MyOcean
Copernicus Marine Service
Architecture and data access Experience

Sophie Besnard
CLS, Toulouse, France

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MyOcean Story

MyOcean Challenge & Success

MyOcean Service

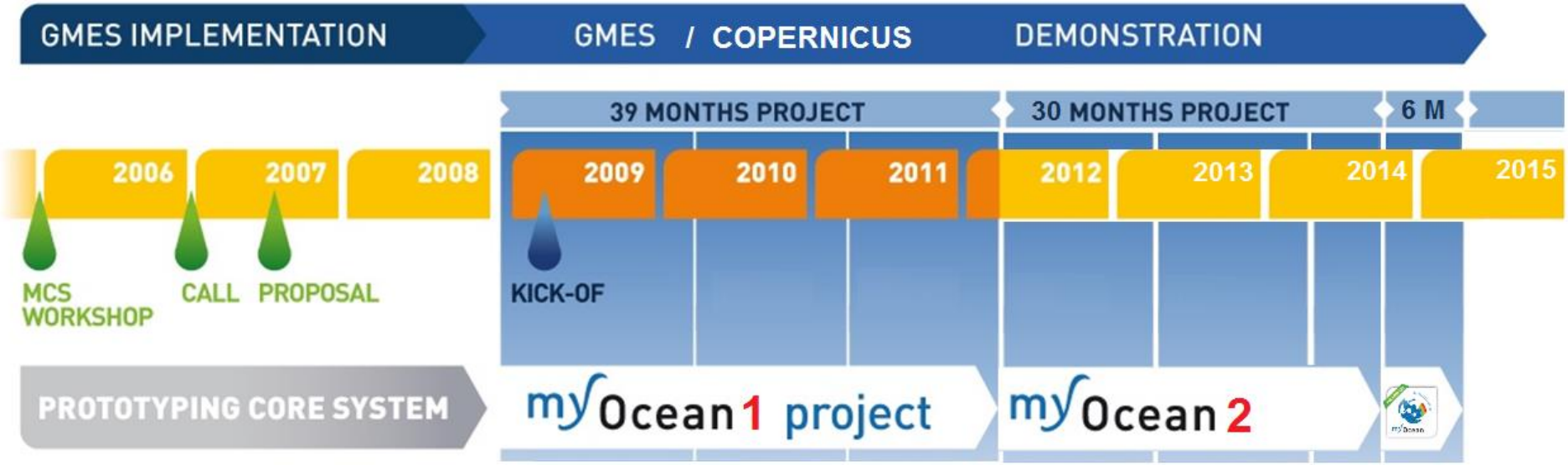
MyOcean System

MyOcean Engineering

MyOcean towards CMS

http://www.myocean.eu/

MyOcean Story



MyOcean1

integration of a System of systems - Strong engineering part to structure and manage the project - Requirements coming from EU stakeholder mainly.

MyOcean2

Service part takes the lead - More user oriented with integration of **users feedbacks** in the continuous improvement process. Strong improvements in terms of process and operationality.

MyOcean-FO

Consolidation of the System and the Service - Continuity of MyOcean 2 to reach full **operationality**.

CMS Copernicus Marine environment monitoring Service

Operational service with its user community and strong integration in the Oceanographic and industrial world.

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MyOcean: Initial postulat

Provide a **unified** marine **data access service** (interoperable, INSPIRE)

with **lots of** (heterogeneous) data **providers** who want keep hold on **their data** and **their production system** at home (flexible, federative)

MyOcean : Five objectives

Today MyOcean delivers:

1. A **core** service (easy access, reliable and sustainable)
2. An **integrated** capacity for production & service
3. A **user-driven** service
4. A **pan-European** organization
5. A **methodology** for development and operations

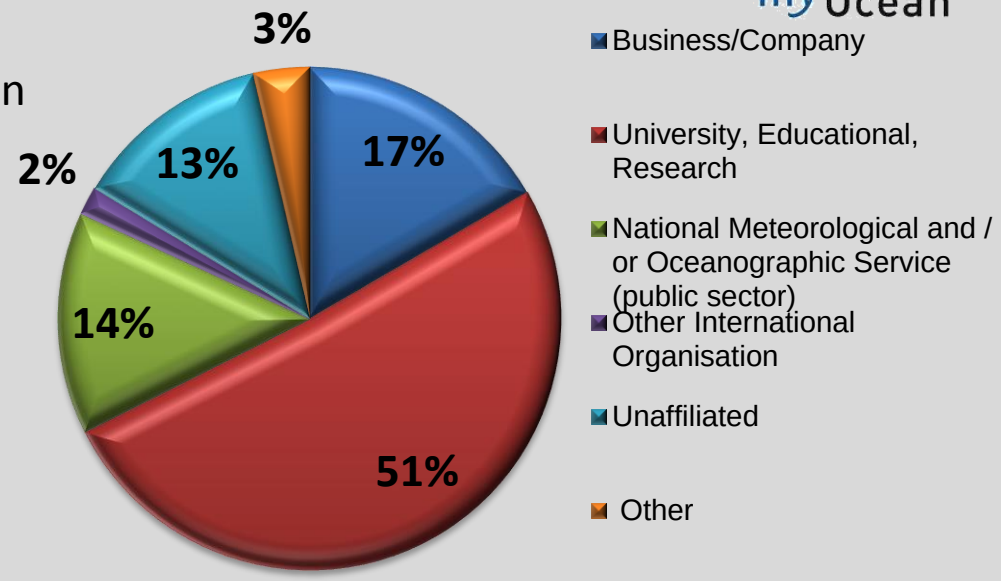
→**The initial postulat is reached successfully**

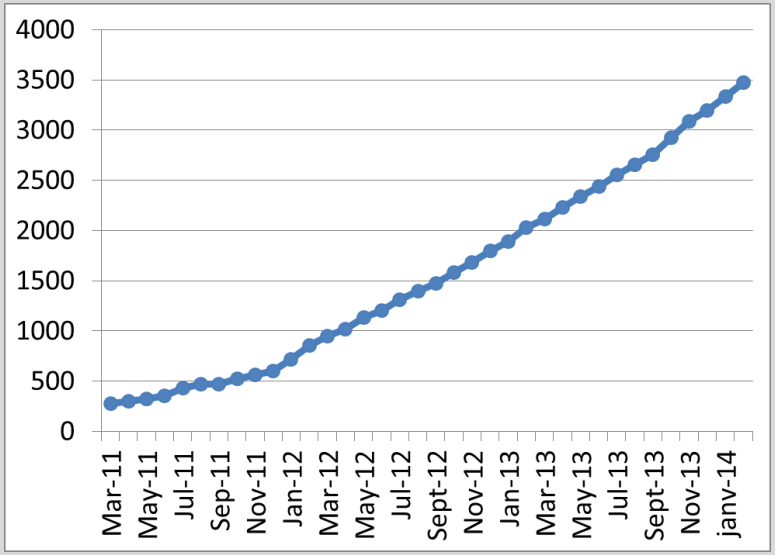
MyOcean key success points

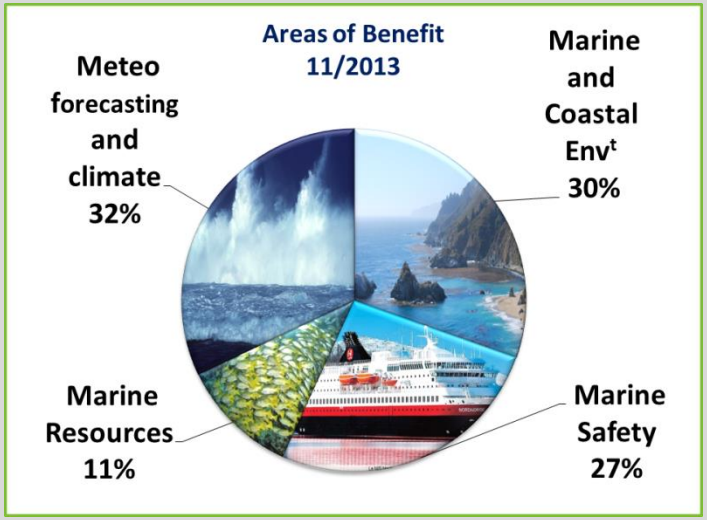
- A **unique access point** service (unique centralized Portal & Service Desk)
- Not only a system but a user-driven service relying on a **distributed scalable organization**
- Addressing both registered / regular Users (Met'Offices, Navies,…) and occasional Users (Researchers, EU Citizen, …)
- Addressing **sectoral activities**
- Discovery, visualization and download services through an **online interactive catalogue** covering all products
- **Open & Free Access** (EU data policy)
- A common set of information, documentation, content and formats
- All data served through **standard interfaces**
- Mainly compliant with the **INSPIRE** directive (and on track to be fully)
- **Monitoring and reporting** capabilities (product, system, users) for better service provision
- **User feedbacks** management and technological watch for continuous improvement
- Configuration and change management
- **Continuous increase & improvement** of the services and products and their quality level

Users and Service

- End of 2014:
  - Number of **registered** users: more than **4500**
  - New users rate: **> 110 new users/ month**
  - Users depending **operationally** on MyOcean : **130**
  - **Downstream providers: 1076 (31%) –** Met/oceano. Centres + Business Cies.







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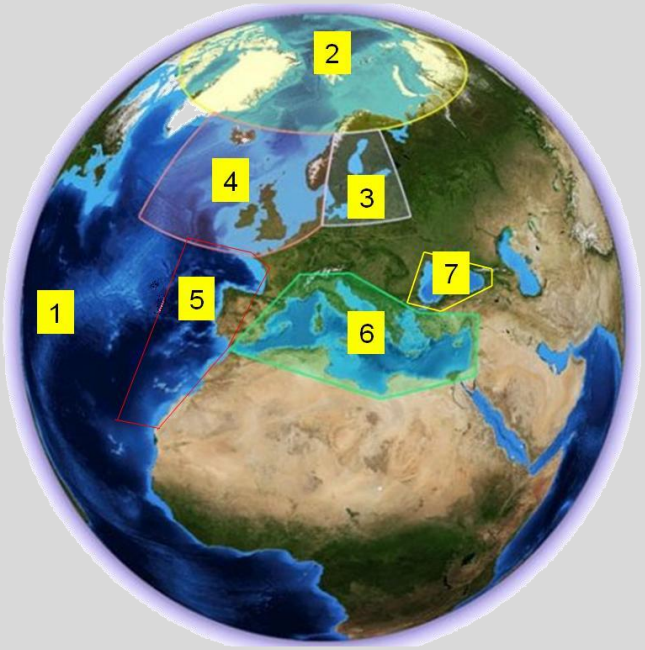
A comprehensive and consistent description of the ocean

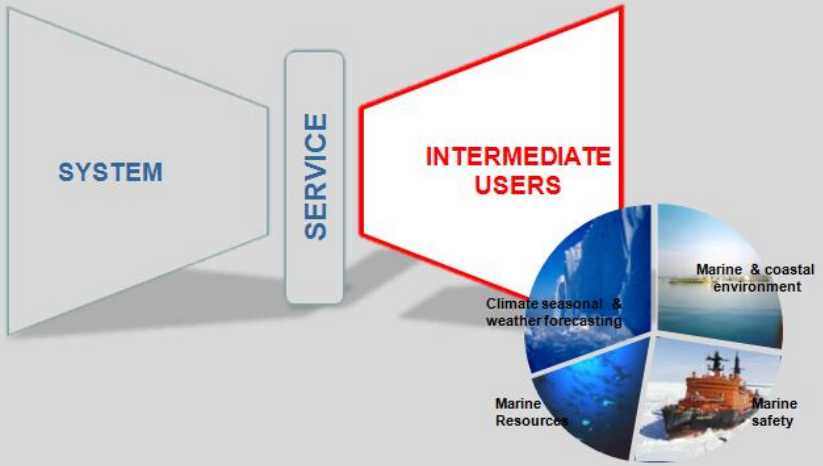


- 1. Global
- 2. Arctic
- 3. Baltic
- 4. NWS
- 5. IBI
- 6. Med Sea
- 7. Black Sea

- All areas

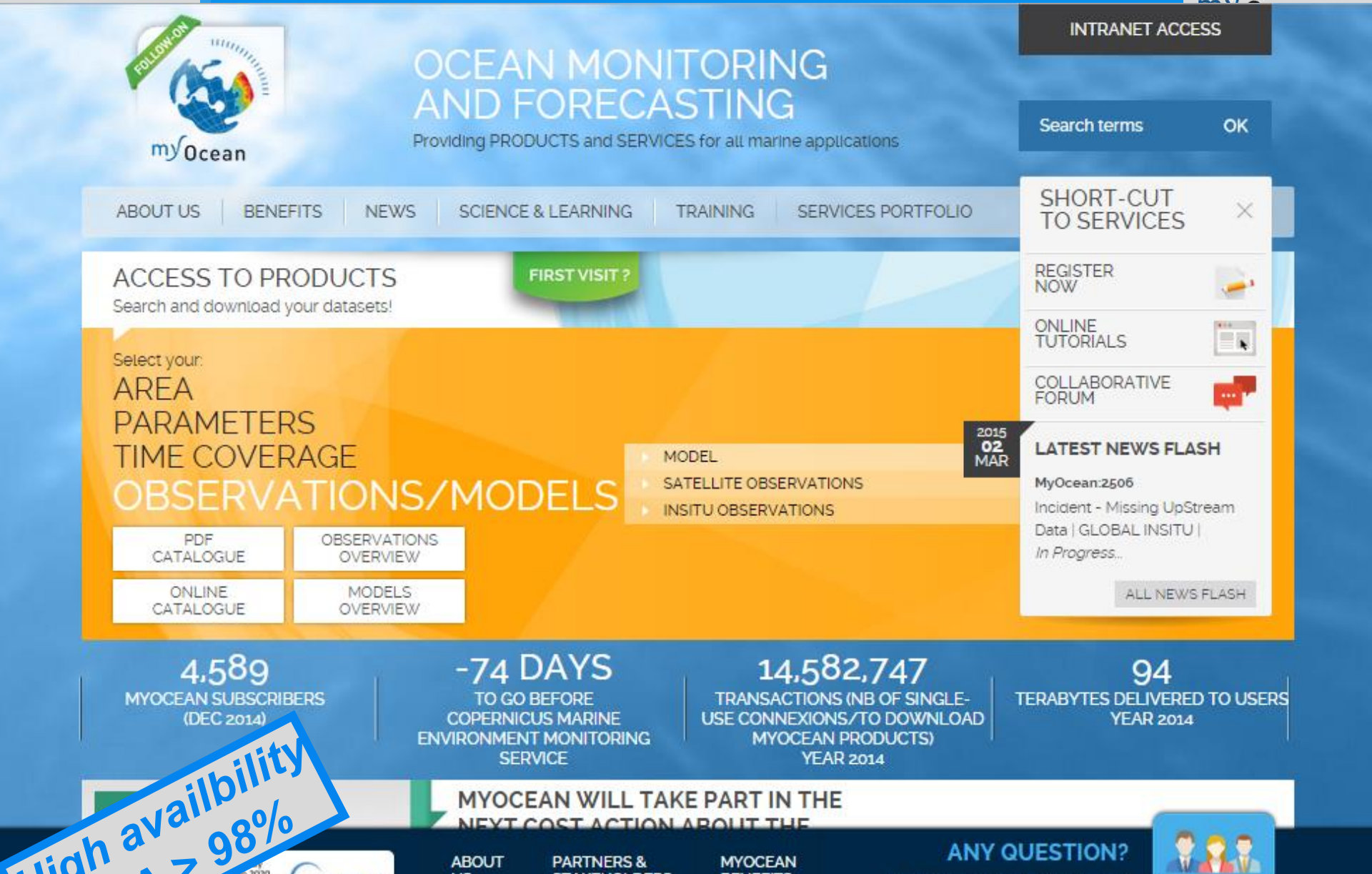
- In Situ observations
- Satellite Observations
- Assimilative Models

- Real-time
- Reanalyses



- Sectoral Users

MyOcean Web Portal
www.myocean.eu



High availbility ≥ 98%

ONLINE CATALOGUE

CATALOGUE PDF

FIRST VISIT ?

MY CART 0 product(s)

MyOcean Catalog

YOUR

Found 127 products matching your criteria.

KEYWORD SEARCH SEARCH

- Global Ocean (40)
- Arctic Ocean (29)
- Baltic Sea (24)
- European North-West Shelf Seas (30)
- Iberia-Biscay-Ireland Regional Seas (23)
- Mediterranean Sea (28)
- Black Sea (23)

PARAMETER

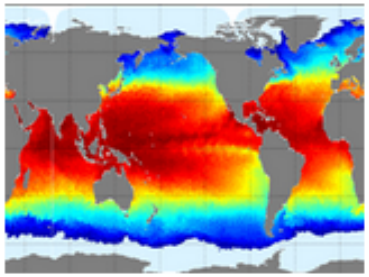
- All parameters

GLOBAL OCEAN 1/12° PHYSICS ANALYSIS AND FORECAST UPDATED DAILY

Numerical-model, Sea-ice, Sea-level, Temperature, Salinity, Currents, Nrt-forecast, Global-ocean

GLOBAL_ANALYSIS_FORECAST_PHYS_001_002

The Operational Mercator global Ocean analysis and forecast system – at 1/12 degree - is providing 7 days of 3D global ocean forecasts updated daily and ocean analysis updated weekly. The time series start on January 1st 2013 and is aggregated in time in order to reach a two full year's time series sliding window. This product includes daily mean files of temperature, salinity, currents, sea level and ice parameters from the top to the bottom of the Ocean over the Global Ocean.



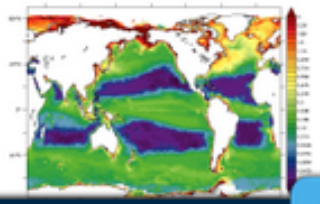
MORE INFO ADD TO CART

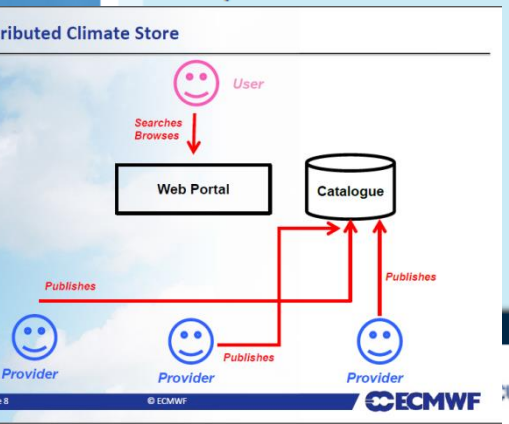
GLOBAL OCEAN BIOGEOCHEMISTRY ANALYSIS

Numerical-model, Ocean-chlorophyll, Ocean-chemistry, Ocean-biology, Near-real-time, Global-ocean

GLOBAL_ANALYSIS_BIO_001_014

Product GLOBAL_ANALYSIS_BIO_001_014 produced by Mercator Ocean in Toulouse, France, is a global Ocean Biogeochemical analysis product at 1/2°. It supersedes former product GLOBAL_ANALYSIS_BIO_001_008b. It provides 3D global ocean biogeochemical weekly mean analysis for





MyOcean VIEW ACCESS

BACK TO SEARCH

MY CART

GLOBAL_ANALYSIS_FORECAST_PHYS_001_002

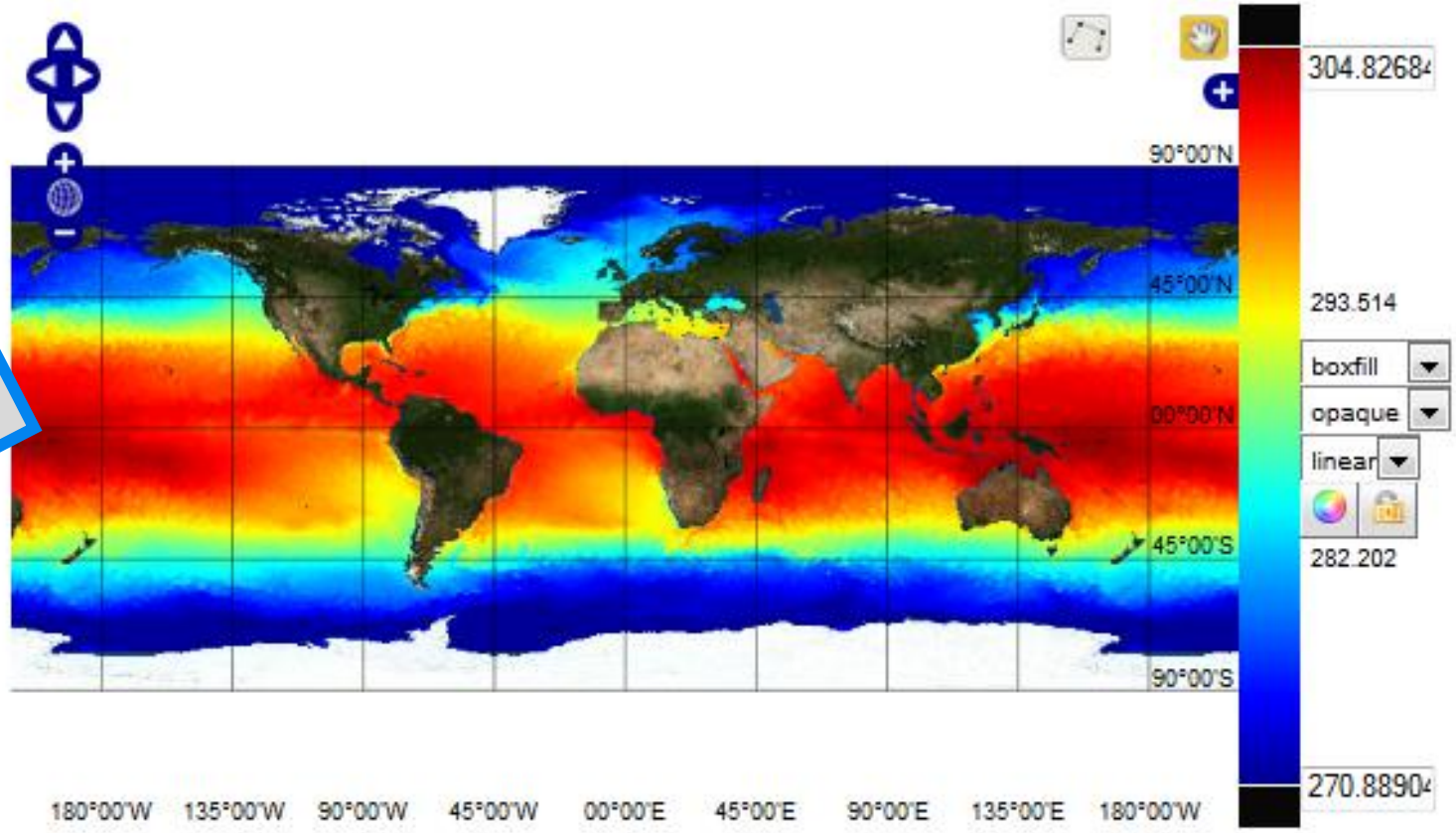
Global Ocean 1/12° Physics Analysis and Forecast updated Daily

Product id: GLOBAL_ANALYSIS_FORECAST_PHYS_001_002

Dataset: daily mean fields from Global Ocean Physics Analysis and Forecast updated Daily

Variable: sea_water_potential_temperature

Units: K **Time:** 2014-12-17 12:00:00.000Z **Depth (m):** -0.49



Documentation Open in Google Earth Permalink Export to PNG

MyOcean Viewing

CLS
COLLECTE LOCALISATION SATELLITES

MyOcean Download

MyOcean DATA ACCESS

BACK TO SEARCH

MY CART

Global Ocean 1/12° Physics Analysis and Forecast updated Daily

GLOBAL_ANALYSIS_FORECAST_PHYS_001_002

DATASET SELECTED GLOBAL-ANALYSIS-FORECAST-PHYS-001-002

GLOBAL-ANALYSIS-FORECAST-PHYS-001-002

DOWNLOAD

DATA SET FILTERS

GEOGRAPHICAL AREA
(Default = Product region)

Full region

90

180

-80

ATE 2014-12-23 12:00:00

EPTH 0.4942

SCRIPTION	STANDARD NAME	UNITS
thward velocity	northward_sea_water_velocity	m s-1
stward velocity	eastward_sea_water_velocity	m s-1
hice	sea_ice_thickness	m
vice	sea ice northward velocity	northward_sea_ice_velocity	m s-1

NLOAD

BACK TO DATASET SELECTION

GLOBAL-ANALYSIS-FORECAST-PHYS-001-002

You can check the size of your request here

SUBSETTER

The following criteria are taken into account with subsetting:

- Geographical area
- Depth
- Time range
- Variables

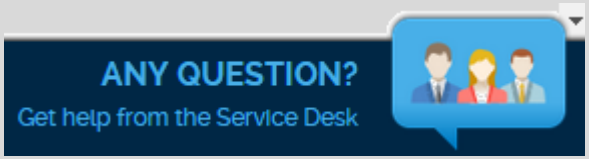
VIEW SCRIPT

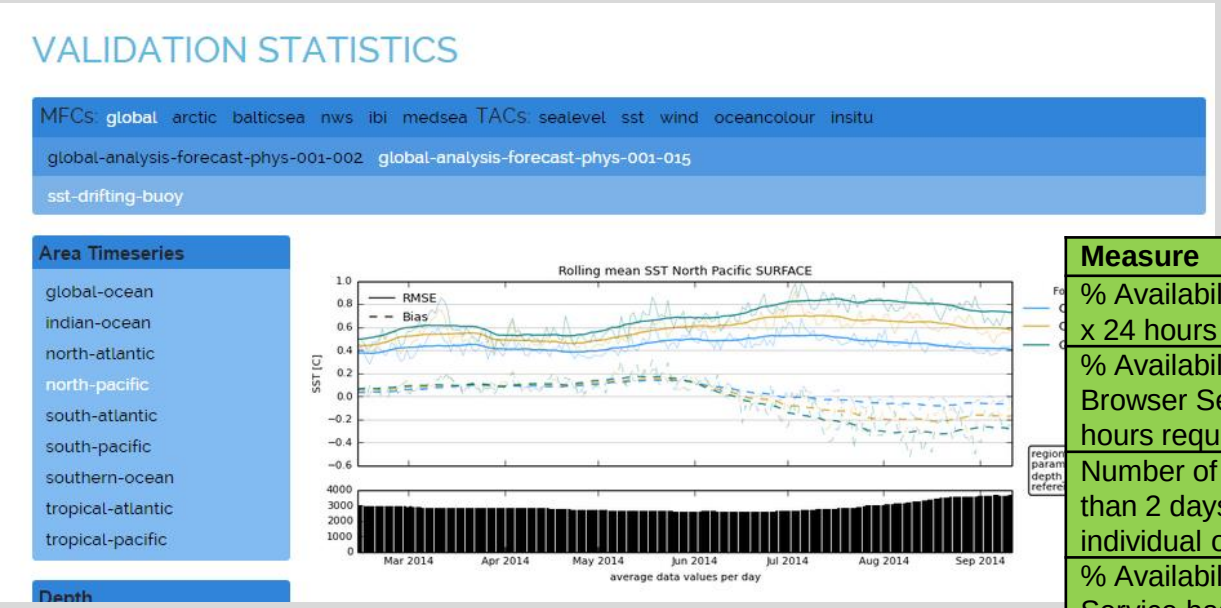
The maximum amount of data that can be downloaded is 2048 MB.

DOWNLOAD 151.356 MB

MyOcean additional services

- Service desk to support and help End Users and Data Providers. A Central service desk is supported by a distributed organization of local service desks
- Quality control on product and service (online and through reports)
- Service continuity and transition management
- User Workshop
- Online documentation on the product
- …





Measure	*Dec*	*Jan*
% Availability of MIS based on 7 days x 24 hours requirement	100%	100%
% Availability of MIS Catalogue Browser Service based on 7 days x 24 hours requirement.	99,88%	100%
Number of times the outage was more than 2 days (x) over number of individual outages (y)	0/1	0/0
% Availability of Authorisation Interface Service based on 7 days x 24 hours requirement	100%	100%

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From data production to downstream applications through standard web services

1 Web portal

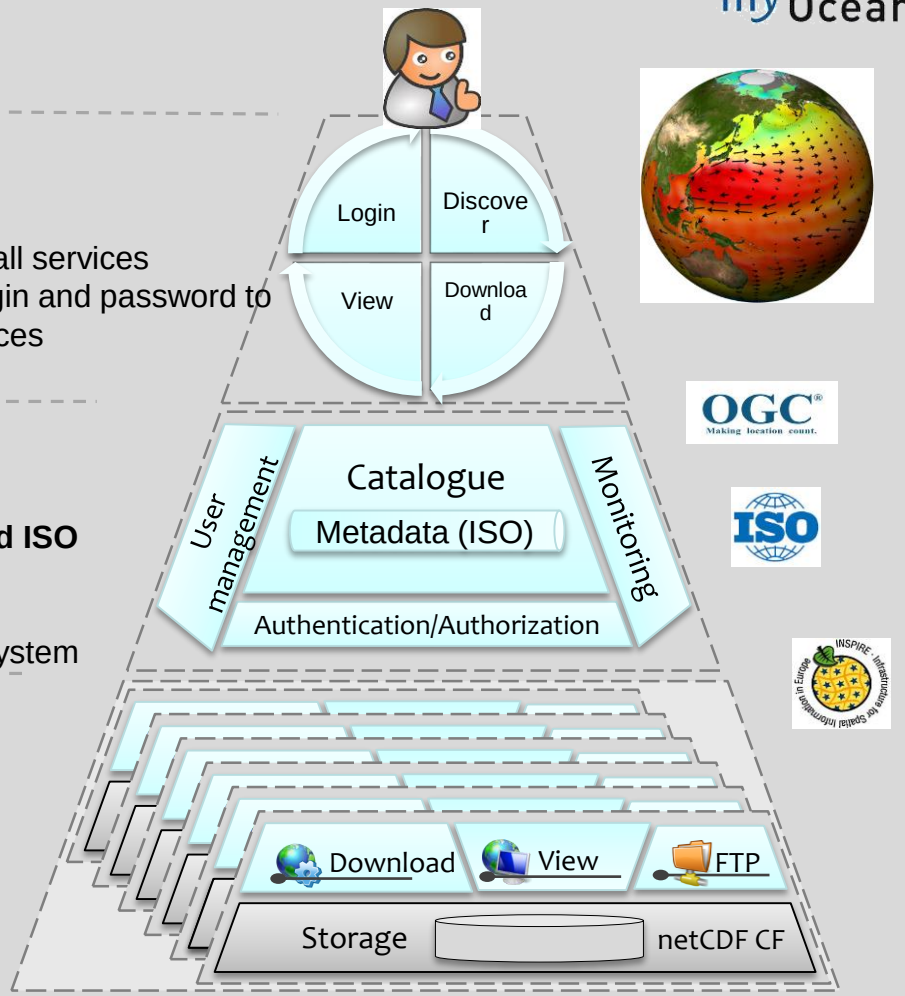
- **Centralized** system
- Offer a **single entry** to all services
- Users have a unique login and password to access all MyOcean services

1 Information system

- **Centralized** system
- Provide a catalogue build on **OGC and ISO standards (INSPIRE directive)**
- Provide administration functionalities
- Provide a centralized authentication system

24 Dissemination units

- **Distributed** systems over Europe
- Provide machine to machine interfaces to download and view data
- All DUs are connected to the centralized authentication system
- Authorization can be configured in the DU: a user profile can access certain datasets and not others
- All DUs are monitored centrally: system monitoring and transaction accounting

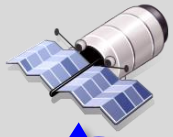


A pan-European system organization to produce marine information

- 24 DU
- 52 PU
- 59 partners

- 127 products / 561 datasets
- 94To delivered to the user in 2014

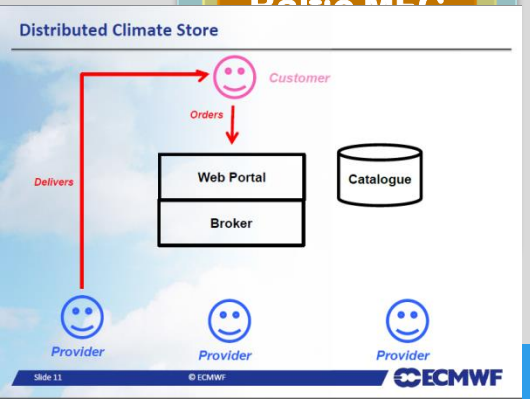
Functional Overview



SL TAC
OC TAC
OSI TAC
In Situ TAC

Production Centres

Global MFC
Arctic MFC
Baltic MFC



Monitoring
•User Transaction
•Production
•System Monitoring

Central Information System (CIS)

MyOcean Information System (MIS)

User Interface System (UIS)

- Monitoring Dashboard
- Static metadata
- User Administration

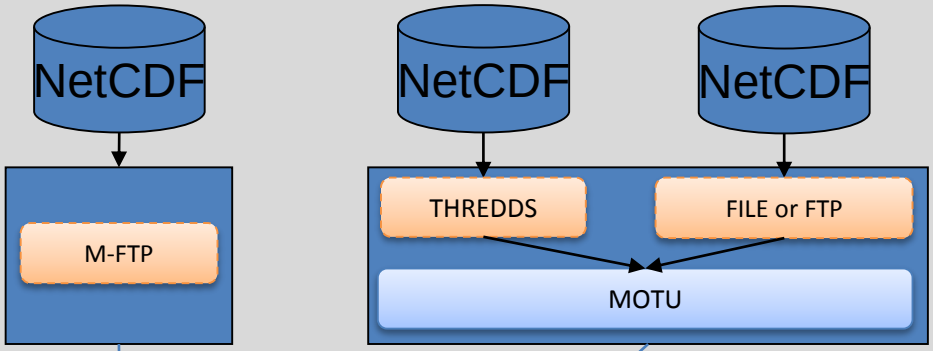
Download

View

Catalogue
User registration

Download Service: technical overview

Server side

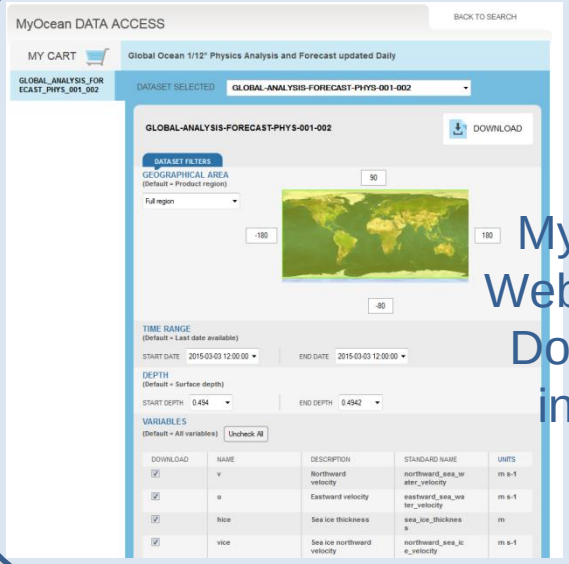


- Gridded data:
  TDS or File + Motu
- In situ data MyOcean
  FTP (authenticated)

Metadata (XML)
Data(NetCDF files)

Client side

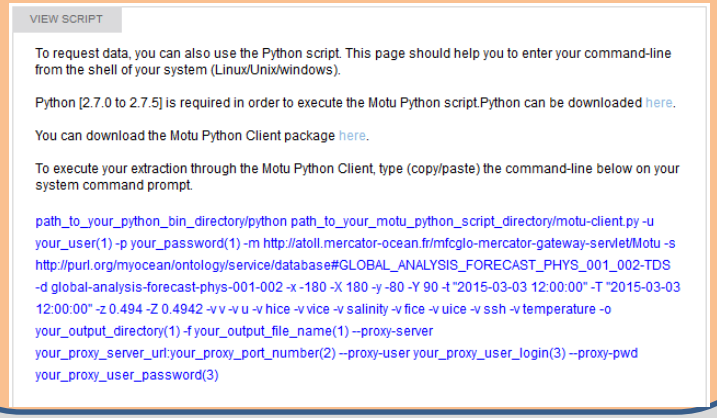
HTML, Javascript



MyOcean Web Portal Download interface

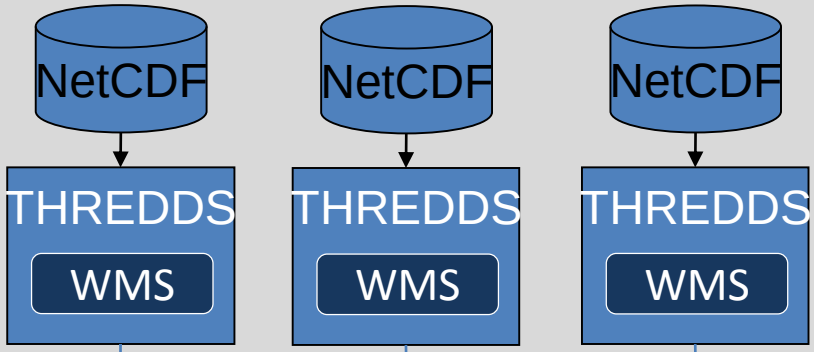
Script downloading

Python Command line



View Service: technical overview

Server side



- Gridded data: THREDDS + ncWMS
- In situ data Oceanotron + WMS frontdesk

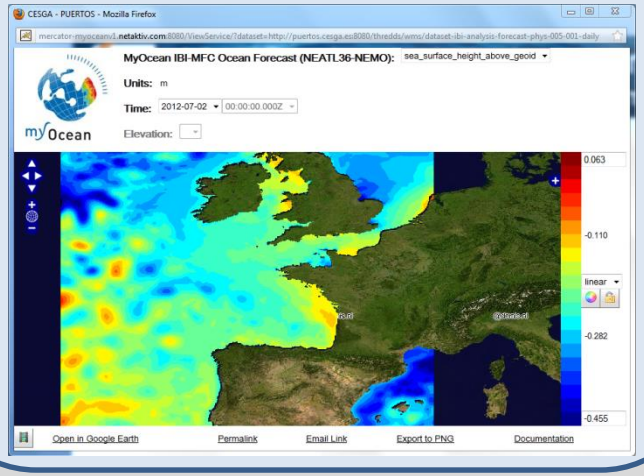
Metadata (XML)
Images (PNG)

Client side

Background Maps

MyOcean Web Portal Dynamic View

HTML, Javascript



Third-party WMS clients.

e.g. EEA Eye On Earth)

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Engineering Success : visible part

From

- good scientific algorithms
- good system prototype (operate by experts only)
- FTP services

To

- Service with strong availability, timeliness, robustness
- SLA to allow End Users to rely on us to create downstream services

- Only one point of contact for user : one main service desk, one catalogue, one Graphic user interface for download or View
- Complexity of 54 Production units, 24 Dissemination units hidden

- Still Good scientific algorithms, ie the best products

- One major release by year (big step)
- Quaterly small releases for the flexibility, dynamism
- Taking into account the user needs and feedbacks

Engineering Success : hidden part

- Mastering of standards and strong experiences in system engineering and service engineering

- Good rhythm : Continuous adaptation of project methodology according to partners feelings (Implies partners communication)

- Lot of Sensitization and Training (and we should have done even more to get better result or at least with less suffering !)

- Lot of communication during integration and testing phases (IVV).

- Change management and release management : Good rhythm between
  - dynamism (user point of view),
  - flexibility (partners point of view),
  - and number of IVV phases by years (cost and stress).

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MyOcean: Next Steps

- Transition to Copernicus Marine Environment Monitoring Service (May 1st, 2015)
  - Service Continuity
    - Insure System Operations without disruption from May 2015
    - Adaptation to new context, new partners, new interfaces, new products
  - Support for transition
    - Technical support on new-comers
    - Continuous technical support to users
  - Put Marine Copernicus on track
    - Consolidate current System
    - Analyze feedbacks from MyOcean experience

END