Paving the future of European operational coastal observing systems

JERICO in its context

Outline

-The EU strategic context

- Role of Jerico
- Ferrybox in MyOcean

Dominique DURAND (NIVA)

EU perspectives

- **Europe 2020: A European strategy for smart, sustainable and inclusive growth (COM(2010) 2020)**
- **Seven flagship initiatives**
  - ➔ **« Innovation Union »**
  - ➔ **« A digital agenda for Europe »**
  - ➔ **« Youth on the move »**
  - ➔ **« Resource efficient Europe »**
  - ➔ **« An industrial policy for the globalisation era »**
  - ➔ **« An agenda for new skills and jobs »**
  - ➔ **« European platform against poverty »**

Innovation Union

Strategic approach to innovation

Focused on the Grand Challenges

Ostend declaration, Oct. 2010

JPI-Oceans …. European Ocean Observing Systems

Three main characteristics:

- **A world class science base**
- **Coherent Europe wide use of public sector intervention to stimulate private sector**
- **Concerted effort to remove bottlenecks which stop ideas reaching the market**

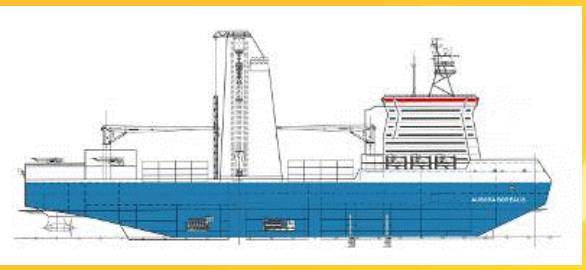
Will shape next generation of programmes for R&I

Innovation Union commitments
and Research Infrastructures

(4) « … a European Research Area framework… to ensure…opening of Member State operated research infrastructures to the full European user community;… »

(5) « By 2015 (…) have completed or launched the construction of 60% of the priority European research infrastructures currently identified by the European Strategy Forum on Research Infrastructures - ESFRI… »

Environmental Sciences



AURORA BOREALIS

IAGOS-ERI

EUFAR COPAL

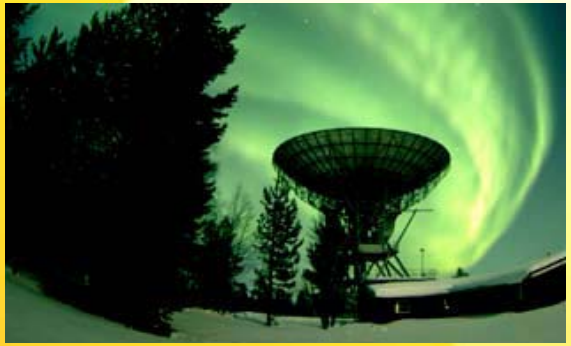
LIFE-WATCH

EURO-ARGO

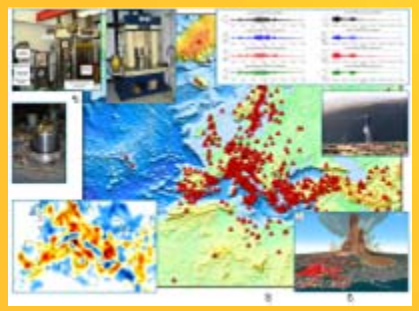
10 Projects

EMSO

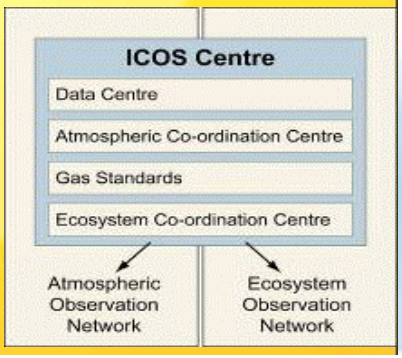
SIOS



EISCAT



EPOS



ICOS

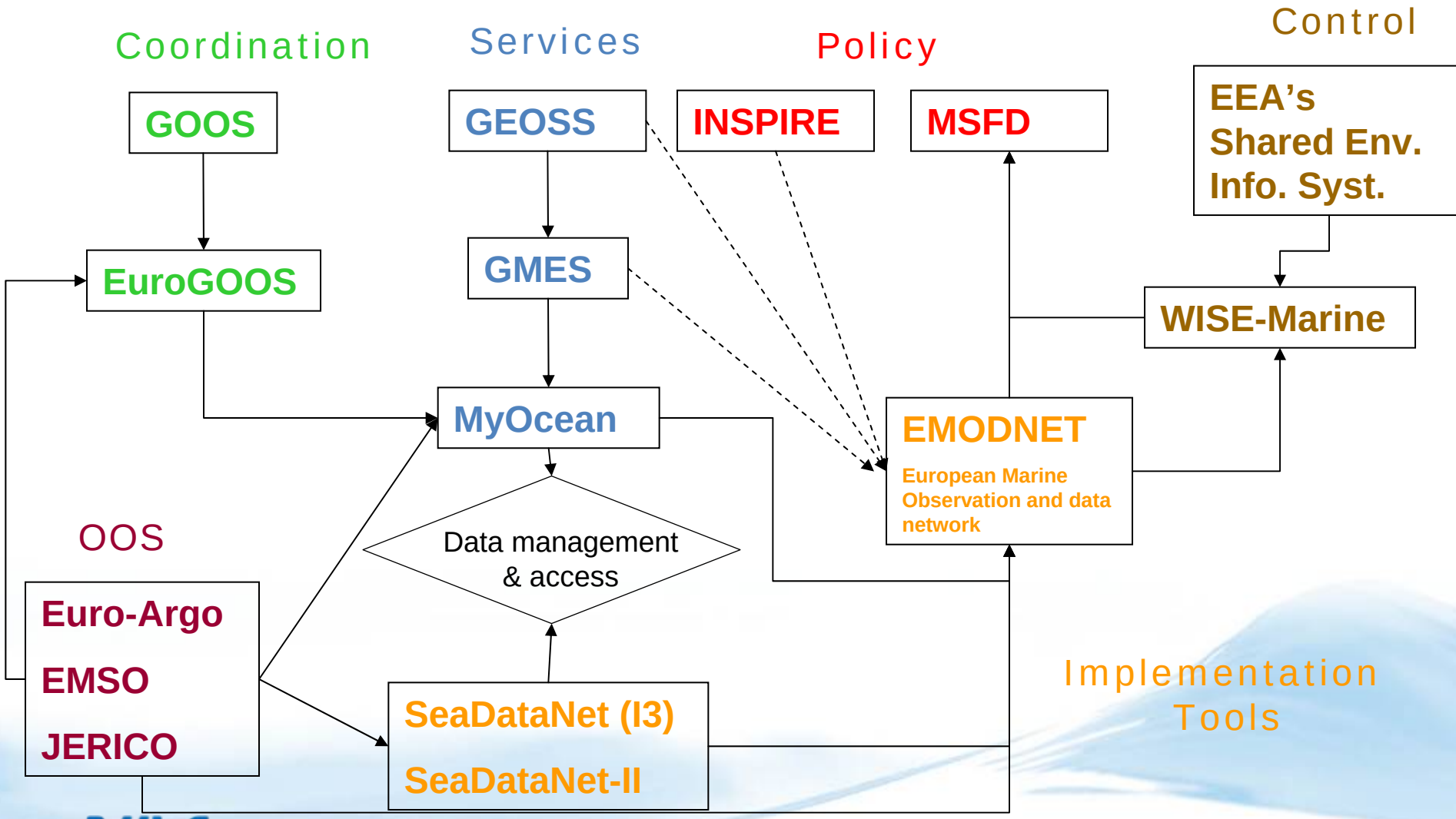
Report 2006 and 2008

Integrating Activities (I3)
Short list of projects

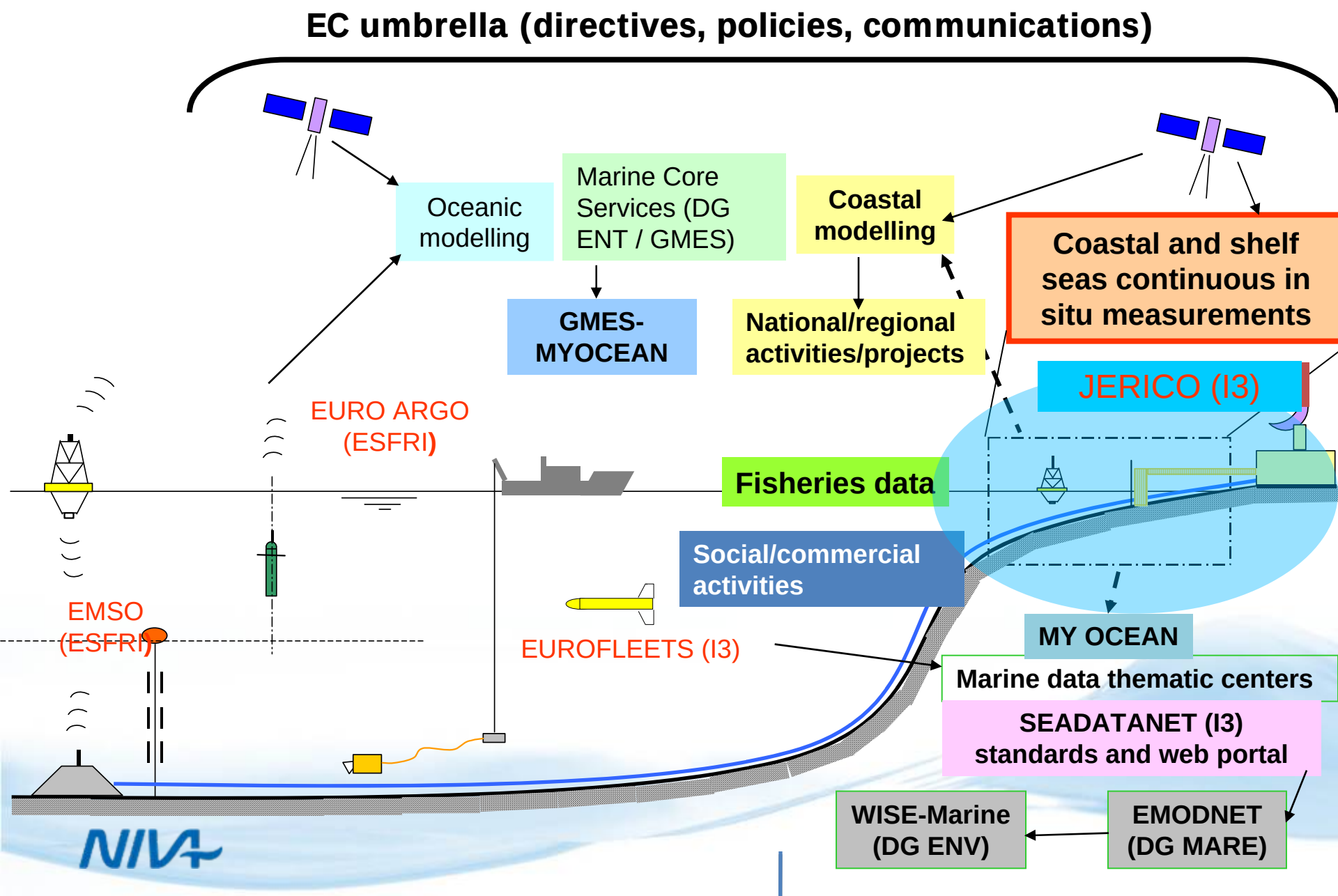
- **EUROFLEETS – Research vessels**
- **JERICO – Coastal observatories**
- ***SeaDataNet II – Marine data centres***

Role of JERICO

Operational Ocean Observations



Towards a long-term and sustained European network of coastal observatories



JERICO's Vision

to harmonise existing European (operational) coastal observatories and promote coordinated future developments and access to the RI

JERICO will increase knowledge and understanding of marine systems, strengthen the evidence base for environmental assessments, provide data and information required to improve predictions of future human and climate driven environmental change and the strategies to combat them

Ferrybox and INSPIRE Directive

EC-FerryBox
EC-JERICO

Interoperability requirements

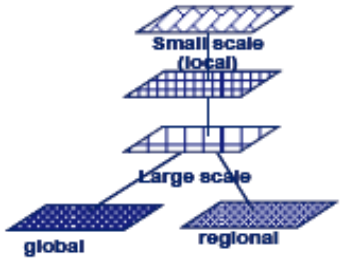
EC-FerryBox
EC-MyOcean

Standardization → Harmonization → Interoperability

EC-DISMAR
EC-INTERRISK

- **Metadata** together with the need for Discovery & Query
- **Networking services** (and their order of use)

Data model
Common profile



Outcomes

Implementing rules

de jure standards
OGC standards
de facto standards
& other rules

- **Data Specification & Aggregation/ Inventory needs to reach Interoperability**
- **Other harmonisation issues and monitoring**

INSPIRE - Infrastructure for Spatial Information in Europe

NIVA

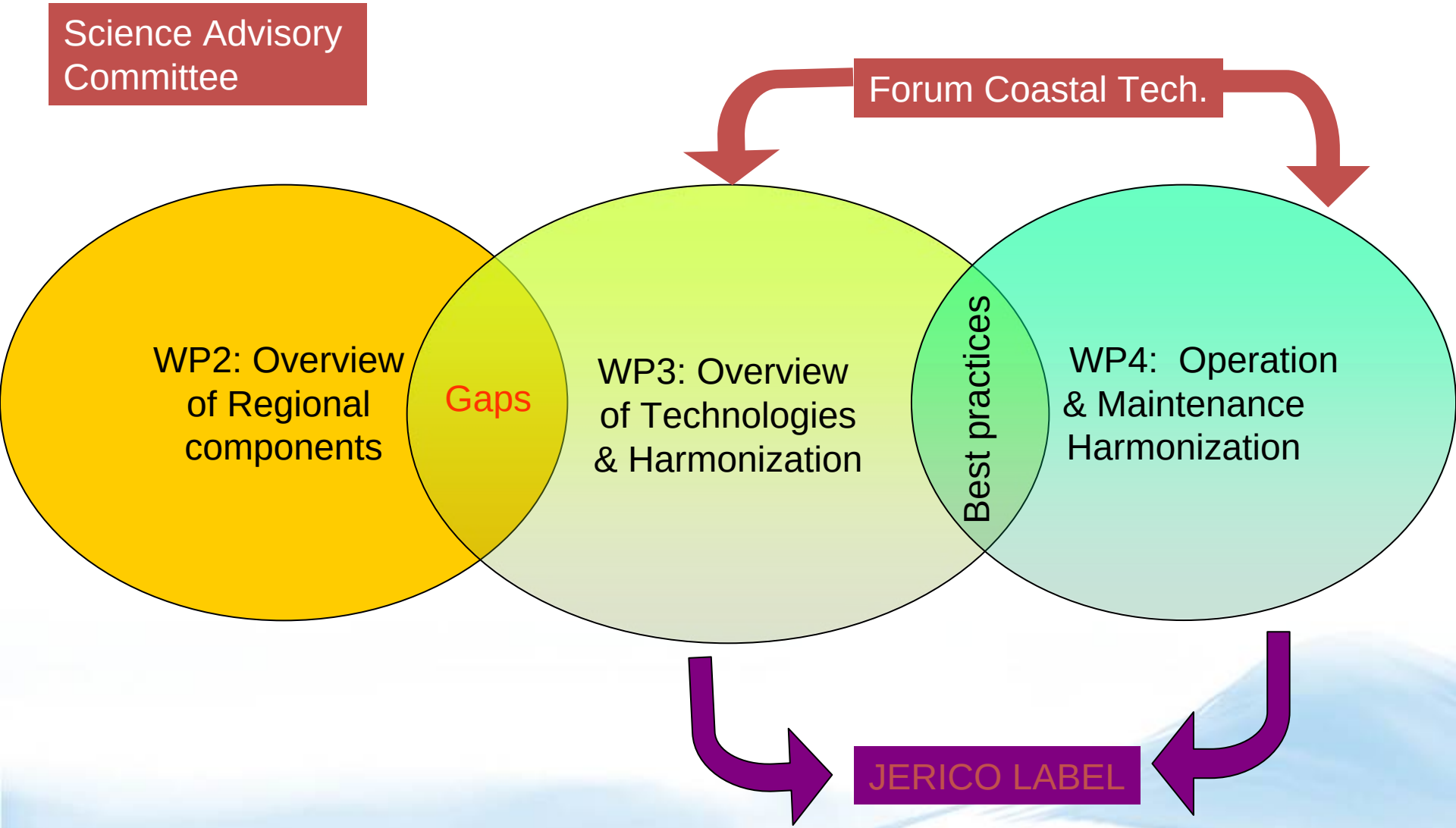
Implementation in JERICO

- WP3&4 overview of practices for QC/QA

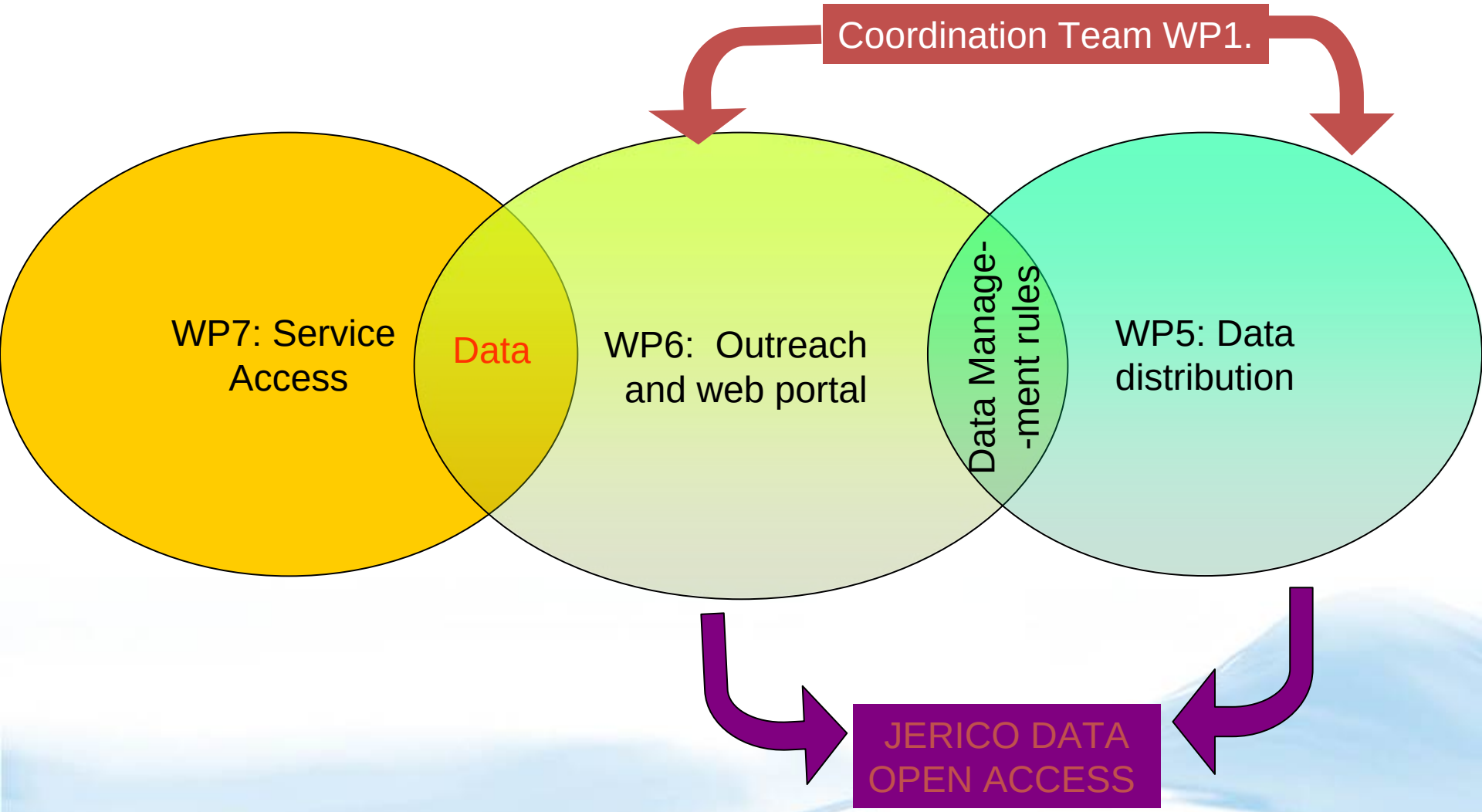
- WP5 Data management procedures
  - Task 5.2 Harmonization of Delayed Mode with SEADATANET (Ifremer ++)
  - Task 5.3 Harmonization of Real Time Mode with MyOcean and EuroGOOS (Ifremer ++)

- WP10 R&D
  - Task 10.5 Ferrybox data quality control algorithm (M6-M42)
    - NERC, NIVA, HZG
    - From MyOcean approach to a consensual & sustainable approach
    - Best Practices

Coordination of NAs

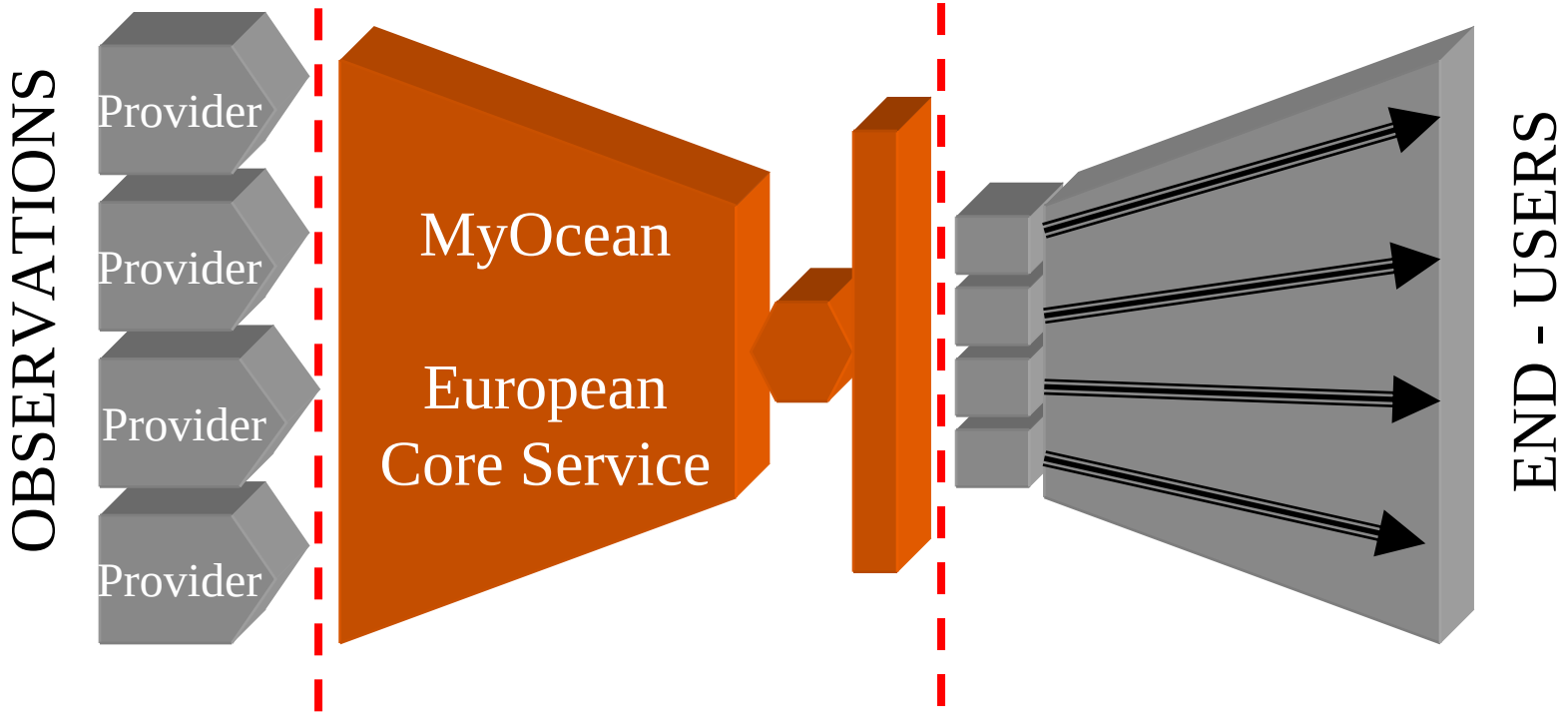


Coordination of DATA WPs



MyOcean Overview

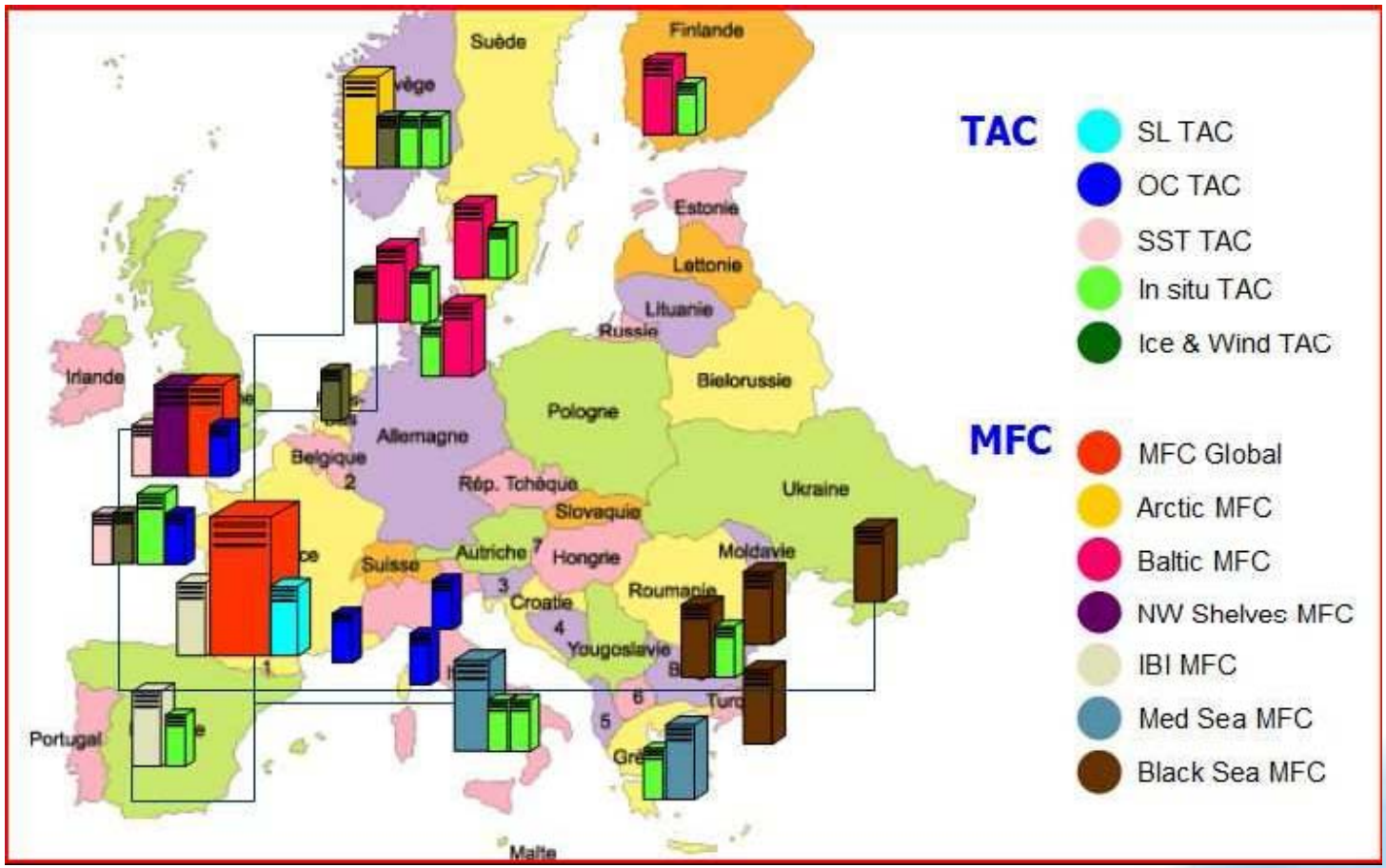
Scope of responsibility



Data Assembly, production and distribution

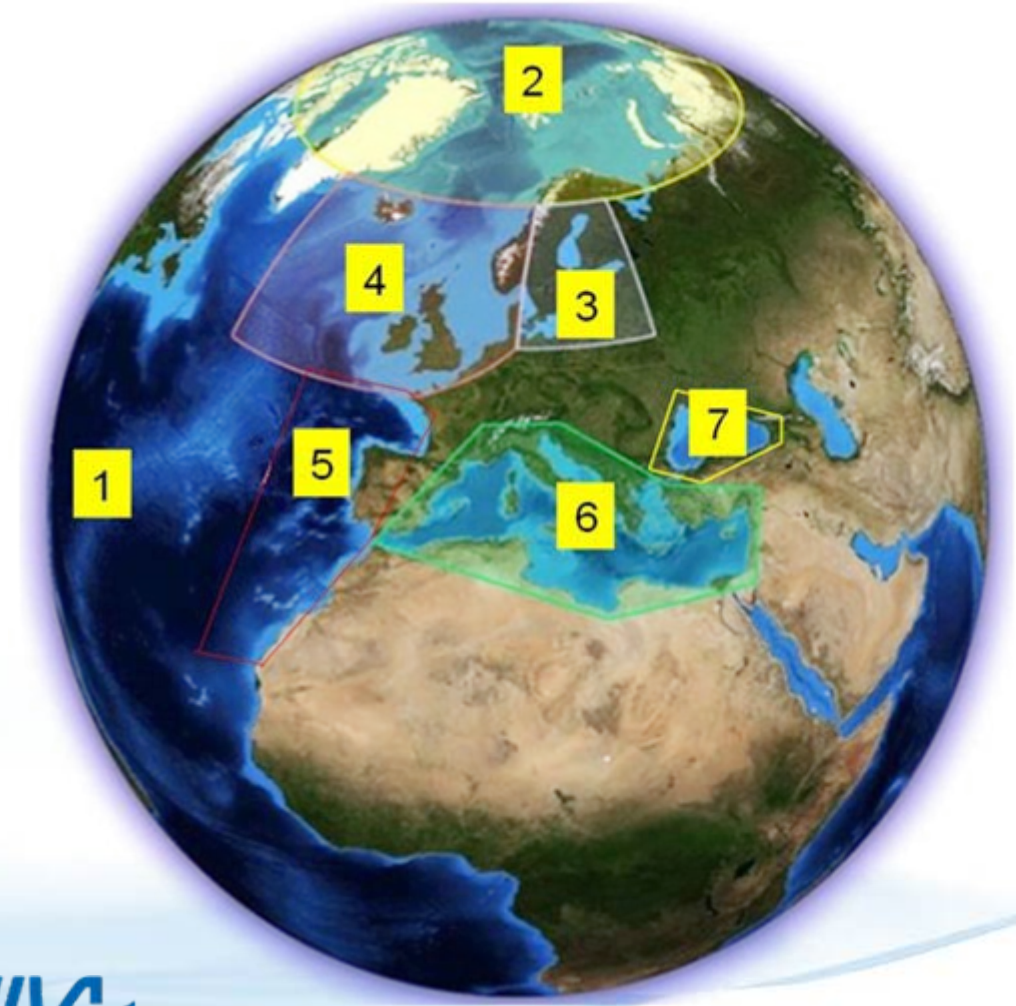
Harmonization of formats and quality control

Members


Suède
Finlande
Estonie
Lettonie
Lituanie
Russie
Bielorussie
Pologne
Irlande
Allemagne
Belgique
Rép. Tchèque
Slovaquie
Ukraine
Autriche
Hongrie
Moldavie
Suisse
Croatie
Roumanie
Yougoslavie
Portugal
Malte
TAC
SL TAC
OC TAC
SST TAC
In situ TAC
Ice & Wind TAC
MFC
MFC Global
Arctic MFC
Baltic MFC
NW Shelves MFC
IBI MFC
Med Sea MFC
Black Sea MFC

MyOcean Insitu TAC and JERICO implementation of EuroGOOS regional approach

Ferrybox



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

MyOcean In-situ TAC role

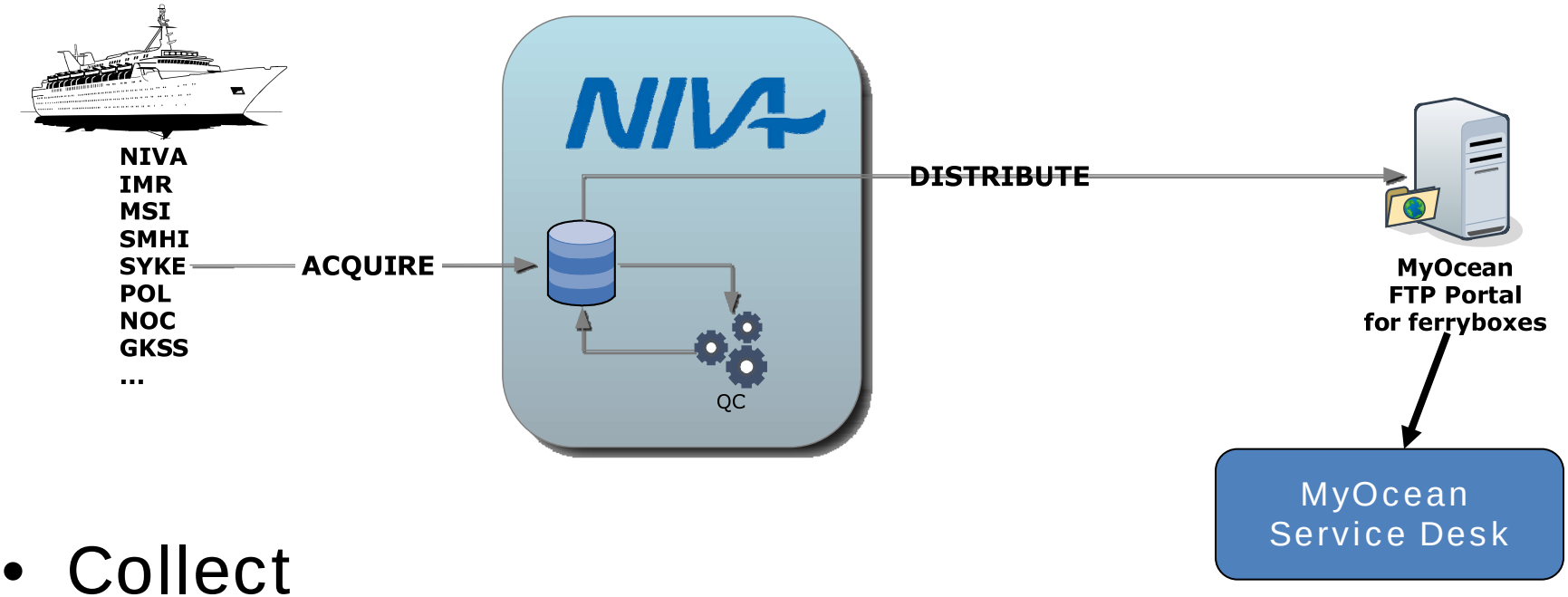
- Limited number of parameters:
  - Physical: T&S, current, sea level
  - Biogeochemical: Chlorophyll/Fluorescence, Oxygen, Nutrients (?)

- Integrate in-situ data in product and Disseminate through Compatible global and regional portals
  - Main users: MFC (data assimilation and model assessment)
  - Common format
  - Common NRT QC
  - Common Quality flags
  - Common distribution tools
  - Single access point

- Ensure a minimum level of quality on the data delivered through standardized QC/QA procedures
  - In near real time (24h to a week)
  - In delayed mode (SeaDataNet)

NIVA

Ferrybox in MyOcean



- Collect
- Process QC
- Export

INS-VESSEL-GLO_TS_NRT-OBS

- Manage the MyOcean ferrybox FTP Portal

Ferrybox in MyOcean

Norferry NOOS, Arctic-ROOS, BOOS

Acquire Data from NIVA, IMR

German ferries NOOS

Acquire Data from HZG

Estonian ferries BOOS

Acquire Data from MSI

Finnish ferries BOOS

Acquire Data from SYKE/FMI

Swedish ferries BOOS

Acquire Data from SMHI

UK ferries IBI, NOOS

Acquire Data from NOC, POL

CEFAS

French ferries IBI, NOOS

Acquire Data from Ifremer

Greek ferries MOON

Acquire Data from HCMR,

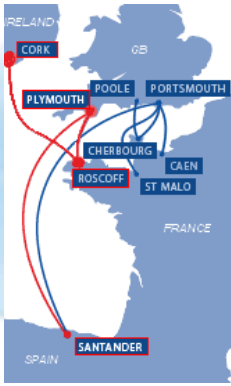
Data Base

Flagged Data

RTQC DMQC

Distribute Product

FTP



See Pierre's talk on Friday

Implemented and Expected

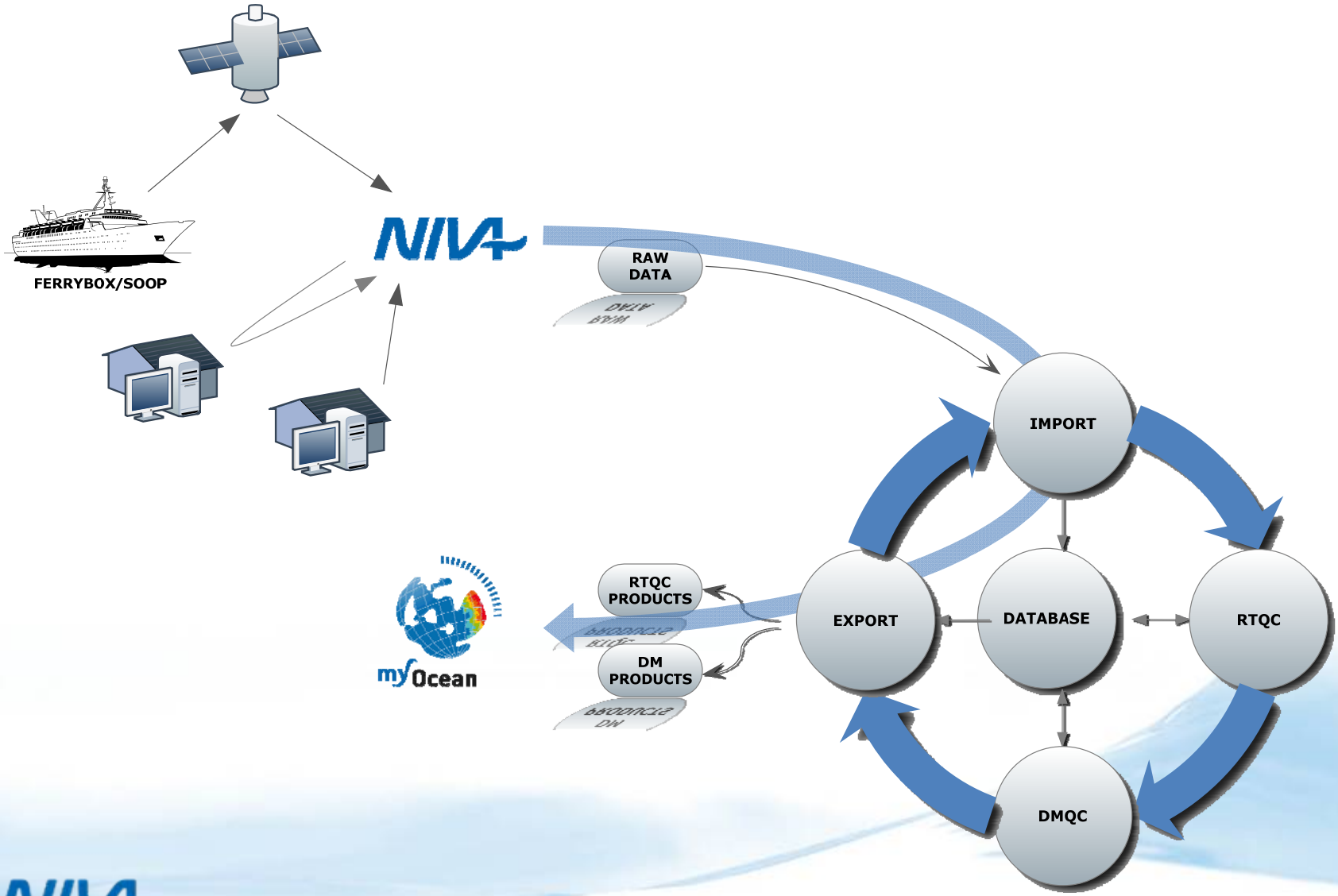
MS Color Fantasy
MS Trollfjord
MS Norbjørn
MS Bergensfjord
MS Vesterålen
MS Baltic Princess
MS Finnmaid
MS Liverpool Seaways

MS Lysbris
MS TorDania
MS FunnyGirl
MS Pont Aven
MS Armorique

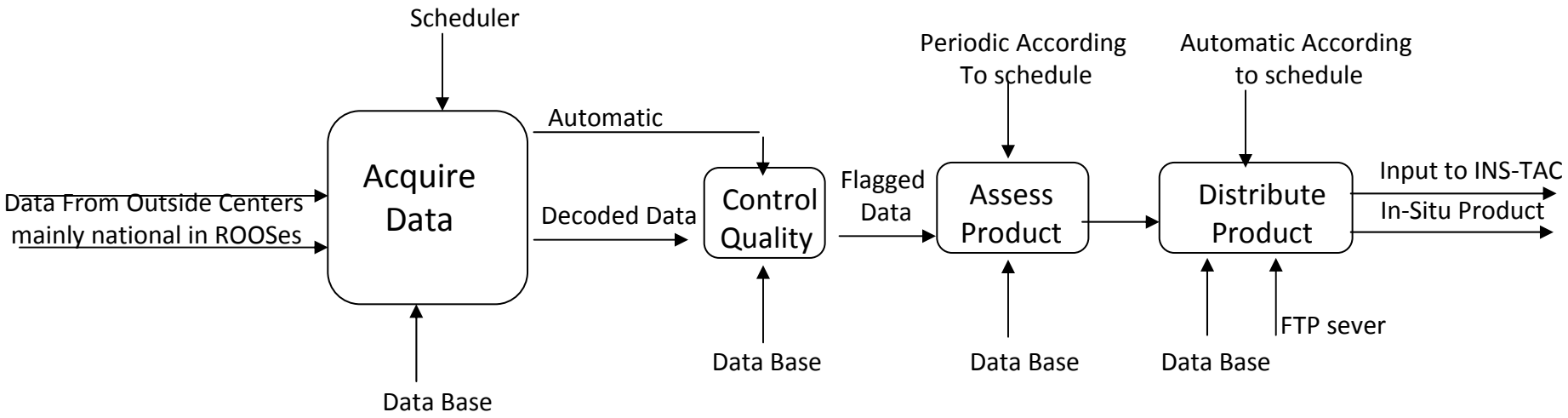
MS Silja Serenade
RV Endeavour
MS Norrøna
MS Transpaper
MS Nuka Arctica

Handling of Ferrybox Data

Data Flow


FERRYBOX/SOOP
NIVA
RAW DATA
IMPORT
EXPORT
DATABASE
RTQC
DMQC
RTQC PRODUCTS
DM PRODUCTS
myOcean

MyO TACs : The implemented functions by the global and regional components



➢ **Acquire Data:** Gather data available on international networks or though collaboration with regional partners

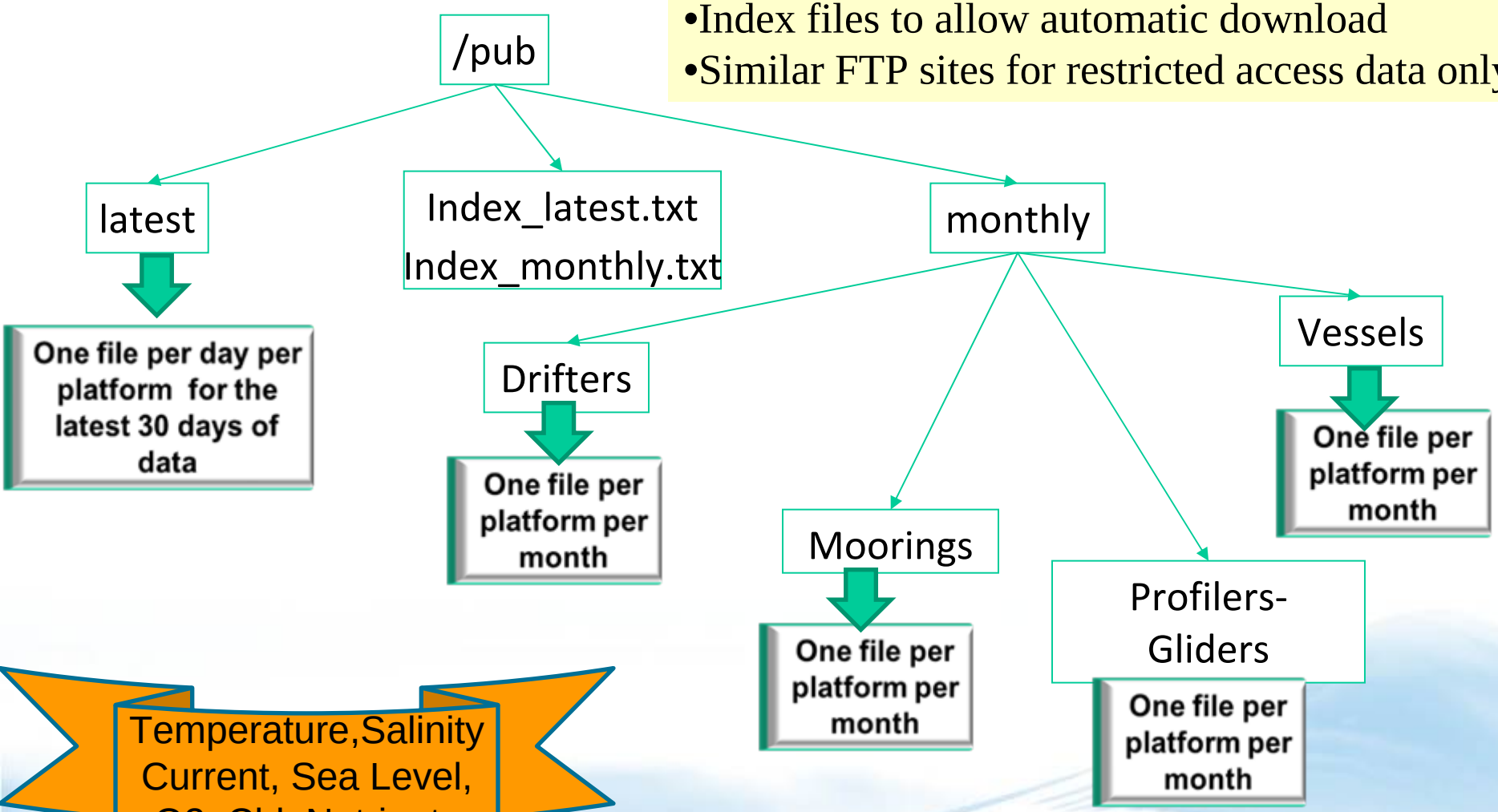
➢ **Quality control (RTQC):** apply automatic quality controls that have been agreed at the In Situ TAC level . These procedures are defined by parameter, elaborated in coherence with international agreement , in particular SeaDataNet ,and documented in MyOcean Catalogue.

➢ **Assessment (DMQC):** Assess the consistency of the data over a period of time and an area to detect data that are not coherent with their neighbors but could not be detected by automatic QC.

➢ **Distribution:** make the data available within MyOcean and to the external users

7 portals with the same FTP portal organization

- OceanSites Netcdf Format
- Index files to allow automatic download
- Similar FTP sites for restricted access data only



MyOcean Quality Flags

Code	Meaning	Comment
0	No QC was performed	-
1	Good data	All real-time QC tests passed.
2	Probably good data	-
3	Bad data that are potentially correctable	These data are not to be used without scientific correction.
4	Bad data	Data have failed one or more of the tests.
5	Value changed	Data may be recovered after transmission error.
6	Not used	-
7	Not used	-
8	Interpolated value	Missing data may be interpolated from neighbouring data in space or time.
9	Missing value	-

RTQC Tests

- Blocks of consecutive data
- Impossible Date/Location
- Frozen Date/Location/Speed
- Pump/Flow and Pump/Speed History
- Frozen T/S/FLU/OXY
- Global Range: Speed/T/S/FLU/OXY
- Regional Range: T/S/FLU/OXY
- Gradient and Spikes

More RTQC Tests

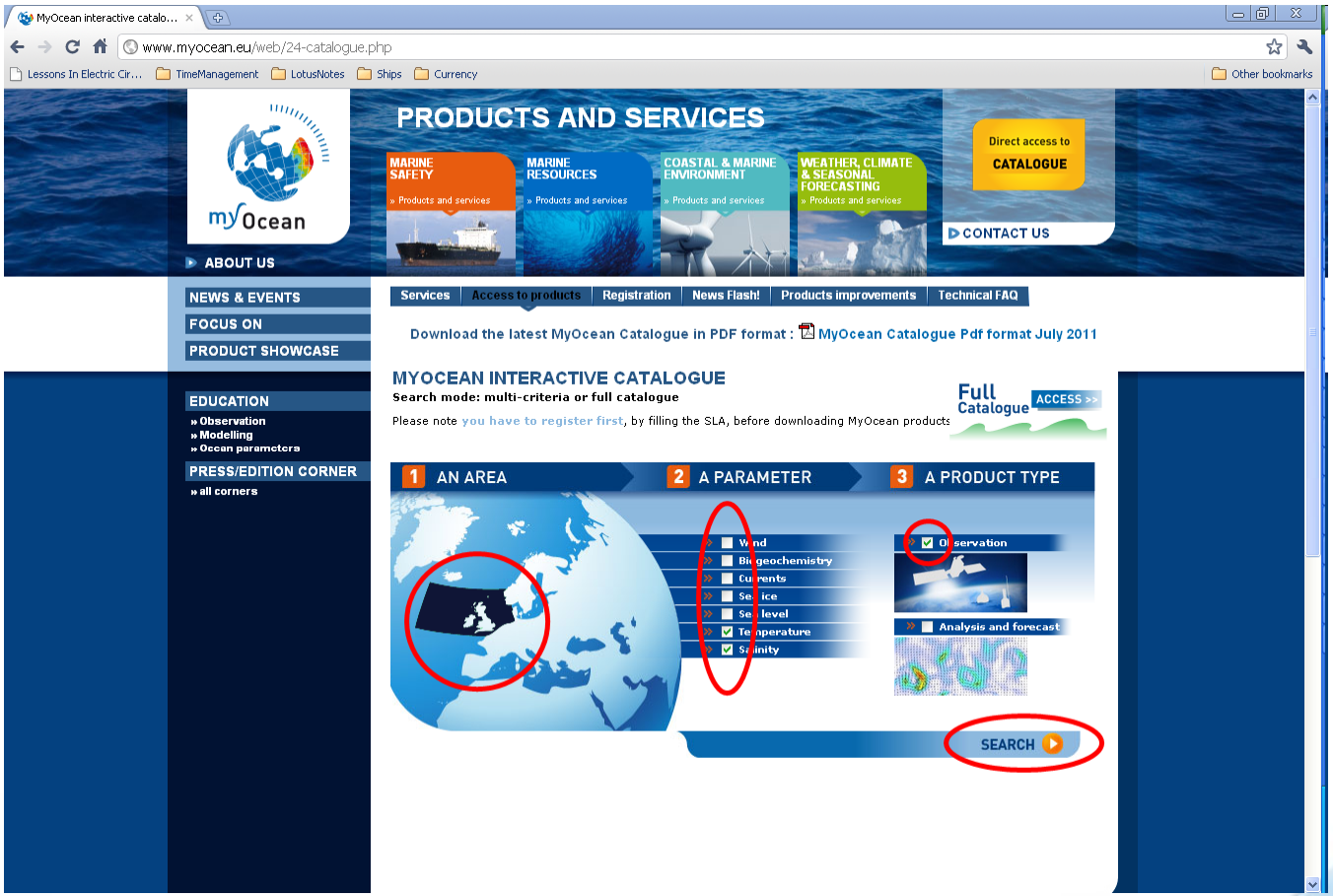
- Instrument Comparison
- Parameter Relationship
- Calibration Status
- Subsequential Trips

DMQC Overview

Delayed mode is delayed (by definition)

Decision: follow SeaDataNet procedures and standards

How to Get Data



Register as a MyOcean User and get access to servers

Roadmap for Jerico

- From MyOcean to a consensual and sustainable QC/QA approach
  - Additional parameters
  - Suggestion for improvements of QC/QA
  - End-to-end Quality Assurance

Hope it is a bit less blurry

☺