
EMODnet
European Marine
Observation and
Data Network

Co

- *The European framework*
- *The "proof of concept" of EMODnet…*
- *Objectives of DGMARE tender*
- *EMODnet PP*
  - *the Methodology, the Parameters, the Pillars, the Sustainability*
  - *Geographical coverage (and acting communities)*
  - *Data origin*
  - *Web Portal Architecture*
    - *EMODnet PP - NRT Data, Historical Data, Data Access*
    - *EMODnet PP - pilot portal*
- *Enlarge the community*

EMODnet
European Marine Observation and Data Network

EUROPEAN INTEGRATED MARITIME POLICY

President of the European Commission

- Knowledge built on extended use of data
- Maritime Spatial Planning

EMODnet
European Marine Observation and Data Network

MARIA DAMANAKI, COMMISSIONER FOR MARITIME AFFAIRS AND FISHERIES

(..) the data collected through these observations can only generate knowledge and innovation if Europe's engineers and scientists are able to find, access, assemble and apply them efficiently and rapidly. At present this is often not the case.

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.**

EMODnet
European Marine Observation and Data Network

EU Initiatives

- Marine Strategy Framework Directive (MSFD) - 2007
  - comprehensive monitoring of the marine environment beyond the geographical limits set in the Water Framework Directive.
- European Environment Information and Observatory Network – EIONET
  - EEA tools for sharing coastal, transitional and marine waters observations at EU level.
- Global Monitoring for Environment and Security (GMES)
  - GMES MARINE → information system in the field of marine environment and security for forecasts, hindcasts, nowcasts
- Water Information System for Europe (WISE)
  - WISE MARINE → for water related component of environmental data access and reporting
- Shared Environmental Information System (SEIS) and INSPIRE

EMODnet
European Marine Observation and Data Network

PRESENT LIMITATIONS

Data Collection Framework only deals with **fisheries data**;

GMES only targets services where data from **satellites plays a substantial role**;

SEIS and WISE marine are **limited to data** that must be reported as part of the **Marine Strategy Framework Directive**

European Agencies only hold limited amounts of data and national archives on their own cannot provide the seamless **cross-border sea-basin-scale** data layers that are required;

EMODnet
European Marine Observation and Data Network

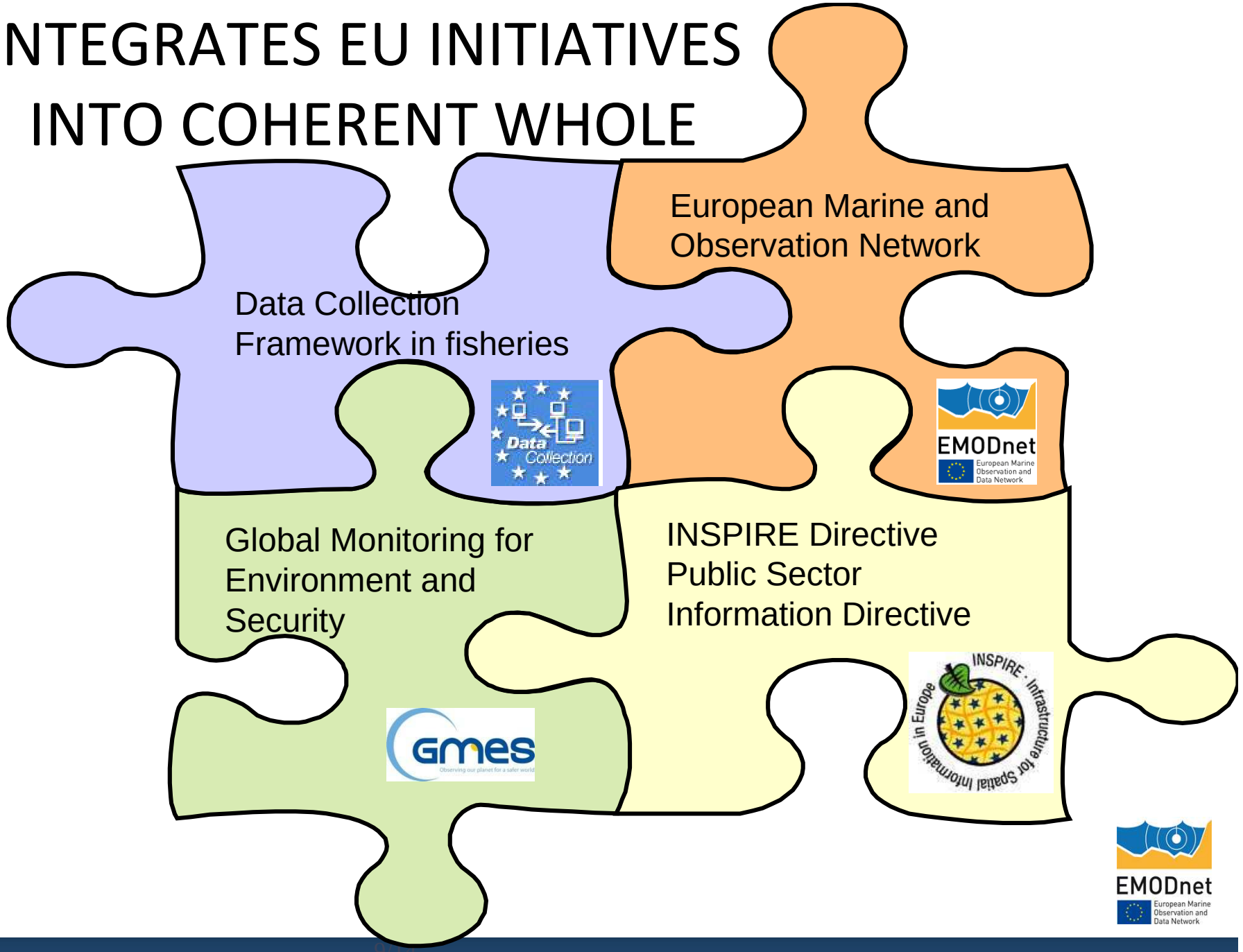
SETTING EMODNET

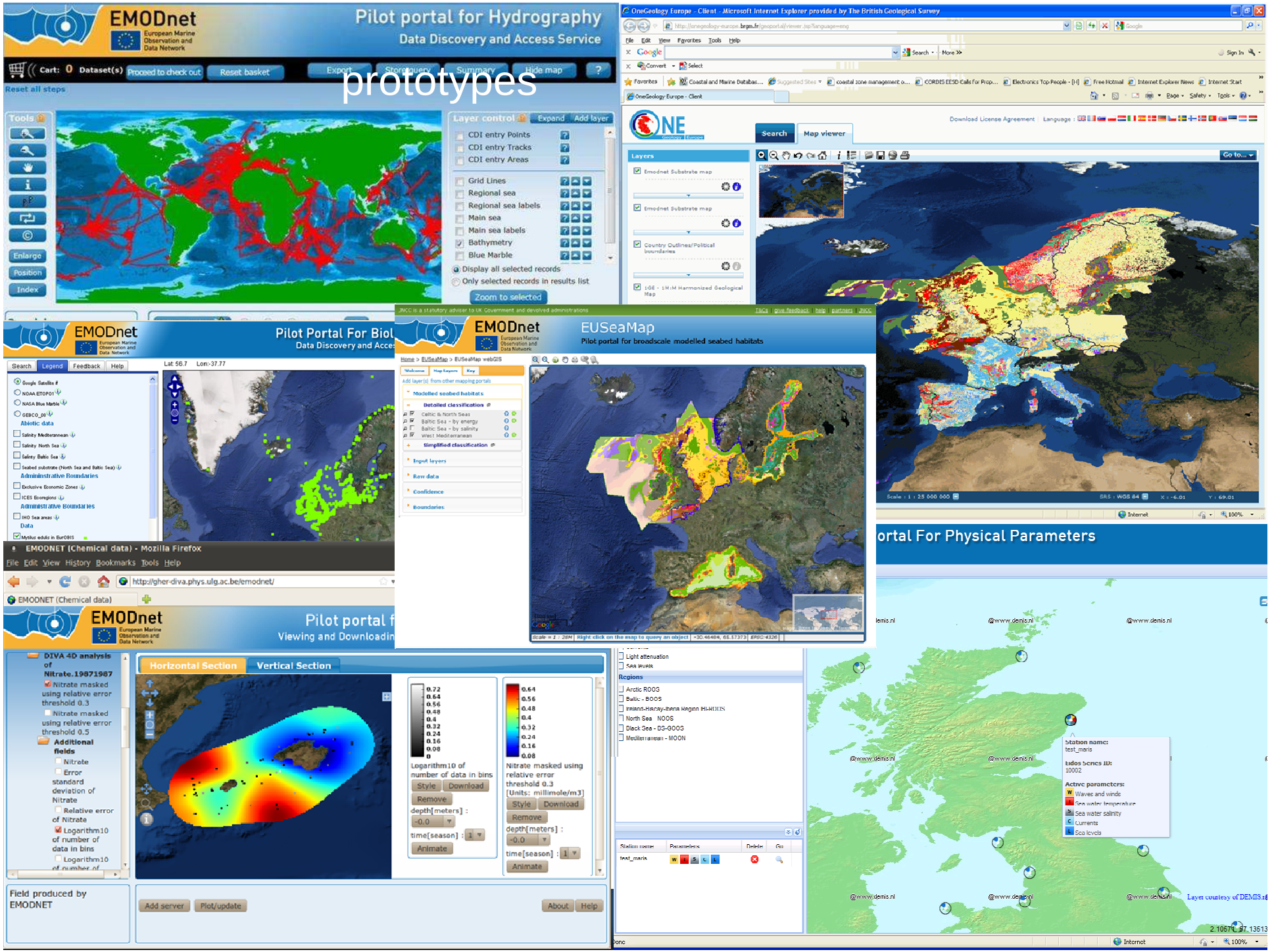
Green Paper *on a Future Maritime Policy for the Union:*

- **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

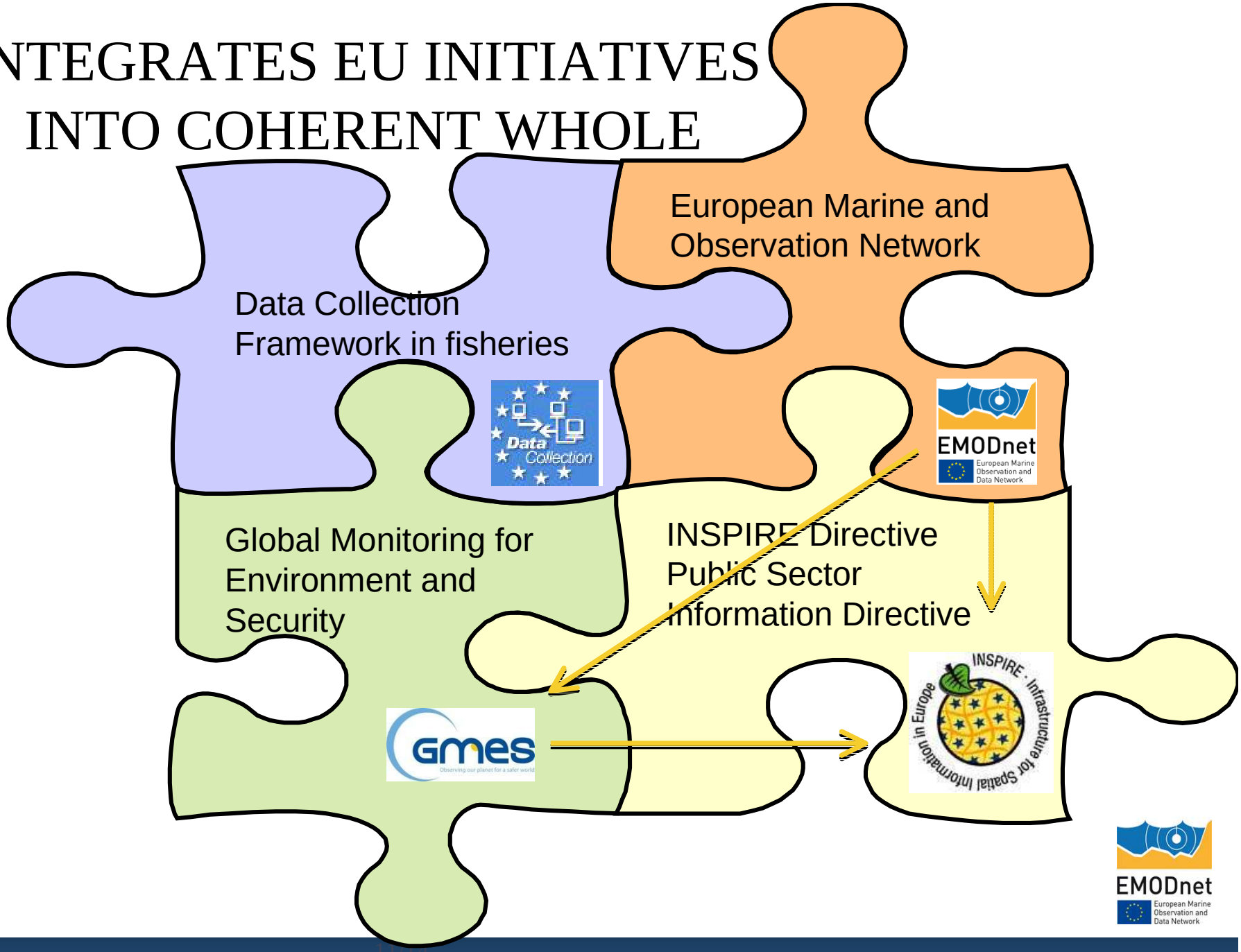
EMODnet
European Marine Observation and Data Network

INTEGRATES EU INITIATIVES INTO COHERENT WHOLE




EMODnet
European Marine Observation and Data Network
Pilot portal for Hydrography
Data Discovery and Access Service
prototypes
Cart: 0 Dataset(s)
Proceed to check out
Reset basket
Export
Store query
Summary
Hide map
Reset all steps
Tools
Enlarge
Position
Index
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
Display all selected records
Only selected records in results list
Zoom to selected
OneGeology Europe - Client - Microsoft Internet Explorer provided by The British Geological Survey
Search
Map viewer
Layers
Pilot Portal For Biol
Data Discovery and Acces
Search
Legend
Feedback
Help
Abiotic data
Administrative Boundaries
Administrative Boundaries
Data
EMODnet
EUSeaMap
Pilot portal for broadscale modelled seabed habitats
Modelled seabed habitats
Detailed classification
Simplified classification
Input layers
Raw data
Confidence
Boundaries
EMODNET (Chemical data) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://gher-diva.phys.ulg.ac.be/emodnet/
EMODNET (Chemical data)
Pilot portal f
Viewing and Downloadin
ortal For Physical Parameters
DIVA 4D analysis of Nitrate.19871987
Nitrate masked using relative error threshold 0.3
Nitrate masked using relative error threshold 0.5
Additional fields
Nitrate
Error standard deviation of Nitrate
Relative error of Nitrate
Logarithm10 of number of data in bins
Horizontal Section
Vertical Section
Logarithm10 of number of data in bins
Style
Download
Remove
depth[meters] :
time[season] :
Animate
Nitrate masked using relative error threshold 0.3
[Units: millimole/m3]
Regions
Arctic ROOS
Baltic - BOOS
North Sea NOOS
Black Sea - DS-GOOS
Mediterranean - MOON
Station name:
test_maris
Active parameters:
Waves and winds
Sea water temperature
Sea water salinity
Currents
Sea levels
Field produced by EMODNET
Add server
Plot/update
About
Help

INTEGRATES EU INITIATIVES INTO COHERENT WHOLE



EMODNET AND GEOSS/GMES

An Integrated Maritime Policy for the European Union

- **Data** on oceans and seas are available from many sources **but assembling them** for particular applications **takes considerable effort and there is no overall policy for keeping them for posterity**. The objective here is to **integrate existing, but fragmented initiatives** in order to facilitate access to primary data for public authorities, maritime services, related industries and researchers.
- The **European Marine Observation and Data Network** … Integrated with **GEOSS and GMES**, it will increase the precision of estimates of the magnitude and impact of climate change.

EMODnet
European Marine Observation and Data Network

OBJECTIVES OF DGMARE TENDER

- **Provide access to archived and real-time data on physical conditions in Europe's seas and oceans and to determine how well the data meet the needs of users.**

- Make layers of physical data and their metadata available for use by industry, public authorities and scientists

- Contribute towards the definition of an operational European Marine Observation and Data Network (EMODnet)

- Contribute to developing the definition of the Global Monitoring for Environment and Security (GMES) marine core service.

EMODnet
European Marine Observation and Data Network

EMODNET PP – THE METHODOLOGY

- Provide through a portal:
  - free and open access to marine data from measurement stations and ferryboxes.
  - metadata to these parameters using EMODnet/INSPIRE standards.

- Monitoring and reporting on the effectiveness of the portal in meeting the **needs of users** in terms of ease of use, quality of information and fitness for purpose of the products delivered.

EMODnet
European Marine Observation and Data Network

EMODNET PP – THE PARAMETERS

Measurements from **fixed stations** that should 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

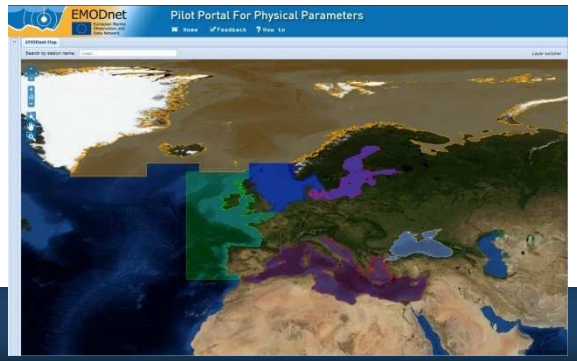
Measurements from **ferryboxes** that should cover :

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

EMODnet
European Marine Observation and Data Network

GEOGRAPHICAL COVERAGE (AND ACTING COMMUNITIES)

- Western Mediterranean Sea *(ROOS Med and SeaDataNet)*;
- Adriatic Sea *(ROOS Med and SeaDataNet)*;
- Ionian Sea and Central Mediterranean Sea *(ROOS Med and SeaDataNet)*;
- Aegean-Levantine Sea *(ROOS Med and SeaDataNet)*;
- Greater North Sea, including Kattegat, and English Channel *(ROOS NWS [North West Shelf] and SeaDataNet)*;
- Celtic Seas *(ROOS IBI and SeaDataNet)*;
- Bay of Biscay and the Iberian Coast *(ROOS IBI and SeaDataNet)*;
- In the Atlantic Ocean, the Macronesian bio-geographic region, being the waters surrounding the Azores, Madeira and the Canary Islands *(Coriolis and SeaDataNet)*, and Cape Verde (*E subtropical Atlantic*)
- North Atlantic (including Porcupine Abyssal Plain, Central Irminger Basin, Norvegian Sea)
- Black Sea (*BSGOOS*)



DATA ORIGIN

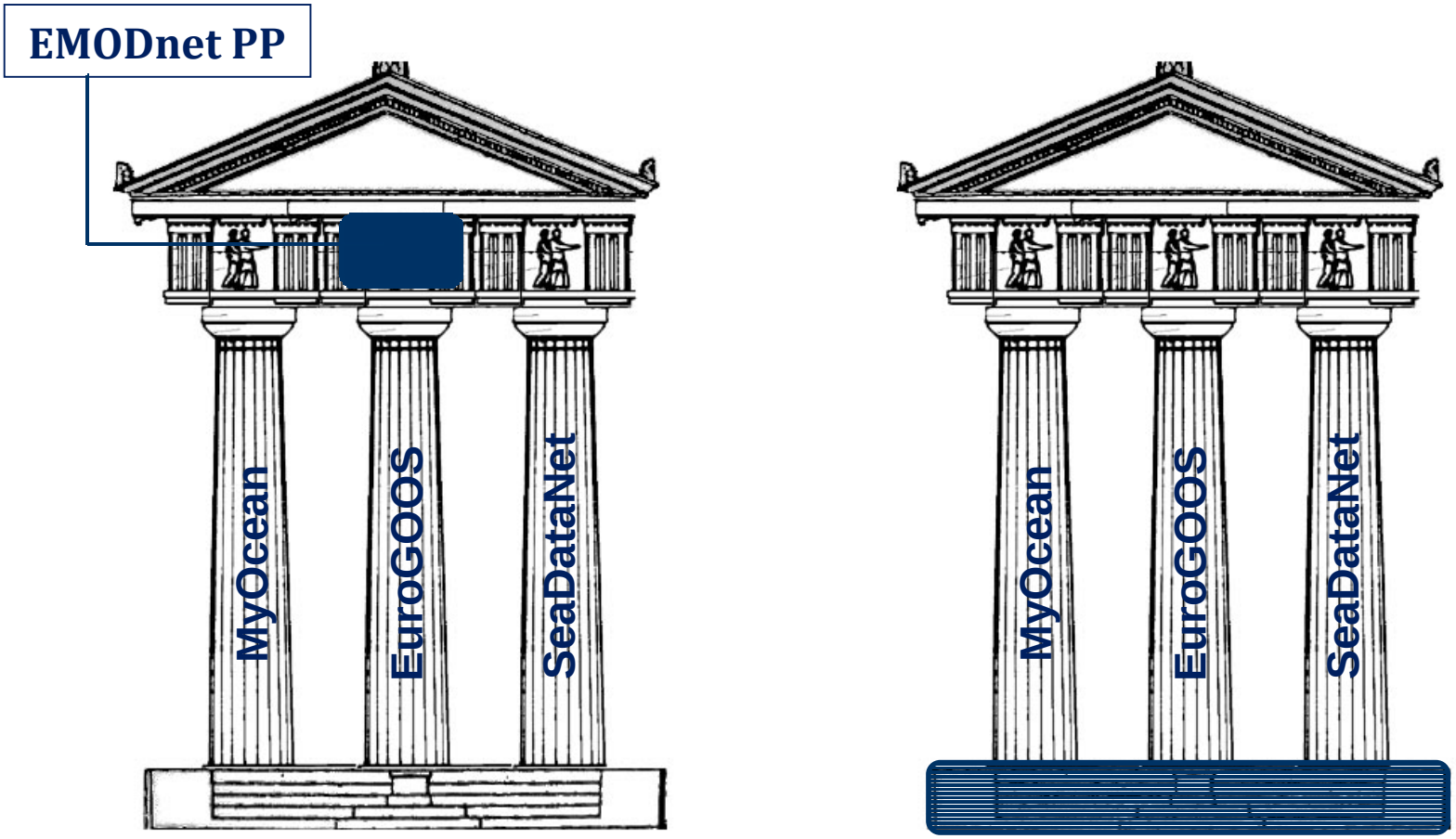
- **EuroGOOS ROOS's**
- **SeaDataNet**
- **MyOcean – In Situ**

- Jerico
- Data Buoy Cooperation Panel
- National initiatives

- All contributors will be actors in the project:
  - documents will be agreed during ad hoc EuroGOOS meetings
  - EuroGOOS technical reports will contain results and names of contributors
  - EMODnet PP is being presented in EuroGOOS regions and Black Sea

EMODnet
European Marine Observation and Data Network

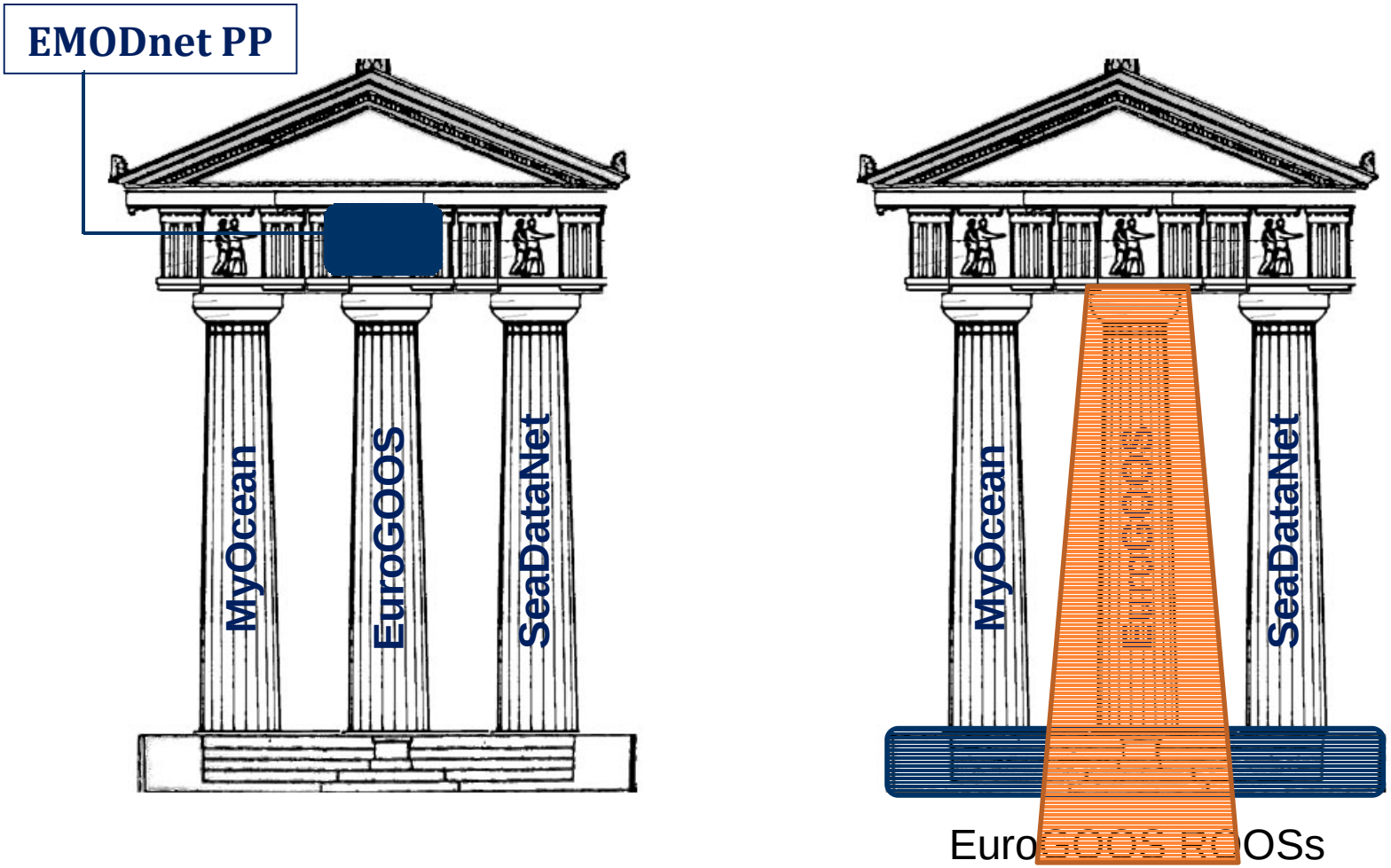
THE EMODNET PP PILLARS



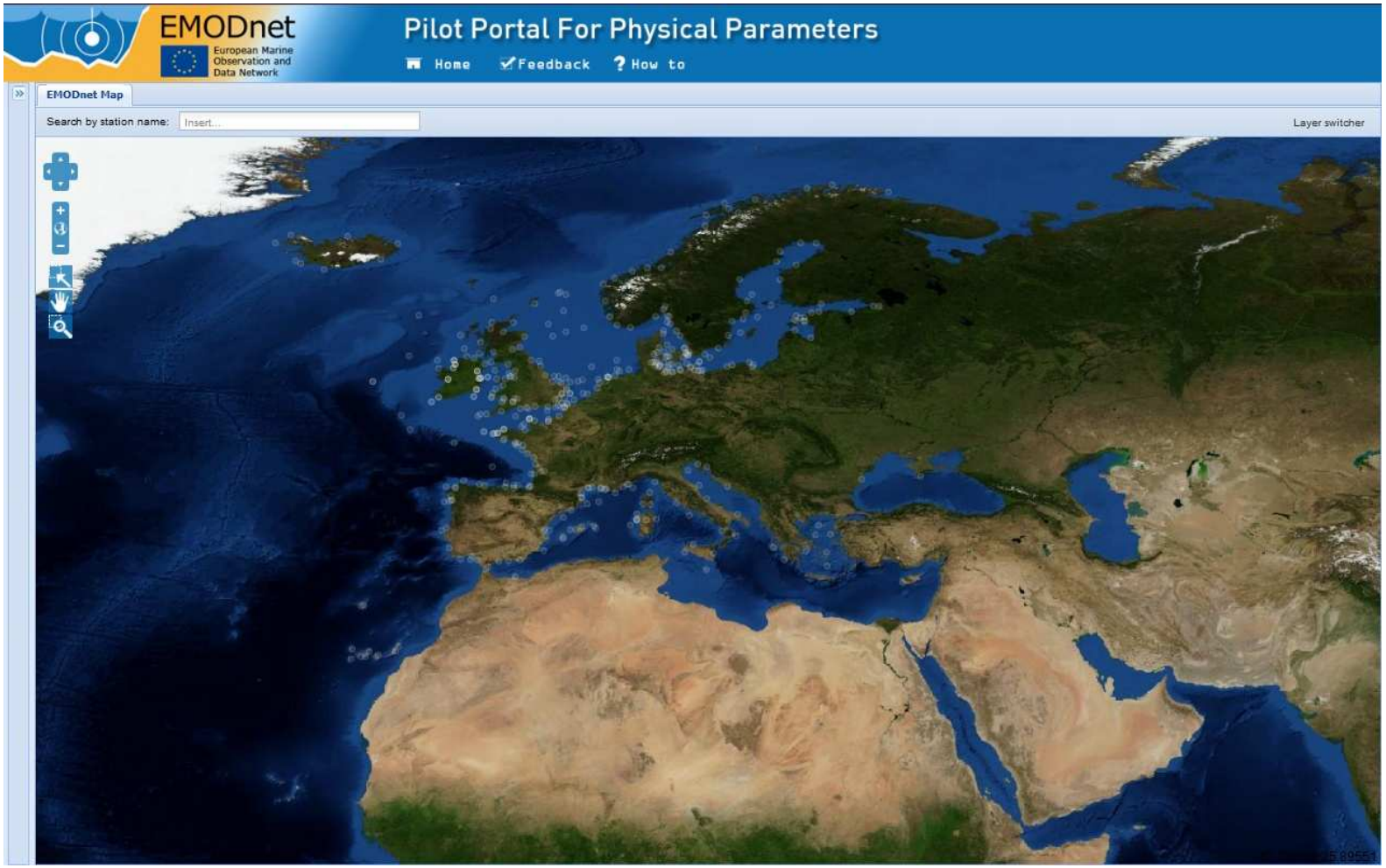
EuroGOOS ROOSs

EMODnet
European Marine Observation and Data Network

THE EMODNET PP PILLARS



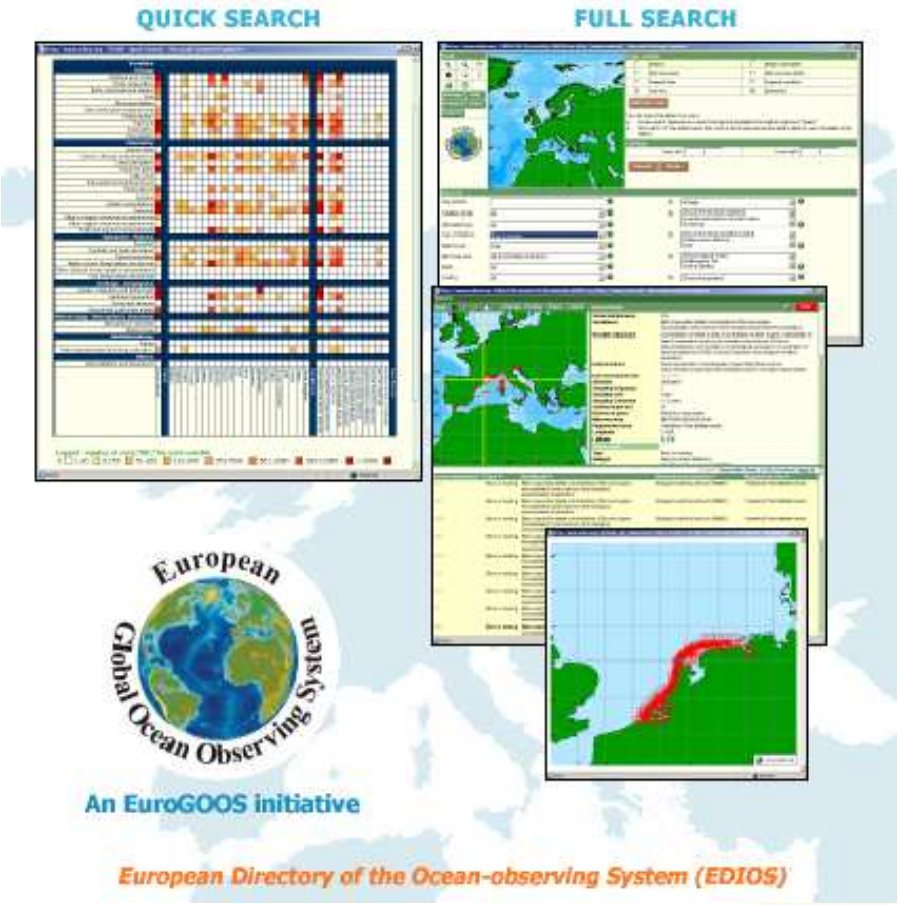
SEPRISE HEREDITY



EMODnet
European Marine Observation and Data Network

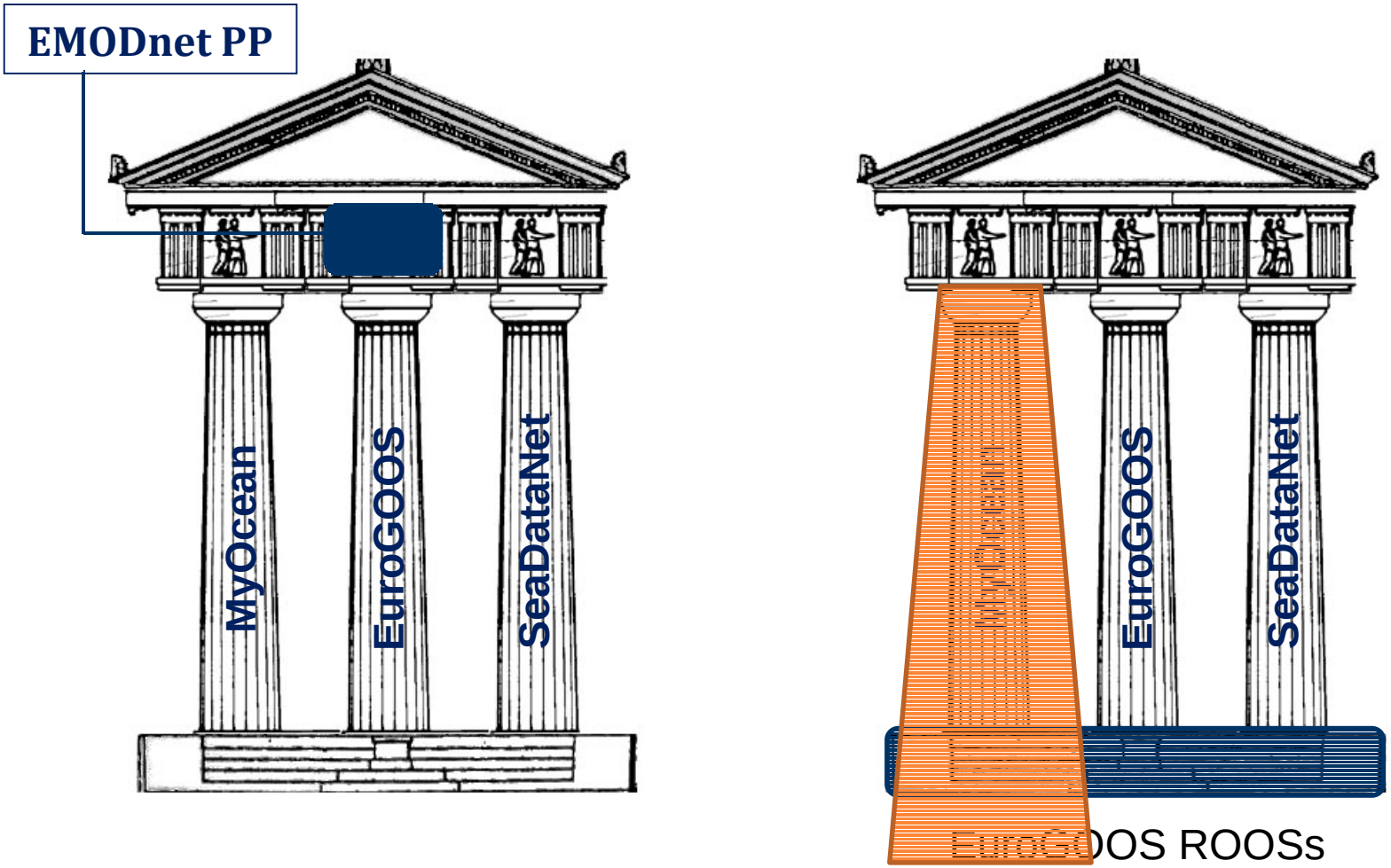
EUROPEAN DIRECTORY OF THE OCEAN-OBSERVING SYSTEM (EDIOS)

- On-line searchable directory of observing, measuring, and monitoring systems
- Approx. 10,000 observation entries
- Links to on-line real-time and archive data



EMODnet
European Marine Observation and Data Network

THE EMODNET PP PILLARS



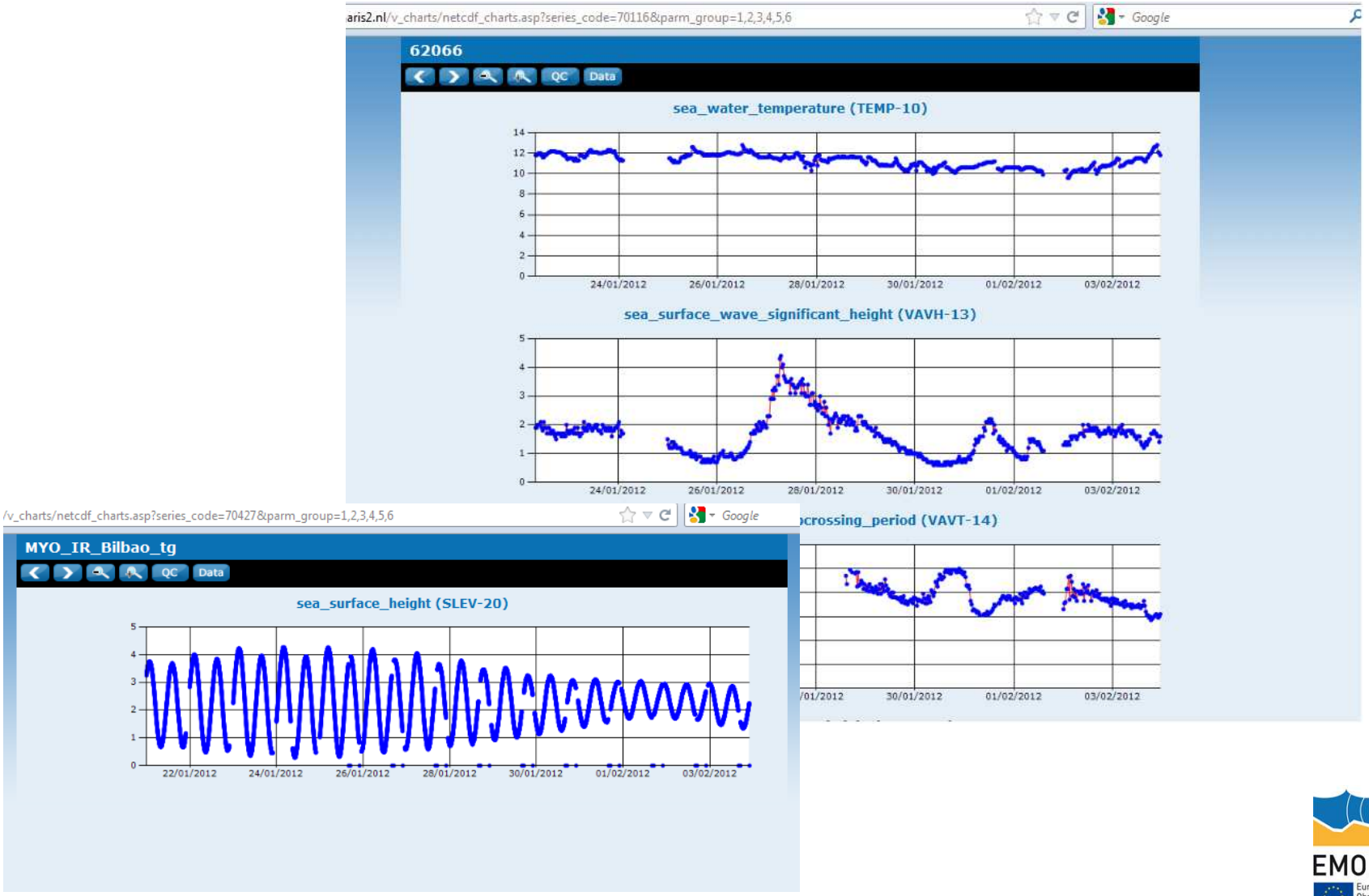
EMODnet
European Marine Observation and Data Network

EMODnet PP - NRT Data

- Access to NRT data is pretty much organized within ROOSs in collaboration with MyOcean
- The existing network RT observing system is presenting spatial and temporal gaps.
- A goal of EMODnet PP is to demonstrate that we are missing the observations needed for the operational and research applications in the area.

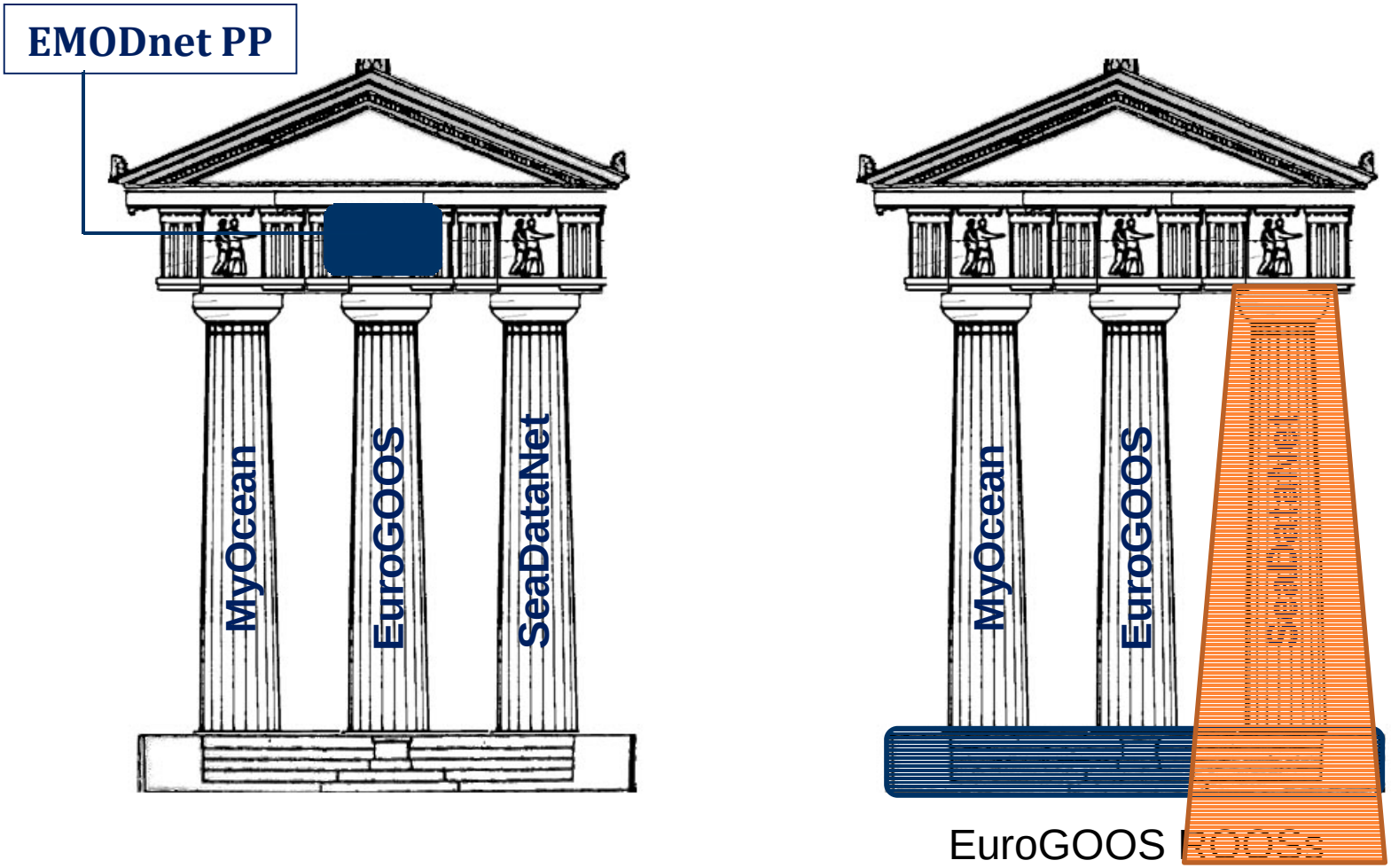
EMODnet
European Marine Observation and Data Network

EMODnet PP – NRT Data



EMODnet
European Marine Observation and Data Network

THE EMODNET PP PILLARS



EMODnet
European Marine Observation and Data Network

EMODnet PP - Historical Data

- Access to historical data is organised through SeaDataNet, but there are still gaps (data not yet available)
- EMODnet PP wants to demonstrate that NRT and historical data can be well organised in an unique Informative System (IS)
- EMODnet PP wants to demonstrate that it is possible to benefit of such project for the reanalysis product that are required for (e.g.) climate and fisheries applications.

EMODnet
European Marine Observation and Data Network

EMODnet PP – Historical Data

- **Germany:**
  - 10 - Series CDI
  - 1 - Program CDI

- **Ireland:**
  - 73 - Series CDI
  - 12 - Programs CDI

- **Italy:**
  - 28 - Series CDI
  - 26 - Programs CDI

→ to be validated

- **Sweden:**
  - 16 - Series CDI
  - 2 - Programs CDI

- **United Kingdom:**
  - 15103 - Series CDI
  - 275 - Programs CDI

- **France:**
  - 990 - Series CDI
  - 27 - Programs CDI

→ to be validated

EMODnet
European Marine Observation and Data Network

EMODnet PP – Data Access

Near Real Time

EDIOS

60 days data – direct access

Archived Data

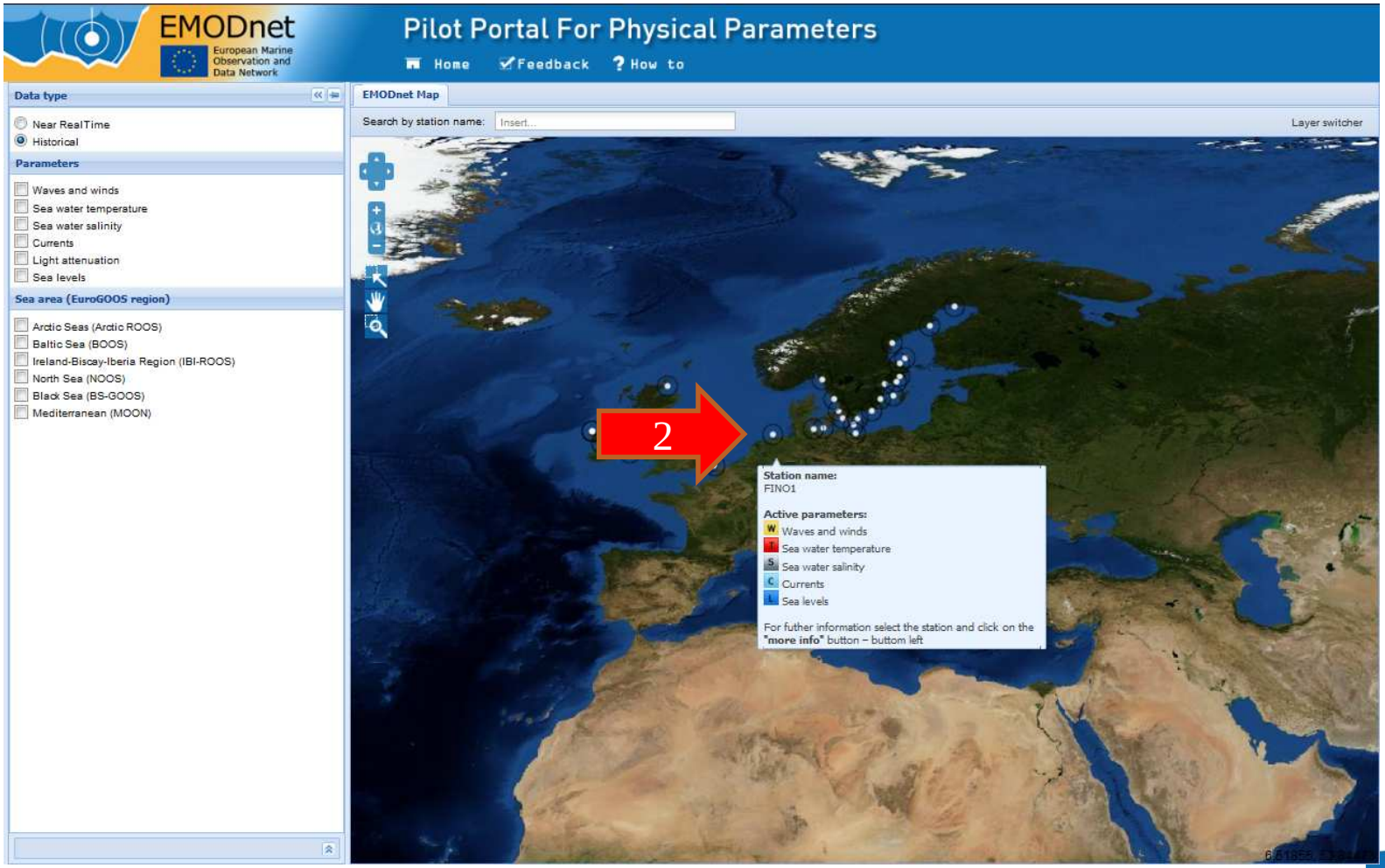
EDIOS

EDIOS

EMODnet PP - pilot portal

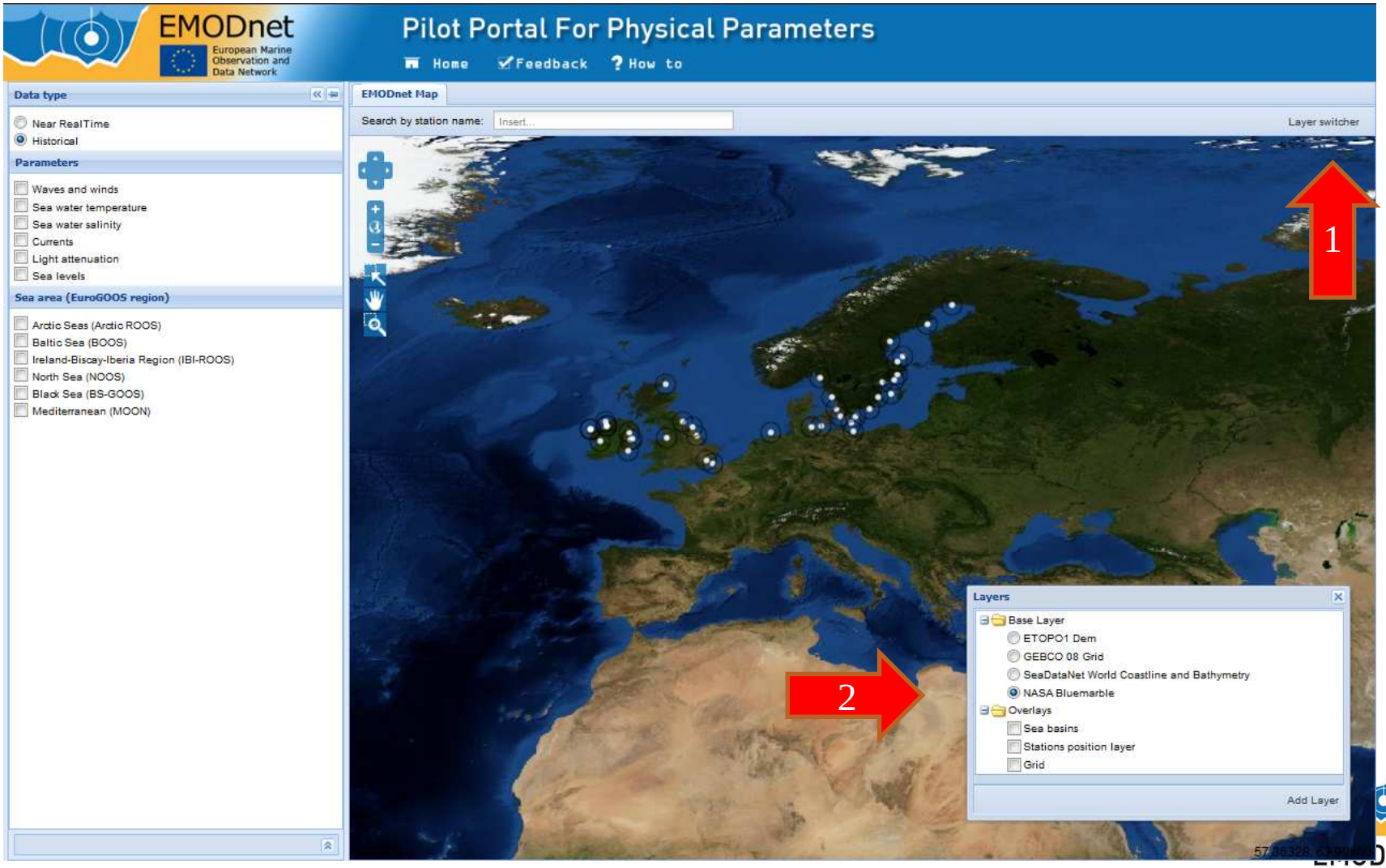
EMODnet
European Marine Observation and Data Network

EMODnet PP - pilot portal



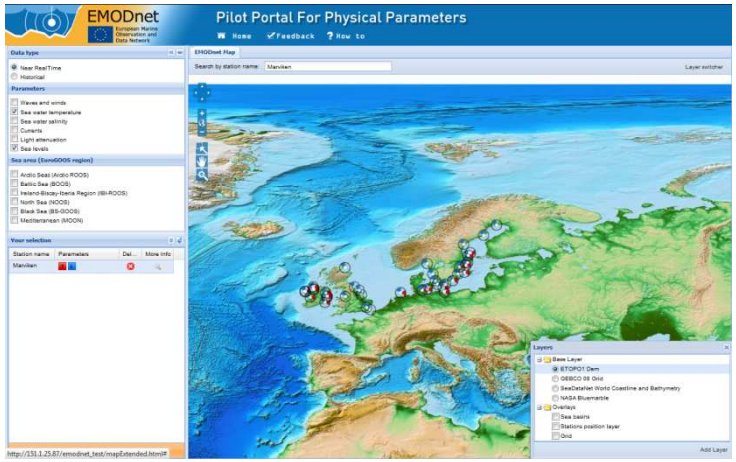
EMODnet
European Marine Observation and Data Network

EMODnet PP - pilot portal

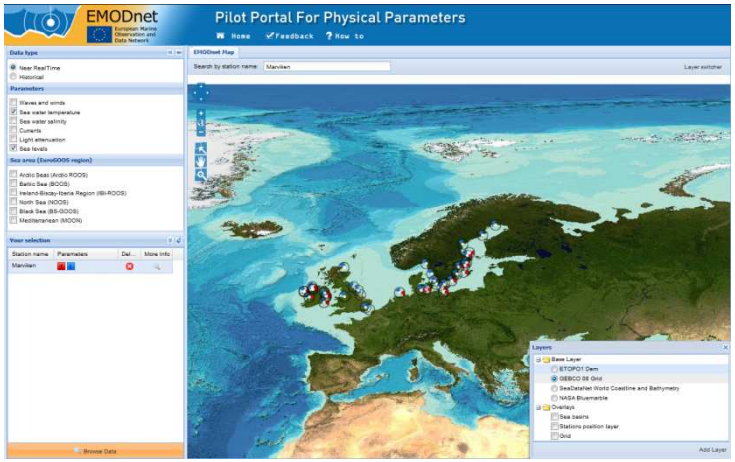


Maps and Overlays

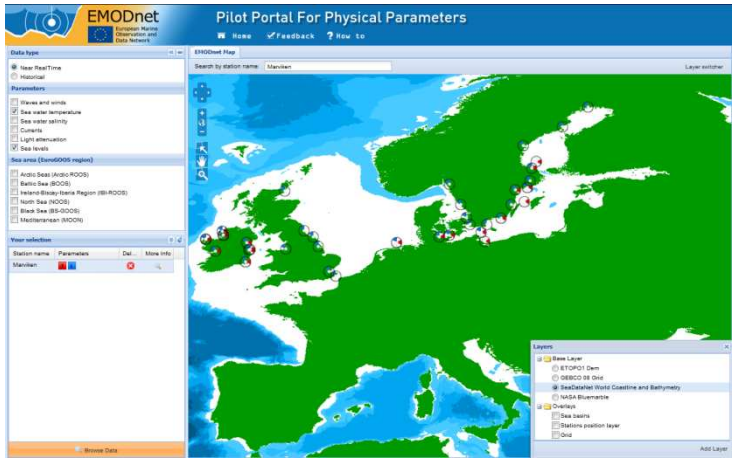
EMODnet PP - pilot portal



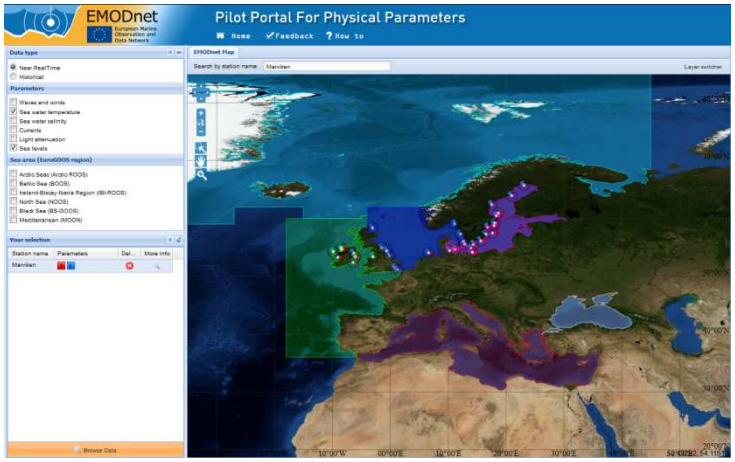
ETOP01



GEBCO



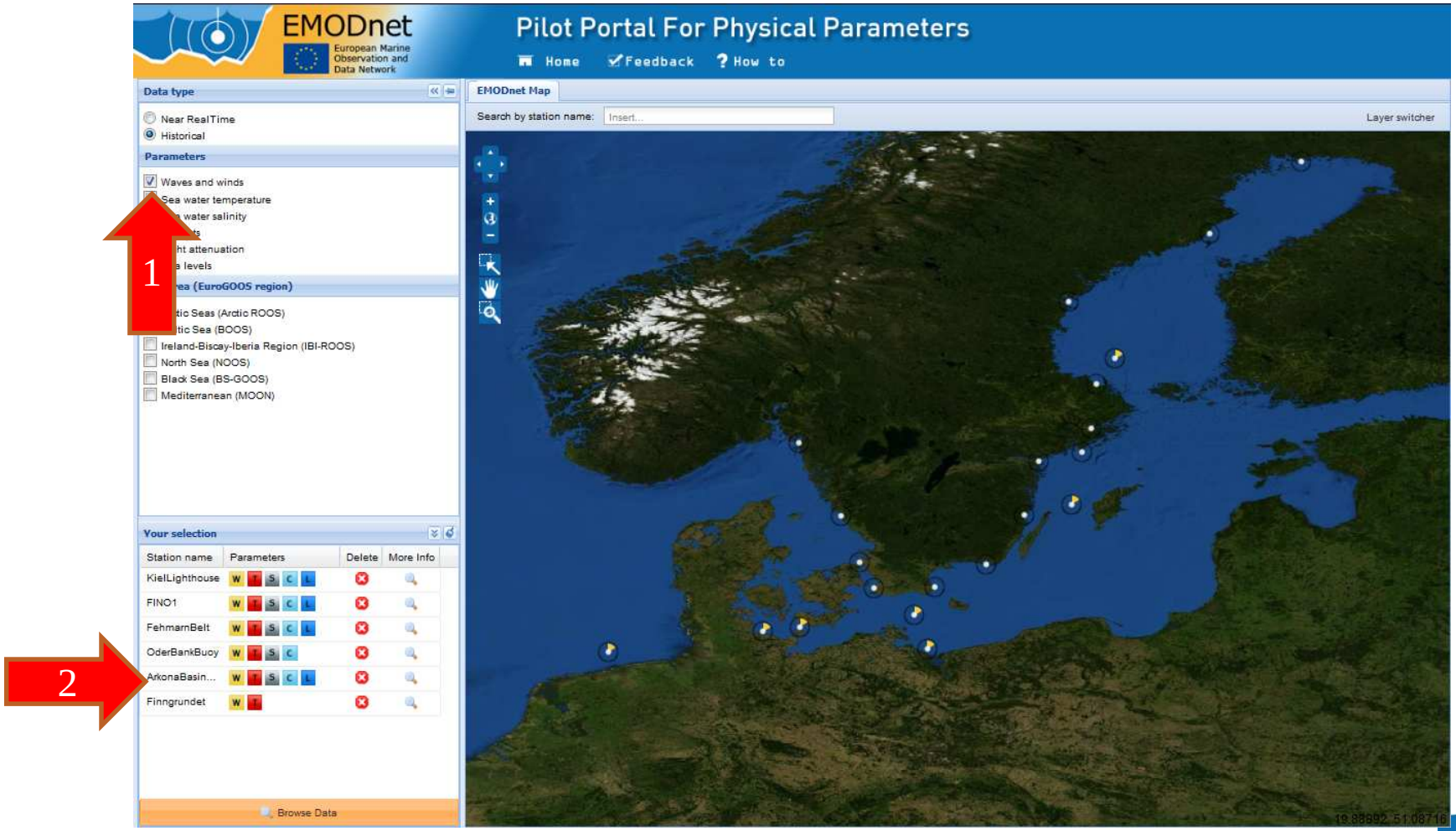
SeaDataNet



Sea Basins

EMODnet
European Marine Observation and Data Network

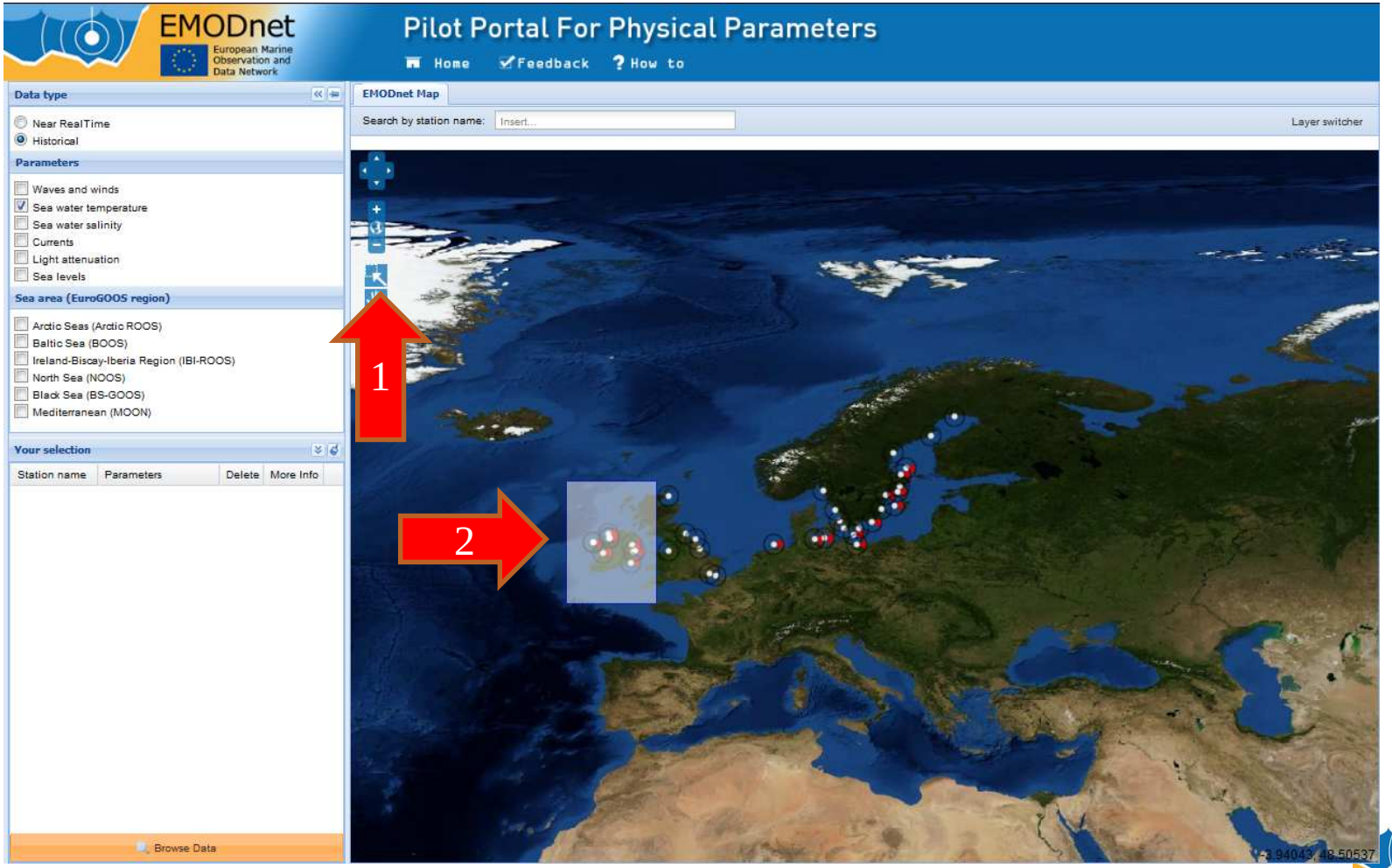
EMODnet PP - pilot portal



Appling filters

EMODnet
European Marine Observation and Data Network

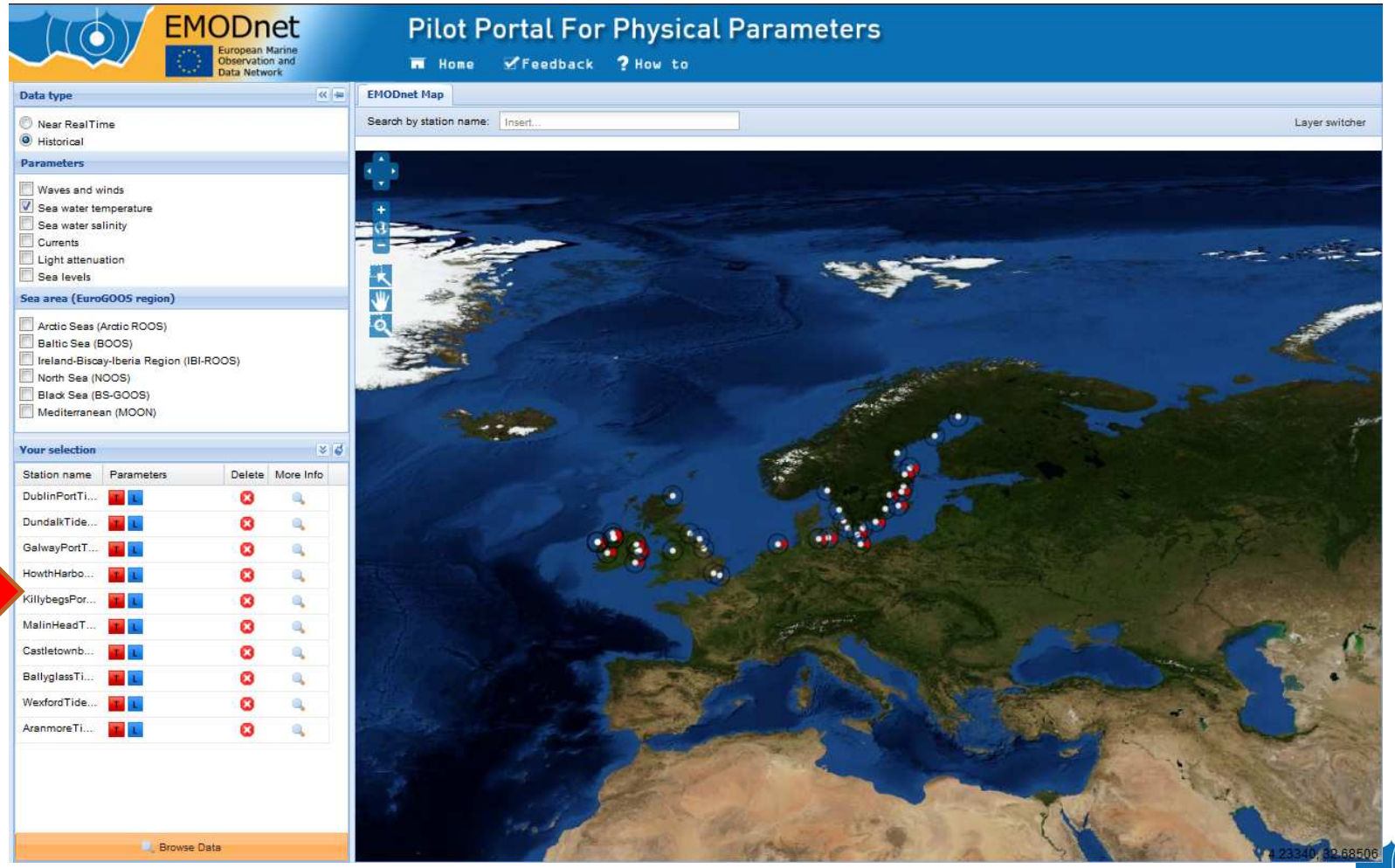
EMODnet PP - pilot portal



Box selection

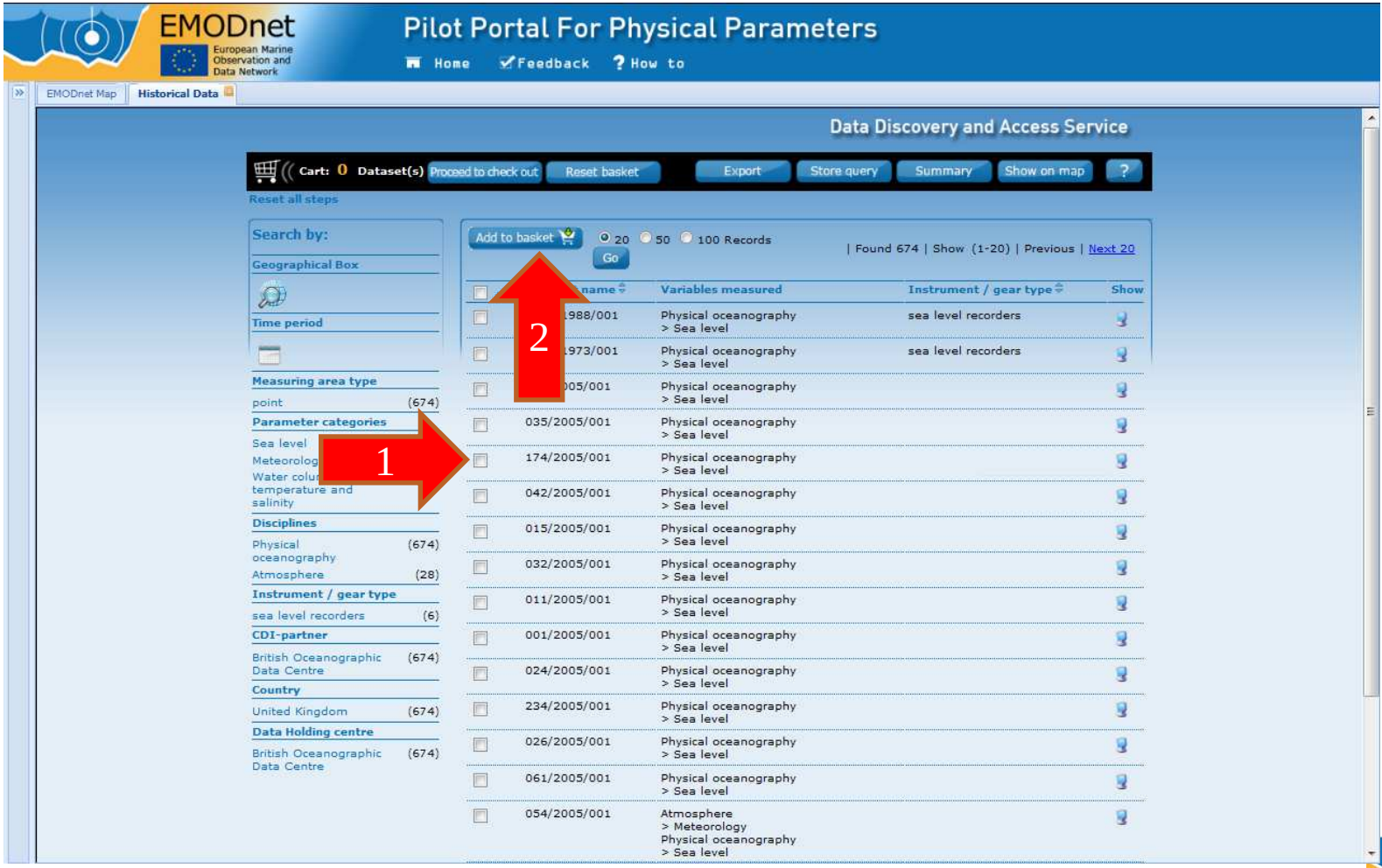
EMODnet
European Marine Observation and Data Network

EMODnet PP - pilot portal



Historical data

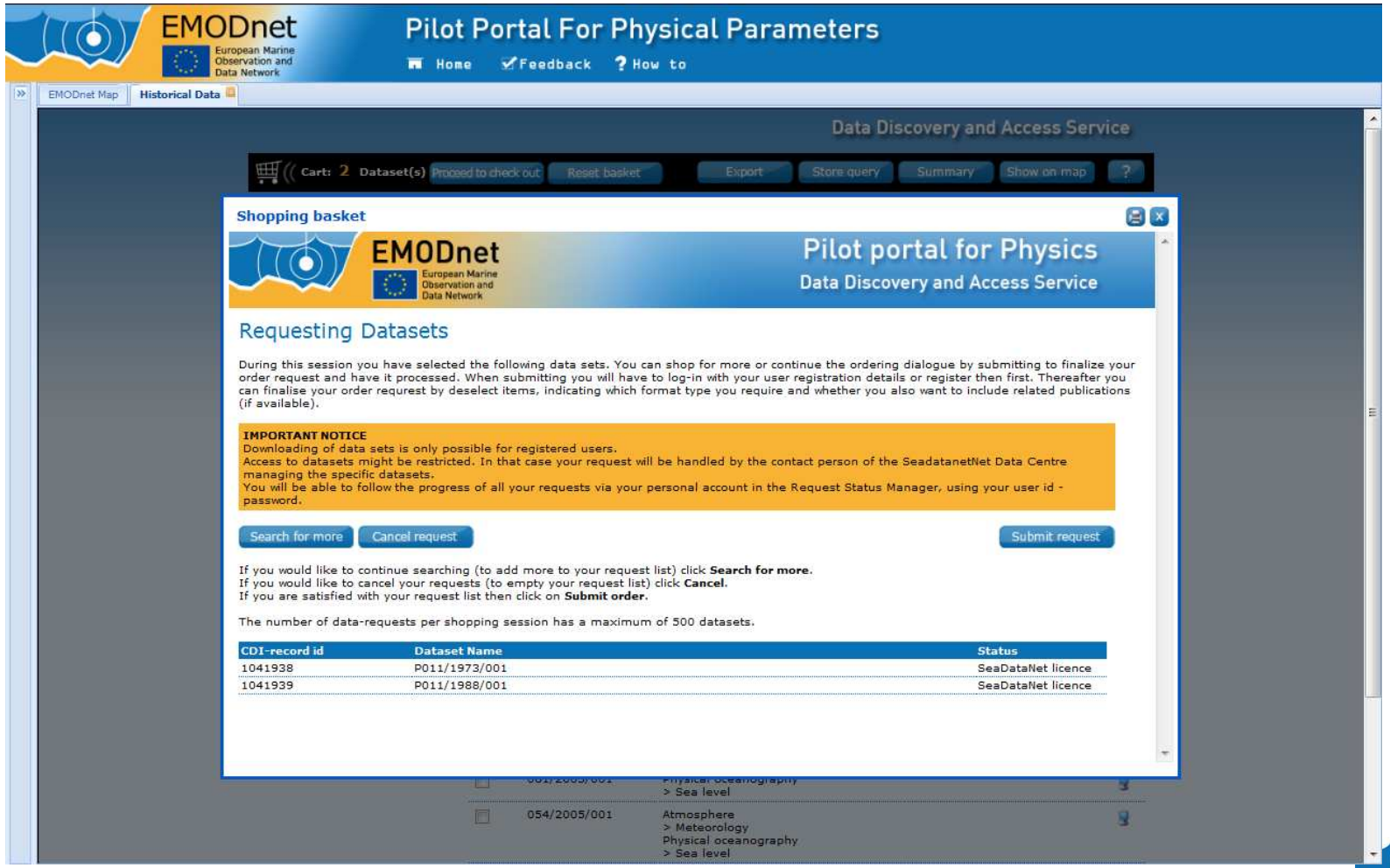
EMODnet PP - pilot portal



Historical data

EMODnet
European Marine Observation and Data Network

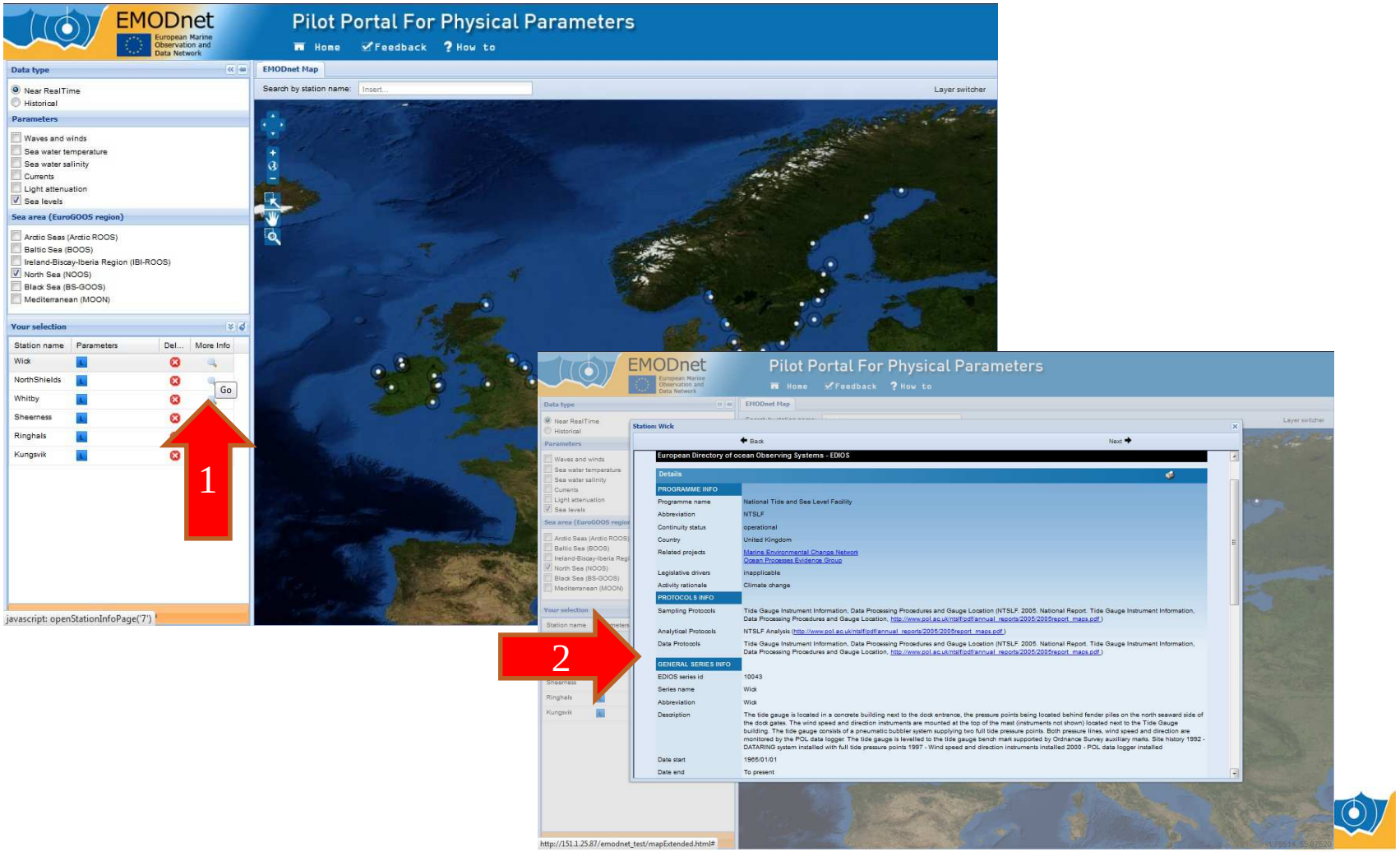
EMODnet PP - pilot portal



Historical data

EMODnet
European Marine Observation and Data Network

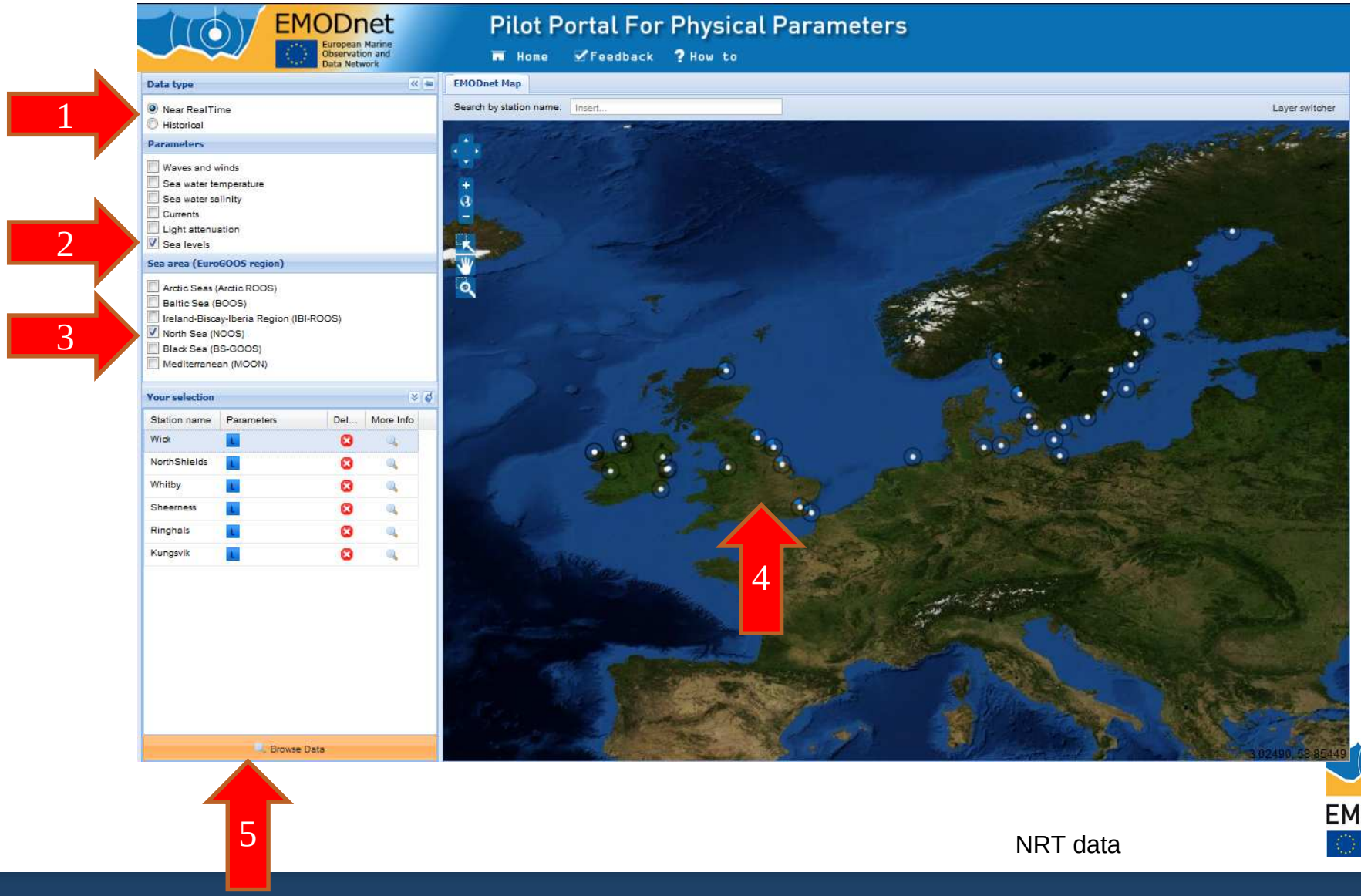
EMODnet PP - pilot portal



EDIOS info

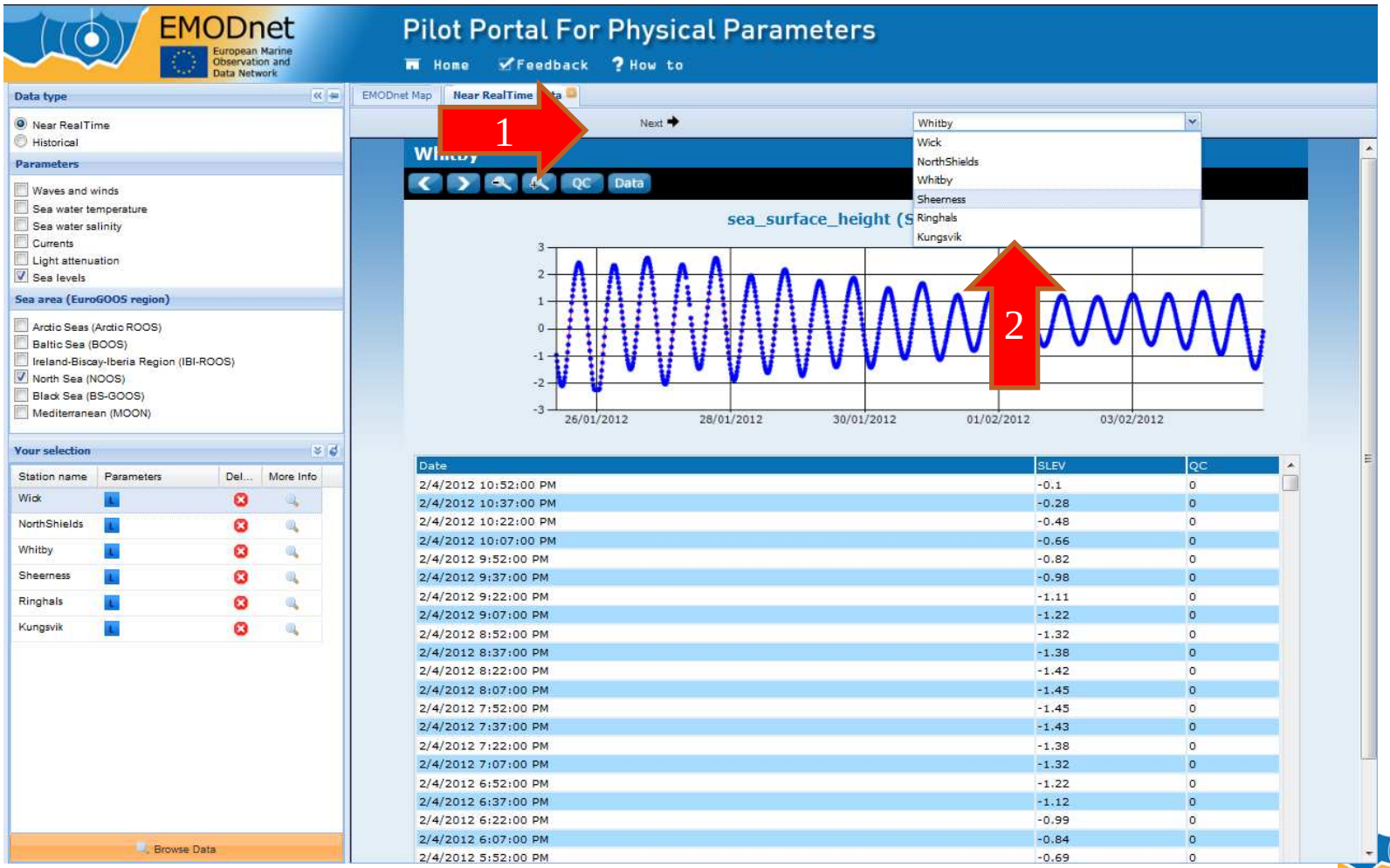
EMODnet
European Marine Observation and Data Network

EMODnet PP - pilot portal



NRT data

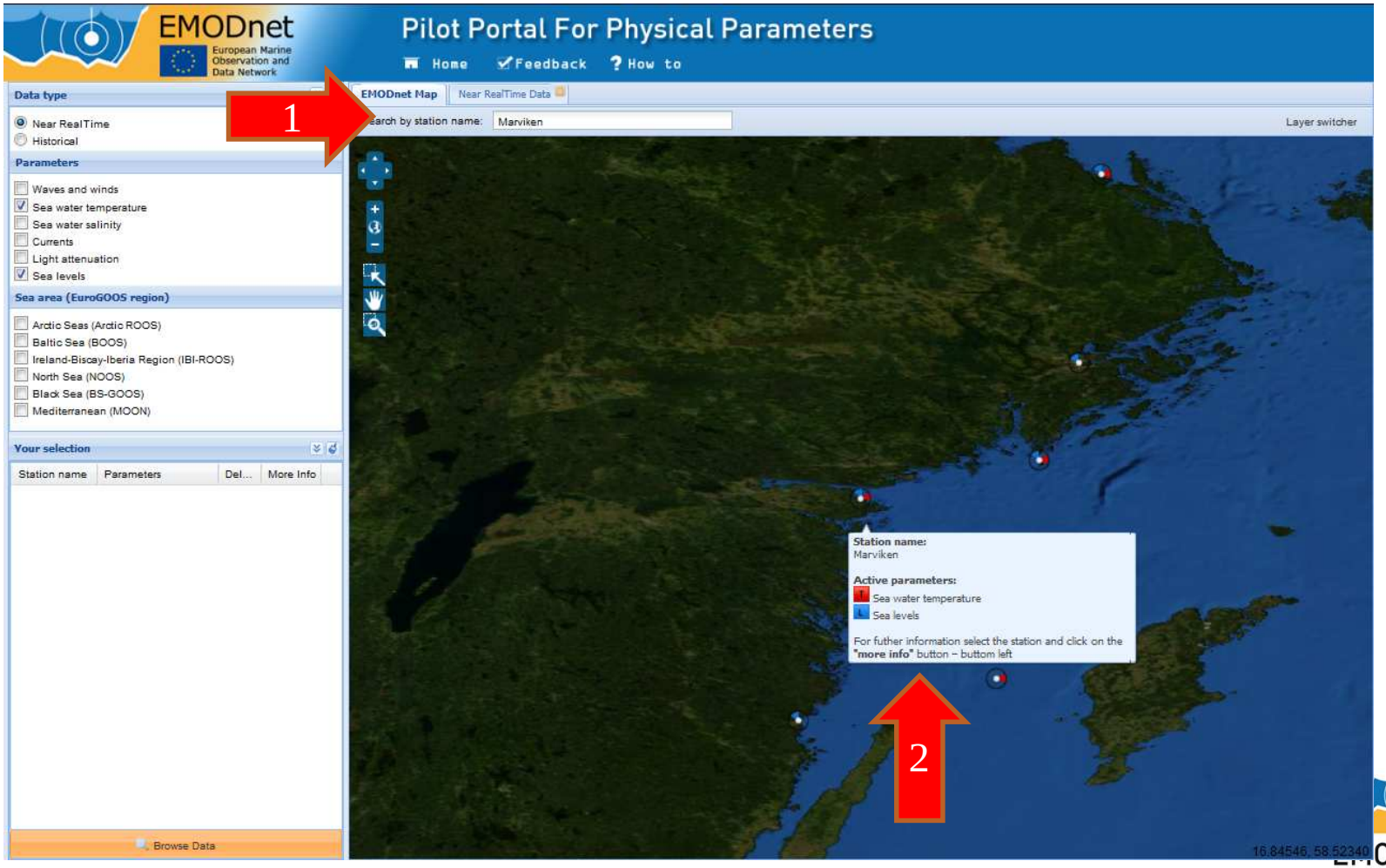
EMODnet PP - pilot portal



NRT data

EMODnet
European Marine Observation and Data Network

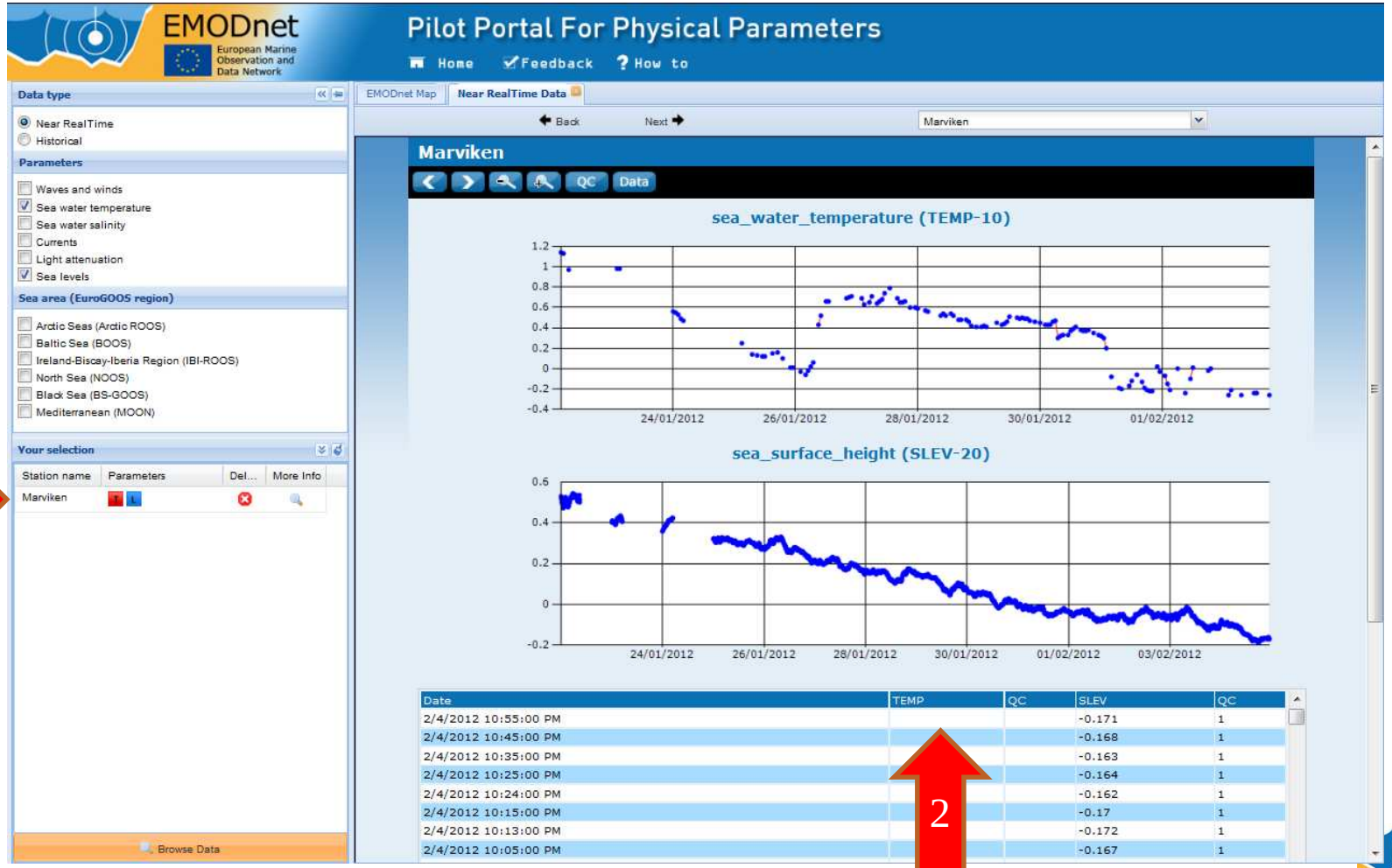
EMODnet PP - pilot portal



NRT data

EMODnet
European Marine Observation and Data Network

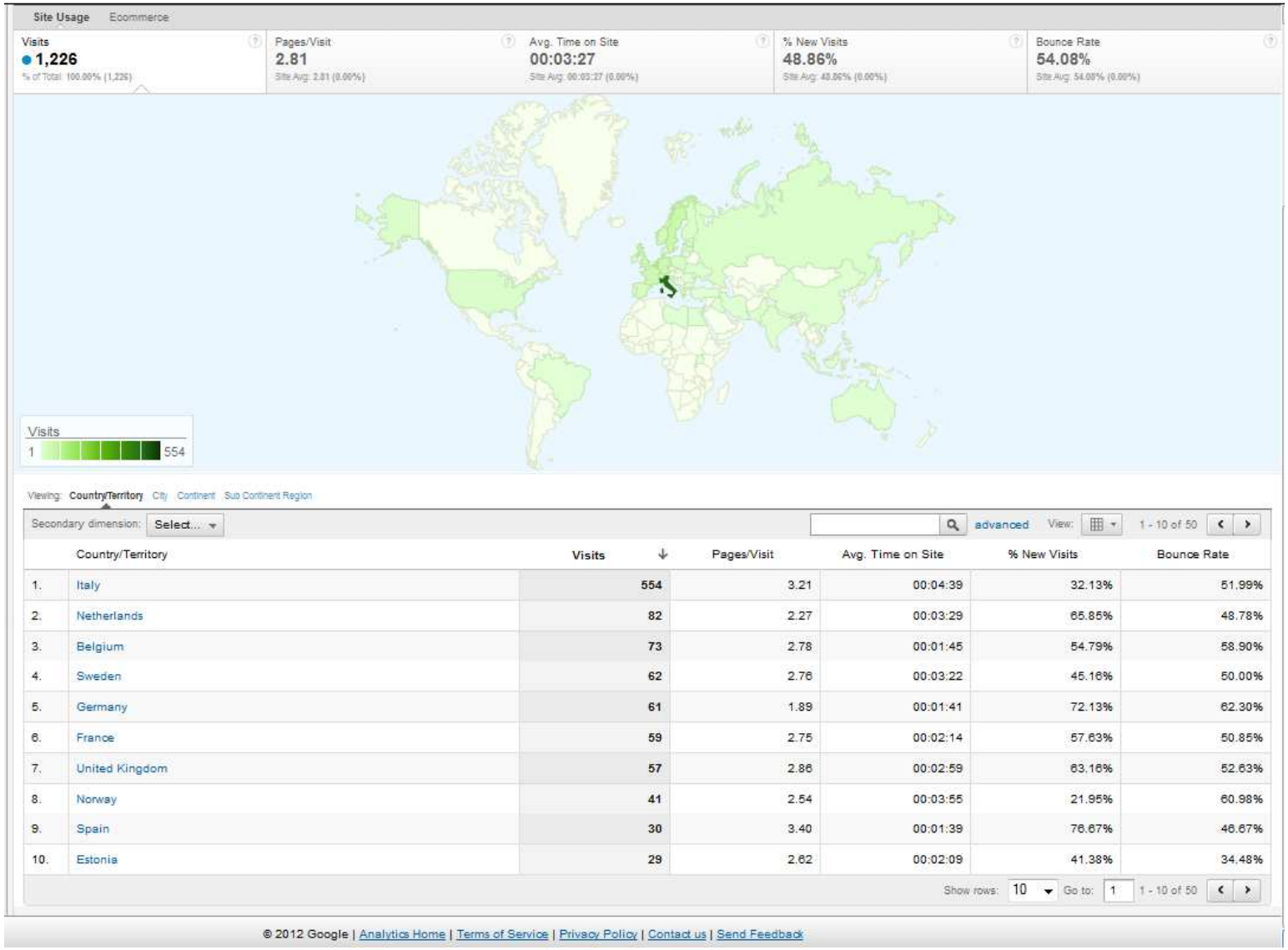
EMODnet PP - pilot portal



NRT data

EMODnet
European Marine Observation and Data Network

EMODnet PP - pilot portal



EMODnet
European Marine Observation and Data Network

MARINE KNOWLEDGE 2020

- Marine Data and Observation for smart and sustainable growth (COM2010 461)
  - Data collection
  - Data assembly
- Collection is mostly the responsibility of Member States
- **EU has the potential to add value in the assembly phase because of the need to ensure coherence across borders and between different communities**

EMODnet
European Marine Observation and Data Network

WORKING PRINCIPLES

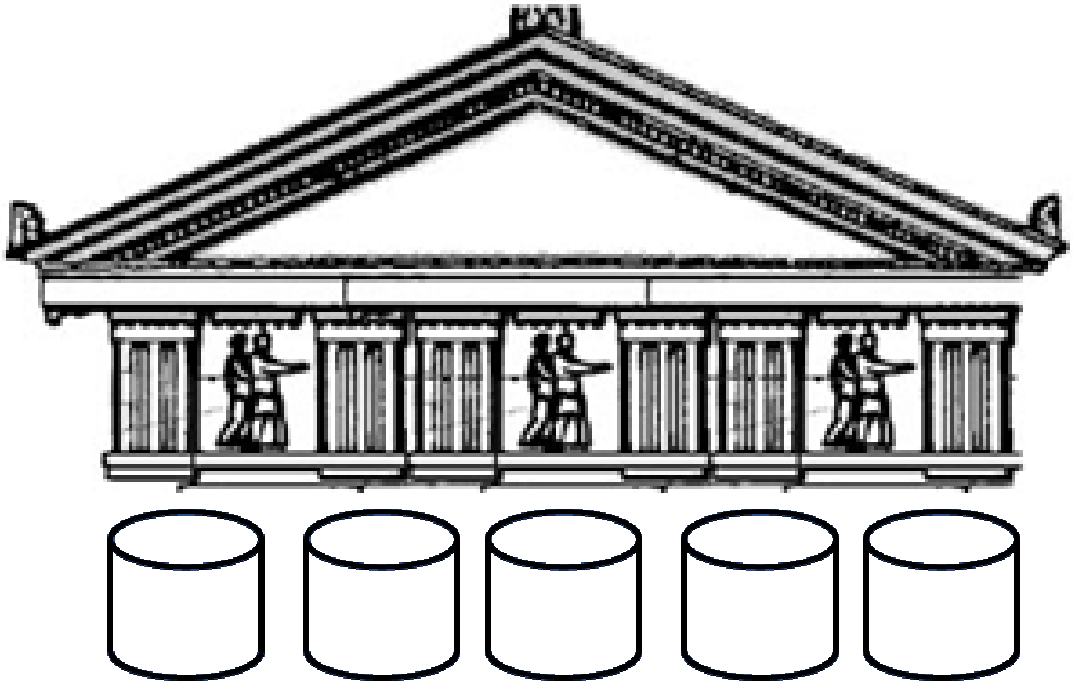
- Rely on **INSPIRE** principles to **leave data** as close as possible to their **collection source** and thus the system is based on **distributed data nodes**;

- **Exchanges with other initiatives/links** with infrastructures managing **real-time/near real-time** and **delayed** mode data;

- Use harmonized reporting tools.

EMODnet
European Marine Observation and Data Network

EMODNET IN THE EU INFRASTRUCTURES



REPORTING
(Assessment, etc)

PRODUCTS' LAYER

SERVICE LAYER
(EMODnet, etc)

DATA LAYER
(ROOSs, Projects, National initiatives, etc)

EMODnet
European Marine Observation and Data Network

REINFORCE THE OBSERVING SYSTEMS

EMODnet
European Marine Observation and Data Network

Thank you for your attention

http://www.emodnet-physics.eu/

For further details do not hesitate to contact us!

EMODnet
European Marine Observation and Data Network