



**WP5: Data discovery, access and viewing services (CDI and data sets), management of the CDI directory**

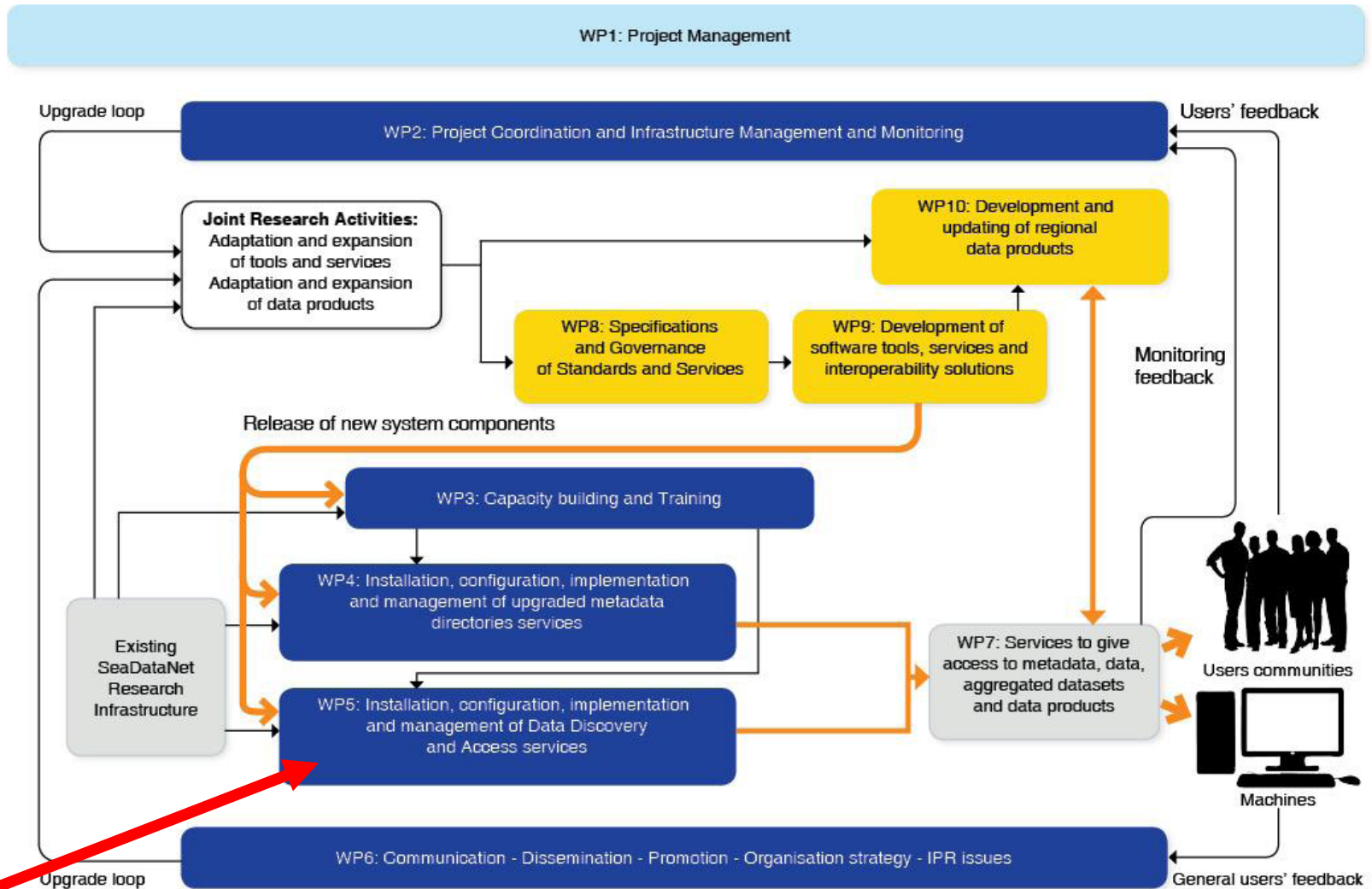
**Total effort: 93 MM = ca 16% of full SeaDataNet II**

**By**

**Dick M.A. Schaap – SeaDataNet Technical Coordinator**

**Athens - Greece, 19 October 2011**

# SeaDataNet II – Flow Chart



SeaDataNet II Flow Chart

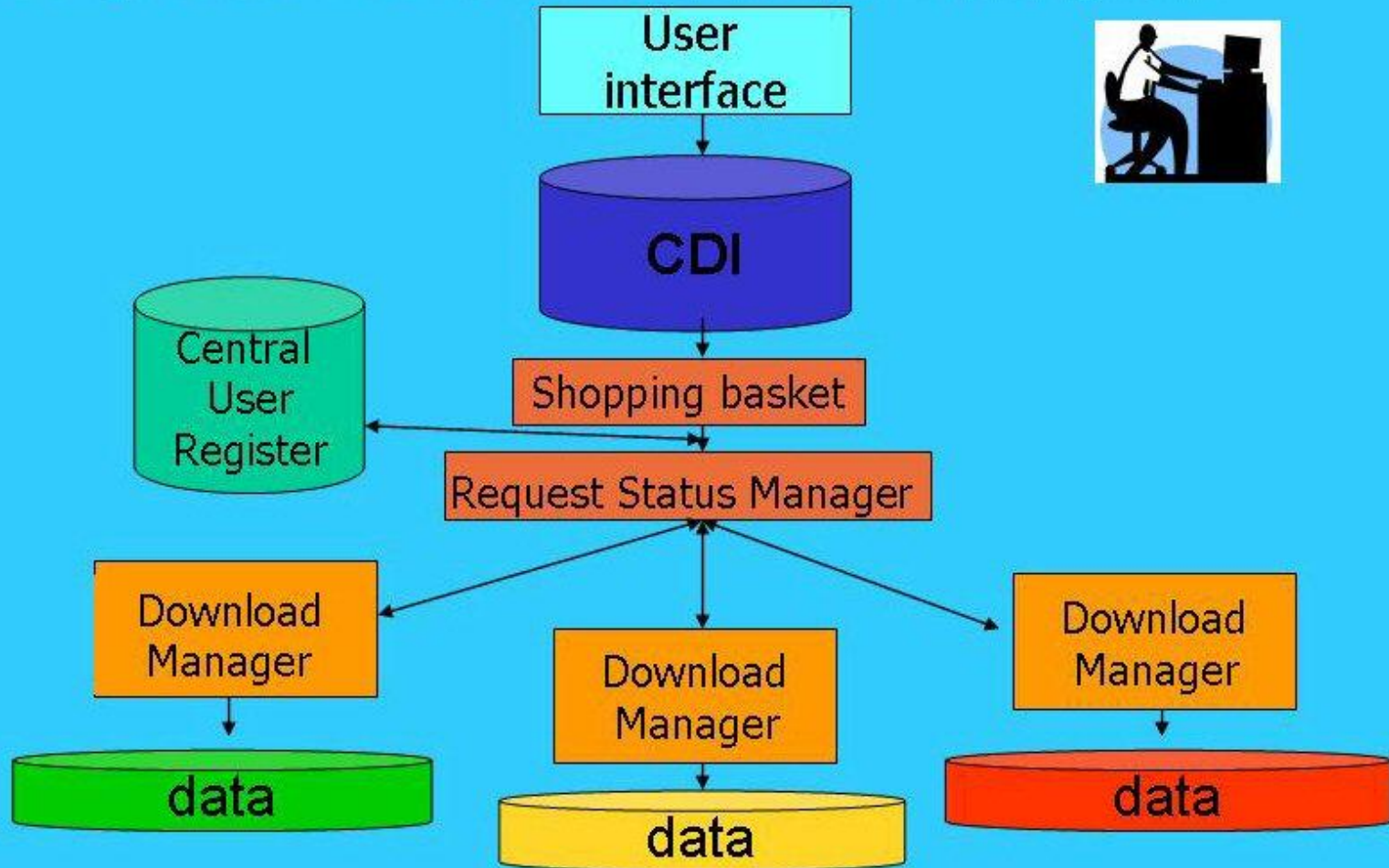
# Common Data Index (CDI) Data Discovery and Access Service

- **CDI** is a fine-grained index (ISO 19115) to individual data measurements (such as a CTD cast or moored instrument record).
- The CDI Data Discovery and Access Service provides users a highly detailed insight and unified access to the large volumes of marine and oceanographic data sets managed by the distributed data centres
- An intelligent middle tier connection is configured between the SeaDataNet portal and the local data management systems at each of the data centres.



- A shopping basket allows users to submit a shopping request for multiple data providers in one go and to follow its processing by each of the providers *via* an online transaction register.

# Delivery Services – CDI V2 – architecture



# CDI V2 system components

## ■ **CDI Metadatabase and User Interface:**

- Searching and browsing of metadata of data sets, managed by Data Centres

## ■ **Central User Register - Web service:**

- Details of users, their organizations and addresses, license period, Id-Passwords, Roles

## ■ **Shopping Basket – User Interface:**

- Preparing a user request of multiple data sets, handling validation of users and roles via the Central User Register, and routing requests to the Request Status Manager

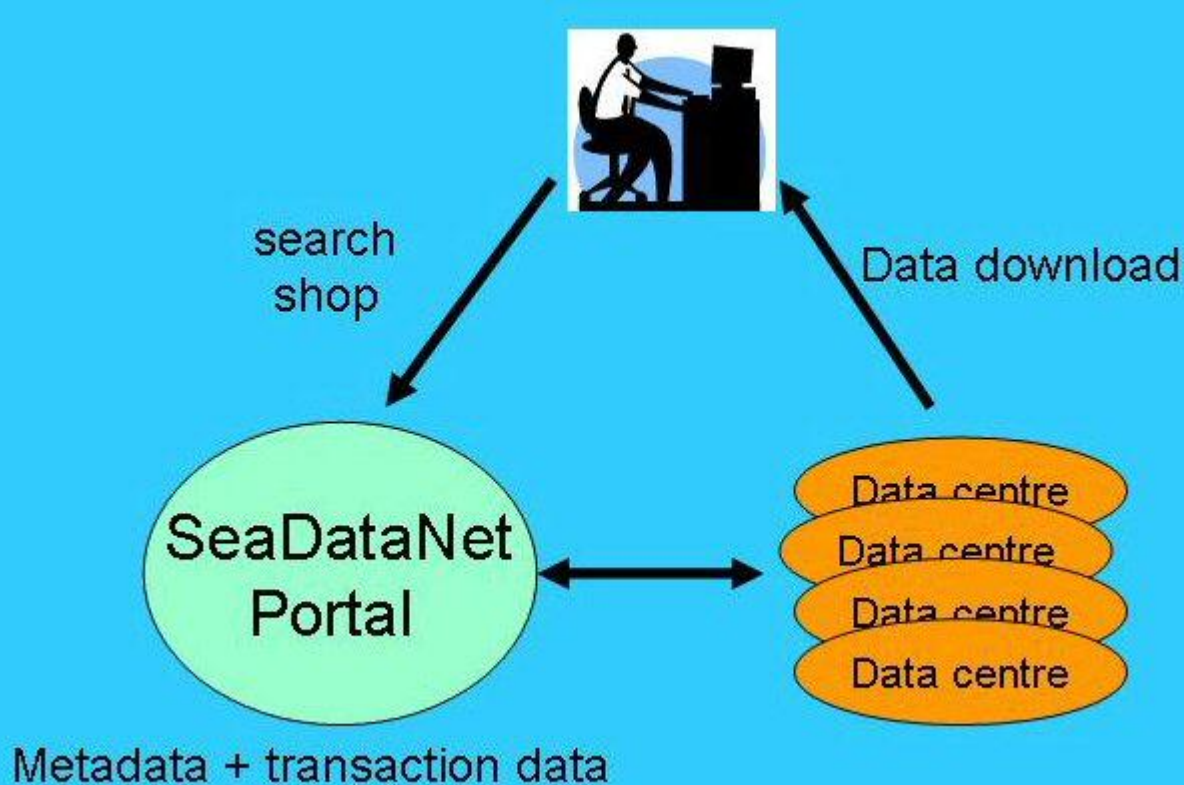
## ■ **Request Status Manager – Web service + User Interface:**

- Processing and administration of all requests and data deliveries (downloads), for users in communication with data centres. For data centres to oversee all transactions.

# CDI V2 system components

## ■ Data Centre Download Manager – Java Tool:

- Handles communication with Request Status Manager and takes care that requested files are made ready for downloading by User (if OK) in the agreed formats via a local website address at the Data Centre



# Data Policy and implementation

## ■ Metadata

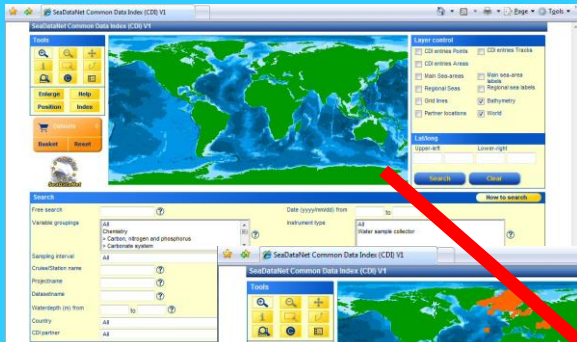
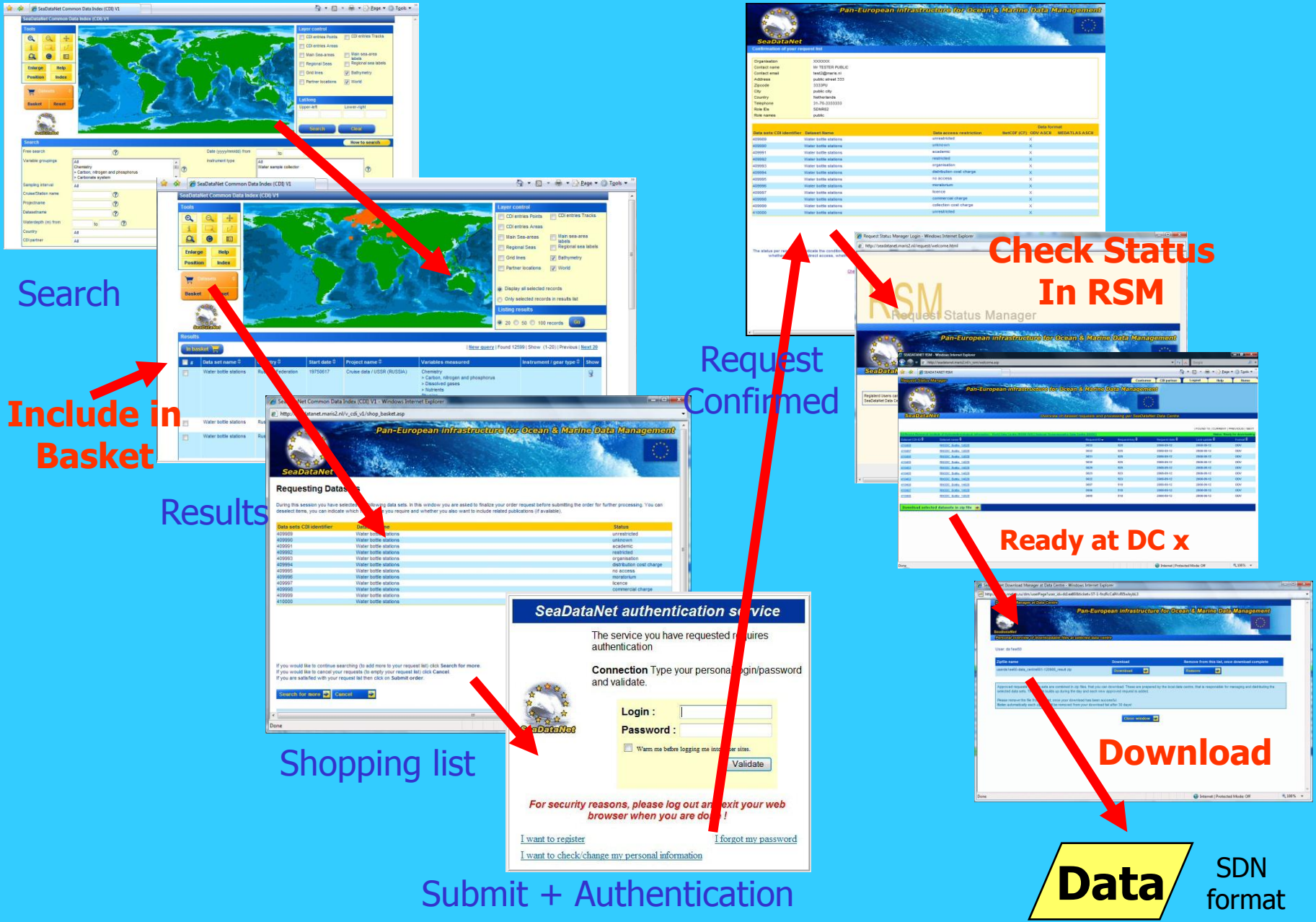
- free and open access, no registration required
- each data centre is obliged to provide the meta-data in standardized format to populate the catalogue services

## ■ 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)
- 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
- 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**'



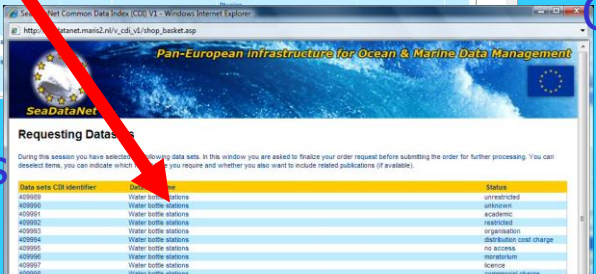
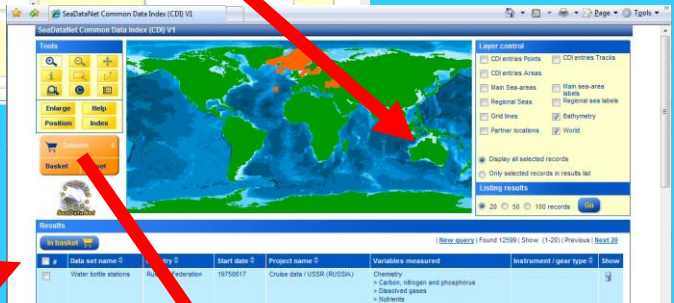
# SeaDataNet CDI – Data retrieval and downloading



Search

Include in Basket

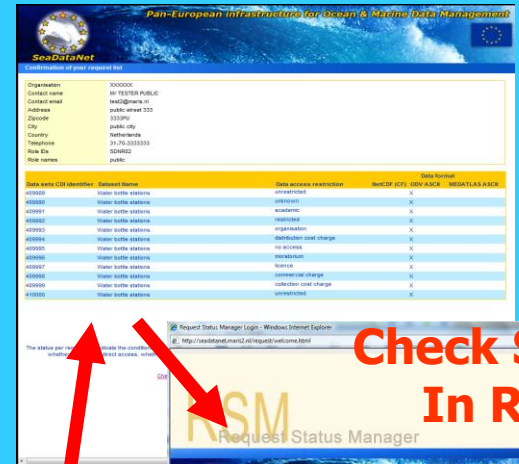
Results



Shopping list

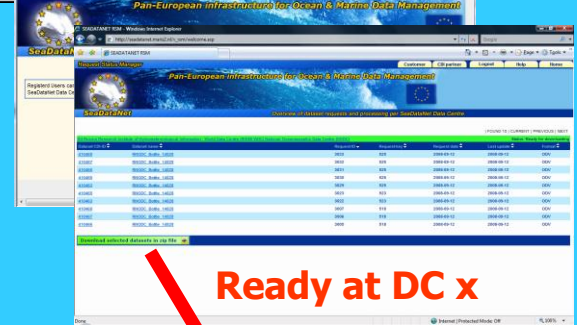


Submit + Authentication



Check Status In RSM

Request Confirmed



Ready at DC x



Download

**Data** SDN format



# SeaDataNet Download Manager V1.1f Functions

- Communication with RSM Web service about process progress
- Processing order lists => retrieving requested data files
- Retrieving data sets from:
  - **file management systems**
  - **database systems** (e.g. Oracle, MySQL, MS-SQL, Sybase, ....)
- If data sets are retrieved from a database => export of data files in **SDN ODV4 format**
- Note: Data sets from a file management system must be pre-processed in SDN transport formats (**ODV4** and optional **MedATLAS** for ASCII type data, or **NetCDF (CF)** for grid type data)
- Combining data set files in daily zip files in a user download directory incl a csv with CDI metadata
- Generating dynamic user download webpage, following SDN template, to give user overview and option of downloadable zip files

# SeaDataNet CDI user interfaces

SeaDataNet Common Data Index (CDI) V2

Tools: Enlarge, Help, 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

Lat/long: Upper-left, Lower-right

Search: Search, Clear

Free search: [text input]

Date (yyyymmdd) from: [text input] to: [text input]

Variable groupings: All, Biological oceanography > Bacteria and viruses > Bacteria composition

Sampling interval: All

Cruise/Station name: [text input]

Projectname: [text input]

Datasetname: [text input]

Waterdepth (m) from: [text input] to: [text input]

Country: All

Date (yyyymmdd) from: [text input] to: [text input]

Instrument type: All, >2000 Hz top-bandwidth sub-bottom penetrator and n acoustic tracking systems, active fishery gear

Measuring area type: All, All, beach/intertidal zone structure, coastal structure

Platform type: [text input]

Instrument depth (m) from: [text input] to: [text input]

Originator: All

CDI partner: All

Parameter categories:

- Water column temperature and salinity (791817)
- Administration (408209)
- Dimensions (372794)
- Carbon, nitrogen and phosphorus (237741)
- Nutrients (220759)

Extended search interface  
(lots of combinations of  
Search criteria and free text search)

Pan-European infrastructure for Ocean & Marine Data Management  
Common Data Index (CDI) V2 - Access to Datasets

SeaDataNet

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

Search by: Add to basket 20 50 100 Records GO | Found 1055491 | Show (1-20) | Previous | Next 20

#	Data set name	Variables measured	Instrument / gear type	Show
<input type="checkbox"/>	CTD_G10 data set	Biological oceanography > Zooplankton > Biota abundance, biomass and diversity	plankton nets	Show
<input type="checkbox"/>	CTD_E1 data set	Biological oceanography > Zooplankton > Biota abundance, biomass and diversity	plankton nets	Show
<input type="checkbox"/>	CTD_G3 data set	Biological oceanography > Zooplankton > Biota abundance, biomass and diversity	plankton nets	Show
<input type="checkbox"/>	CTD_E3 data set	Biological oceanography > Zooplankton > Biota abundance, biomass and diversity	plankton nets	Show

Quick search interface  
(easy to use for first  
time users with drill-  
down – intuitive)

# SeaDataNet CDI Extended Search interface

SeaDataNet Common Data Index (CDI) V2

**Tools**

Enlarge Help  
Position Index

Datasets 0

Basket Reset

Add to basket

**Layer control** Expand Add layer

- CDI entry Points ?
- CDI entry Tracks ?
- CDI entry Areas ?

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- 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 **Go**

[Summary](#) | [Zoom to selected](#) | [Export result](#) | [Store query](#) | [Refine query](#) | [New query](#) | Found 190341 | Show (1-20) | Previous | [Next 20](#)

#	Data set name	Country	Start date	Variables measured	Instrument / gear type	Show
<input type="checkbox"/>	SI29200802022.bot	Spain	20080612	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus > Dissolved gases	discrete water samplers	
<input type="checkbox"/>	SI29200802022.bot	Spain	20080422	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus > Dissolved gases	discrete water samplers	
<input type="checkbox"/>	SI29200802022.bot	Spain	20080317	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus	discrete water samplers	

■ Searching for nutrients



# SeaDataNet CDI Extended Search interface

The screenshot displays the SeaDataNet CDI Extended Search interface. At the top left, there are tabs for 'Position' and 'Index', a 'Datasets' basket with 0 items, and a 'Reset' button. Below this is the SeaDataNet logo. The main area features a map of the North Atlantic Ocean with a color-coded overlay representing data points. On the right, a control panel includes checkboxes for 'Main sea' and 'Main sea labels', radio buttons for 'Display all selected records' (selected) and 'Only selected records in results list', and a 'Listing results' section with radio buttons for '20', '50', and '100 records', and a 'Go' button. Below the map, navigation links include 'New query', 'Results', 'Found 20617', 'Show 1', 'Previous', and 'Next'. A blue bar contains 'XML', a shopping cart icon, and a globe icon. The 'Details' section is divided into 'WHAT?' and 'WHERE?'. The 'WHAT?' section lists metadata for the dataset 'SI29200602008.bot', including its discipline (Administration and dimensions, Biological oceanography, Chemical oceanography), category (Administration and dimensions, Carbon, nitrogen and phosphorus, Nutrients, Pigments), and variables measured (Chlorophyll pigment concentrations, Nitrate, Nitrite, Phosphate, Silicate concentrations, and Vertical spatial coordinates). The 'WHERE?' section shows a map of the same region with a red square indicating the location of the selected record.

**Position** **Index**

Datasets 0

Basket Reset

SeaDataNet

Main sea ? ? ? ? ?

Main sea labels ? ? ? ? ?

Display all selected records

Only selected records in results list

**Listing results**

20  50  100 records **Go**

[New query](#) | [Results](#) | Found 20617 | Show 1 | [Previous](#) | [Next](#)

**Details** XML

**WHAT?**

Data set name SI29200602008.bot

Discipline Administration and dimensions  
Biological oceanography  
Chemical oceanography

Category Administration and dimensions  
Carbon, nitrogen and phosphorus  
Nutrients  
Pigments

Variables measured Chlorophyll pigment concentrations in the water column  
Nitrate concentration parameters in the water column  
Nitrite concentration parameters in the water column  
Phosphate concentration parameters in the water column  
Silicate concentration parameters in the water column  
Vertical spatial coordinates

Abstract Not specified

Data format MEDATLAS ASCII **Version 2.0**  
Ocean Data View ASCII input **Version 0.4**

Data size 1

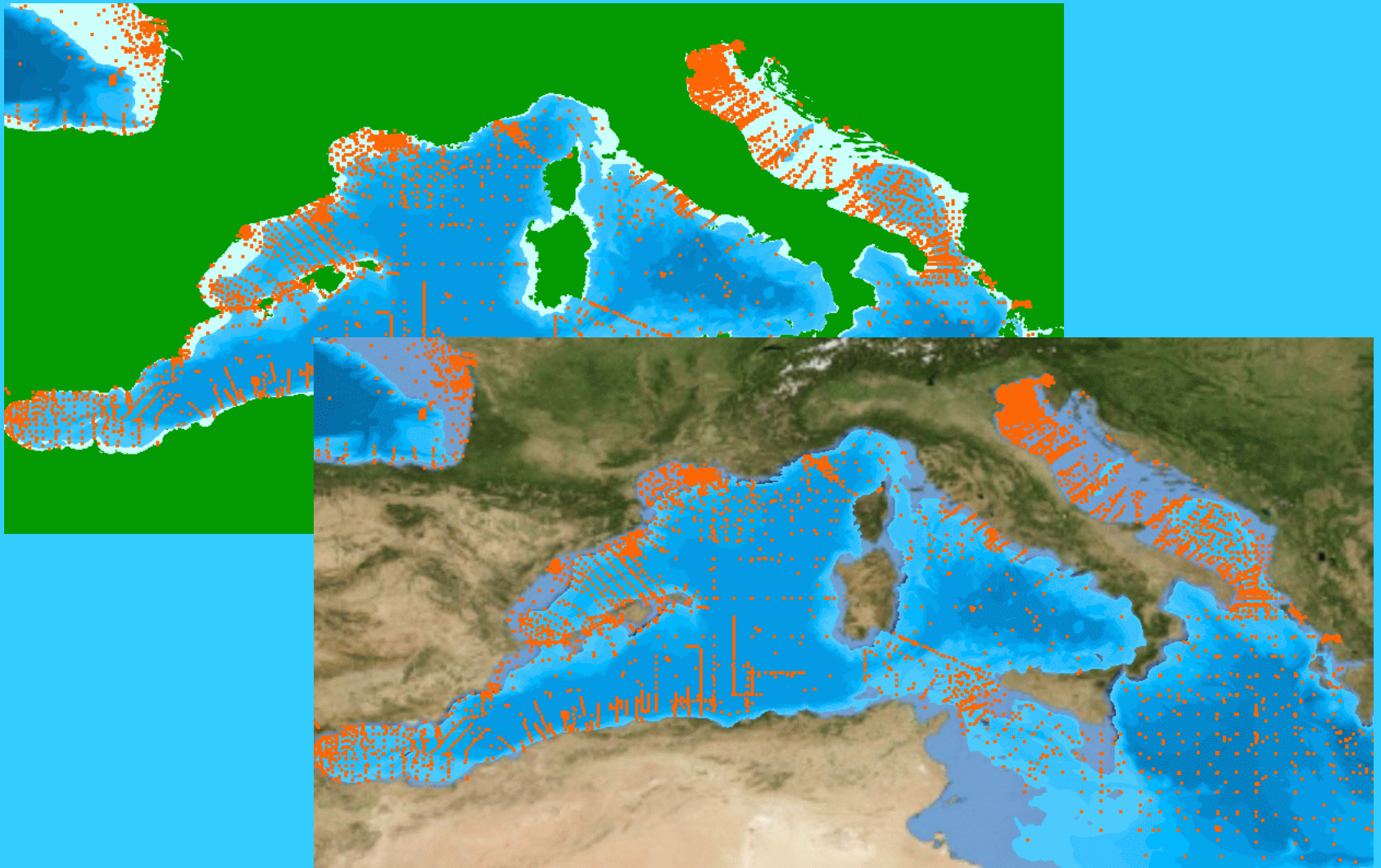
Data set creation date 20061219

**WHERE?**

Map

■ Details of a selected CDI record

# SeaDataNet CDI Search interface



- Searching for nutrients – results map zoom in and also with Blue Marble



# CDI V2 – Request Status Manager

The screenshot shows a web browser window titled "Request Status Manager Login - Windows Internet Explorer". The address bar displays the URL "http://seadatanet.maris2.nl/request/welcome.html". The main content area features a large "RSM" logo in yellow, with "Request Status Manager" written below it in a smaller, grey font. A blue banner below the logo contains the text "Pan-European infrastructure for Ocean & Marine Data Management" in yellow, accompanied by the SeaDataNet logo (a globe with stars) on the left and the European Union flag on the right. A "Continue" button is located in the bottom right corner of the banner. Below the banner, a text box contains the following information:

Registered Users can check the progress of the processing of their dataset requests and download datasets to which they have been authorised. SeaDataNet Data Centres can check the overall user statistics, such as number of dataset requests, downloads and more...

# CDI V2 – RSM: logged in as User

The screenshot shows the SEADATANET RSM web interface. The browser title is "SEADATANET RSM". The page header includes "Request Status Manager" and navigation buttons for "Logout", "Help", and "Home". The main banner features the text "Pan-European infrastructure for Ocean & Marine Data Management" and the "SeaDataNet" logo. Below the banner, the text "Overview of dataset requests and processing per SeaDataNet Data Centre" is displayed. The main content is a table with 7 columns: Request ID, Dataset ID, Status, Request ID, Status, Date, and Action. A red arrow points to a green button labeled "Download selected datasets in zip file" at the bottom of the table.

Request ID	Dataset ID	Status	Request ID	Status	Date	Action	
3372	01OC202_30_4	4	41308	1128	2009-10-23	2009-10-23	ODV
3371	01OC202_30_30	30	41307	1128	2009-10-23	2009-10-23	ODV
3370	01OC202_30_3	3	41306	1128	2009-10-23	2009-10-23	ODV
3369	01OC202_30_29	29	41305	1128	2009-10-23	2009-10-23	ODV
3368	01OC202_30_28	28	41304	1128	2009-10-23	2009-10-23	ODV
3367	01OC202_30_27	27	41303	1128	2009-10-23	2009-10-23	ODV
3366	01OC202_30_26	26	41302	1128	2009-10-23	2009-10-23	ODV
3365	01OC202_30_25	25	41301	1128	2009-10-23	2009-10-23	ODV
3364	01OC202_30_24	24	41300	1128	2009-10-23	2009-10-23	ODV
3363	01OC202_30_23	23	41299	1128	2009-10-23	2009-10-23	ODV
3362	01OC202_30_22	22	41298	1128	2009-10-23	2009-10-23	ODV
3361	01OC202_30_21	21	41297	1128	2009-10-23	2009-10-23	ODV
3360	01OC202_30_20	20	41296	1128	2009-10-23	2009-10-23	ODV
3359	01OC202_30_2	2	41295	1128	2009-10-23	2009-10-23	ODV
3358	01OC202_30_19	19	41294	1128	2009-10-23	2009-10-23	ODV
3357	01OC202_30_18	18	41293	1128	2009-10-23	2009-10-23	ODV
3356	01OC202_30_17	17	41292	1128	2009-10-23	2009-10-23	ODV
3355	01OC202_30_16	16	41291	1128	2009-10-23	2009-10-23	ODV
3354	01OC202_30_15	15	41290	1128	2009-10-23	2009-10-23	ODV
3353	01OC202_30_14	14	41289	1128	2009-10-23	2009-10-23	ODV

Download selected datasets in zip file

Status = Ready for Download + Download option

# CDI V1 – RSM: logged in as User

The screenshot displays the SEADATANET RSM interface. The main window shows a list of datasets with columns for ID, date, and count. A green arrow points from the 'Download selected datasets in zip file' button to a secondary 'Download Manager at Data Centre' window.

**Request Status Manager**  
Logout Help Home

**Pan-European infrastructure for Ocean & Marine Data Management**

**SeaDataNet**

ID	Date	Count
3372	01OC202 30	4
3371	01OC202 30	30
3370	01OC202 30	3
3369	01OC202 30	29
3368	01OC202 30	28
3367	01OC202 30	27
3366	01OC202 30	26
3365	01OC202 30	25
3364	01OC202 30	24
3363	01OC202 30	23
3362	01OC202 30	22
3361	01OC202 30	21
3360	01OC202 30	20
3359	01OC202 30	2
3358	01OC202 30	19
3357	01OC202 30	18
3356	01OC202 30	17
3355	01OC202 30	16
3354	01OC202 30	15
3353	01OC202 30	14

**Download Manager at Data Centre**  
Logout Help Home

**Pan-European infrastructure for Ocean & Marine Data Management**

**SeaDataNet**

**Personal overview of downloadable files at selected data centre**

User: pt1eaab

Zipfile name	Download	Remove from this list, once download complete
userpt1eaab-data_centre630-231009_result.zip	<a href="#">Download</a>	<a href="#">Remove</a>

Approved requests for data sets are combined in zip files, that you can download. These are prepared by the local data centre, that is responsible for managing and distributing the selected data sets. The zip file builds up during the day and each new approved request is added.

Please remove the file from this list, once your download has been successful.  
Note: automatically each zip file will be removed from your download list after 30 days!

[Close window](#)

User personal Download webpage at Data Centre

## CDI extra functionalities

- Numerous options for searching and drilling down of search results
- CDI XML format can handle points, detailed tracks and polygons as GML
- CDI Summary function for search results with statistics and drill-down function
- CDI Mapping supports OGC WMS services with option to add external WMS layers and vice versa to serve CDI as WMS – WFS layer to other portals
- A query and GIS layer configuration can be stored by users as a favourite and can be forwarded to other users as a URL
- Extra attribute included for linking to (pre)viewing services



# SeaDataNet CDI Search interface

The screenshot displays the SeaDataNet Common Data Index (CDI) V2 interface. A summary window is open, titled "Summary", which features a banner for "Pan-European infrastructure for Ocean & Marine Data Management" and "Summary of query results". The window contains a table of results with columns for "PER CDI PARTNER", "COUNTRY", and "DATASETS". An "Export" button is visible in the top right of the window. Below the summary window, a portion of the main search results table is visible, showing entries like "CTD\_G10 data set" from Bulgaria.

PER CDI PARTNER	COUNTRY	DATASETS
<a href="#">IFREMER / IDW/SISMER</a>	France	186103
<a href="#">National Environmental Research Institute, University of Aarhus, Department of Marine Ecology</a>	Denmark	164154
<a href="#">Swedish Meteorological and Hydrological Institute</a>	Sweden	100688
<a href="#">Marine Hydrophysical Institute</a>	Ukraine	95348
<a href="#">OGS, National Institute of Oceanography and Experimental Geophysics, Department of Oceanography</a>	Italy	89042
<a href="#">All-Russia Research Institute of Hydrometeorological Information - World Data Centre (RIHMI-WDC) National Oceanographic Data Centre (NODC)</a>	Russian Federation	57125
<a href="#">British Oceanographic Data Centre</a>	United Kingdom	48057
<a href="#">Hellenic Centre for Marine Research, Hellenic National Oceanographic Data Centre (HCMR/HNODC)</a>	Greece	41477
<a href="#">P.P.Shirshov Institute of Oceanology, RAS</a>	Russian Federation	38171
<a href="#">Spanish Oceanographic Institute</a>	Spain	31139
<a href="#">Southern Scientific Research Institute of Marine Fisheries and Oceanography</a>	Ukraine	19159
<a href="#">German Oceanographic Datacentre (NODC)</a>	Germany	17278
<a href="#">Rijkswaterstaat Waterdienst</a>	Netherlands	16398
<a href="#">Institute of Marine Research - Norwegian Marine Data Centre</a>	Norway	14793

- Summary function for results with drill down option



# SeaDataNet CDI Search interface

SeaDataNet Common Data Index (CDI) V2

Tools

Layer control Expand Add layer

Grid Lines  
Regional sea  
Regional sea labels

CDI Add WMS layer

Please, specify which layers you want to add to the SeaDataNet interface.

Add a wms layer:

Select a layer Available

- SDB\_PRODUCT
- SDB\_TRACKLINE
- emodnetcontours
- emodnetworldlinesshape
- emodnetworldshape
- northseawrecks

Selected

- emodnet\_v2\_midwater
- emodnet\_v2\_shallow\_b02
- emodnet\_v2\_shallow\_single\_colour

Sort  
Top  
Up  
Down  
Bottom

Give a name if you want to combine the selection in one layer

Back Add layer

Go

Next 20

Show

#	Data
SI29	
SI29	
SI2900802022.bot	Spain 20080317 > Dissolved gases > Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus discrete water samplers

- Add OGC WMS layers – EMODNet Hydrography

# SeaDataNet CDI Search interface

SeaDataNet Common Data Index (CDI) V2

**Tools**

Enlarge Help  
Position Index

Datasets 0

Basket Reset

Add to basket

**Layer control** Expand Add layer

- CDI entry Points ?
- CDI entry Tracks ?
- CDI entry Areas ?
- emodnet\_v2\_midwater
- emodnet\_v2\_shallow\_b0 2
- emodnet\_v2\_shallow\_si ngle\_colour
- Grid Lines

Display all selected records  
 Only selected records in results list

**Listing results**

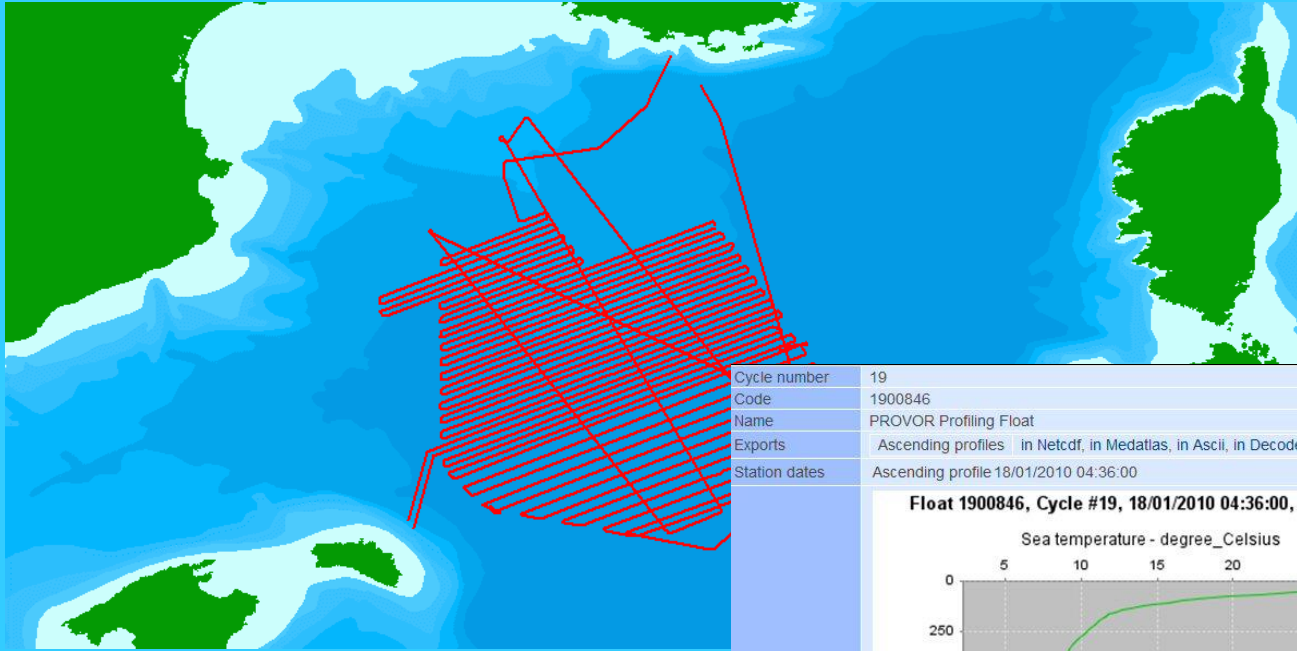
20  50  100 records **Go**

[Summary](#) [Zoom to selected](#) [Export result](#) | [Store query](#) | [Refine query](#) | [New query](#) | Found 190341 | Show (1-20) | Previous | [Next 20](#)

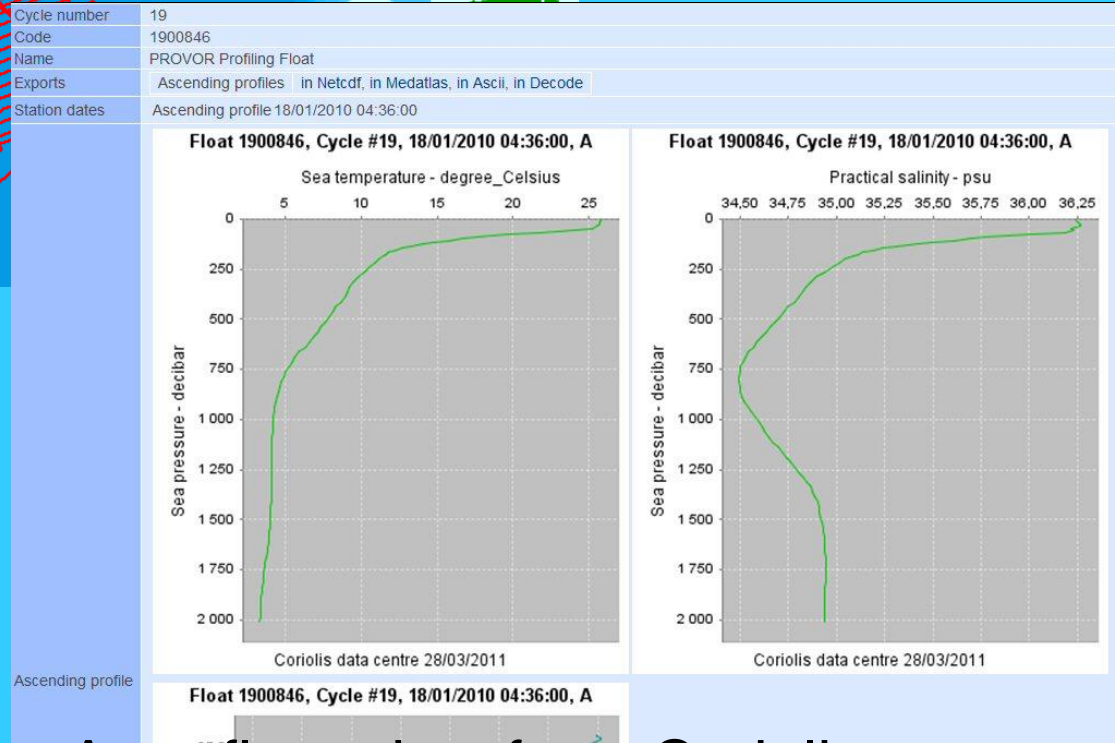
#	Data set name	Country	Start date	Variables measured	Instrument / gear type	Show
<input type="checkbox"/>	SI29200802022.bot	Spain	20080612	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus > Dissolved gases	discrete water samplers	
<input type="checkbox"/>	SI29200802022.bot	Spain	20080422	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus > Dissolved gases	discrete water samplers	
<input type="checkbox"/>	SI29200802022.bot	Spain	20080317	Administration and dimensions > Administration and dimensions Biological oceanography > Pigments Chemical oceanography > Nutrients > Carbon, nitrogen and phosphorus > Dissolved gases	discrete water samplers	

OGC WMS layers added – EMODNet Hydrography

# CDI – Example of GML object and Example of preview service



Multibeam survey

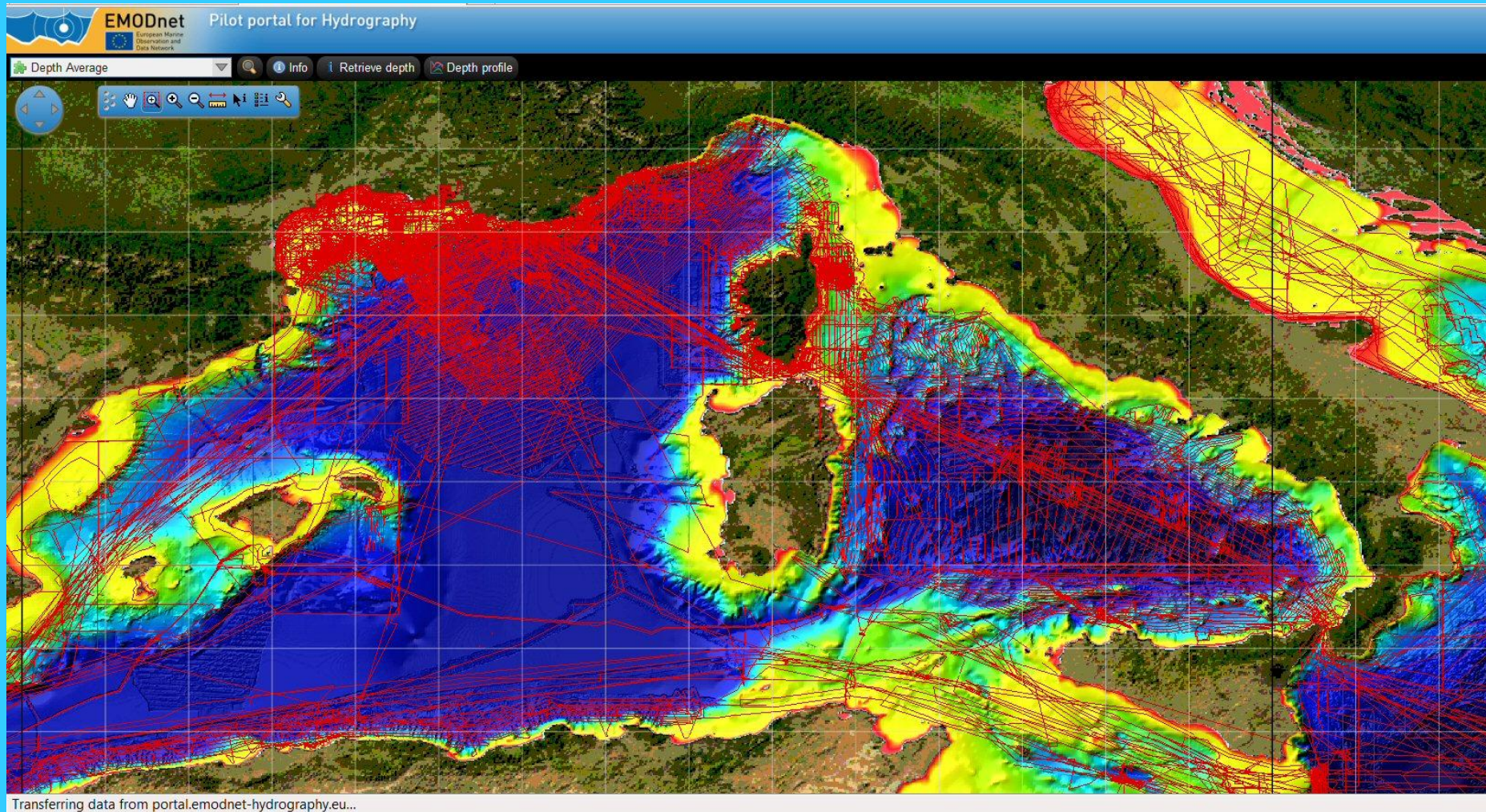


Argo float view from Coriolis



# OGC WMS – WFS support

- CDI entries from the CDI portal are available as a series of OGC WMS and WFS services, e.g. for inclusion in the EMODNet portals.





# CDI Service as common service in many projects

Geo-Seas Overview | Metadata | Data access | Products | Standards & Software | Meetings | Promotion | Partners

Pan-European Infrastructure for management of marine and ocean GEOLOGICAL AND GEOPHYSICAL DATA

Welcome to Geo-Seas

Geo-Seas is implementing an e-Infrastructure of 26 marine geoscientific data centres, located in 17 European maritime countries. Data are enabled to identify, locate and access pan-European, harmonised and federated marine geological and geophysical datasets and derived data products held by the data centres through a single common data portal.

The aims of Geo-Seas are aligned with European directives and recent large-scale framework programmes on global and European scales, such as GEOS and GMES, EMODNET and INSPIRE.

www.geo-seas.eu

EMODnet Pilot portal for Chemistry

Welcome to EMODNET Chemical portal

EMODNET is a data management system for a real operational European Marine Observation and Data Network, supported by the Directorate-General for Maritime Affairs and Fisheries (DG MARE).

EMODNET aims to assemble fragmented and inaccessible marine data into interoperable, continuous and publicly available data streams for complete marine users.

EMODNET Chemical will be focused on the groups of datasets required for monitoring the Marine Strategy Directive:

1. synthetic compounds (i.e. pesticides, herbicides, pharmaceuticals);
2. hydrocarbons;
3. nutrients;
4. metals and other inorganic and physico-chemical substances;
5. organic matter (e.g. from wastes or manure);
6. hydrocarbons deriving from biogenic sources.

EMODNET Chemical will concern the following geographical regions:

- Atlantic
- Mediterranean
- Black Sea

www.emodnet-chemistry.eu

Black Sea SCENE

Welcome to the Upgrade BlackSeaScene website

The IP-GRADE BS-SCENE project is an FP7 EU funded project running from 2009-2011 that is building and extending the existing research infrastructure (developed under FP6 project BlackSeaScene I) with an additional 19 marine environmental institutes/organizations from the 6 Black Sea countries, implementing IP-BS SeaSustables project standards regarding common communication standards and adapted technologies, will ensure the open access interoperability. Main output will be on-line access to in-situ and remote sensing

www.blackseascene.net

SeaDataNet

Common Data Index (CDI) V2

Search filters: Variable groupings, Sampling intervals, Coordinate, Frequency, Wavelength, Country, Measuring area type, System type, Atmosphere parameters, Sea/terrestrial zone structure, Coastal structure, Depth (m), Water, Layer, Water depth (m), Country.

SeaDataNet CDI Service

CaspInfo

Project News

Conference announcement: Black Sea Outlook - 31 Oct - 4 Nov 2011

Resolution of conference "Climate and Water Balance Changes in the Caspian Region" (October 2010)

Regional News

www.caspinfo.net

EMODnet Portal For Physical Parameters

Welcome to EMODnet - Physical Parameters

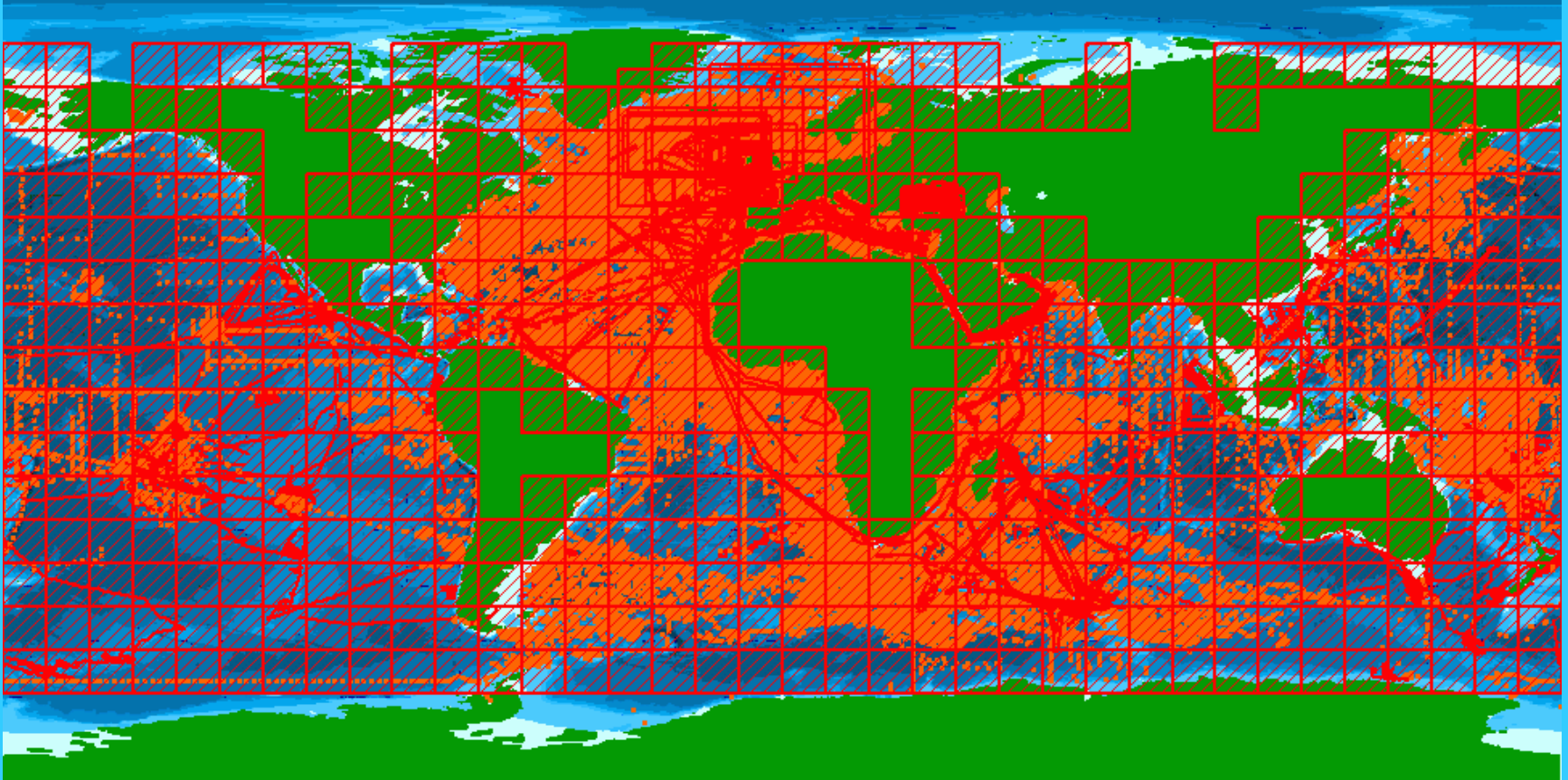
This EMODnet - Physical Parameters portal is one of the portals, that is being developed as part of the EMODnet preparatory actions for the European Marine Observation and Data Network (EMODNET).

www.emodnet-physics.eu

www.emodnet-hydrography.eu



# CDI – Data Coverage – 18 October 2011



**1.055.491** CDI entries from **29** countries and **65** data centres and **379** originators for physics, chemistry, geology, geophysics, bathymetry and biology; years **1800 – 2011**; **88%** unrestricted or under SeaDataNet licence

# SeaDataNet II – WP5 Activities

- **Involved partners:** IFREMER, MARIS, BODC, BSH, SMHI, IEO, HCMR, OGS, RIHMI, ENEA, METU-IMS, IMR, NERI, ICES, MI, IHPT, NIOZ, RBINS-MUMM, VLIZ, MRI, FMI, IMGW, MSI, LHEI, EPA, SIO-RAS, MHI-DMIST, IO-BAS, NIMRD, TSU-DNA, IOF, NIB, UOM, OC-UCY, IOLR, CNR, IBSS, UniHB, TUBITAK-MAM, IMBK, SHOM, (INEWI), RSHU, INRH, INSTM, and ENSSMAL.

## First priority

- Establishing that the CDI data services of present connected data centres are still functioning well and assuring robust operations  
Action: Self-testing by existing data centres and arranging improved constellation, where needed
- Production and submission of more CDIs aiming for complete and up-to-date coverage
- Connecting extra data centres to the CDI infrastructure. This concerns: ICES, CNR, UniHB (PANGAEA-MARUM), TUBITAK-MAM, IMBK, SHOM, (INEWI), RSHU, and the not yet connected INRH, INSTM, and ENSSMAL.

## Activities to undertake for CDI connection

- Create a testset of CDI metadata records, using MIKADO XML editor, and send to MARIS for a check
- Create a testset of ODV files, using NEMO, and test these yourself via input into ODV software and send to MARIS for a check
- Install and configure the Download Manager (version 1.1f) and complete the coupling table with links between test CDIs and test ODV data files
- Test the online connection from the CDI test system to your Download Manager
- Create a considerable volume of CDI files and related datasets in ODV format or as database queries. Send the CDI files to MARIS, put the ODV files on the server with DM or arrange the appropriate database queries and synchronise the coupling table
- After approval of CDI records and quality check of downloadable ODV files you can move to production.

# Upgrading of CDI services

- As part of WP8 and WP9 a number of developments will be undertaken for upgrading various aspects of the CDI service. These have implications for the systems operated by connected data centres and the CDI portal.
- Upgrading in 2 cycles, at data centres level and at central level
  - **Cycle 1 (M18):**
    - CDI with INSPIRE conformity (ISO 19139)
    - Harvesting mechanism for exchange between data centres and portal
  - **Cycle 2 (M42):**
    - operational oceanography
    - viewing and subsetting via extended CDI (O&M, SensorML, ..)
    - machine to machine interfacing
    - handling biology data

# Activities

- **Installation activities:** Upgrades will have to be installed, configured and tested. This will be guided by well written manuals, a support desk for assistance and trouble shooting, the instructions and hands-on training during the Training Workshops (see WP3) and overall coordination by the Technical Coordinator assisted by the Technical Task Group.
- **WP5.1: Management of the CDI, data discovery and access services (M1 – M48)**
  - handling CDI entries from all data centres
  - managing extra CDIs from associated projects
  - Guiding and connecting new data centres
- Task lead by MARIS
- Monitoring by HCMR as part of WP2



# Activities

- **WP5.2: Connecting new and not yet connected existing data centres to the CDI service (M1 – M6)**
  - New data centres – Task lead MARIS
  - Not yet connected data centres – Task lead IEO
  
- **WP5.3: Installing and configuring the upgraded MIKADO tool with OGC CS-W harvesting capabilities at the SeaDataNet data centres and central portal for improved exchange of CDI updates and new entries (M9 – M18)**
  - The installation will be done gradually. Once full scale, then also a central CS-W CDI service will be configured to provide a machine interface for ISO 19139 based XML CDI output to other servers to support the wider interoperability of SeaDataNet (e.g. INSPIRE, GEOSS, IODE ODP). The CS-W output services are configured next to the existing User Interfaces.
  - Task lead by MARIS

# Activities

- **WP5.4: Installing and configuring the upgraded components at the SeaDataNet data centres and central portal for supporting operational oceanography (M29 – M36)**
  - Streamlining the flow and standard description of signals from in situ instruments (e.g. buoys, floats, gauges, poles, ferrybox, drifters) to the data centres. WP8 and WP9 will establish common SeaDataNet profiles of OGC standards such as SensorML, O&M, SOS, for metadata and data transfer, in connection with improved functionality for the EDIOS services. These extensions will influence the complete operational chain for the CDI service. These upgrades must be installed and configured at data centres and monitoring agencies (EuroGOOS members, others) to give structured access to both archived data sets and real-time data.
  - The upgrading will be combined, where possible, with new visualisation and data delivery services (see WP5.5.)
  - These innovations will be introduced at the Training Workshop 2 (see WP3)
  - Task lead by MARIS and IFREMER

# SeaDataNet II – WP5 Activities

- **WP5.5: Installing and configuring new visualisation and data delivery services at the SeaDataNet data centres and central portal (M29 – M42)**
  - WP9 will deliver new visualisation services for previewing (quick look), subsetting and virtual access to data in the Discovery Service, before, or in stead of, downloading. OGC standards such as WFS, and SensorML, O&M, and SOS will be adopted where possible, or alternatively OPeNDAP services. These give new standard SeaDataNet services that have to be installed at the distributed data centres and tuned with the portal.
  - WP8 will give additional data exchange formats to make SeaDataNet fit for more domains, such as handling marine biology data, the dialogue with INSPIRE, upgrading of the NetCDF (CF) standard in cooperation with UNIDATA (USA).
  - These extensions might result in an upgrading of the Download Manager software
  - These innovations will be introduced at the Training Workshop 2 (see WP3)
  - Task lead by MARIS and IFREMER

# Activities

- **WP5.6: Installing and configuring new machine to machine interface at the SeaDataNet central portal in agreement with the SeaDataNet data centres (M19 – M24)**
  - The present CDI interface is a human to machine interaction, fine for individual users.
  - The CDI services will be extended with a machine to machine interaction in support of regular and operational metadata and data exchanges with systems of intermediate user communities such as, for example, the GMES Marine Core Service (MyOcean) for physical oceanography data sets. The machine to machine interface in this WP will deal with metadata and archived data.
  - Task lead by MARIS and IFREMER



# MILESTONES

- **M6:** The CDI user interfaces gives access to CDI and data sets of the new and the not yet connected data centres
- **M18:** End of 1st innovation cycle - All portal services and SeaDataNet data centres make use of CS-W harvesting and ISO 19139 for updating EDMED, EDMERP, CSR, EDIOS and CDI entries
- **M24:** Regular aggregation of metadata and data following specified user community profiles and delivery from machine to machine
- **M42:** End of 2nd innovation cycle – Upgraded central CDI data discovery and access service with capabilities for handling O&M and SensorML profiles, new visualisation services and more data types.