



*Data Management in Research
SOPOT, 27 - 28 August, 2012*



SeaDataNet

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

SeaDataNet and EMODnet Data Management and Services

G.M.R. Manzella, M. Fichaut, D. Schaap, Stefano Nativi, Enrico Boldrini and
SeaDataNet consortium

Overview

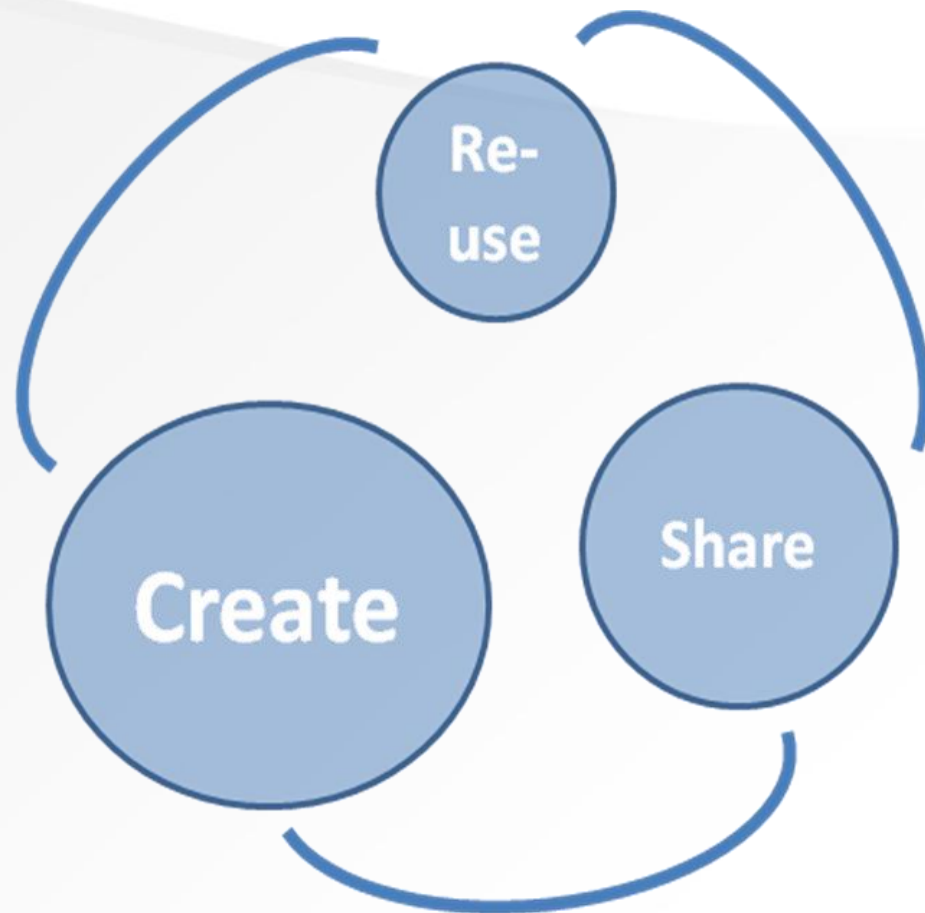
- **From Earth System Science to Marine Science**
- **A short story behind SeaDataNet**
- **SeaDataNet**
- **SeaDataNet services**
- **SeaDataNet and EMODnet**
- **Conclusions**

Data is being used by a far broader community than ever before;

Metadata are critical for recording the provenance of data, processing steps and quality control certification;

A basic international goal is the definition of a standard set of metadata and a mechanism for exchanging the acquired information.

Serve Research and Societal Needs



Re-using data: principles

- **Data could fit for the intended use but not necessarily for all potential uses.**
- **Data need not be perfect, especially if imperfect data do not compromise the intended use and the costs of perfect data are too high in relationship to the benefits.**
- **Data should flow from the underlying business processes.**

Data adequacy:

- “the usefulness of data for risk assessment purposes”, Klimisch et al.
- "hazard identification purposes". EPA
 - Klimisch HJ, Andreae M, Tillmann U.: A systematic approach for evaluating the quality of experimental toxicological and ecotoxicological data. Regul Toxicol Pharmacol. 1997 Feb; 25(1):1-5.
 - EPA: Determining the Adequacy of Existing Data, <http://www.epa.gov/hpv/pubs/general/datadfin.htm>

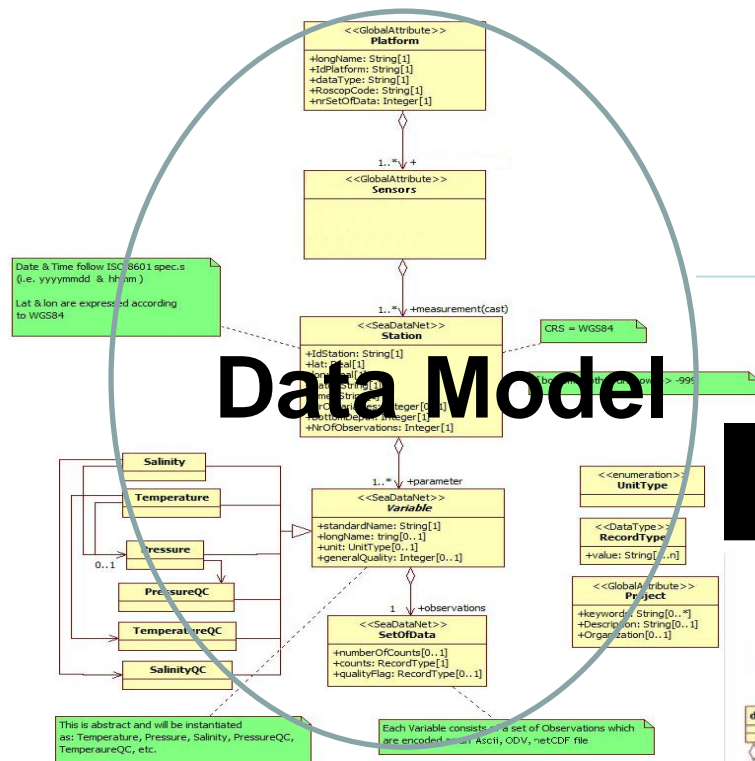
DG MARE: Data Adequacy

- is there an overview of data availability?
- if we have an overview then how complete are the data? Is incompleteness due to reluctance of data-owners to release data or because of a lack of measurements?
- are there any statements made as to fitness for purpose – eg. for fish stock or environmental assessments, for spatial planning, for licensing, for coastal protection.

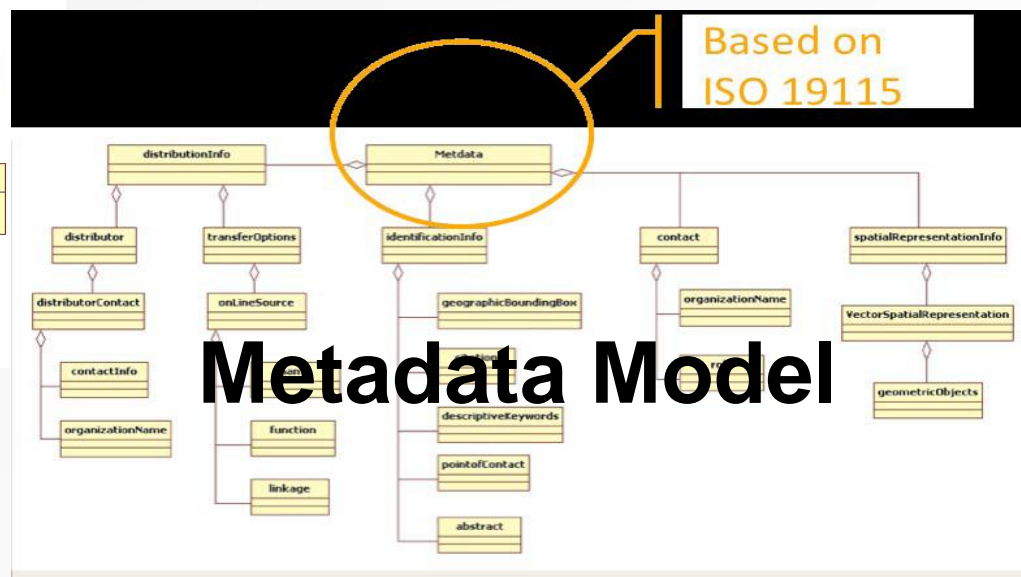


SeaDataNet

Models: need of international collaboration



Common Vocabularies



Overview

- **From Earth System Science to Marine Science**
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- **Conclusions**

- **Specific research and technological development programme (EEC) in the field of marine science and technology (MAST), 1989-1992**
- Objectives: To contribute to a better knowledge of the marine environment, an improvement in its management and an enhanced capacity to predict changes within it on the basis of cooperation with national and international programmes in this field. Furthermore, to encourage the development of new technologies for the exploration, protection and exploitation of marine resources.

Short title: Marine science and technology (MAST I)

- **Second Framework Programme**

- **Specific research and technological development programme (EEC) in the field of marine science and technology, 1990-1994**
- **Objectives:** To help establish a scientific and technological basis for the exploration, exploitation, management and protection of European coastal waters and the seas surrounding the Community Member States, to introduce the necessary Community dimension to various ongoing research activities, and to achieve a balance in the marine scientific potential between the various areas of the European Communities.

Short title: Marine Science and technology (MAST II)
Third Framework Programme

- **Supporting initiatives:**
... Establishment of a European ocean data and information system, including a system on the management of data on remote sensing ...

- **Specific programme of research and technological development in the field of marine science and technology, 1994-1998**
- **Objectives:** To foster the scientific knowledge and technological development necessary to understand how marine systems function at basin scales, in order to prepare for sustainable use of the oceans and determine their role in global change.

Short title: Specific RTD programme in the field of marine science and technology

Programme Acronym:FP4-MAST 3

-  **Euronodim**

EURONODIM (1998 – 2001)

- Concerted Action in the framework of EC-DGXII Marine Science & Technology Program (**MAST**).
- **Objectives:** to develop, maintain and electronically publish jointly 4 meta-data products/directories on the Internet to keep track of ocean and marine data & information and to improve the overall awareness, overview and access to ocean and marine data & information in Europe:
 - European Directory of Marine Environmental Data (EDMED)
 - Cruise Summary Reports (ROSCOP)
 - Research Projects Database (EDMERP)
- **Duration:** September 1998 - September 2001

Sea-Search (2002 – 2005)



SEA-SEARCH

The Sea Search partnership has brought together a unique group of 33 institutes/centres from 30 different European coastal states, that are highly skilled in management and added-value services on a wide range of oceanographic and marine data and information. The range of data disciplines includes physical oceanography, marine biology, marine chemistry, and hydrography. Moreover each of these centres are operating in their country as national data centre or focal point for oceanographic and marine data & information. As such they are central nodes in their countries with links to other organisations, active in marine research and marine environmental management, thus monitoring and overseeing national marine research activities and marine data flows. The majority of the partners are also participating in the global IOC-IODE system of national oceanographic data centres.

The partners are involved in many marine research projects on a national and international level, including a large number of European Commission projects. In most cases the role of the partners is to give support or coordinate the oceanographic data management in these projects. By these activities the partners have developed specialist skills, trained staff and developed infrastructure (software, hardware, networks) for the full cycle of data & information management, i.e. data monitoring, tracking, quality controlling, processing, archiving, making added-value products, data-analysis, maintaining meta-databases and databases, support services and dissemination / data distribution services.

Within the Sea-Search project (2002 – 2005) the partners have established and populated an array of Pan-European directories and overviews of ocean and marine data & information resources from 30 coastal states bordering European seas. Maintenance, upgrading and further expansion of these services is secured within the SeaDataNet project (2006 – 2010), that has succeeded Sea-Search early 2006.

Partners

The European Commission
Community Research
Energy, Environment
and Sustainable Development

Countries:

- ★ [Belgium](#)
- ★ [Bulgaria](#)
- ★ [Croatia](#)
- ★ [Cyprus](#)
- ★ [Denmark](#)
- ★ [Estonia](#)
- ★ [Finland](#)
- ★ [France](#)
- ★ [Georgia](#)
- ★ [Germany](#)
- ★ [Greece](#)
- ★ [Iceland](#)
- ★ [Ireland](#)
- ★ [Israel](#)
- ★ [Italy](#)
- ★ [Latvia](#)
- ★ [Lithuania](#)
- ★ [Malta](#)
- ★ [Morocco](#)
- ★ [The Netherlands](#)
- ★ [Norway](#)
- ★ [Poland](#)
- ★ [Portugal](#)
- ★ [Romania](#)
- ★ [Russia](#)
- ★ [Spain](#)
- ★ [Sweden](#)
- ★ [Turkey](#)
- ★ [Ukraine](#)
- ★ [United Kingdom](#)

SEA-SEARCH

Overview

- **From Earth System Science to Marine Science**
- **A short story behind SeaDataNet**
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- EU Sixth Framework Programme
- Integrated Infrastructure Initiative (I3)
- 1 April 2006 to 31 March 2011
- **Objectives:** develop an efficient distributed pan-European marine data management Infrastructure for managing large and diverse data sets; network existing professional data centres of 35 countries, active in data collection; provide integrated databases of standardised quality on-line



Sixth Framework Programme
2002 - 2006

49 partners including:

- Major oceanographic institutes of 35 countries
- National Oceanographic Data Centres (NODCs)
- Divisions of major national marine research institutes
- 3 satellite data centres
- 3 scientific modelling centres
- 2 SMEs experts in software development
- 3 International organisations (IOC, ICES, JRC)



SeaDataNet 2 : Key figures

- Start 1st of October 2011
- Duration 4 years
- Budget 6 M€
- 44 partners from 30 countries
- 14 subcontractors
- 1 associate partner
- Total of 35 countries represented
- 59 participants, 45 data centres
- 602 man/month

- 44 partners from 30 countries
- 14 subcontractors from 13 countries
- 1 associate partner
- 59 participants from 35 countries



SeaDataNet 2 partnership

- Only 1 partner of SeaDataNet I missing : Lebanon, CNR
- 5 subcontractors were partners in SeaDataNet
 - IOC-IODE – International (IFREMER)
 - ENSSMAL – Algeria (IEO)
 - INRH – Morocco – (IEO)
 - INSTM - Tunisia (IEO)
 - INEWI – Albania (OGS)
- 10 newcomers
 - 4 partners
 - UniHb – Germany
 - Tubitak – Turkey
 - CNR-IIA – Italy
 - IBSS – Ukraine
 - 6 sub-contractors
 - IMBK – Montenegro (OGS)
 - RSHU - Russia (SIO-RAS)
 - UTM-CSIC – Spain (IEO)
 - SHOM – France (IFREMER)
 - STFC – United Kingdom (BODC)
 - Eu-Consult – Netherlands (MARIS)
- 1 associate partner
 - IOPAN - Poland

SeaDataNet : a very brief summary

- Objective
 - to develop an efficient **data management infrastructure able to handle the diversity and large volume of data** collected via the Pan-European oceanographic fleet and the new observation systems, both in real-time and delayed mode
- It is **based on a semi-distributed system** that incorporates and enhance the existing NODC network and satellite data centres.
- A major technical development activity will enable the **data centres to interact as a virtual data centre, able to deliver integrated data, meta-data and products of controlled quality through a unique portal**

SeaDataNet : a very brief summary

- To reach the objectives the main accomplishments were
 - Development of common standards :
 - Vocabularies
 - Transport formats
 - European catalogues with standardised XML ISO-19115 descriptions
 - One unique portal to access all data : virtual data centre
 - Set of tools to be implemented in each data centre
 - MIKADO : generator of XML descriptions of SeaDataNet catalogues
 - NEMO : reformatting software to SeaDataNet formats
 - Download Manager : downloading software
 - ODV : Ocean data view adapted to SeaDataNet needs
 - DIVA : for product generation adapted to SeaDataNet needs

SeaDataNet - SeaDataNet 2, what's new?

- **Operational** update of the SeaDataNet catalogues (CDI, EDMED, EDMERP, EDIOS, CSR) using OGC CSW (Catalogue Service for the Web)
- INSPIRE directive compliance : **ISO-19139** standard for XML description of the catalogues
- **Machine to machine interface** for data and product distribution to regular end-users (operational oceanography)
- **Duplicate management, Data preview** before downloading
- Improve capability for handling also **marine biological data** in close cooperation with EurOBIS, MarBEF, and LifeWatch initiatives
- Product : aggregated data sets at full basin scale **using the datasets made available via the SeaDataNet infrastructure**
- **Development of true synergies with other projects** Eurofleets, Jerico, MyOcean

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*recording metadata at sea
... is problematic ...*



Who's
recording the
metadata?



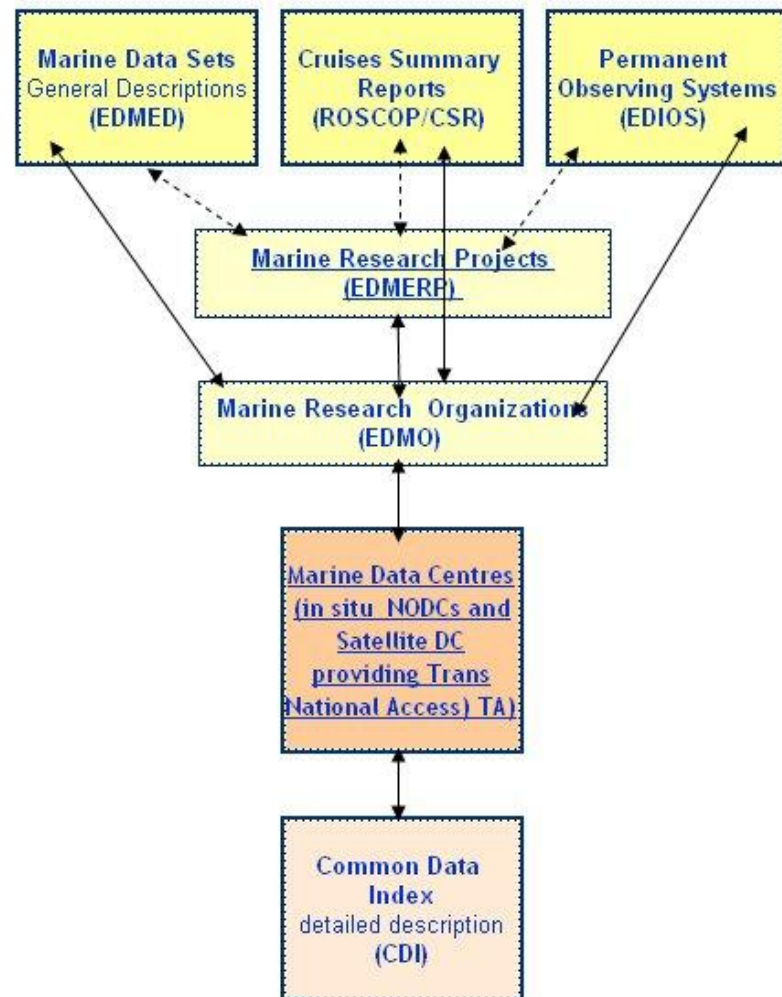
Think I'll go
record some
metadata.

**.. But I
need to
know as
much as
possible ...**



Discovery services

- Marine environmental data sets (**EDMED**)
- Marine environmental research projects (**EDMERP**)
- Observing systems (**EDIOS**)
- Research Cruise Summary Reports (**CSR**)
- Directory of marine organisations (**EDMO**)
- Common Data Index (**CDI**)





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Data Management in Research – Sopot, 2013

EDMED

- “Discovery” metadata
- Comprehensive reference to marine data sets and collections in Europe
- On-line query & browse
- Simple or advanced query interface to specify a combination of search criteria

The image displays four overlapping screenshots of the SeaDataNet EDMED web application. The top-left screenshot shows the 'Search form' with various filters and search options. The top-right screenshot shows 'Search results' with a list of data sets and their metadata. The bottom-left screenshot shows 'Data set information' for a specific data set, including details about the data and its collection. The bottom-right screenshot shows 'Data centre information' for a specific data centre, including details about the data and its collection.

European Directory of Marine Environmental Data (EDMED)



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EDMERP

SEA-SEARCH See-Search Quick Index GO

SEA-SEARCH European Directory of Marine Environmental Research Projects

SEARCH THE EUROPEAN DIRECTORY OF MARINE ENVIRONMENTAL RESEARCH PROJECTS

SIMPLE QUERY **ADVANCED QUERY** **COORDINATE CENTRE** **HELP**

Free search: []
Theme: [All] GO

SEA-SEARCH See-Search Quick Index GO

SEA-SEARCH European Directory of Marine Environmental Research Projects

SEARCH THE EUROPEAN DIRECTORY OF MARINE ENVIRONMENTAL RESEARCH PROJECTS

SIMPLE QUERY **ADVANCED QUERY** **COORDINATE CENTRE** **HELP**

Dataset ID: [] Project title: [] Project acronym: [] Begin date: [] End date: [] Area Type: [] Country: [] Show

Dataset ID	Project title	Project acronym	Begin date	End date	Area Type	Country
18001010	Fluxes of organic and inorganic matter in the Baltic Sea system		1/1/1992	1/1/1999	Offshore & Coastal	Sweden
18001011	Harmful Algae Blooms Initiation and Prediction in Large European Marine Ecosystems	HABLE	1/1/2002	31/12/2004	Offshore & Coastal	Sweden
18001004	Harmful Algae Blooms Expert System	HABES	1/2/2001	31/12/2003	Coastal	Sweden
18003001	Marine biodiversity, patterns and processes	Marbop	1/8/2001	31/8/2006	Coastal	Sweden
18008001	Marine Research on Eutrophication - A scientific base for cost-effective measures for the Baltic Sea	WARE	1/1/1999	1/1/2006	Offshore & Coastal	Sweden
18001008	Method for detecting changes in aquatic ecosystems and monitoring of algae blooms, Application Phase II	RESE project 5	1/1/2000	31/12/2002	Offshore & Coastal	Sweden
18001005	Monitoring the Atlantic inflow towards the	MAIA	1/1/2000	31/12/2002	Offshore & Coastal	Sweden
18001006						
18001007						
18001012						

GENERAL PROJECT INFO

Dataset ID: 18001011
Project title: Harmful Algae Blooms Initiation and Prediction in Large European Marine Ecosystems
Project acronym: HABLE
Project centre: The Swedish Meteorological and Hydrological Institute, SMHI
Associated programme: Fth Framework Pro Theme, Environ and Sust Dev Key Action 3 Sustainable Marine Ecosystem
Begin date: 1/1/2002
End date: 31/12/2004
Occupied: No

LOCATION

Geographical coverage: Baltic Sea, North Sea and Northern Barents coast
Area Type: Offshore & Coastal
Sea area: Baltic Sea, North Sea, remaining N. Atlantic Ocean
Coastal zone: Spain, Sweden, Germany, Norway, Denmark, Finland

DESCRIPTION

Summary: The aim of HABLE is to assess and quantify the environmental conditions required for the formation of identified HAB in three European Large Marine Ecosystems. HABLE's objectives will be achieved through a 4-coordinated integrated observational and modelling approach. The project will focus on the analysis of long-term series (up to 10 years) of in situ monitoring and satellite ocean colour data for improved understanding of the conditions of formation of eutrophication HAB. The model (modelled) under different anthropogenic forcing scenarios and ecosystem functioning in the Baltic Sea, the North Sea and the Northern Barents coast. The socio-economic impact of a reduction of HAB events will be assessed for fishery/aquaculture, tourism, food industries through a project dedicated industrial/governmental organisation user reference group.

References: HABLE, human impact, mitigation
Keywords (e.g. chlorophyll, Plankton, REMOTE-SENSING (e.g. satellites, aircraft), COMPUTER MODELS, Hydrography (e.g. T, S), Nutrients
URL: <http://www.merics.muhable.it>

CONTACT INFORMATION

Project centre: SMHI
Part of research centre: The Swedish Meteorological and Hydrological Institute, SMHI
Other partners and countries: Partner: Project manager: NRSO-Norway, Partners: PMU, United Kingdom, CIRC-Spain, Biosciences Denmark, FMR-Finland, MFR-Norway, DLH-Germany, BNF-Norway
Contact: **Georg Karlsson**
SMHI Oceanographic Services Nyä Varavä 31 SE-426 71 V. Finland
T: +46 (0) 751 89 50
F: +46 (0) 751 89 50
Email: Georg.Karlsson@smhi.se

ADMINISTRATION

Compiled by: Lotta Fyhrberg, SMHI
Collating centre: The Swedish Meteorological and Hydrological Institute, SMHI
Latest update: 9/4/2005

- Initiated in 1998 in EURNODIM and further developed in Sea-Search
- Inventory of marine research projects undertaken by European research laboratories.
- The primary objective is to support users in identifying interesting research activities and in connecting them to involved research managers and project results like data, models, publications, etc. across Europe.



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EDMO

The screenshot displays the Sea-Search web application interface. At the top, there's a 'SEA-SEARCH' header with a 'Sea-Search Quick Index' dropdown and a 'GO' button. Below this, a section titled 'Organisations & their Activities' features a world map with orange markers indicating search results. To the right of the map is a search form with fields for 'Search on Name:', 'OR', 'Free search', and 'Country'. The 'Country' dropdown is set to 'United Kingdom'. Below the search form, there are buttons for 'SEARCH' and 'CLEAR'. The main content area shows a list of search results, with the first result selected and its details displayed. The details for the 'National Oceanography Centre, Southampton' include its address, zip code, city, country, and website. A description of the center's mission and research is provided, along with a list of its activities. The bottom of the page shows a 'Collating centre' and 'Latest update' date.

SEA-SEARCH
Organisations & their Activities

Search on Name: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
OR
Free search
Country: United Kingdom
SEARCH CLEAR

FOUND 132 | SHOW 1 | PREVIOUS | NEXT

DETAILS

Name: National Oceanography Centre, Southampton
Address: University of Southampton
Waterfront Campus
European Way
Zipcode: SO14 3ZH
City: Southampton
Country: United Kingdom
Centre website: <http://www.soc.soton.ac.uk>
Metadata entries

Description

National Oceanography Centre, Southampton
UNIVERSITY OF SOUTHAMPTON AND NATURAL ENVIRONMENT RESEARCH COUNCIL

The Southampton Oceanography Centre is a joint venture between the University of Southampton and the Natural Environment Research Council (NERC) and is one of the few world-class centres of excellence in ocean sciences, earth sciences and ocean technology. This unique combination of interdisciplinary research and teaching resources comprises the University of Southampton's School of Ocean and Earth Science together with 4 specialist NERC research divisions. The scientific mission of the Southampton Oceanography Centre is:

- To deliver scientific excellence and understanding of the earth and its oceans as a dynamic interdisciplinary system.
- To provide the highest quality teaching and training in ocean and earth science within an active research environment.
- To provide large scale national facilities for ocean and earth science.

This mission is achieved through integration between staff and facilities of the Natural Environment Research Council and the University of Southampton. Success in this mission will deliver our goal, to establish SOC as a major national and international centre of excellence for research, teaching and training in marine and earth science and in marine technology.

Research work is conducted through a variety of organisations. Data are retained in a variety of forms and individual members of staff of the Department should be contacted for particular data. Details of the Department are available from the Department Secretary. Degrees of B.Sc., M.Sc. and Ph.D. are awarded in Oceanography.

[British Oceanographic Data Centre \(BODC\)](#)

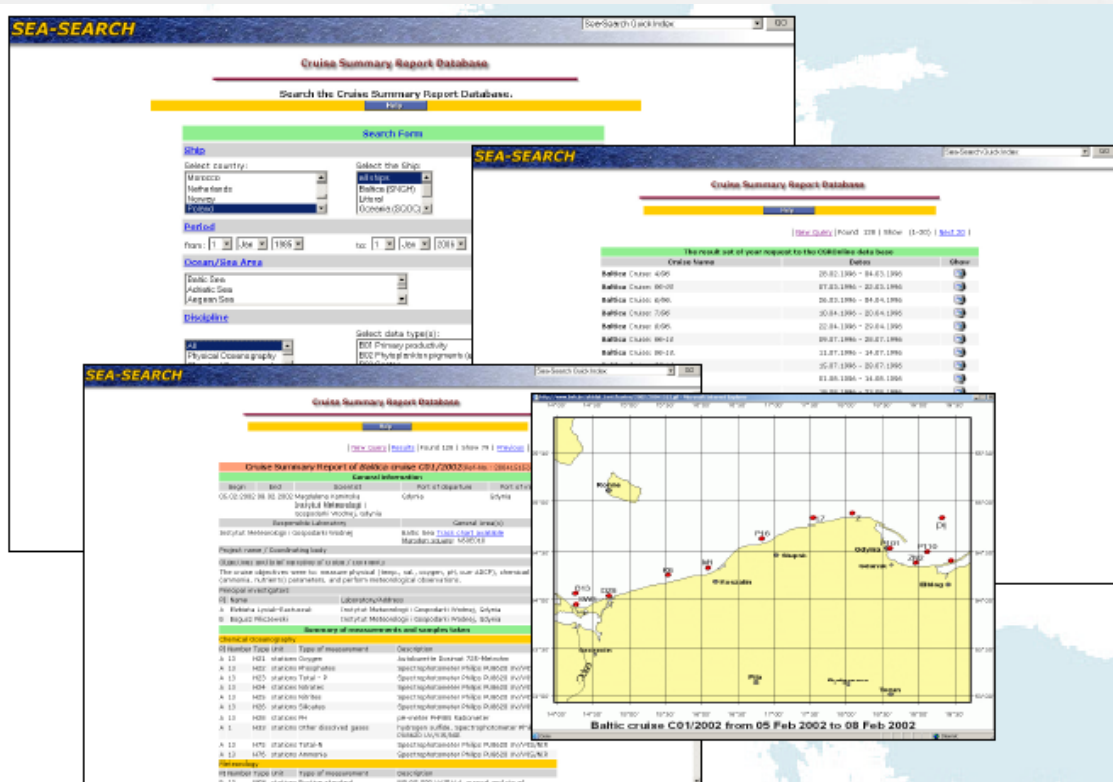
Collating centre
Latest update: 1/6/2006 2:56:03 PM

FOUND 132 | SHOW 1 | PREVIOUS | NEXT

- Initiated in EURONODIM and further developed in Sea-Search
- Inventory of organisations working in marine research.
- The primary objective is to support users in identifying interesting research organisations in connecting them to involved research managers and project results like data, models, publications, etc. across Europe.

Cruise Summary Reports

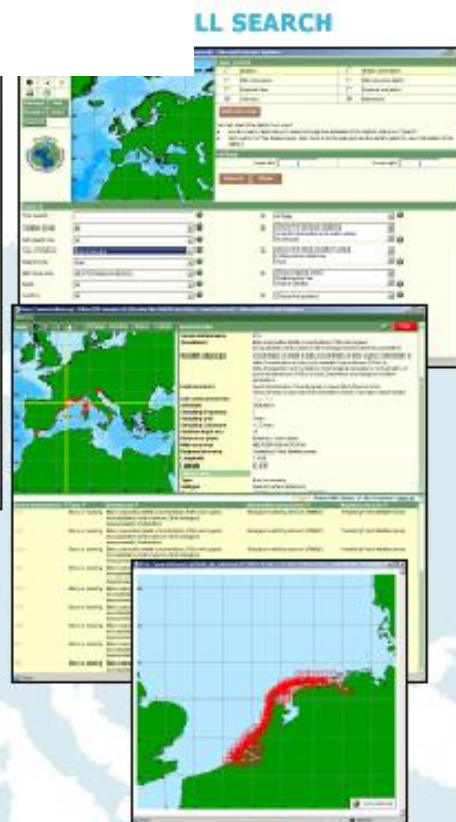
- **Conceived by IOC**
- **ICES acted as focal point**
- **Documenting data collected on scientific research cruises operated by European vessels**
- **Cruise track charts included**
- **Online entry form**
- **Online searchable database**



European database on Cruise Summary Reports (CSR)

European Directory of the Ocean-observing System (EDIOS)

- Initiative of the European Global Ocean Observing System (EuroGOOS)
- Regular repeated measurements
- On-line searchable directory of observing, measuring, and monitoring systems
- Links to on-line real-time and archive data
- Tool to aid design of observing systems



European Directory of the Ocean-observing System (EDIOS)



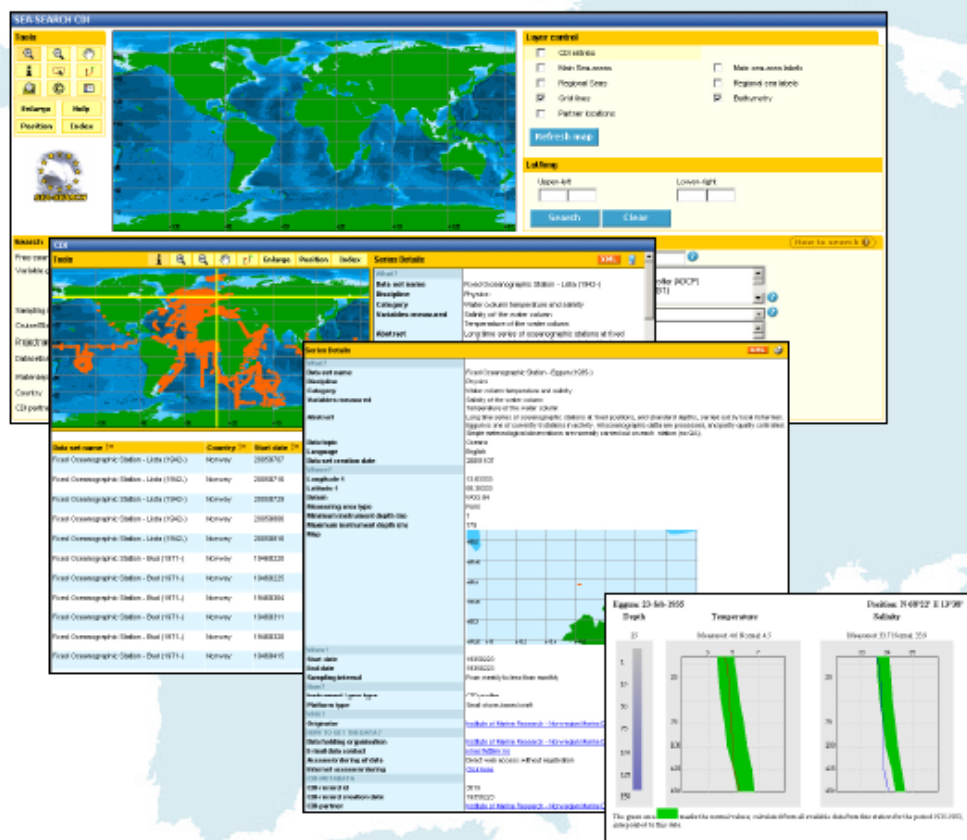
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Common Data Index

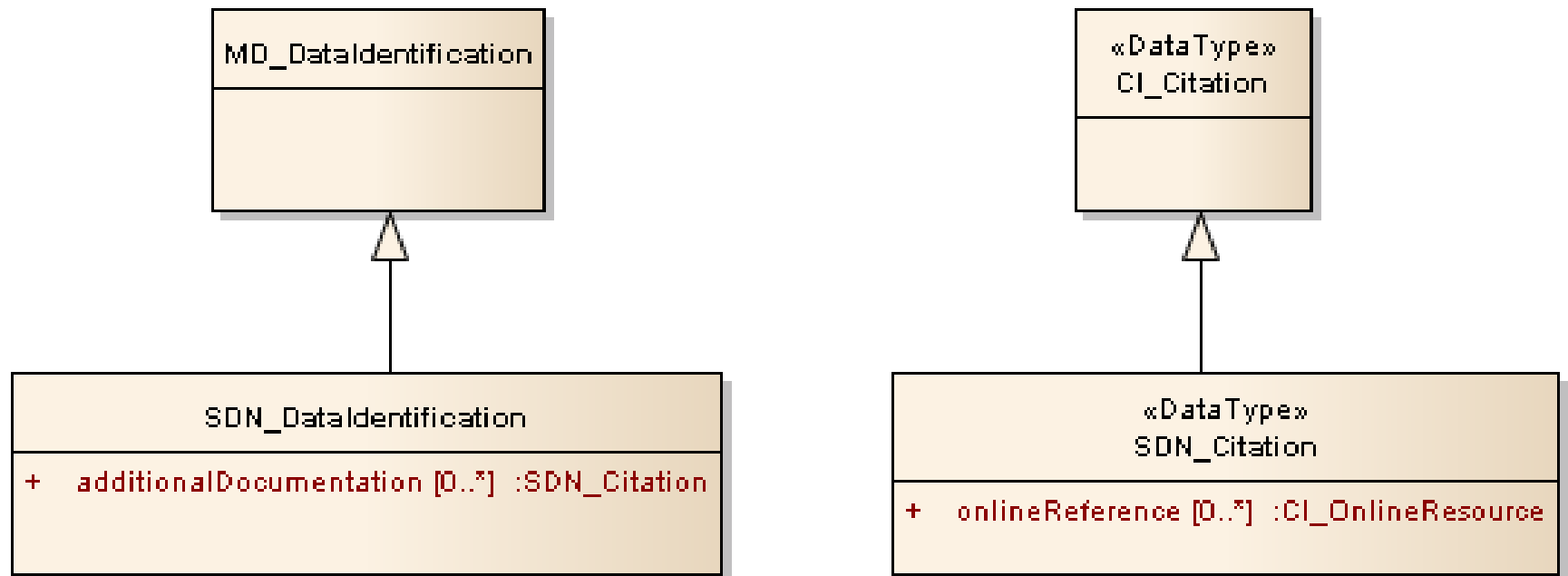
- Index to individual data sets
- ISO19115 metadata standard has been adopted
- On-line searchable directory
- Direct access to on-line data sets, catalogues or e-mail request



Common Data Index - CDI

The new CDI: ISO, OGC and INSPIRE compliant – containing also references to bibliography and any documentation (e.g. QA/QC protocols)

class SeaDataNet extensions





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SeaDataNet

All these Directories have been harmonised and mutually tuned in format, syntax and semantics (common vocabularies), a common XML editor (MIKADO), online CMS and online user interfaces.



European Directory of Marine Environmental Research Projects (EDMERP)

Search

Free search

Sea area

Coordinating organisation

Initiative leading centre

Listing results

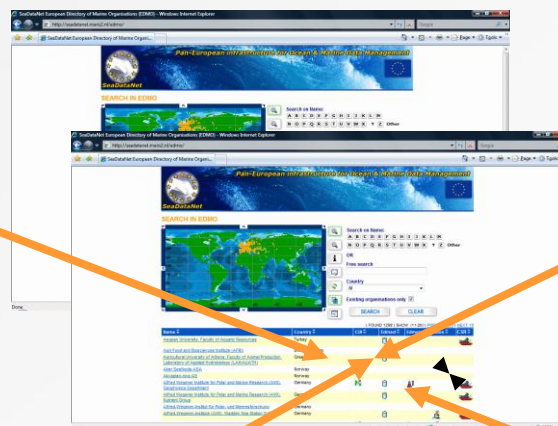
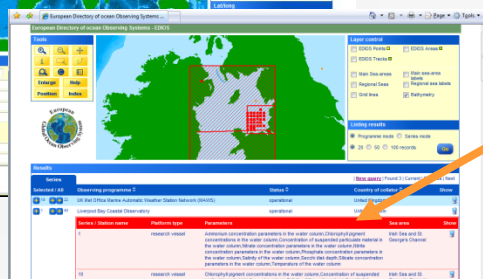
20 50 100 records

Project ID	Project title	Project acronym	Start date	End date	Country
703	Initiative in space and time of sea and other possible effects of climate change on the environment of coastal systems	ICCS	2003-01-01	2003-12-31	Turkey
704	Review of Environmental Projects of the Caspian Sea for the Ministry of Natural Resources	RECAP	1999-01-01	1999-10-31	Turkey
705	Development of Black Sea Integrated Coastal and Shelf Zone Monitoring and Early Warning (BICSE) Project	ICOWS	1999-01-01	2003-12-31	Turkey
706	Black Sea Ecosystem Processes And Forecasting / Operational Decision Support System	Black Sea Ecosystem	2001-06-06	2010-12-31	Turkey
707	Particulate matters in the Eastern Mediterranean: Atmospheric Processes Impact on Marine Ecosystems	Particulate matters	2003-01-01	2003-12-31	Turkey
708	The influence of anthropogenic climate change on the phytoplankton in the Eastern Mediterranean	Phytoplankton	2003-01-01	2004-05-31	Turkey
709	Development of a regional network of the phytoplankton monitoring in the Southern Black Sea	Phytoplankton	2003-01-01	2003-12-31	Turkey
710	Evolution of biogeochemical aspects of a black sea ecosystem in the Black Sea	Biogeochemical	2003-01-01	2003-12-31	Turkey

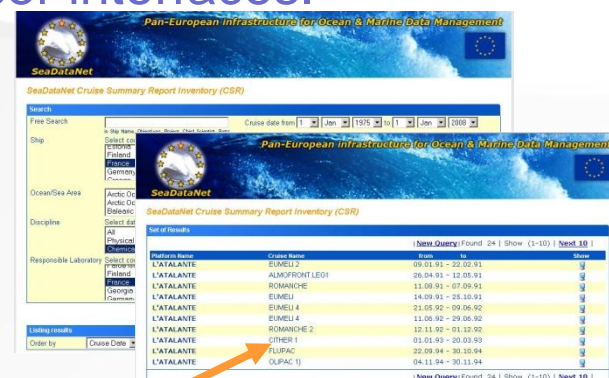
EDMERP



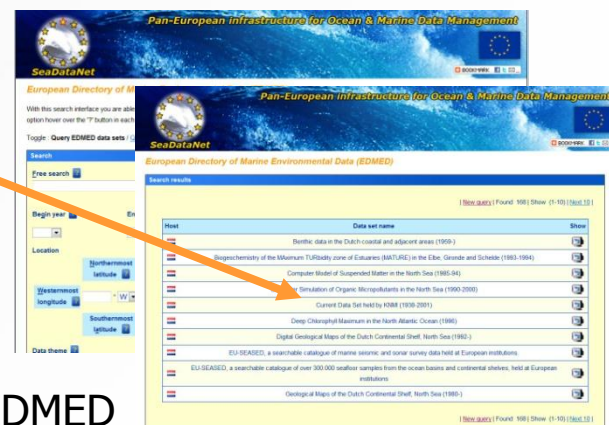
EDIOS



EDMO



CSR



EDMED

SeaDataNet Common Data Index (CDI) V2 - Mozilla Firefox

File Modifica Visualizza Cronologia Segnalibri Strumenti Aiuto




Common Data Index (CDI) - ... x SeaDataNet Common Data I... x +




seadatanet.maris2.nl/v_cdi_v2/search.asp




Google

SEADATANET COMMON DATA INDEX (CDI) V2

Tools ?






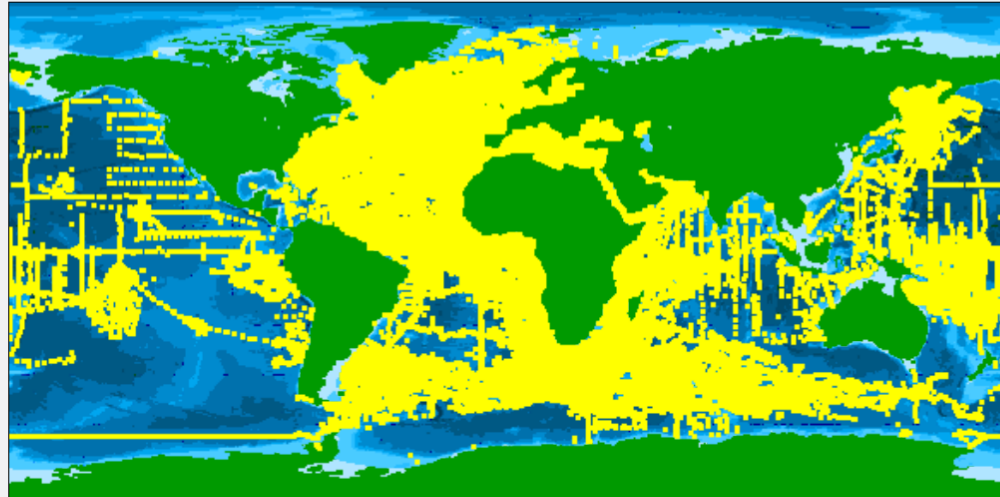




Enlarge Help
 Position Index

Datasets 0
 Basket Reset





Layer control ?

Expand Add layer

- ☒ CDI entry Points ?
- ☐ CDI entry Tracks ?
- ☐ CDI entry Areas ?
- ☐ Grid Lines ?
- ☐ Regional sea ?
- ☐ Regional sea labels ?
- ☐ Main sea ?
- ☐ Main sea labels ?
- ☒ Bathymetry ?
- ☐ Blue Marble ?

Lat/long ?

Upper-left ? Lower-right ?

Search

Search Clear ?

Free search ?

Date (yyyymmdd) to ?

Variable groupings

- All
- Biological oceanography
- > Bacteria and viruses
- > Biota composition

Instrument type

- All
- >2000 Hz top-bandwidth single-channel
- >2000 Hz top-bandwidth sub-bottom
- 1000 Hz top-bandwidth multi-channel

Sampling interval All ?

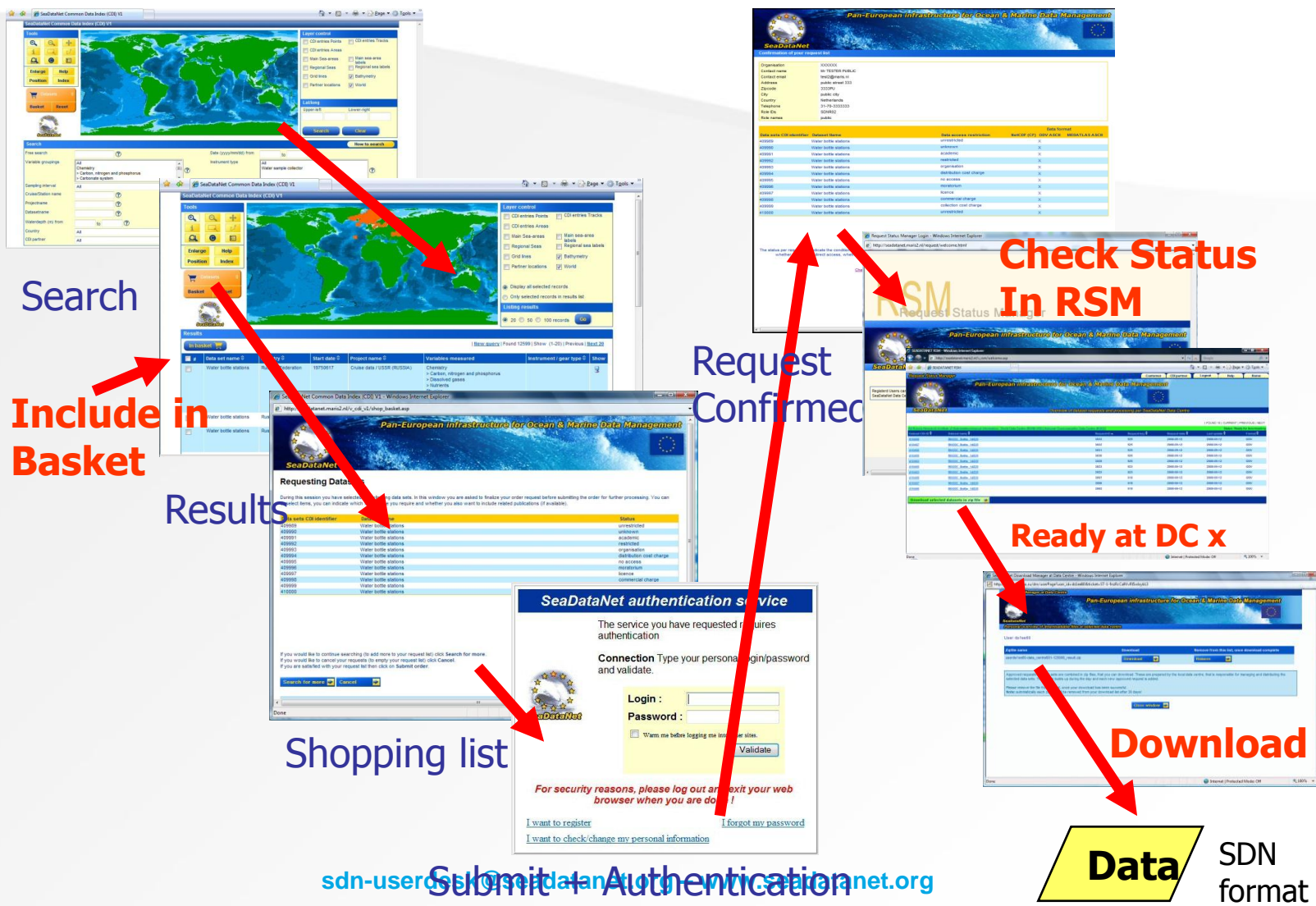
Measuring area All ?



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SeaDataNet Common Data Index (CDI) V2 - Mozilla Firefox

File Modifica Visualizza Cronologia Segnalibri Strumenti Aiuto

Common Data Index (CDI) - ... x SeaDataNet Common Data I... x +

seadatanet.maris2.nl/v_cdi_v2/result.asp

SEADATANET COMMON DATA INDEX (CDI) V2

Tools ?

Enlarge Help
Position Index

Datasets 0
Basket Reset

Layer control ?
Expand

☒ CDI entry Points ?
☐ CDI entry Tracks ?
☐ CDI entry Areas ?

☐ Grid Lines ?
☐ Regional sea ?
☐ Regional sea labels ?
☐ Main sea ?
☐ Main sea labels ?

☐ Display all selected records
☒ Only selected records in results list

Listing results

20 50 100 records

Found 129711 | Show (1-20) | Previous Next

#	Data set name	Country	Start date	Variables measured	Instrument / gear type
1	PQ2-09A_stack.sgy	Germany	19960426	Marine geology	airgun array, multi-channel

Desktop 07:42 16/08/2012

SeaDataNet Viewing services

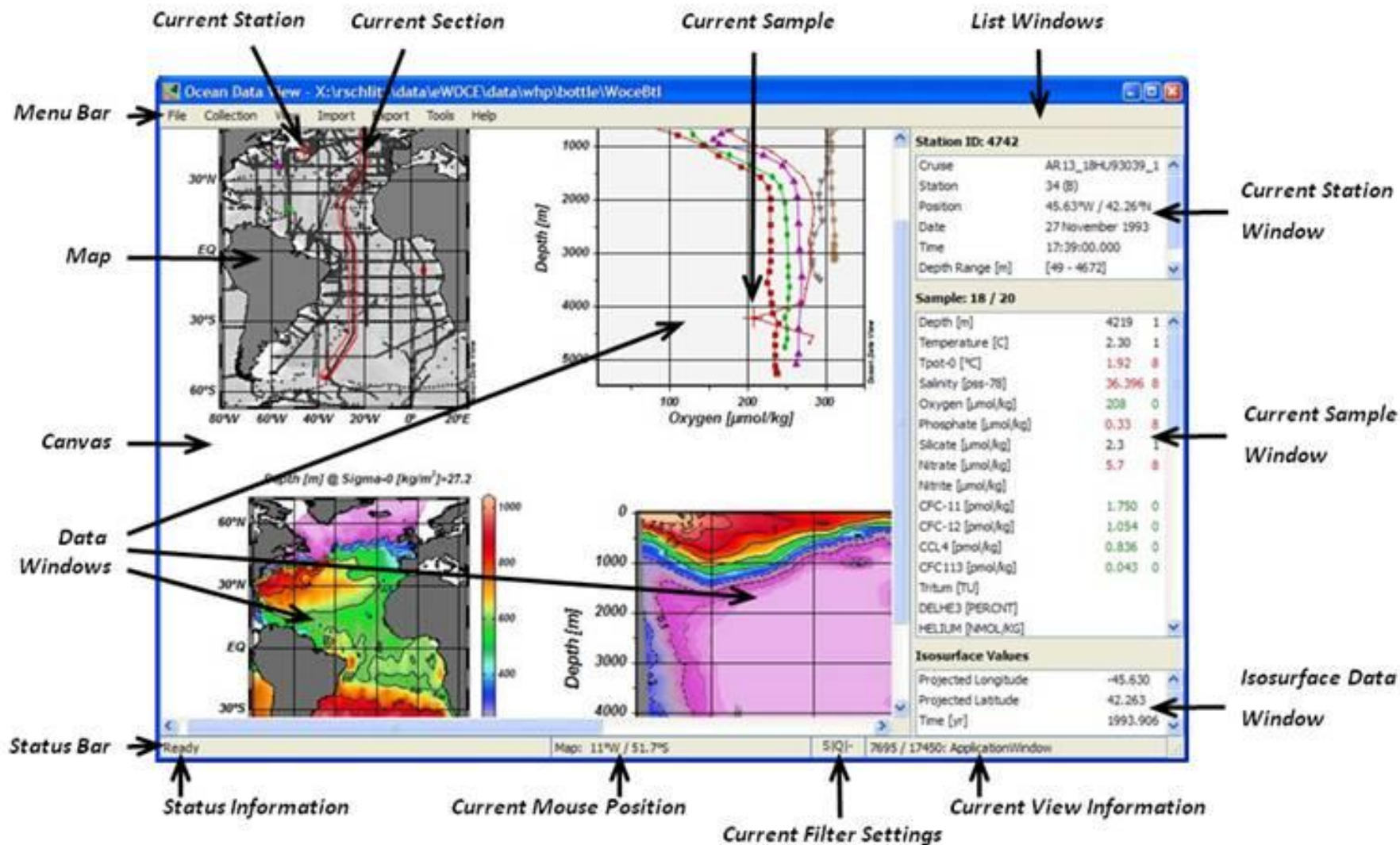
- **Ocean Data View (ODV)**
 - General data analysis and visualization software >10,000 registered users
- ODV software upgraded to ODV4 for:
 - Extending ODV's graphical display capabilities and interactive controls for automatic and visual quality control and data quality flagging
 - Seamless connection to SeaDataNet output: SDN ODV4 data formats, quality flag scale
 - Integration of DIVA gridding software Important tool for the SeaDataNet regional Data Products



SeaDataNet

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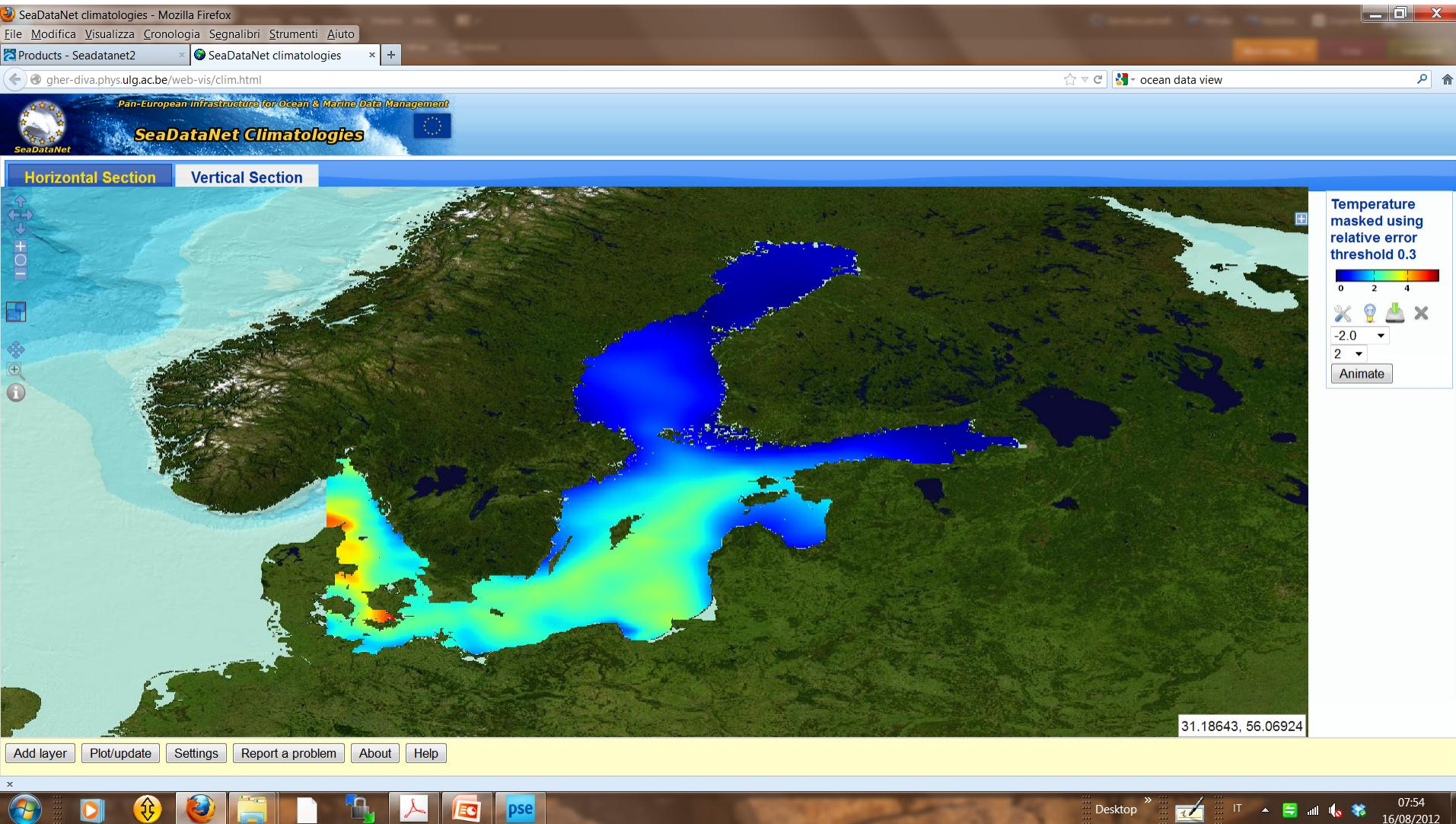
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SeaDataNet Viewing services

- **DIVA software (Data-Interpolating Variational Analysis) allows to spatially interpolate observations on a regular grid in an optimal way.**

The analysis is performed on a finite element grid allowing for a spatial variable resolution and a good representation of the coastline and isobaths.



SeaDataNet Data Policy and implementation

- **Metadata**
- free and open access, no registration required
- each data centre is obliged to provide the meta-data in standardized format to populate the catalogue services
- **Data and products services**
- the general case is free and open access, however users must register once in order to get a personal login - password
- Web form to provide necessary information
- User agrees with “**SeaDataNet User Licence**”
- After processing, login/password sent by email (email check)

SeaDataNet Data Policy and implementation

- **Data and products services (cnt)**
- Licence is part of the **SeaDataNet Data Policy**, that is intended to be **fully** compatible with the Directive of the European Parliament and of the Council on public access to environmental information, the INSPIRE Directive, IOC, ICES, WMO, GCOS, GEOSS and CLIVAR data principles.
- SeaDataNet Data Policy is an overarching policy, respecting any local policy
- Registration is also required to facilitate the follow-up of a user request to multiple data centres (asynchronous processing)
- Each user gets a SeaDataNet Role; while each CDI record has a 'Data access restriction' label. The combination of role and access label determines '**access OK**', '**access to be discussed**' or '**access denied**'

Cross sector involvement

- **EuroGOOS**, maintaining the **European Directory of Ocean** observing systems (EDIOS) and quality controlling and archiving long-term data series. www.edios.org
- **GMES Marine Core Services** for streamlining the provision of long-term archives for optimising marine forecast services; **SeaDataNet has an MoU with MyOcean to formalise the cooperation**
- **POGO**, collecting and providing information on ocean-going research vessels, and their operators, planned and completed cruises. www.pogo-oceancruises.org
- Services for the international oil & gas industry for metocean data (**SIMORC**) www.simorc.org

Overview

- **From Earth System Science to Marine Science**
- **A short story behind SeaDataNet**
- **SeaDataNet**
- **SeaDataNet services**
- **SeaDataNet and EMODnet**
- **Conclusions**



SeaDataNet

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Essential Components of an Observation Network

Sensors to measure continuously and autonomously 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
- living Argo

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 micropollutants
- abundance & function of biota
- food web
- HABs

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



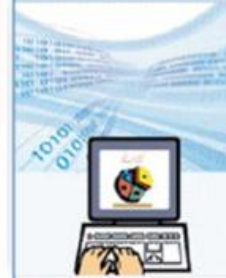
- satcom
- GSM, GPRS
- fibre optics
- acoustics

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



EMODnet

European Marine
Observation and
Data Network

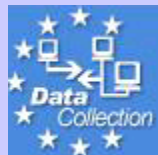


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Data Collection
Framework in fisheries



European Marine and
Observation Network



Global Monitoring for
Environment and
Security



INSPIRE Directive
Public Sector
Information Directive

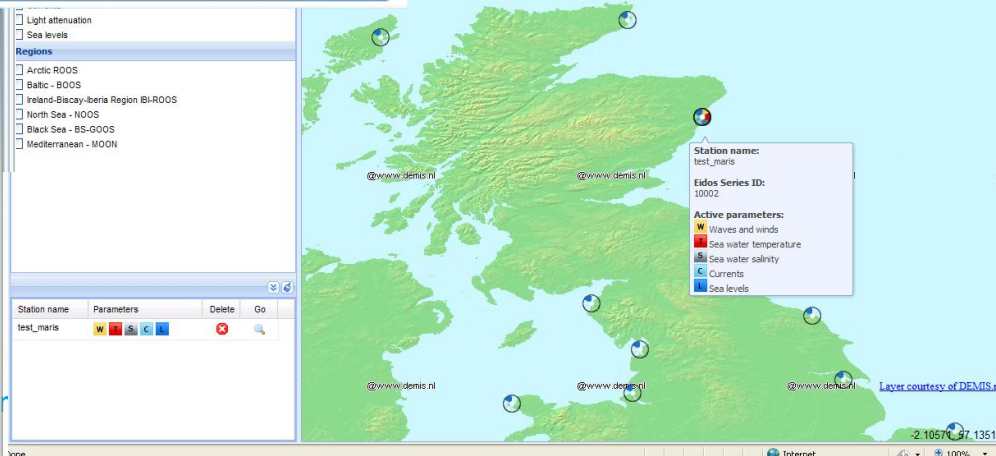
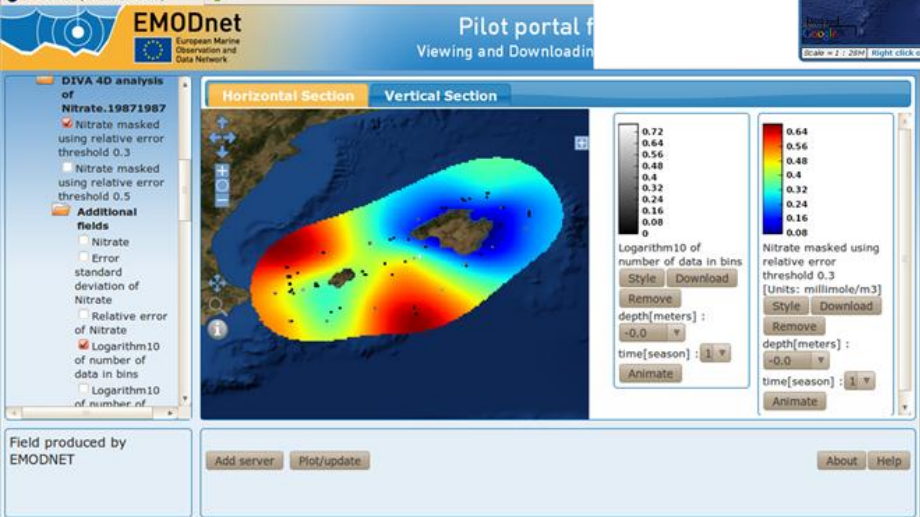
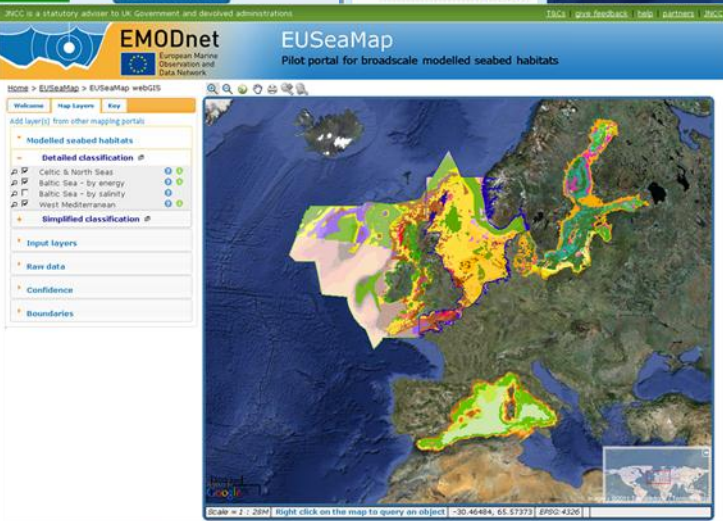
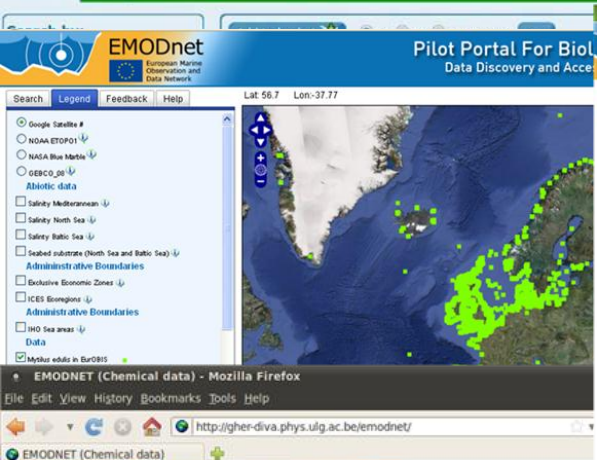
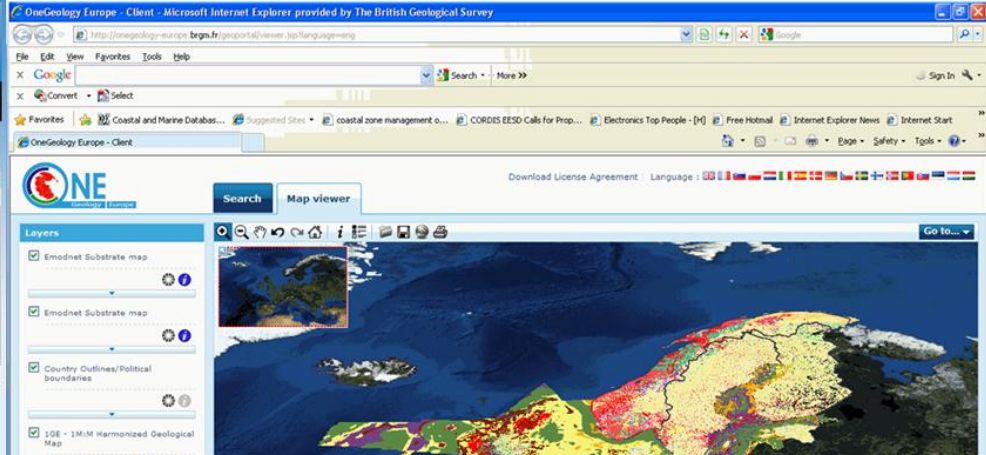
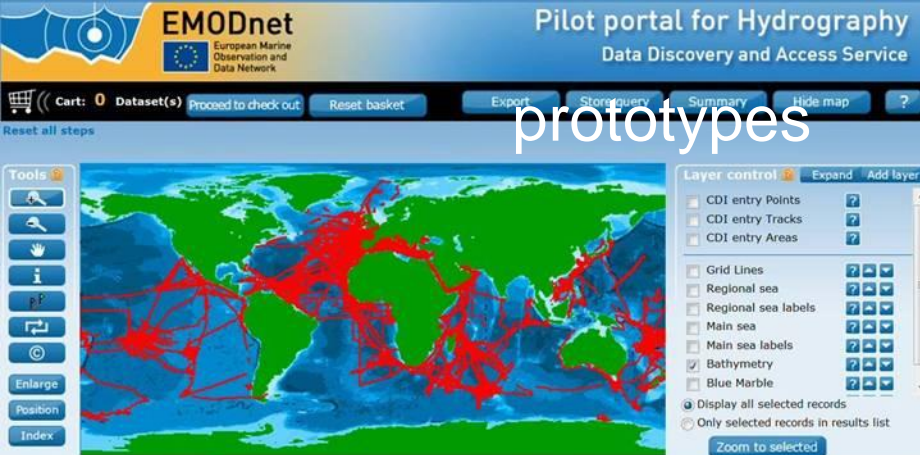


Green Paper on a Future Maritime Policy for the Union:

- Good data are also of importance for maritime economic operators. However, there are still major problems of harmonisation and reliability of data, as well as insufficient and geographically imbalanced monitoring in EU marine regions. These gaps must be addressed if we are to devise a sound and sustainable EU Maritime Policy.
- The EU could consider setting up a European Marine Observation and Data Network which would provide a sustainable focus for improving systematic observation

SeaDataNet and EMODnet

- SeaDataNet has qualified itself as leading infrastructure for the EMODNet data management component and is leading several preparatory EMODNet projects:
- **Chemistry – focus on the groups of chemicals**
- **Hydrography – to produce and deliver a higher resolution digital bathymetry for European seas**
- The **Geology lot is producing harmonised seabed maps (WMS)**. The SeaDataNet infrastructure is adopted via the **Geo-Seas project** to give overview and access to the underlying geological and geophysical data sets.
- SeaDataNet is data partner in the **Biology lot** and a closer technical relation is being developed in the ongoing SeaDataNet II project.



EMODnet Physics

Measurements from fixed stations that cover :

- wave height and period
- temperature of the water column
- wind speed and direction
- salinity of the water column
- horizontal velocity of the water column
- light attenuation
- sea level

Measurements from ferryboxes that cover :

- temperature of the water column
- salinity of the water column



The screenshot shows the EMODnet Pilot Portal For Physical Parameters. The header includes the EMODnet logo and the title 'Pilot Portal For Physical Parameters'. The navigation bar contains links: Home, Access to Data, Objectives, Partners, and Feedback. The main content area is titled 'Welcome to EMODnet - Physical Parameters' and includes a paragraph about the project's purpose, a 'Click here for fullscreen map' link, and a map of Europe showing monitoring stations. The right sidebar contains 'News from web' and 'Newsletter' sections. The footer includes logos for the European Climate Ocean Observing System, SeaDataNet, and myOcean.

Tools

- Contact
- How to
- Sitemap
- Video
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- u

Marine Knowledge 2020

EMODnet
European Marine Observation and Data Network

EMODnet Physics – First Workshop, Tallinn 2011

European Commission Maritime Forum

Welcome to EMODnet - Physical Parameters

The European Commission, represented for the purposes of this project by the Directorate-General for Maritime Affairs and Fisheries (DG MARE), is conducting service contracts for creating pilot components of the **European Marine Observation and Data Network (EMODNET)**. The overall objective is to create pilots to migrate fragmented and inaccessible marine data into interoperable, continuous and publicly available data streams for complete maritime basins observation. The final objective is to provide layers of physical data and metadata available for use by public authorities, scientists and industry, and contribute towards the definition of an operational **European Marine Observation and Data Network (EMODNET)** and contribute to developing of the definition of the Global Monitoring for Environment and Security (GMES) marine core service.

[Click here for fullscreen map](#)

[Click here for fullscreen map](#)

This **EMODNET-Physical Parameters Portal** is one of the EMODNET portals and it is aimed at providing access to archived and real-time data catalog on the physical conditions in Europe's seas and oceans.

This portal is being developed and operated in a cooperation between EuroGOOS, its Regions, SeaDataNet and MyOcean. It provides access to an increasing number of Near Real Time and Archived data series from all fixed metocean monitoring stations and Ferry Box lines in European seas.

News from web

Avoiding harmful ozone pollution this summer

EEA seeks five new members of its Scientific Committee

Deputy Director Gordon McInnes retires after 20 years at the EEA

Eleven Member States exceed air emissions limits under LRTAP Convention

[More](#)

Newsletter

EMODnet Physical Parameters

[More](#)

Meetings

[More](#)

EMODnet Physical Parameter Workshop in the Mediterranean - Rome 9th - 10th February 2012

6th EuroGOOS Conference (4th - 6th October 2011, Sopot, Poland)

EUROGOOS Workshop in Tallinn (16th - 17th June 2011)

[More](#)

European Climate Ocean Observing System

SeaDataNet

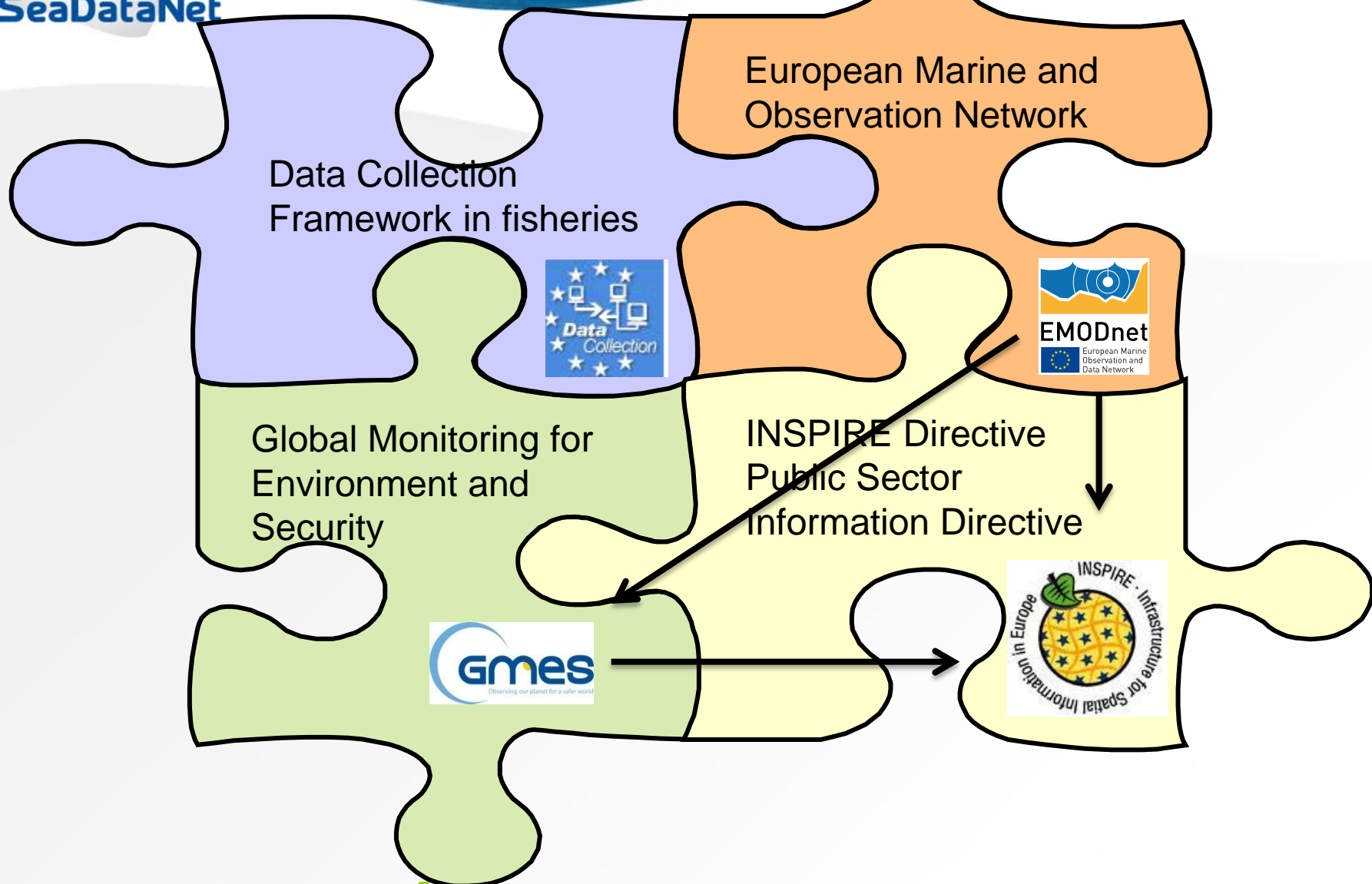
myOcean



SeaDataNet

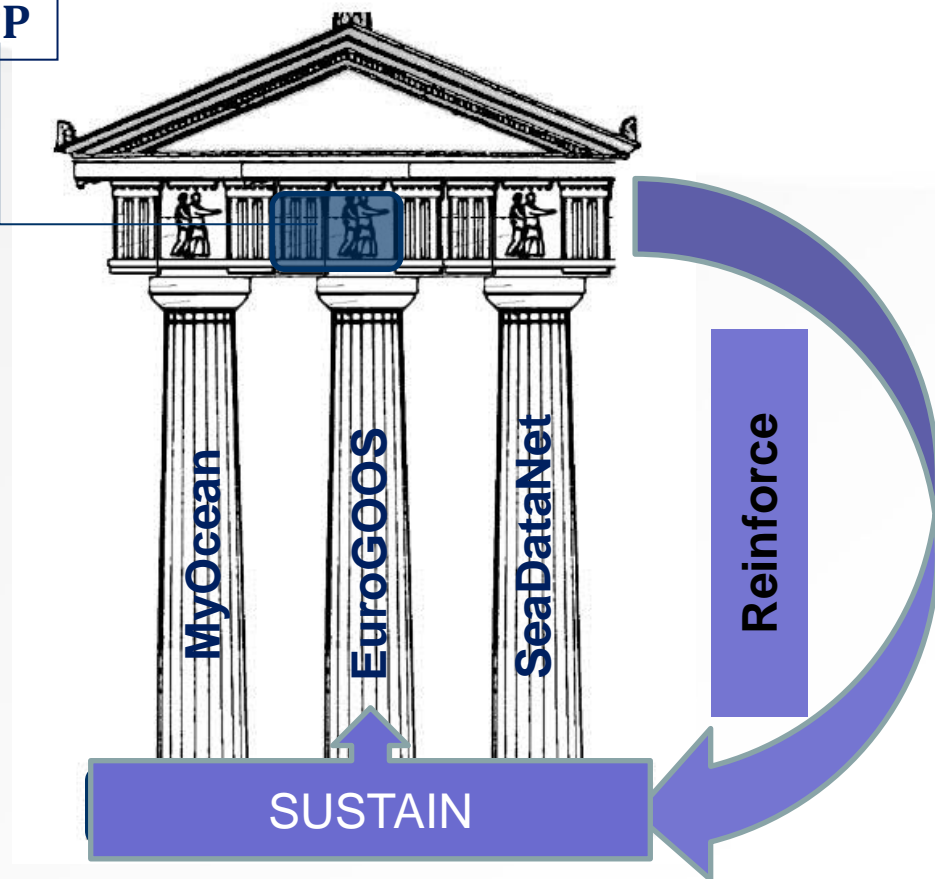
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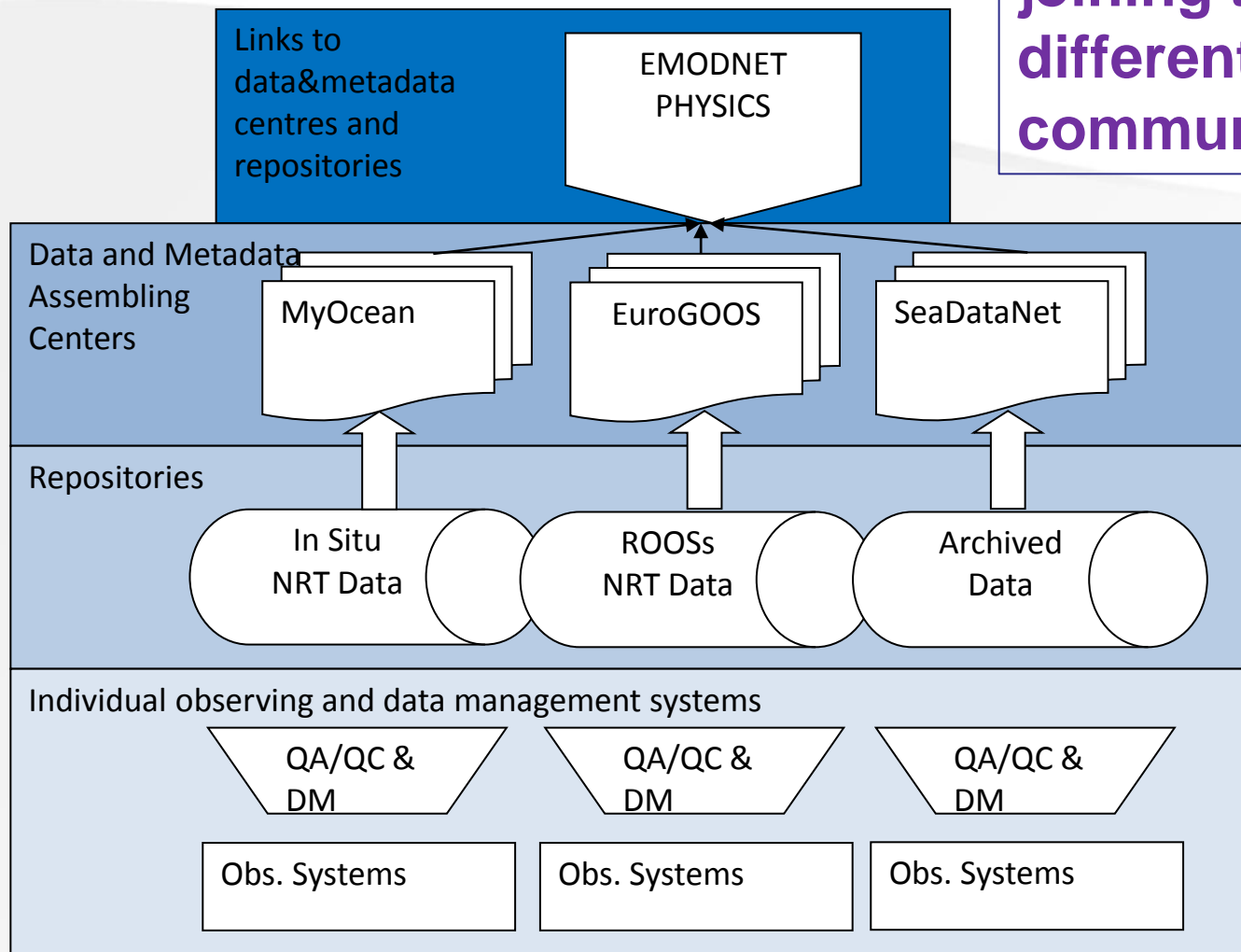
The EMODnet PP pillars

EMODnet PP



SeaDataNet partnership
EuroGOOS ROOSs
MyOcean/GMES partnership

joining two
different
communities



Access Near Real time and Archived data

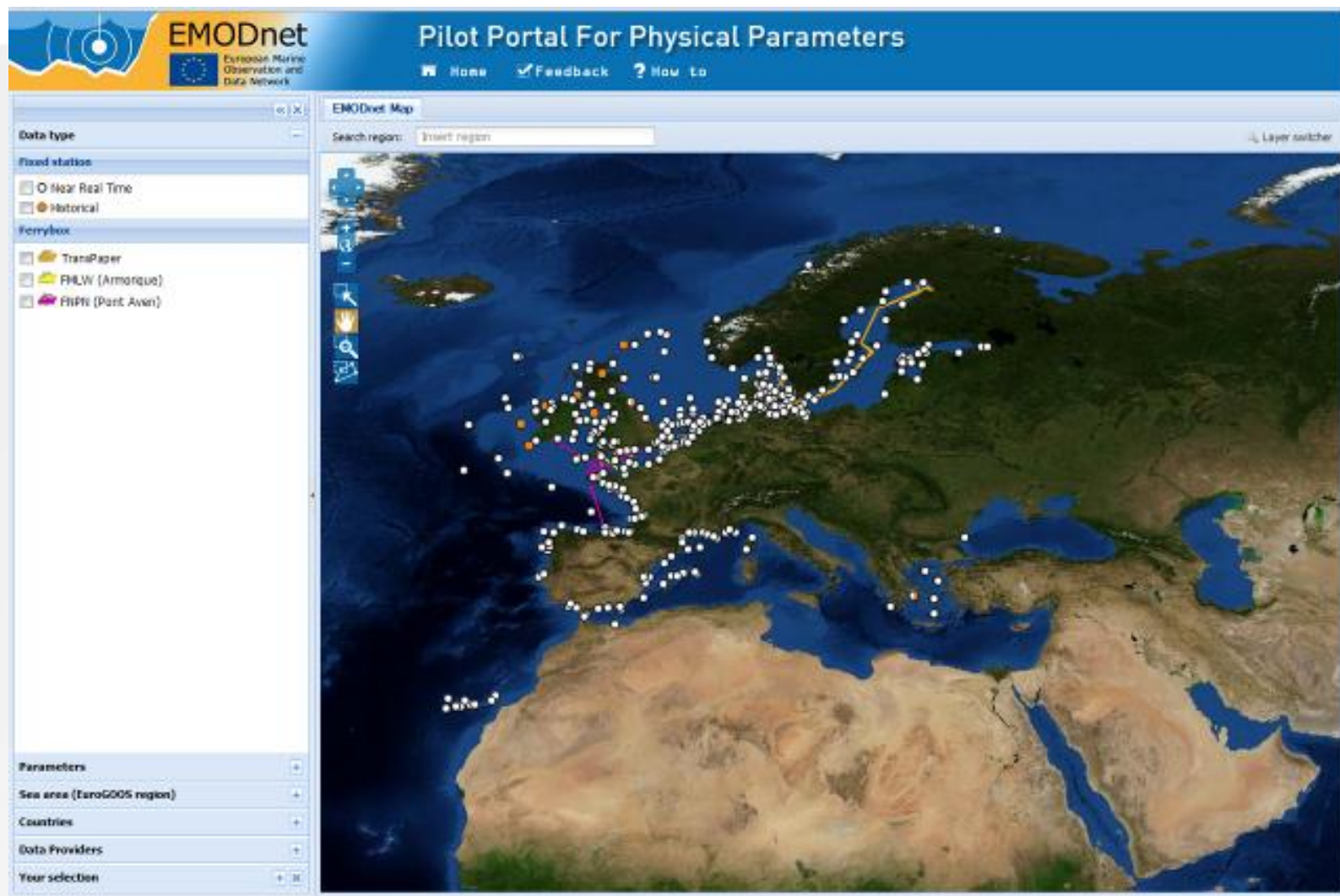




SeaDataNet

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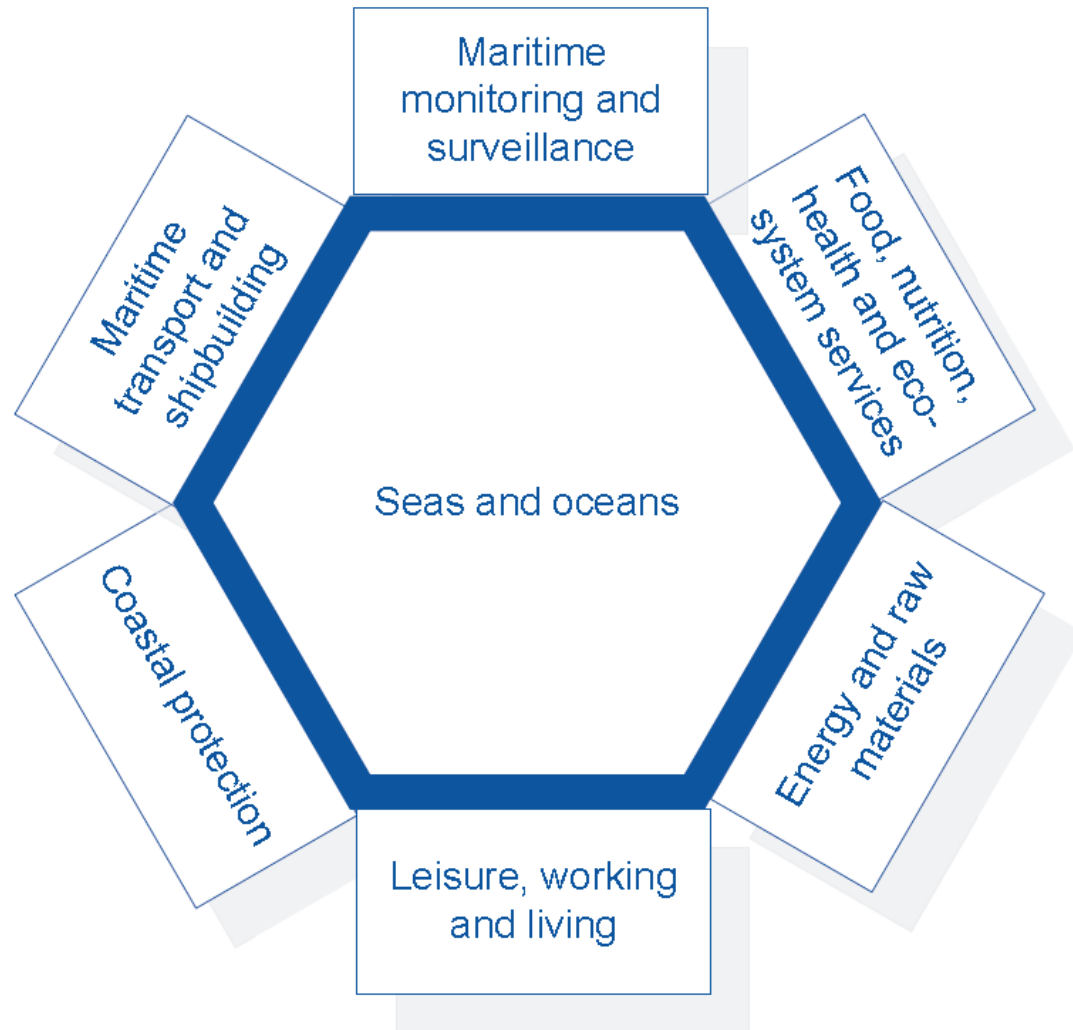
Data Management in Research – Sopot, 2013



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The Blue Growth Maritime Functions



SeaDataNet/EMODnet: European framework

Green Paper on a Future Maritime Policy for the Union:

- In its strategic objectives for 2005-2009, the European Commission declared *“the particular need for an all-embracing maritime policy aimed at developing a thriving maritime economy, in an environmentally sustainable manner. Such a policy should be supported by excellence in marine scientific research, technology and innovation”*.
- Better understanding of the competing uses of the ocean will require better data and information on maritime activities, be they social, economic or recreational, as well as on their impacts on the resource base.

SeaDataNet:
www.seadatanet.org

EMODnet Physics:
www.emodnet-physics.eu