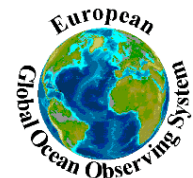




Service Contract No. MARE/2010/02

**Preparatory Actions for European Marine Observation
and Data Network**

Physical Parameters Lot [SI2.579120]

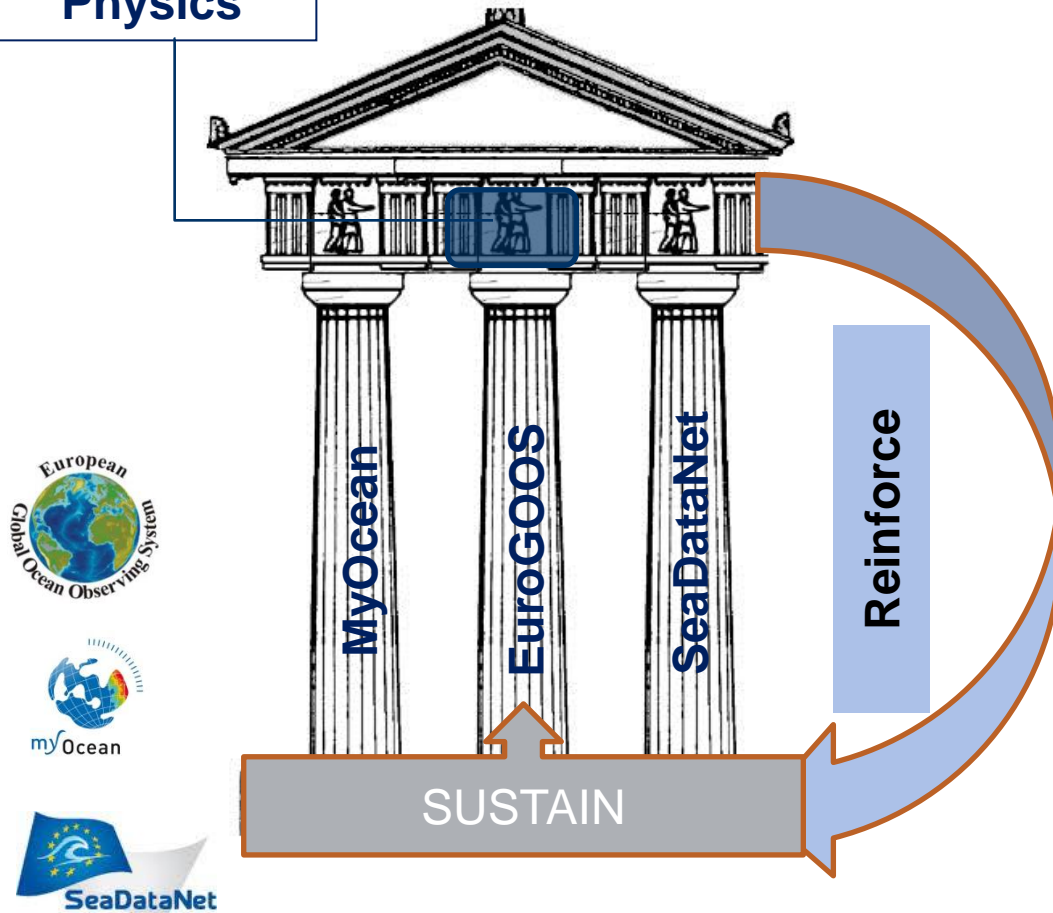


Objectives of EMODnet Physics

- EMODnet – Physics has to 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.
- **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 → exploit and support GMES key initiatives
- **Contribute to Common Data Formats and Metadata Representation** → adopt, exploit, support the **Common Data Index and Common Vocabularies**

EMODnet Physics

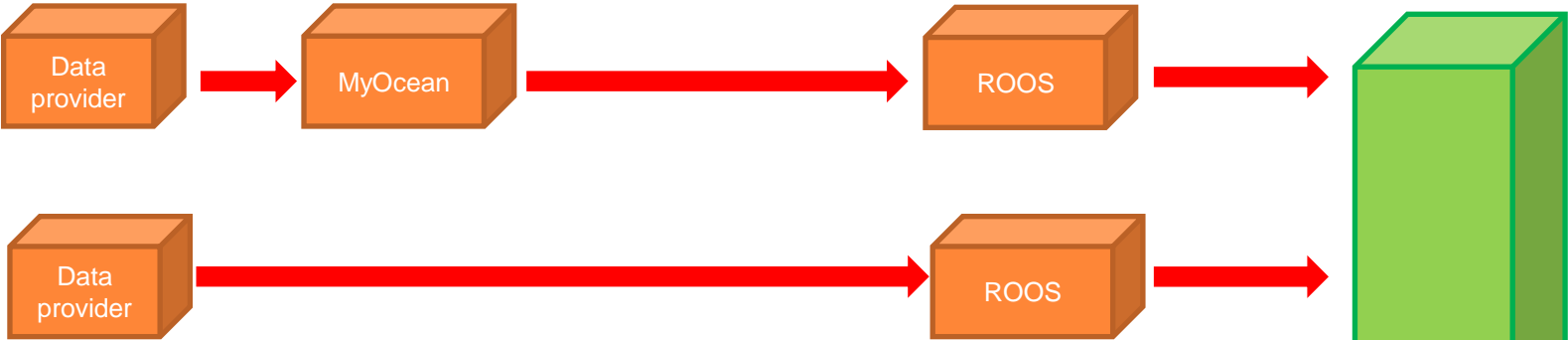
EMODnet Physics



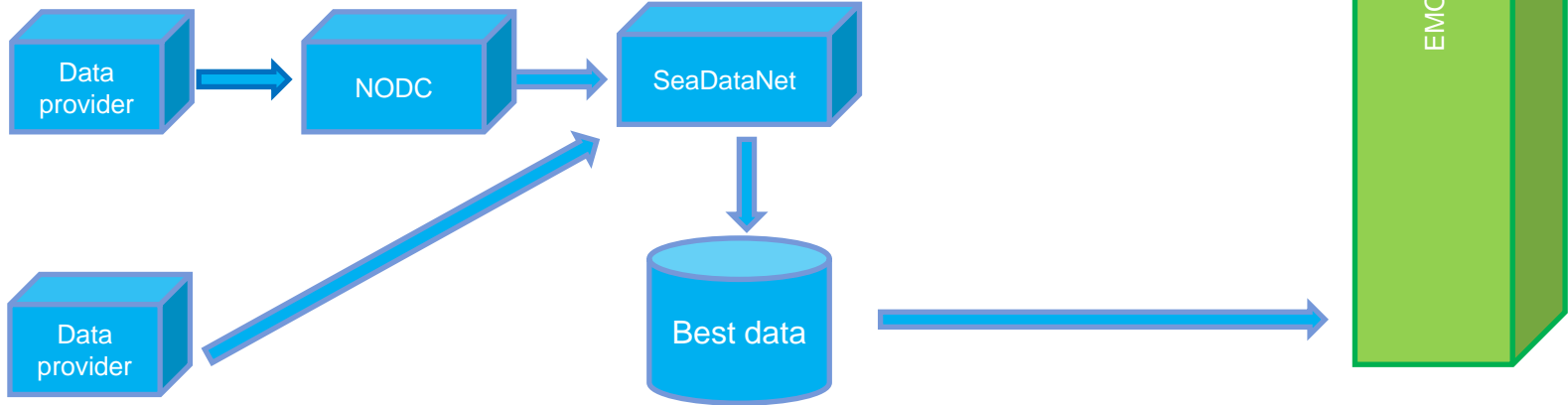
- bridge the communities behind EuroGOOS, MyOcean and SeaDataNet
- MoU between MyO SDN
- Build up on existing
- infrastructures by adding value – not unless complexity
- Ensure data access to any user
- Attract new data holders
- Attract better and more data

EMODnet Physics

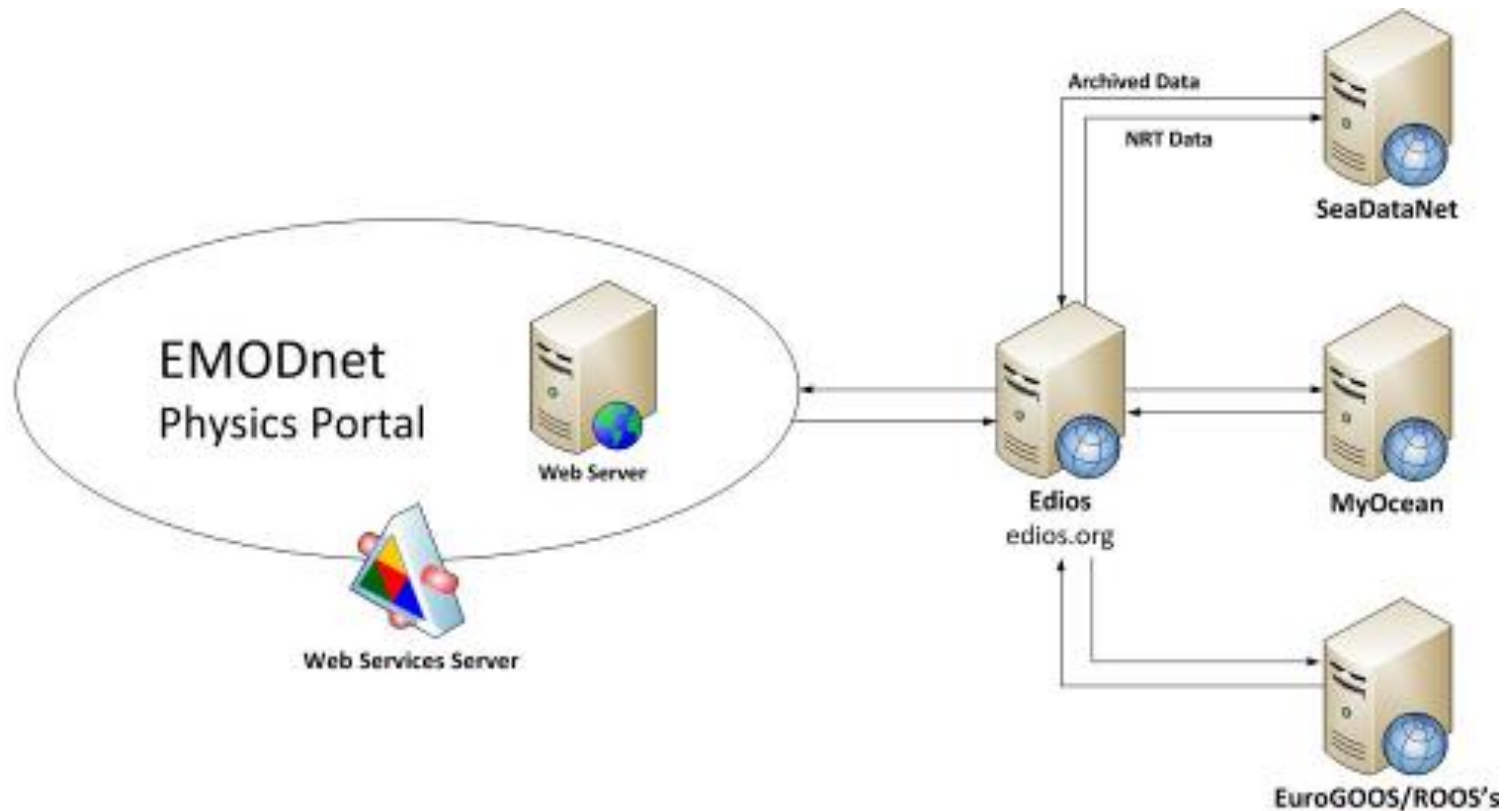
Near Real Time



Historical



EMODnet Physics logical architecture





A marine data service to provide access to archived multidisciplinary datasets of **in situ observations relevant to the monitoring of the ocean state and health**, in the form of single data and gridded fields for **European seas**

EDMO: European Directory of Marine Organisations (>2200 entries)

EDMED: European Directory of Marine Environmental Data sets (>3000 entries)

EDMERP: European Directory of Marine Environmental Research Projects (>2500 entries)

CSR: Cruise Summary Reports (>31500 entries)

EDIOS: European Directory of Ocean-observing Systems

Common Data Index (CDI)

- descriptions of distributed data sets and their access procedures
- marine profile of ISO 19115, for describing marine observation data
- fully compliant with data discovery services as defined by INSPIRE

CDI, Common Vocabularies, Interoperability

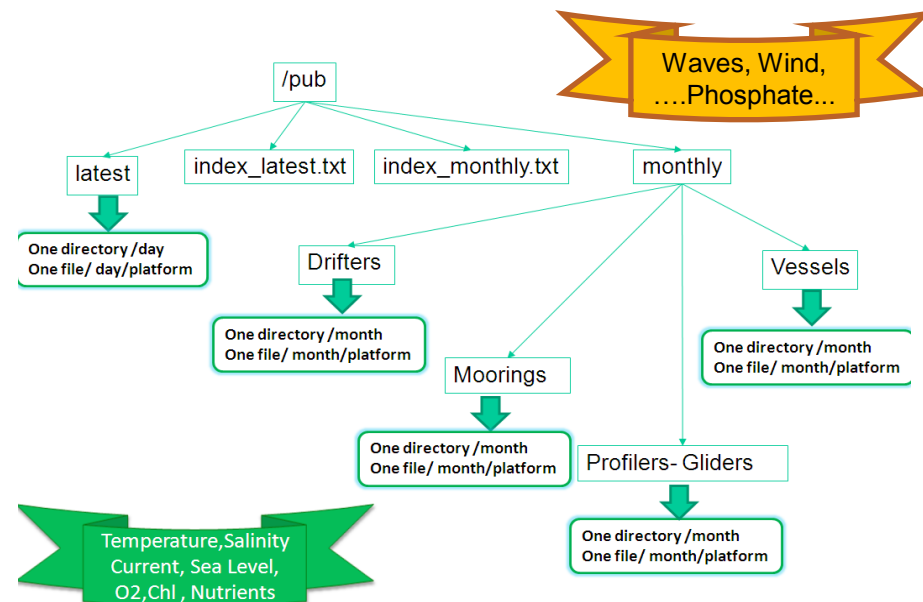
SDN Data formats: ODV (ASCII) and NetCDF (CF)

→ the 'de facto' standards in the oceanographic and meteorological communities.

List code	List Name	List code	List Name
L231	SeaDataNet Metadata Entities	L061	SeaDataNet Platform Classes
P021	BODC Parameter Discovery Vocabulary	L081	SeaDataNet Data Access Restriction Policies
L021	SeaDataNet Geospatial Feature Types	L101	SeaDataNet Geographic Co-ordinate Reference Frames
C320	ISO countries	L111	Height and Depth Vertical Co-ordinate Reference Datum
L05	SeaDataNet device categories	L241	SeaDataNet Data Transport Formats
L031	SeaDataNet Measurement Periodicity Classes	L071	SeaDataNet Data Access Mechanisms
EDMERP	European Directory of Marine Research Projects	EDMO	European Directory of Marine Organisations



A GMES marine service to provide free and open access to real-time and delayed mode «ocean monitoring and forecasting» information based on the combination of **satellite, in situ observations and assimilative ocean models** on the **global ocean and European seas**



Parameters

- **Water:**
 - CNDC (electrical conductivity), PSAL(practical salinity) → Sea Water Salinity
 - TEMP → Sea Water Temperature
 - EWCT (east current component), HCDT (relative direction through north), HCSP (horizontal current speed), NSCT (current north component) → Water Currents
 - DOXY, DOX1 (oxygen)
 - FLUO, FLU2, FLU3, FFU (fluorescence)
 - PHPH (pH)
 - TURB: (Turbidity)
- **Sea Level:**
 - SLEV → Sea Level
- **Wave:**
 - SWHT (wave height), SWPR (wave period), VTDH (significant wave height) VTZA (average crossing zero wave period), VTPK (wave spectrum peak period), VPED (wave spectrum peak energy) → Wave
- **Wind:**
 - WSPD (horizontal wind speed), WDIR (wind direction rel. to north) → Wind Direction
- **Atmospheric:**
 - ATMS (atmospheric pressure) ATPT(atmospheric pressure hourly tendency)
 - DEWT (dew point temperature) DRYT (air temp in dry)
 - RELH (relative humidity)
- **Light Irradiance:**
 - LGHT (light irradiance)

Data quality and quality flags

- Near Real Time Quality Flag → MyOcean → quality control is performed automatically (value from 1 - best to 9 - unchecked)
- Quality Control procedures on Real Time Data/Near Real Time Data are aiming at
 - Detecting missing mandatory information
 - Detecting errors made during the transfer or reformatting
 - Detecting duplicates
 - Detecting remaining outliers (spikes, out of scale data, vertical instabilities etc)
 - Attaching a quality flag to each numerical value in order not to modify the observed data points
- Achieved Data Quality Control procedures → SeaDataNet → reviewing NODC schemes and other known schemes (e.g. WGMDM guidelines, World Ocean Database, GTSP, Argo, WOCE, QARTOD, ESEAS, SIMORC, etc.)
 - Quality Flags defined in the Common Vocabularies as list **L201**.

 **EMODnet**
European Marine Observation and Data Network

Pilot Portal For Physical Parameters

Home Access to Data Objectives Partners User's guide Documents 

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.



News from web

[EU greenhouse gases in 2011: more countries on track to meet Kyoto targets, emissions fall 2.5 %](#)
[Protected areas have increased to cover one fifth of Europe's land](#)

More 

Marine Forum



[EMODnet Physical Parameters](#)

Newsletter 

Meetings

[SeaDataNet II - first annual meeting](#)

[EMODnet Physical Parameter Workshop in the Black Sea](#)

More 

Tag Cloud

bodc bsh cnr emodnet enea
eurogoos hcmr myocean

www.emodnet-physics.eu

EMODnet Physics

EMODnet Pilot Portal For Physical Parameters

European Marine Observation and Data Network

Data type + ?

Parameters - ?

- Sea levels
- Waves and winds
- Sea water temperature
- Sea water salinity
- Currents
- Light attenuation

Search point: -

Search region:

Map layer management

Sea Basin (EuroGOOS Region) + ?

Countries + ?

Data Providers + ?

Your selection + X ?

Map data ©2012 Basarsoft, Google, INEGI, MapLink, ORION-ME, Tele Atlas - Termini e condizioni d'uso

EMODnet Physics

EMODnet European Marine Observation and Data Network

Pilot Portal For Physical Parameters

Data type + -

Parameters - +

- Sea levels
- Waves and winds
- Sea water temperature
- Sea water salinity
- Currents
- Light attenuation

Sea area (EuroGOOS region) + -

Countries + -

Data Providers + -

Your selection + - X -

EMODnet Map

Search point:

Search region:

Google

EMODnet Physics

The screenshot displays the EMODnet Pilot Portal For Physical Parameters. The interface includes a header with the EMODnet logo and the text "European Marine Observation and Data Network". Below the header, there are several sections:

- Data type:** A dropdown menu with a plus and minus icon.
- Parameters:** A dropdown menu with a plus and minus icon.
- Sea area (EuroGOOS region):** A list of sea areas with corresponding color swatches:
 - Arctic/Barents/Greenland/Norwegian Sea (Yellow)
 - Baltic Sea (Pink)
 - Atlantic/Bay of Biscay/Celtic Sea (Green)
 - North Sea (Light Blue)
 - Black Sea (Light Grey)
 - Mediterranean Sea (Red)
- Countries:** A dropdown menu with a plus and minus icon.
- Data Providers:** A dropdown menu with a plus and minus icon.
- Your selection:** A dropdown menu with a plus and minus icon.

The main area is titled "EMODnet Map" and features a search interface with fields for "Search point: Insert latitude" and "Search point: Insert longitude", and a "Go" button. Below this is a "Search region: Insert region" field and a "Map layer management" link. The map itself shows a satellite view of Europe and the Mediterranean region, with colored lines and dots overlaid. A "Google" logo is visible in the bottom left corner of the map area. A small inset map in the bottom right corner shows a zoomed-in view of a specific location.

EMODnet Physics

The screenshot displays the EMODnet Pilot Portal interface. At the top, the EMODnet logo and the text "European Marine Observation and Data Network" are visible on the left, and the title "Pilot Portal For Physical Parameters" is centered. Below the header, there is a search bar with "Search point:" and fields for "Insert latitude" and "Insert longitude", followed by a "Go" button. A left-hand navigation menu includes sections for "Data type", "Parameters", "Sea area (EuroGOOS region)", "Countries", "Data Providers", and "Your selection". The "Your selection" section contains a table with columns for "Station name", "Parameters", "Delete", and "Type". One entry, "Ringhals", is highlighted with a red square icon. The main content area features a map of the North Sea region with a red dot indicating the location of Ringhals. A pop-up window titled "Ringhals" provides detailed information:

Station	
Station name:	Ringhals
Latitude:	57.2497
Longitude:	12.1125
Sea basin area:	North Sea

Data owner/Data Provider	
Description:	SMHI - Swedish Meteorological and Hydrographic Institute - Sweden
Website:	http://www.smhi.se/en
Partner of:	NOOS
Website:	http://www.noos.cz/
Country:	SE

Below the map, there are four buttons: "Station info", "NRT archived data availability overview", "NRT data preview", and "NRT data table preview". At the bottom left of the interface, there is a link "Add to shopping list".

EMODnet Physics

EMODnet European Marine Observation and Data Network

Pilot Portal For Physical Parameters

EMODnet Map 1. Historical Data

Search region:

Map layer management

Parameters

Sea area (EuroGOOS region)

- Arctic Seas
- Baltic Sea
- Atlantic
- North Sea
- Black Sea
- Mediterranean Sea

61001

From 2012/07/21 to 2012/09/19

W Waves and winds: *Wind_speed*

2012/07/22 2012/07/29 2012/08/05 2012/08/12 2012/08/19 2012/08/26 2012/09/02 2012/09/09 2012/09/16

T Sea water temperature: *sea_water_temperature*

30 25 20 15 10 5 0

Station info NRT archived data availability overview NRT data table preview NRT data preview

Countries

Data Providers

Your selection

Google Map data ©2012 Basarsoft, Google, ORION-ME, SK M&C

Historical data: no
Near real time data: yes

العراق (Iraq) افغانستان (Afghanistan) Кыргызстан (Kyrgyzstan) Таджикистан (Tajikistan)

EMODnet Physics

EMODnet European Marine Observation and Data Network

Pilot Portal For Physical Parameters

EMODnet Map | 1. Historical Data

Data type: + ? Search region: Insert region

Parameters

Sea area (EuroGOOS region)

- Arctic Seas
- Baltic Sea
- Atlantic
- North Sea
- Black Sea
- Mediterranean Sea

61001

From 2012/07/21 to 2012/09/19 Download data

Date	WDIR	QC	WSPD	QC	TEMP	QC
9/17/2012 10:00:00 PM	250	1	1	1	22.1	1
9/17/2012 9:00:00 PM	280	1	2.1	1	22.3	1
9/17/2012 8:00:00 PM	270	1	2.6	1	22.5	1
9/17/2012 7:00:00 PM	250	1	3.6	1	22.7	1
9/17/2012 6:00:00 PM	230	1	3.1	1	22.4	1
9/17/2012 5:00:00 PM	230	1	2.1	1	22.6	1
9/17/2012 4:00:00 PM	230	1	2.1	1	22.5	1
9/17/2012 3:00:00 PM	230	1	3.1	1	22.6	1
9/17/2012 2:00:00 PM	230	1	3.1	1	22.5	1
9/17/2012 1:00:00 PM	220	1	2.1	1	22.4	1
9/17/2012 12:00:00 PM	240	1	2.1	1	22.3	1
9/17/2012 11:00:00 AM	220	1	2.1	1	22.3	1
9/17/2012 10:00:00 AM	230	1	2.1	1	22.3	1
9/17/2012 9:00:00 AM	220	1	1.5	1	22.1	1
9/17/2012 8:00:00 AM	180	1	1.5	1	22.1	1
9/17/2012 7:00:00 AM	210	1	1.5	1	22	1
9/17/2012 6:00:00 AM	230	1	1.5	1	21.9	1
9/17/2012 5:00:00 AM	230	1	2.1	1	22	1
9/17/2012 4:00:00 AM	260	1	1.5	1	21.9	1


Station info | NRT archived data availability overview | NRT data table preview | NRT data preview

Countries: + ?

Data Providers: + ?

Your selection: + X ?

EMODnet Physics



EMODnet

European Marine Observation and Data Network

Pilot Portal For Physical Parameters

EMODnet Map
1. Historical Data

Data type

Parameters

Sea area (EuroGOOS region)

- Arctic Seas
- Baltic Sea
- Atlantic
- North Sea
- Black Sea
- Mediterranean Sea

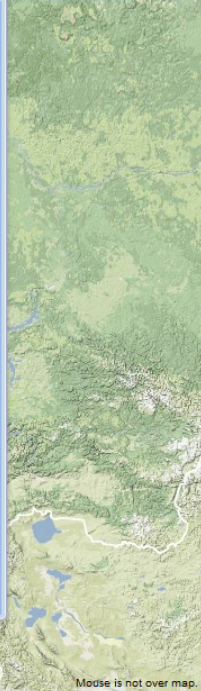
61001

NRT archived data availability overview


Year	January	February	March	April	May	June	July	August	September	October	November	December
2000	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2001	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2002	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2003	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2004	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2005	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2006	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2007	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2008	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2009	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2010	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
2011	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
2012	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖

Download data

Map layer management



Station info
NRT archived data availability overview
NRT data table preview
NRT data preview



(Kazakhstan)


Map data ©2012 AutoNavi, Basarsoft, GIS Innovatsia, Google, Tele Atlas - Termini e condizioni d'uso

Mouse is not over map.

Countries + ?

Data Providers + ?

Your selection + x ?



EMODnet
European Marine Observation and Data Network

EMODnet Physics

The screenshot displays the EMODnet Physics interface. On the left, a sidebar lists various data types and parameters. The main area shows a plot of sea level anomaly (SLA) for Stockholm from 2002/08/16 to 2002/08/17. The plot shows a fluctuating line around zero, with values ranging from approximately -0.2 to 0.6. Below the plot, a table in Microsoft Excel displays the data. The table has columns for Date, Lon, Lat, SLA, and Qc. The data points are as follows:

Date	Lon	Lat	SLA	Qc
15/10/2001	12.1125	57.3497	0.061	0
15/10/2001	12.1125	57.3497	0	0
15/10/2001	12.1125	57.3497	0.064	0
15/10/2001	12.1125	57.3497	0	0
15/10/2001	12.1125	57.3497	0.077	0
15/10/2001	12.1125	57.3497	0	0
15/10/2001	12.1125	57.3497	0.071	0
15/10/2001	12.1125	57.3497	0	0
15/10/2001	12.1125	57.3497	0.087	0
15/10/2001	12.1125	57.3497	0	0
15/10/2001	12.1125	57.3497	0.124	0
15/10/2001	12.1125	57.3497	0	0
15/10/2001	12.1125	57.3497	0.119	0
15/10/2001	12.1125	57.3497	0	0

The screenshot displays the EMODnet Pilot Portal for Physical Parameters. The page title is "Pilot portal for Physics Common Data Index (CDI) V2". The interface includes a navigation bar with "EMODnet Map" and "1. Historical Data". Below the title, there are buttons for "Export", "Store query", "Summary", "Show on map", and "?". A cart indicator shows "0 Dataset(s) Proposed to check out" with a "Reset basket" button. A search section includes "Reset all steps > EDIOS-stations: multiple" and "Search by: Geographical Box". A left sidebar lists various filters: "Time period", "Edios", "Measuring area type", "Parameter categories", "Disciplines", "Instrument / gear type", "Country", and "Data Holding centre". The main content area features a table of data sets with columns for "Data set name", "Variables measured", and "Instrument / gear type". The table lists four data sets: "M3 Weather Buoy Wind Speed and Direction", "M3 Weather Buoy Wave Height and Period Statistics", "M3 Weather Buoy Sea Temperature", and "M3 Weather Buoy Atmospheric Pressure". Each row includes a checkbox, a "Show" button, and a "Variables measured" column with expandable categories. A "Found 6" indicator is visible at the top right of the table area.

<input type="checkbox"/>	Data set name	Variables measured	Instrument / gear type	Show
<input type="checkbox"/>	M3 Weather Buoy Wind Speed and Direction	Administration and dimensions > Administration and dimensions Atmosphere > Meteorology	anemometers	Show
<input type="checkbox"/>	M3 Weather Buoy Wave Height and Period Statistics	Administration and dimensions > Administration and dimensions Physical oceanography > Waves	wave recorders	Show
<input type="checkbox"/>	M3 Weather Buoy Sea Temperature	Administration and dimensions > Administration and dimensions Physical oceanography > Water column temperature and salinity	water body temperature sensor	Show
<input type="checkbox"/>	M3 Weather Buoy Atmospheric Pressure	Administration and dimensions > Administration and dimensions Atmosphere > Meteorology	atmospheric radiometers	Show

archieved data discovery page: CDI list

EMODnet Physics

The screenshot displays the EMODnet Pilot portal interface. The header includes the EMODnet logo and the text "Pilot portal for Physics Data Discovery and Access Service". Below the header, there are navigation buttons: "Cart: 0 Dataset(s)", "Proceed to checkout", "Reset basket", "Export", "Store query", "Summary", and "Show on map".

The main content area is divided into several sections:

- Search by:** Includes "Geographical Box" and "Time period".
- Measuring area type:** A list of area types with counts, such as "point" (874).
- Parameter categories:** A list of categories with counts, such as "Sea level" (674).
- Disciplines:** A list of disciplines with counts, such as "Physical oceanography" (674).
- Instrument / gear type:** A list of instrument types with counts, such as "sea level recorders" (6).
- CDI-partner:** A list of partners with counts, such as "British Oceanographic Data Centre (BODC)" (674).
- Country:** A list of countries with counts, such as "United Kingdom" (674).
- Data Holding centre:** A list of holding centres with counts, such as "British Oceanographic Data Centre (BODC)" (674).

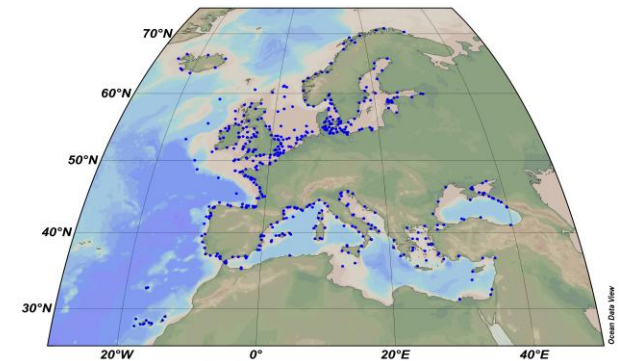
The **Details** section provides specific information for the selected data set:

- WHAT?**
 - Data set name: P011/1973/001
 - Discipline: Physical oceanography
 - Category: Sea level
 - Variables measured: Sea level
 - Abstract: A single series of Sea surface elevation -unspecified data collected between 27 August 1973 06:00 and 05 November 1973 07:00.
 - Data format: Ocean Data View ASCII input **Version 0.4**
 - Data size: 103
 - Data set creation date: 20110111
- WHERE?**
 - Map: A map showing the location of the data set in the North Atlantic Ocean, near the British Isles.
 - Latitude 1: 50.7833
 - Longitude 1: 0.0666

archieved data discovery page: CDI details

What is in:

Sea Basin	NRT data	Updated EDIOS
Arctic Sea/ Greenland Sea/ Norwegian Sea	3	
Baltic Sea	130	30
Black Sea	56	
Celtic Seas, Bay of Biscay and Iberian Coast	1	
Mediterranean Sea	5	5
North Sea	109	25
Total	353	60



Yet to come:

Sea Basin	missing stations
Arctic Sea/ Greenland Sea/ Norwegian Sea	30
Baltic Sea	31
Black Sea	14
Celtic Seas, Bay of Biscay and Iberian Coast	29
Mediterranean Sea	27
North Sea	17

parameter group	missing stations
sea level	92
temperature	41
currents	13
waves	42
wind	19
salinity	16
light attenuation	11

Data available from early 2000 with gaps

EMODnet Physics, Interoperability OGC

EMODnet Physics WMS/WFS

WMS specifies a number of different request types, two of which are required by any WMS server:

- GetCapabilities - returns information about the WMS
- GetMap - returns a map image

<http://151.1.25.219:8080/gisclient/services/ows.php?project=ett&map=stazioni&request=getcapabilities&service=WMS>

<http://www.emodnet-physics.eu/test.wms.getfeatureinfo.html>

WFS provides an interface allowing requests for geographical features across the web using platform-independent calls

- GetCapabilities - this queries the WFS service to determine available options

<http://151.1.25.219:8080/gisclient/services/ows.php?project=ett&map=stazioni&request=getcapabilities&service=WFS>

- GetFeature - this performs the actual query

<http://www.emodnet-physics.eu/test.wfs.html>