Integrating Glider observations to ease their use

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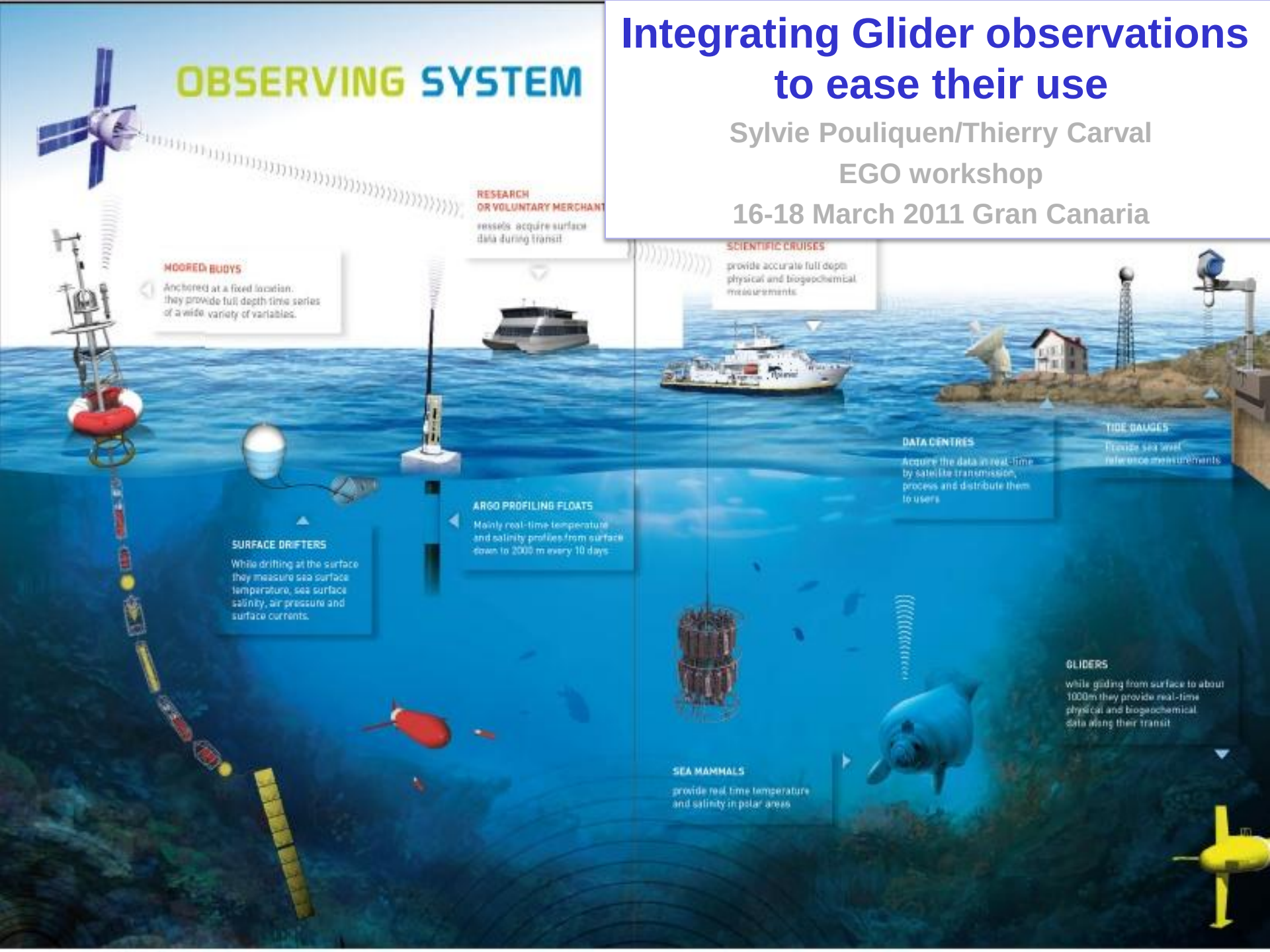
EGO workshop

16-18 March 2011 Gran Canaria



What does a user expect from an observing network ?

- **Data accessible easily from a unique point**

- **Data coherent in term of :**
  - ⇒Data format
  - ⇒Data Quality
  - ⇒Processing chain (clearly documented)

- **Additional requirements for Monitoring and forecasting users**
  - ⇒Data are available in near real time (within less than 24 hours)
  - ⇒Data are available in delayed mode after calibration and /or validation

What does stakeholders expect from an observing network ?

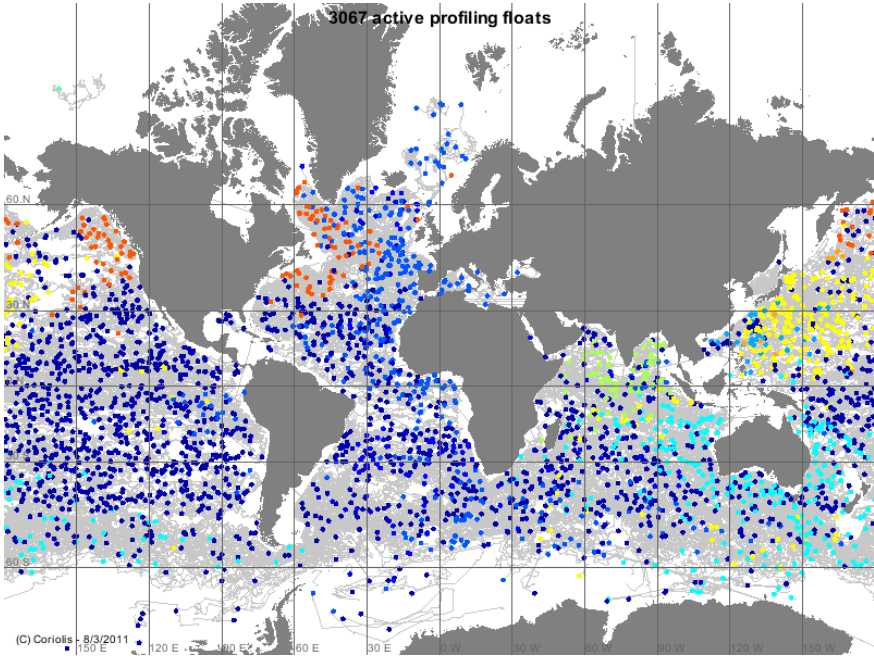
- Get more observations than they could afford alone
- Operate jointly part of the network
- Benefit from the other partners' experience from design to implementation to data management and user uptake

A key sentence for payers :

Acquire once Use multiple ?

Some success stories in the marine domain

- **Argo : more than 3000 floats sampling T &S on the global ocean from surface to 2000m on a 3°x3° grid**



•Both **Information, Scientific and Data management** activities organized since the start of Argo

•**Coordination** of the **deployments** at international level

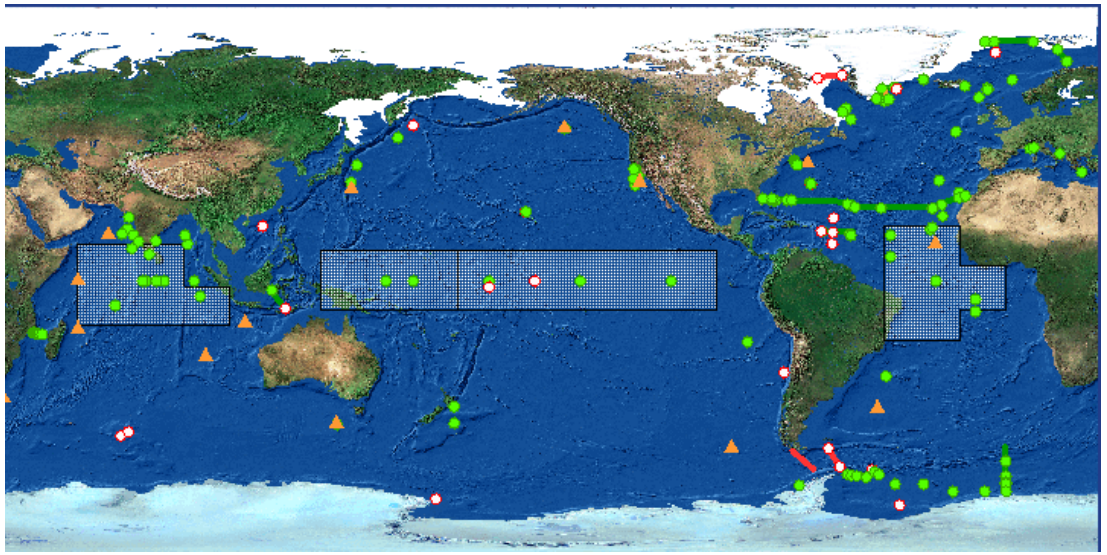
•Two single **portals** (GDACS), synchronizing themselves, to get **best copy of the Argo** data in a **unique format**

• **Common methods** for Quality control in real-time AND Delayed mode

•Organising sustainability in Europe through Euro-Argo ERIC (European Research Infrastructure Consortium)

Some success stories in the marine domain

OceanSites : 60 reference multi-parameter sites for the global ocean from surface to bottom providing long time-series



- Starting long time ago as independent research sites
- Recently set up 2 single **portals** (GDAC) to get best copy of the OceanSites data in a unique format
- **Working on Common methods for Quality control in real-time** first but also in Delayed mode

- Organising sustainability in Europe through Euro-Sites consortium

What About Gliders

- As for OceanSites , Glider activities are presently **driven by individual research drivers**

- As for Argo and some OceanSites Sites , Gliders can **deliver real-time data for core parameters** (T, S Current , Chl, O2) that are useful for both research an operational users

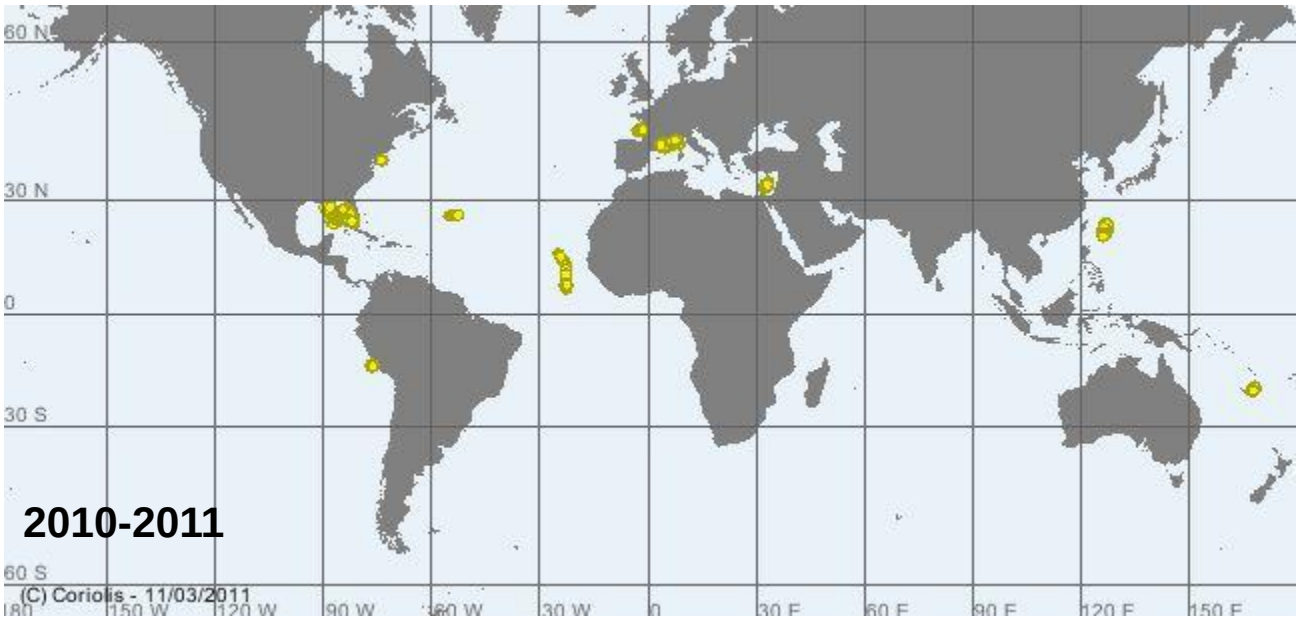
- Commonality with these two networks should be used for
  - ⇒**Developing integrated Data Management system**
  - ⇒ **Common Data format to users**
  - ⇒**Real –time QC of core parameters**

- Gliders are **complementary to other platforms and synergy** should be developed
  - ⇒Developing a deployment strategy for other needs than pure research (ie. GMES Marine Core Service in Europe)

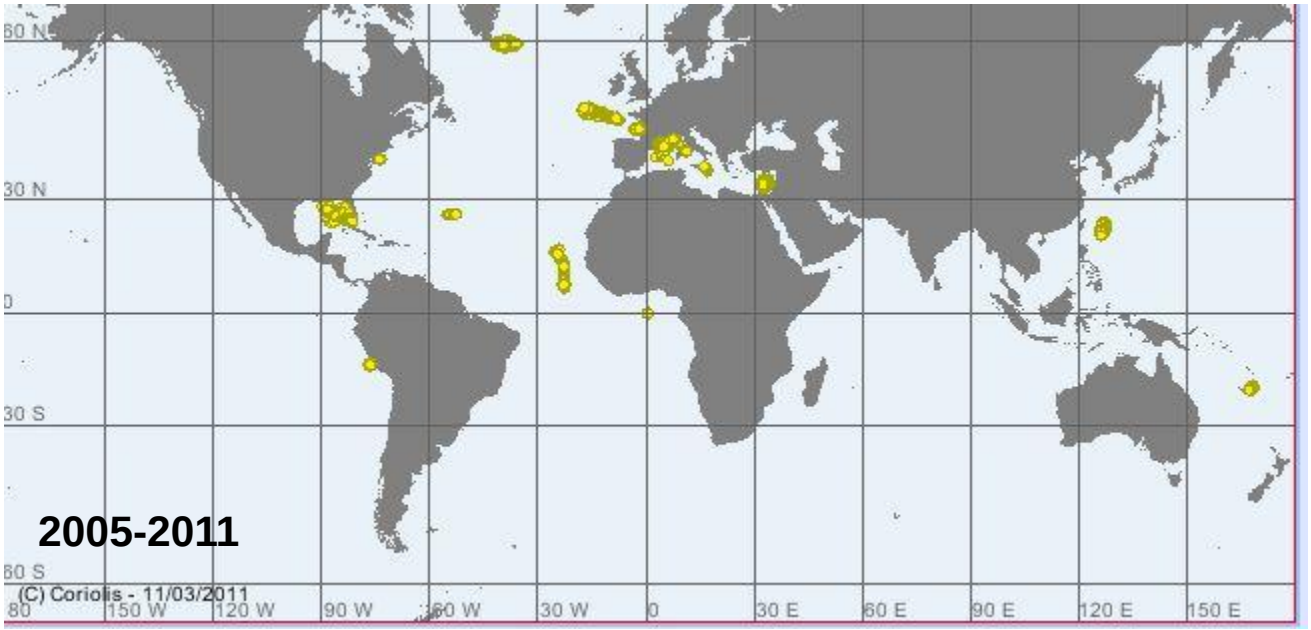
2009 EGO proposal concerning Data Management for Glider

- Set up a prototype GDAC FTP with the Glider data available at Coriolis
- Use the OceanSites NetCDF format
- First integrate as much Metadata (Who, What, When, Where, How) as possible in the global attributes of the NetCDF files
- Second study with OceanSites SensorML a more complete platform description (still progressing)

A first prototype of Glider GDAC exists



2010-2011



2005-2011

A first prototype of Glider GDAC exists

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- 25 different Gliders (mainly EU) Very few compared with the number deployed …But a lot on a best effort basis already
- About 10 Institutes
- Updated daily (Real Time data)
- Argo RTQC applied on T& S

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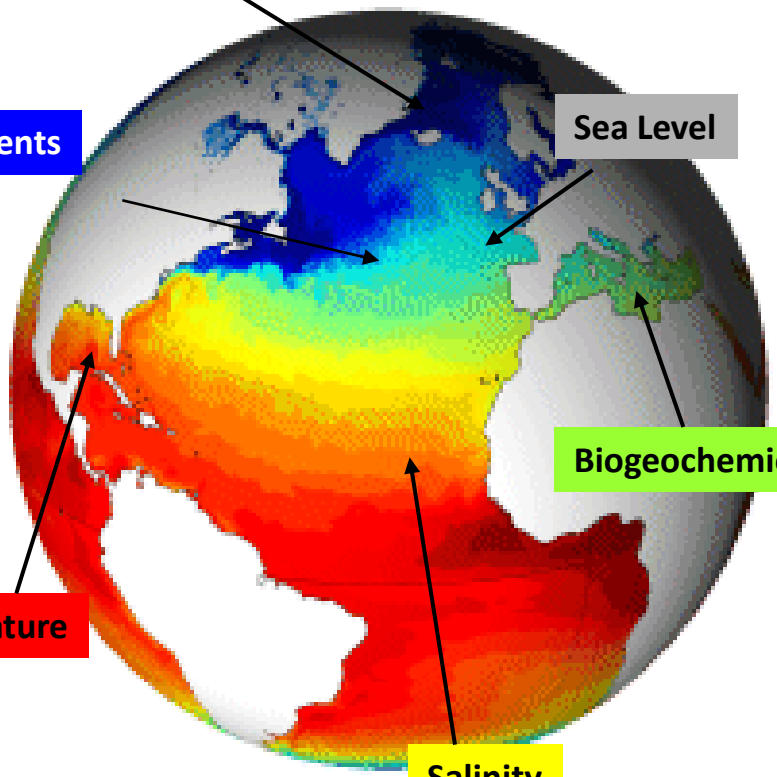


A **3D** and **dynamic**

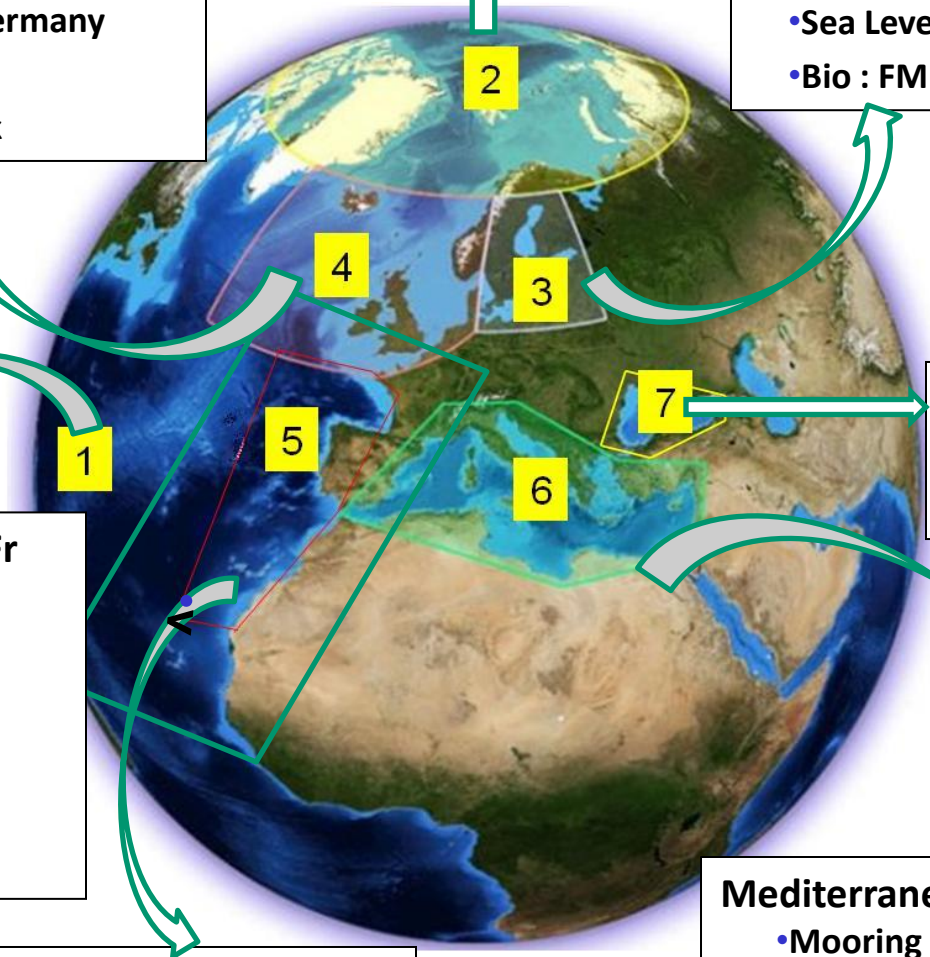
vision of the ocean

These Glider Observations acquired for Research studies already found their path to Operational Users in Europe

Arctic: IMR / Norway
- All parameters

Baltic Sea: SMHI/Sweden
- Temp & Salinity : BSH/Germany
- Current: SMHI/Sweden
- Sea Level: DMI/Denmark
- Bio : FMI-Syke/Finland

North West Shelves: BSH/Germany
- Temp & Salinity : BSH/Germany
- Current: SMHI/Sweden
- Sea Level: DMI/Denmark



Black Sea
IOBAS/Bulgaria
- All parameters

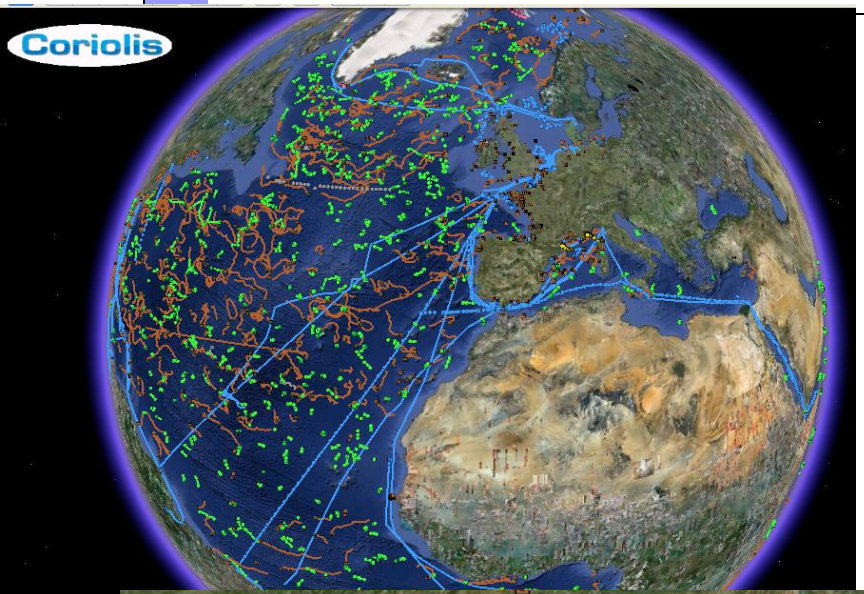
Global Ocean : Coriolis/Fr

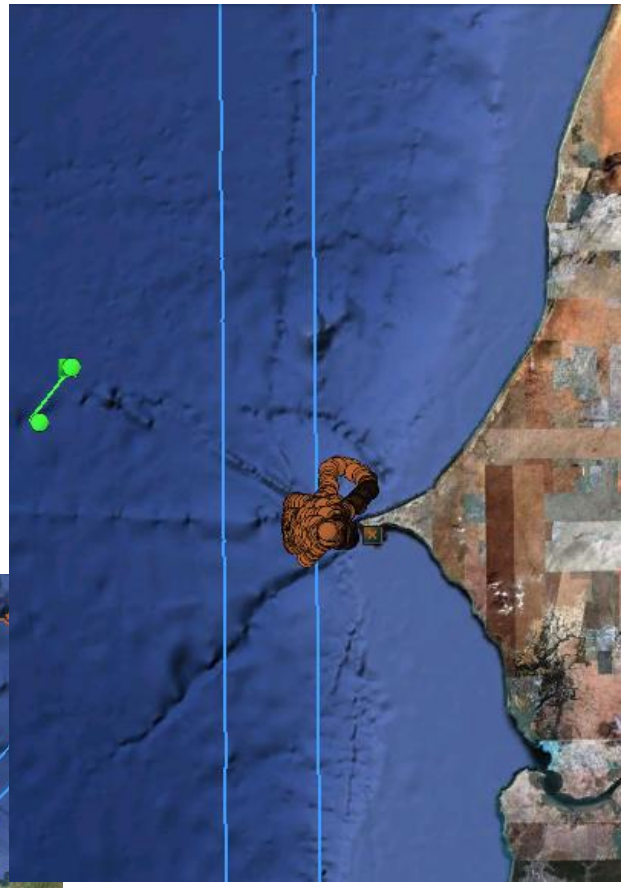
(include Glider)
- Link with international networks: Coriolis/France
- Argo: Coriolis,BODC,BSH
- European Vessels: NIVA/Norway

South West Shelves: Puertos Del Estado/Spain
- Mooring : PdE
- Underway data: Coriolis/France (include Glider)

Mediterranean Sea : HCMR/Greece
- Mooring : HCMR/Greece
- XBT/CTD: ENEA/Italy
- Drifter & Argo: OGS/Italy
- Glider and Argo: Coriolis/France

Glider data for Operational Oceanography





Coriolis

Next Steps for Integrated Data Managem ent of aGlobal Glider network

- **Organize the data management activities both**
  - ⇒at international level including the link to JCOMM
  - ⇒at regional level (ie EU level within GROOM FP7 project if funded)
  - ⇒With link with a Glider steering/science team that would provide the priorities for the network and develop the scientific procedure that need to be implemented by the Data management system

- **Set up a Glider Data Management team that would involve the Glider data managers of the Institutes operating gliders that want to be part a global Glider network**

Next Steps for Integrated Data Management of a Glabal Glider network

- **Define terms of reference for this group that could contain**
  - ⇒Definition of the data management elements and their role
  - ⇒Definition common parameters that would be delivered by all members to be part of the network
  - ⇒Define dissemination services
  - ⇒Define Real-Time data stream and Real Time Quality Control procedures
  - ⇒Define how to deliver delay mode data at least for the data delivered in Real Time
  - ⇒Define Delayed mode data stream and common procedures for core parameters
  - ⇒Organize the links with the Argo and OceanSites data management teams to guaranty interoperability
  - ⇒???