

# DATA-MEQ working group Progress made on 2015 recommendations

*DataMEQ Working group*

24<sup>th</sup> May 2018 Brussels

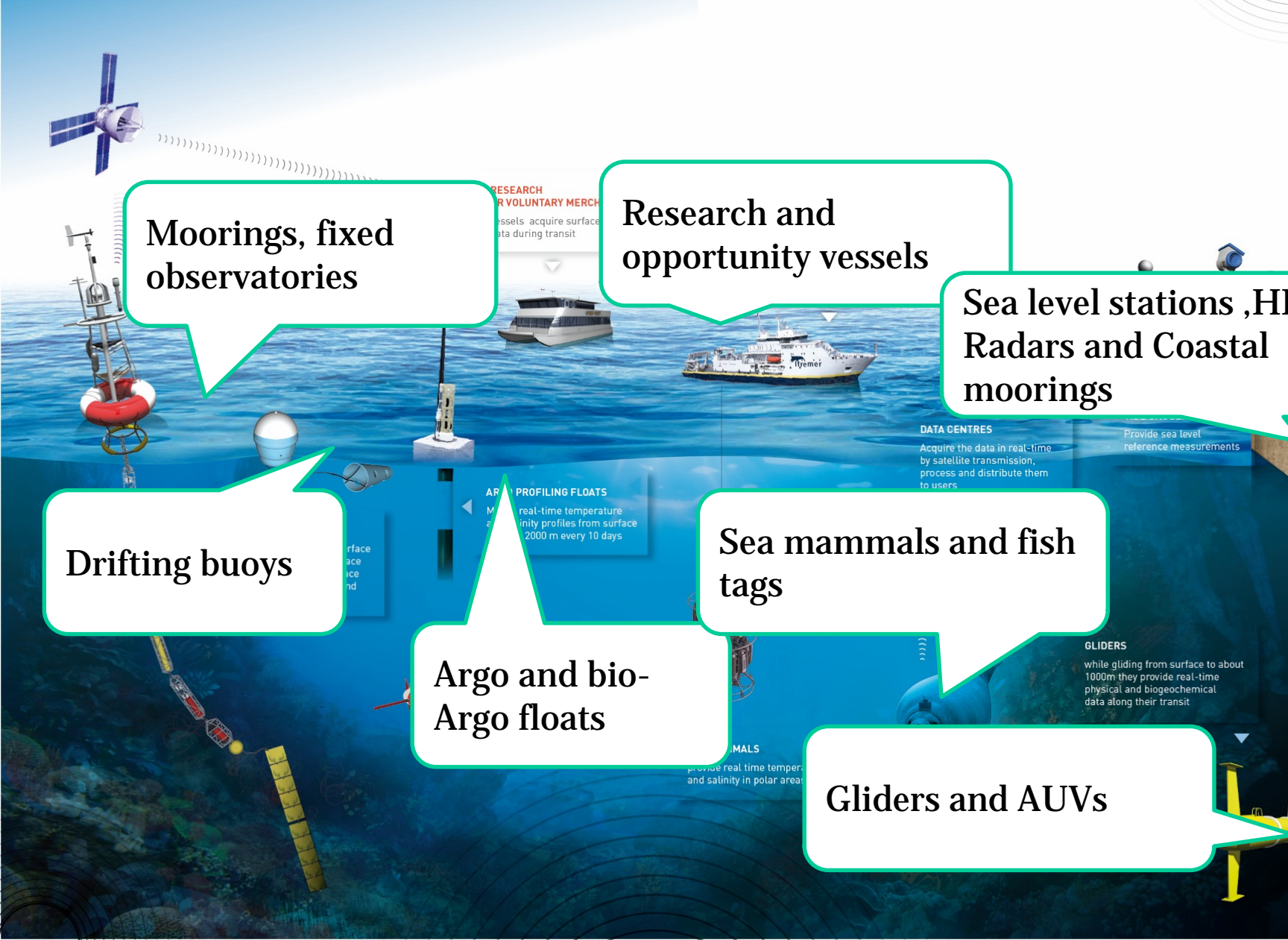


# Data-MEQ Membership (Rev 2013)

Representatives of all the ROOS , some Task Teams and the Major Data Management Initiatives and Projects in Europe related to EuroGOOS activities

- BOOS and NOOS representatives : BSH/Susanne Tamm/BSH , SMHI/Johanna Linders, UKMET/Matthew Martin, Fiona Carse, CEFAS/Kate Collingridge
- IBI-Roos representatives: Puertos Del Estado/Marta de Alfonso, AZTI /Julien Mader
- MONGOOS representatives: HCMR/Leonidas Perivoliotis
- Artic representatives: IMR/Helge Sagen , Sjur Ringheim Lid, Henning Wehde
- Black Sea representative: IOBAS /Veselka Marinova
- Argo/Gosud/OceanSITES/CMEMS-INSTAC: IFREMER/ Thierry Carval
- SeaDataNet : MARIS/Dick Schaap-Peter Thijsse
- EMODnet-Physics: ETT/Antonio Novellino
- Interoperability Tools: IFREMER/Thomas Loubrieu
- Ferrybox TT: HZG/Wilhelm Petersen/Gisbert Breitbach
- Gliders TT: CNRS/P Testor/ V Turpin
- ICES/Neil Holdsworth/Hjalte Parner
- RTQC-BIO (CMEMS-INSTAC- JERICO-Next): NIVA/Kai Sorensen
- HF Radar TT: AZTI/Julien Mader

# A multi-platform approach is essential to observe and monitor the complexity of the oceans



**Moorings, fixed observatories**

**Research and opportunity vessels**

**Sea level stations, HF Radars and Coastal moorings**

**Drifting buoys**

**Sea mammals and fish tags**

**Argo and bio-Argo floats**

**Gliders and AUVs**

# European and International Context



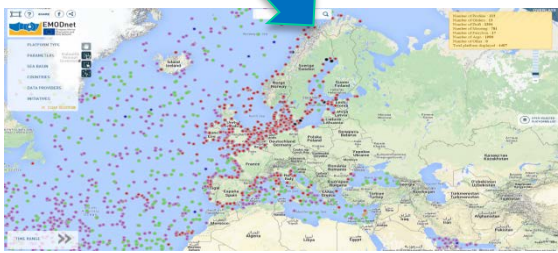
Data collection, processing



SeaDataNet  
Network of NODCs



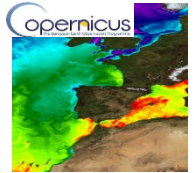
Data Discovery, archiving, standards and Distribution via NODCs



Data discovery, view, download, new platforms (type + number), interoperability layers



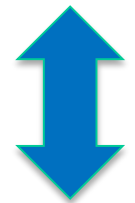
CMEMS  
INSTAC



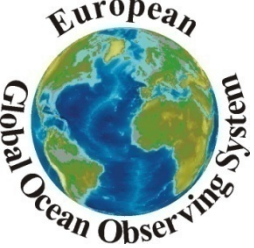
Data Integration, Assessment and distribution for Operational use and Research  
RT QC, products,.....



End Users



End Users

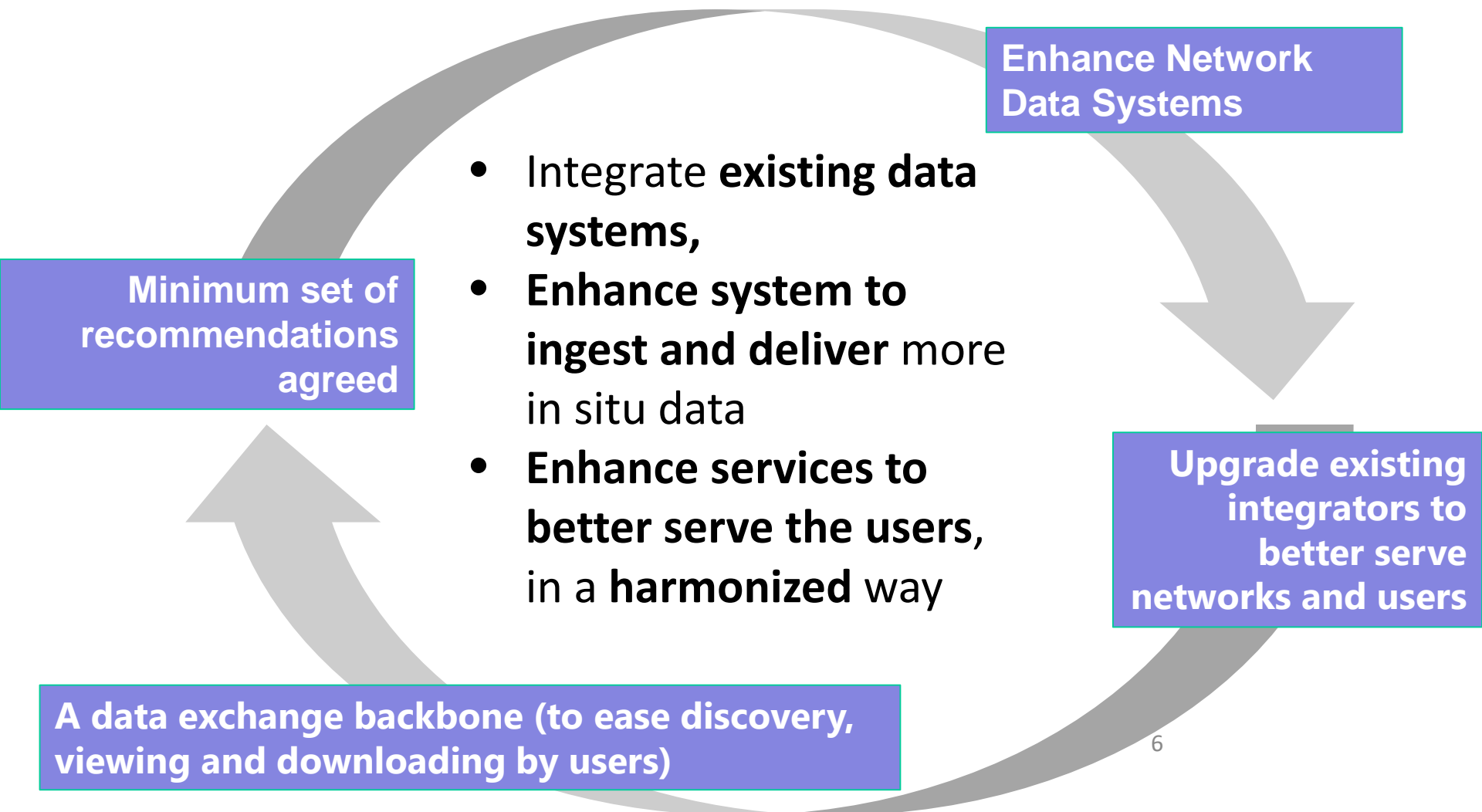


# Implementation was done in a coordinated way through projects

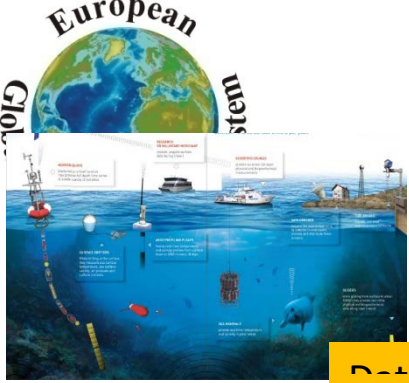
- **CMEMS INSTAC** for real-time data stream
- **SeaDataNet** and **CMEMS INSTAC** for building historical products for reanalysis purposes
- **SeaDataNet (SeaDataCloud)** for standard improvements
- **AtlantOS** for trans-networks integration in Atlantic
- **JERICO-Next** for coastal network expertise
- **EMODNet-Physics** to be interoperable with the EMODNet portal and contribute to unlocking access to private data
- **EMODNet-Chemistry** and **CMEMS INSTAC** for BGC products development
- **ENVRI+, ODIP2, EUDAT** : for Interoperability , Standardization and International collaboration
- **CMEMS Service Evolution for HF Radars**

⇒ Involvement of EuroGOOS office in most the projects helps in securing coordination and avoiding duplication of efforts

# The integrated data system



# The long term goal of in situ coordination



Data mgt  
for network

TOOLS

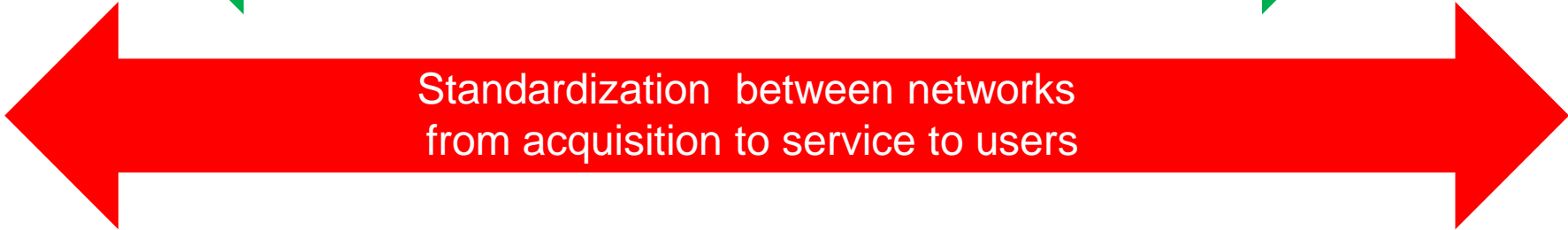
- INS TAC Copernicus
- SeaDataNet
- EMODnet
- Euro-BIS
- ICES
- GEOSS

TOOLS

Services



Users



# Achievements in term of Standardization

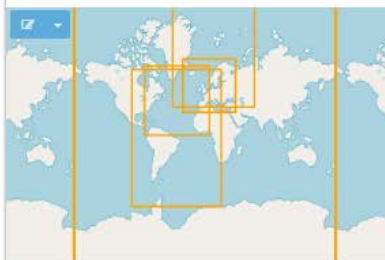
- **Focus on metadata** : set of mandatory fields and vocabularies agreed at network and integrator level:
  - Common **Vocabulary for parameters** , Common **Unique ID** for Platform and **codes for Institutions** (EDMO)
- **Focus on data quality** : recommended **near real time QC procedures for 7 EOVs**: Temperature Salinity Current Sea level Oxygen Chlorophyll-A Nitrate and Carbon
  - Such recommendations need to be examined by DATAMEQ-WG in 2018 to be endorsed by the community
  - Will also be provided to the <https://www.oceanbestpractices.net> repository for wider use
  - Presented to the JCOMM Ocean Coordination Group in May and will be presented to the Data Management Coordination Group in September



# Achievements in term of interoperability with existing services

- **Enhance access to network data by setting up a unique entry point to discover and download existing data**
  - More data in the exiting Network Global data centres (EGO for gliders, OceanSites for fix point platforms and transport array, ICOS-Marine for some VOS and GO-SHIP data)
  - Better use of Monitoring facilities offered by JCOMMOPS (GO-SHIP, SOOP/VOS)
  - Decision to set up a new GDAC for drifters and endorsed by DBCP/JCOMM
- **Connect to existing integrators**
  - SAFHOS and ICOS-Ocean as new SeaDataNet nodes
  - Fish Acoustic connected to ICES
  - ETN connected to EMODnet-Biology
  - more data integrated in the networks GDACS and therefore connected to CMEMS In situ TAC

Search ...



ELEMENTS OF THE INTEGRATED SYSTEM

- Networks (13)
- ESSENTIAL VARIABLES
  - Temperature (13)
  - Salinity (11)
  - Oxygen (7)
  - Chlorophyll-a and fluorescence (6)
  - Atmospheric pressure (5)
  - Currents (5)

Reset filters

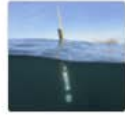
# First version of the AtlantOS catalogue

<https://www.atlantos-h2020.eu>

Results 1 to 13 on 13 : 20 by page ▾

Sort by: Popularity ▾


**Argo float data and metadata from Global Data Assembly Centre (Argo GDAC)**



Argo is a global array of 2,000 free-drifting profiling floats that measures the temperature and salinity of the upper 2000 m of the ocean. This allows, for the first time, continuous monitoring of the temperature, salinity, and velocity of the upper ocean, with all data being relayed and ...

Source: Ifremer

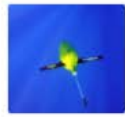
**Sea Surface Salinity from Research Vessels and VOS (NRT & DM)**



GOSUD aims at assembling in-situ observations of the world ocean surface collected by a variety of ships and at distributing quality controlled datasets. At present time the variables considered by GOSUD are temperature and salinity. The GOSUD data are mostly collected using ...

Source: GOSUD


**EGO Gliders: Data and metadata from Global Data Assembly Centre (EGO GDAC)**



The Everyone's Gliding Observatories (EGO) initiative is a gathering of several teams of oceanographers, interested in developing the use of gliders for ocean observations. EGO started in Europe with members from France, Germany, Italy, Norway, Spain, and the United Kingdom. The partners of EGO ...

Source: EGO gliders


**Drifting Buoys (NRT & DM)**



The Drifting Buoys GDAC-Global Data Assembly Centre- is the repository of surface drifters data. Both NRT -Near Real Time- and DM -Delayed Mode- data are available on the GDAC. Drifters report generally trajectories, sea-surface temperatures, atmospheric pressures at sea-level, as well as sea-surface ...

Source: CORIOLIS


**Continuous Plankton Recorder(CPR) data from the Sir Alister Hardy Foundation for Ocean Science (SAHFOS)**



The Sir Alister Hardy Foundation for Ocean Science (SAHFOS) is an international charity that operates the Continuous Plankton Recorder (CPR) Survey. The dataset covers the North Atlantic and the North Sea on since 1958.

Source: SAHFOS


**Data from repeat hydrography (GO-SHIP)**



GO-SHIP, the Global Ocean Ship-Based Hydrographic Investigations Program, is conducting repeat hydrography with high accuracy high precision reference measurements of a variety of EDVs through the whole water column. A selection of continent-to-continent full depth sections are ...

Source: GOSHIP


**OceanSites, a worldwide system of deepwater reference station**



The mission of OceanSITES is to collect, deliver and promote the use of high-quality data from long-term, high-frequency observations at fixed locations in the open ocean. OceanSITES typically aim to collect multidisciplinary data worldwide from the full-depth water column as well as the ...

Source: OceanSites


**Marine biogeochemistry data from the Voluntary Observing Ships or Ships of Opportunity (VOS/SOOP) net...**



VOS/SOOP tracks are usually repeated several times a year and inform about the marine sinks and sources of atmospheric carbon dioxide on a global bases and their variability. Data from this network has been made available to the scientific community and interested public via the Carbon Dioxide ...

Source: NCEI UEA, UIB amongst others


**EuroMapApp – Bathymetric integration and visualisation of European deep seafloor mapping results**



The EuroMapApp task of the AtlantOS project aims to integrate Europe's existing and future bathymetric data sets from the Atlantic Ocean into a seamless whole and put these results into a widely accessible format allowing immediate visualization of the seafloor for the specialist and non- ...

Source: GEOMAR, Ifremer, NIOZ, NERC-BODC and all other...

**Sea level data from the GLOSS Core Network**

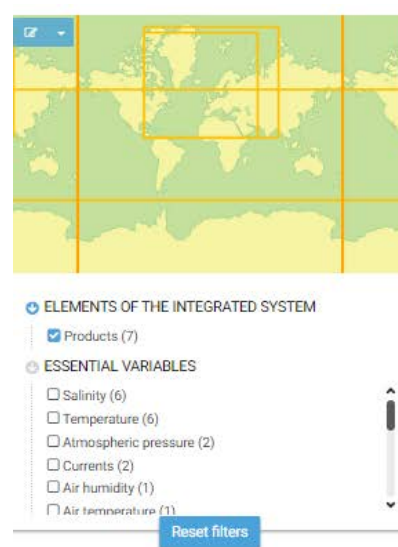


The Global Sea Level Observing System (GLOSS) was established by the Intergovernmental Oceanographic Commission (IOC) of UNESCO in 1985 to establish a well-designed, high-quality in situ sea level observing network to support a broad research and operational user base. ...

Source: GLOSS

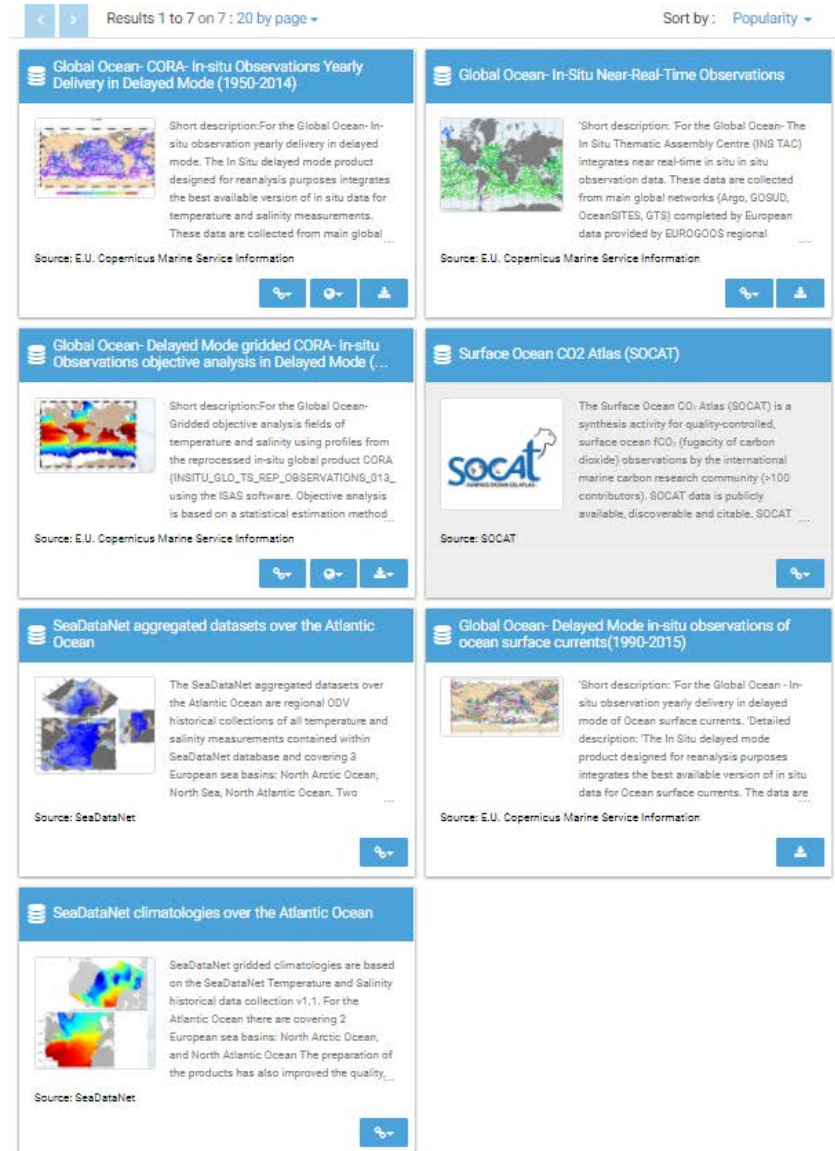
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## WHAT NEXT

- **Could be plugged to EuroGOOS web site**
- **Could be extended to other networks**
- **Could be extended to other components such as Ris and ERICs**
- **Could be extended to other products or linked to ROOS product catalogues**
- ...



# AtlantOS Catalogue connected to GEOSS data portal

Enter search words ...

Search Results Number of results: 28

Filters

KEYWORD FORMAT SOURCE PROTOCOL ORGANISATION

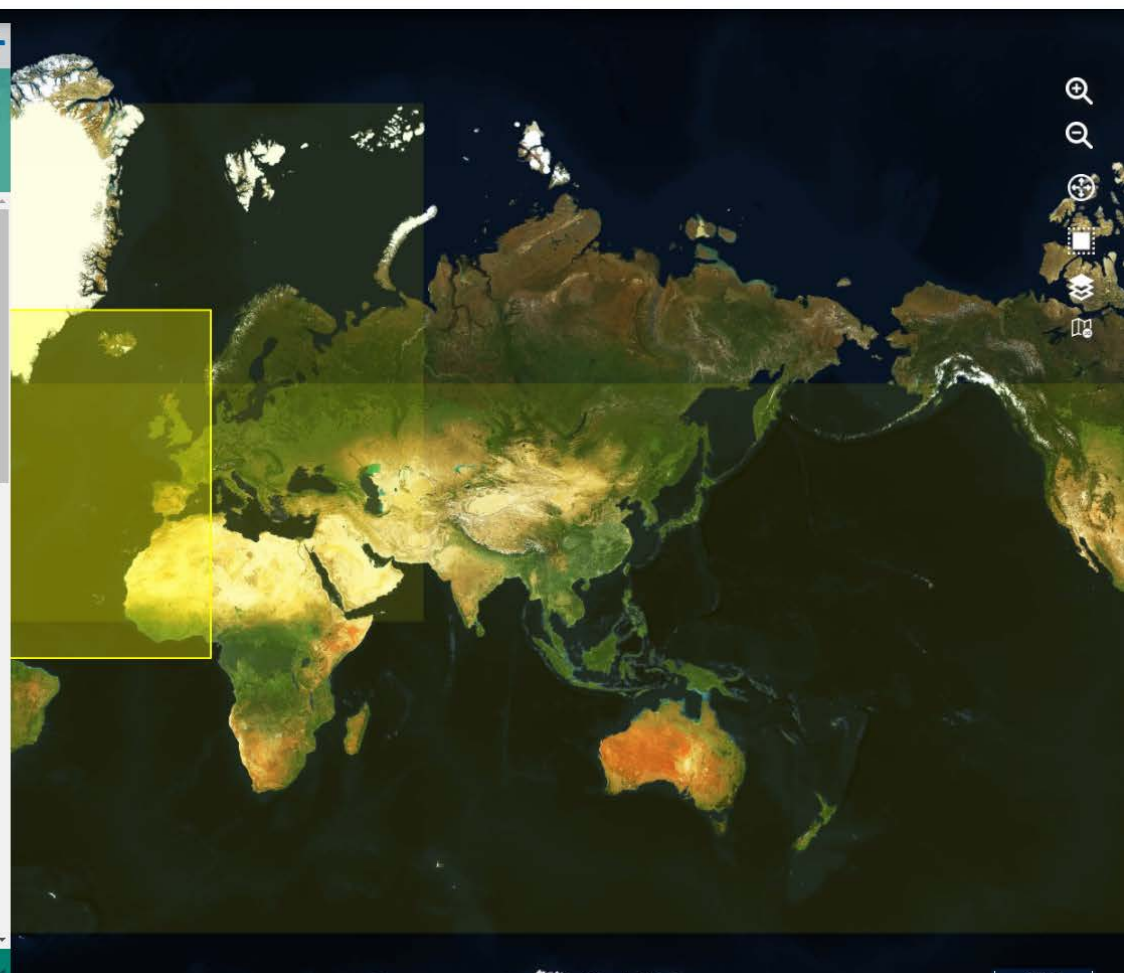
**SeaDataNet climatologies over the Atlantic Ocean**  
 (Organization: SeaDataNet)  
 SeaDataNet gridded climatologies are based on the SeaDataNet Temperature and Salinity historical data collection v1.1. For the Atlantic Ocean there are covering 2 European sea basins: North Arctic Ocean, and North Atlantic Ocean. The preparation of the products has also improved the quality, the cons ...  
 Start date: 1900-01-01  
 0 recent views  
 0.0

**Argo float data and metadata from Global Data Assembly Centre (Argo GDAC)**  
 (Organization: Argo)  
 Argo is a global array of 3,000 free-drifting profiling floats that measures the temperature and salinity of the upper 2000 m of the ocean. This allows, for the first time, continuous monitoring of the temperature, salinity, and velocity of the upper ocean, with all data being relayed and made publi ...  
 3 recent views  
 0.0

**Global Ocean- Delayed Mode gridded CORA- In-situ Observations objective analysis in Delayed Mode (1990-2014)**  
 (Organization: INS-IFREMER-BREST-FR (WPL))  
 ""Short description:"" For the Global Ocean- Gridded objective analysis fields of temperature and salinity using profiles from the reprocessed in-situ global product CORA (INSITU\_GLO\_TS\_REP\_OBSERVATIONS\_013\_001\_b) using the ISAS software. Objective analysis is based on a statistical estimation met ...  
 Collection start date: 1990-01-01  
 14 recent views  
 0.0

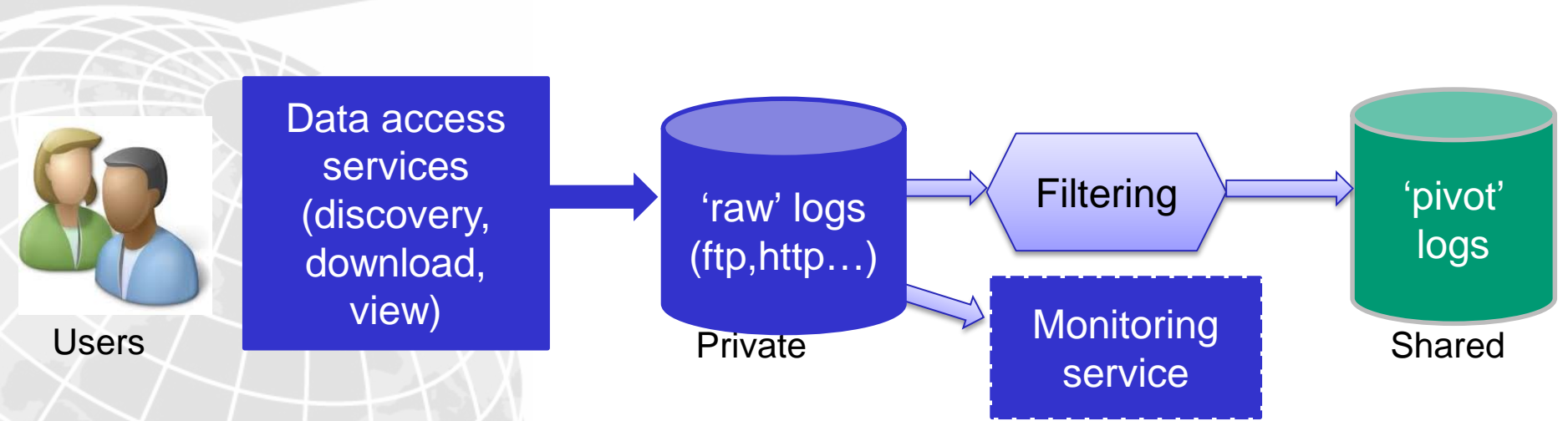
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 Start date: 2004-01-01  
 0 recent views

Visible 1-10 of 28 next

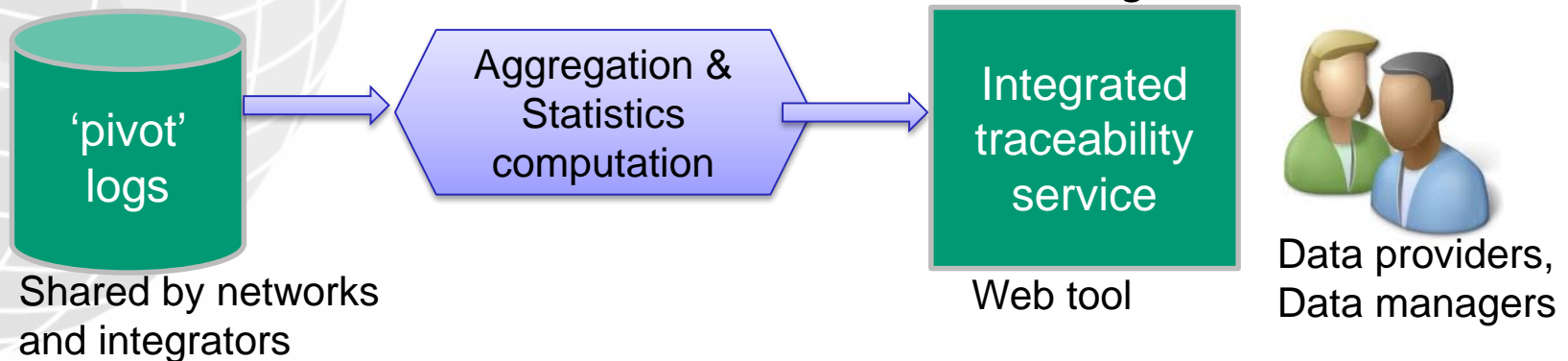


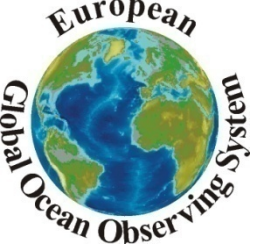
# Strategy for traceability of use

- On network or integrator data system side



- On the Service Provider traceability side





# TransAtlantic Ocean Data Harmonization Workshop

Atlantis

**SCOPE:** The workshop gathered representatives from Europe, North America, Africa and South America to discuss the Atlantic data Landscape and transcontinental data-connectivity

*Brussels  
June 7-8<sup>th</sup>  
2017*

**OUTCOME:** The workshop highlighted the need for an improved trans-continental data management effort – including technical solutions as well as cultural changes on data exchange.



**PERSPECTIVE:** Three working groups shall explore the challenges of improving

- 1) QA QC procedures
- 2) Interoperability & semantics
- 3) Data standardization

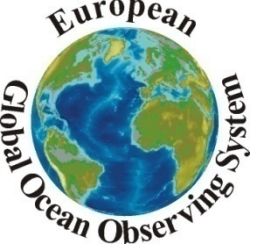
... in a transatlantic perspective

# Contributing to



- At least 4 papers proposed to OceanOBS'19
  - One on **Data standards from sensors to the web** led by J Buck/BODC involving partners from Europe, USA Australia and Canada
  - **Development of integrated observation data services** based on enhanced data system of systems implementing FAIR principles Led by S Pouliquen/Ifremer involving partners from Europe, USA , Canada and Australia
  - **Ocean Observation Data Flow from BLUE PRINT Vision** led by T Tanhua/GEOMAR
  - **Quality Assurance and Real-Time Quality Control of Ocean Data** led by C Wadmann/MARUM and M Brushnell/IOOS

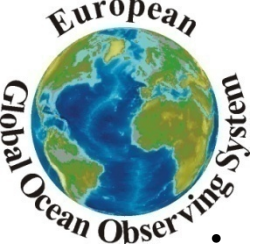
➤ ***On European Side the DATAMEQ-WG is well represented and plaining leading role***



# Facilitating new products developments

- **Wave** : close collaboration between **CMEMS INSTAC** and **EuroGOOS ROOS** to be extended to other **GOOS GRA (IOOS, IMOS , ...)**
- **BGC** ( O2 and Chl-a priority) collaboration started between **CMEMS INSTAC** and **EMODnet-Chemistry** both on method, data exchange and traceability. More NRT data will be available from autonomous platforms
- **Carbon** : Close collaboration **between ICOS and CMEMS-INSTAC** in link with **JCOMM**. More NRT data will be available from autonomous platforms
- **HF-Radar**: Close collaboration between **EuroGOOS Task Team** and **CMEMS INSTAC** based on **INCREASE** project result and **EMODNet demonstrator**. Move toward multplatform current product in **CMEMS INSTAC**





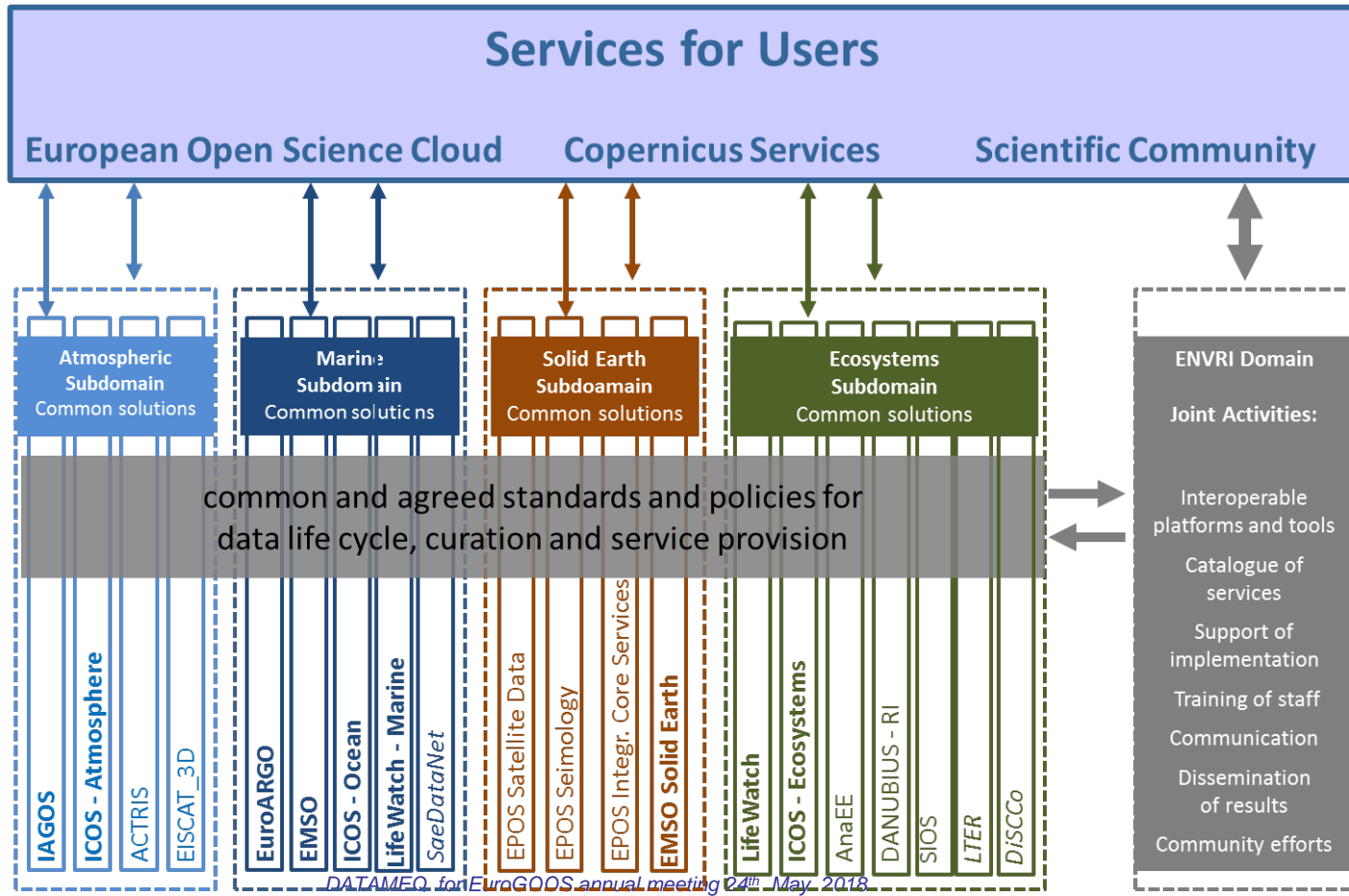
# ENVRI-FAIR

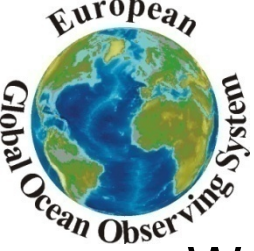
H2020 EOSC proposal submitted end March 2018

**Goal :**

- Enhance Fairness of Environmental data
- Enhance services to users
- Provide service through EOSC

**For Marine:** Enhance access and Interoperability for BGC data and products





# Next Steps

- Work with EuroGOOS to coordinate maintenance of the catalogue developed in AtlantOS and extend it to better cover the in situ Network and Product services
- Made the AtlantOS deliverables available in the DataMEQ section of EuroGOOS WWW to be able to be in an update loop on these documents in other projects
- Close the gap between NRT and Historical Data stream within EMODNET ( both Ingestion and Physic3) to be able construct 50 year historical product both for Operational re-analysis and Climate research ( T&S, Sea Level , BGC , Wave )
- Monitor European Science Cloud development to see how Marine RIs can benefit from it to develop new services in the continuity of the work started in ENVRI+ and SeaDataCloud to be continued in CMEMS and ENVRI-Fair if accepted