EuroGOOS
European Global Ocean Observing System

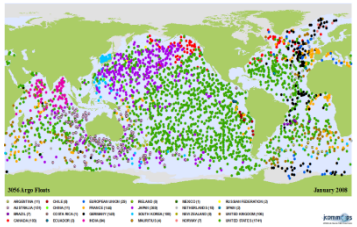
European MARINE BOARD
Advancing Seas & Oceans Science

Towards an integrated European Ocean Observing System

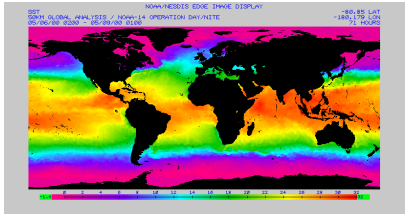
Kostas Nittis

EuroGOOS, Secretary General
European Marine Board, Chair









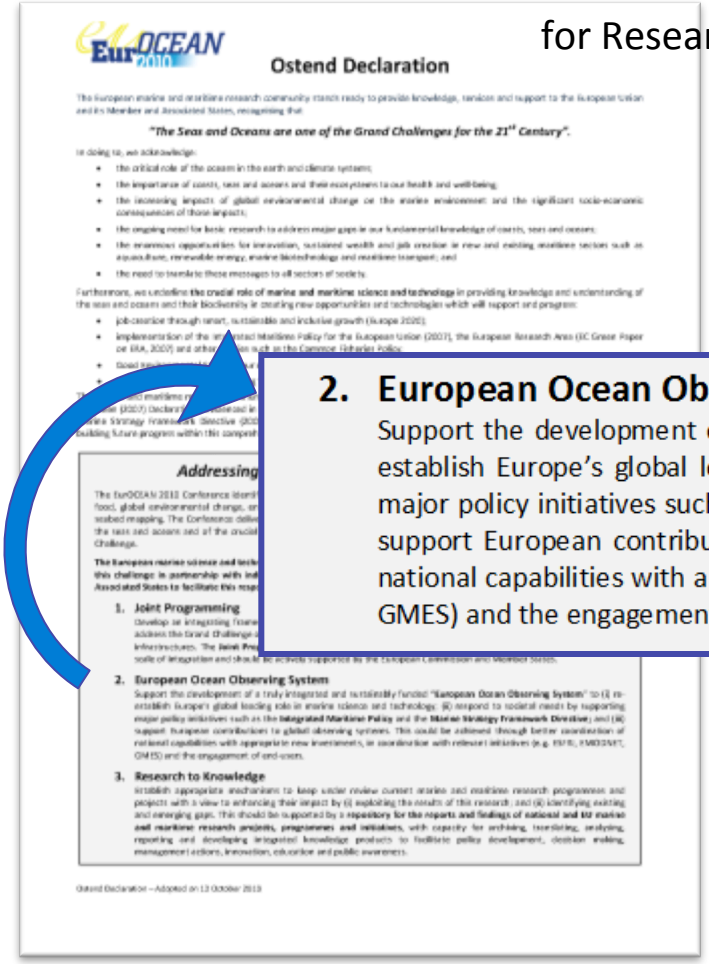


Ostend Declaration 2010

The Ostend Declaration

Adopted at EurOCEAN 2010 and presented to Maire Geoghegan-Quinn, Commissioner for Research, Science and Innovation.





Ostend Declaration

"The Seas and Oceans are one of the Grand Challenges for the 21st Century".

- the critical role of the oceans in the earth and climate systems;
- the importance of coasts, seas and oceans and their ecosystems to our health and well-being;
- the increasing impacts of global environmental change on the marine environment and the significant socio-economic consequences of those impacts;
- the ongoing need for basic research to address major gaps in our fundamental knowledge of coasts, seas and oceans;
- the enormous opportunities for innovation, sustained wealth and job creation in new and existing maritime sectors such as aquaculture, renewable energy, marine biotechnology and maritime transport; and
- the need to translate these messages to all sectors of society.

Furthermore, we underline **the crucial role of marine and maritime science and technology** in providing knowledge and understanding of the seas and oceans and their biodiversity in creating new opportunities and technologies which will support and progress:

- job creation through smart, sustainable and inclusive growth (Europe 2020);
- implementation of the integrated Maritime Policy for the European Union (2007), the European Research Area (EC Green Paper on ERA, 2007) and other [illegible] such as the Common Fisheries Policy;

Addressing

1. Joint Programming
2. European Ocean Observing System
3. Research to Knowledge

Ostend Declaration – Adopted on 13 October 2010

2. European Ocean Observing System

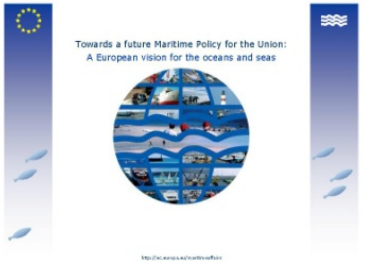
Support the development of a truly integrated and sustainably funded "**European Ocean Observing System**" to (i) re-establish Europe's global leading role in marine science and technology (ii) respond to societal needs by supporting major policy initiatives such as the **Integrated Maritime Policy and** the **Marine Strategy Framework Directive;** and (iii) support European contributions to global observing systems. This could be achieved through better coordination of national capabilities with appropriate new investments, in coordination with relevant initiatives (e.g. ESFRI, EMODNET, GMES) and the engagement of end-users.

Drivers of EOOS

✓**Europe's leading role** in marine and maritime science and technology

✓**Integrated Maritime Policy** (EMODnet)

✓**Marine Strategy Framework Directive** (marine environmental assessments)



✓**GEO-GEOSS** and the EU contribution

✓ Rio– Agenda 21: **GOOS** – UNESCO

✓**UNFCCC** – GCOS

✓**CBD** - GOBI

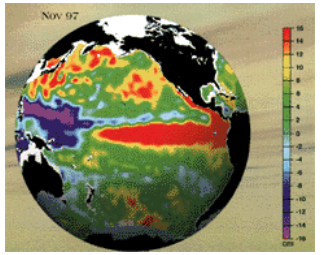


Major driver: supporting blue economy (*user's pull*)

Deliver data and information products in support of:

- ✓Maritime transport
- ✓Offshore operations (constructions, drilling, ..)
- ✓Fisheries & aquaculture
- ✓Tourism & coastal economy
- ✓Ocean renewable energy

- ✓Health of marine environment (pollution, biodiversity)
- ✓Protection from natural hazards (tsunami, HABs)
- ✓Mitigation of climate change effects (e.g. sea level rise)







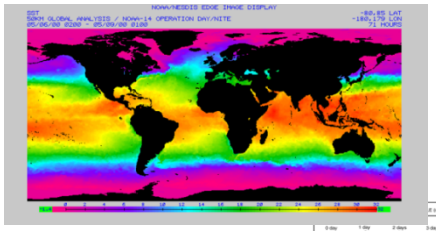


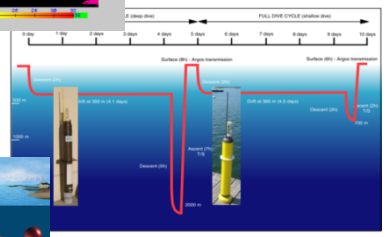
EuroGOOS
European Global Ocean Observing System

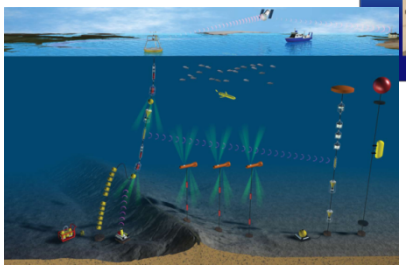
Observing systems are now available (*technology push*)

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- ✓Remote sensing
- ✓Drifting-profiling floats
- ✓Fixed observatories (time-series stations)
- ✓Ships of opportunity
- ✓Gliders
- ✓Research vessels
- ✓Coastal networks (tide gauge..)













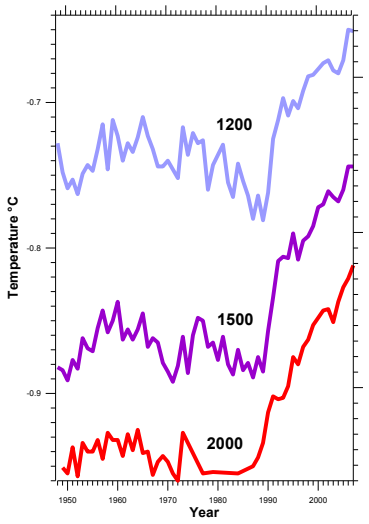
What do we have today in Europe ?

- National systems (partially coordinated by EuroGOOS)
  - Variety of technologies and funding schemes; main synergies at regional level
- Research infrastructure investments (FP, ESFRI)
  - EuroARGO, EMSO, ….
  - FixO3, JERICO, SEADATANET, …
  - ICOS - Carbocean
- EMODNET & Copernicus MS: integrators (and major users)
  - Not yet funding the in-situ component

What is missing ?

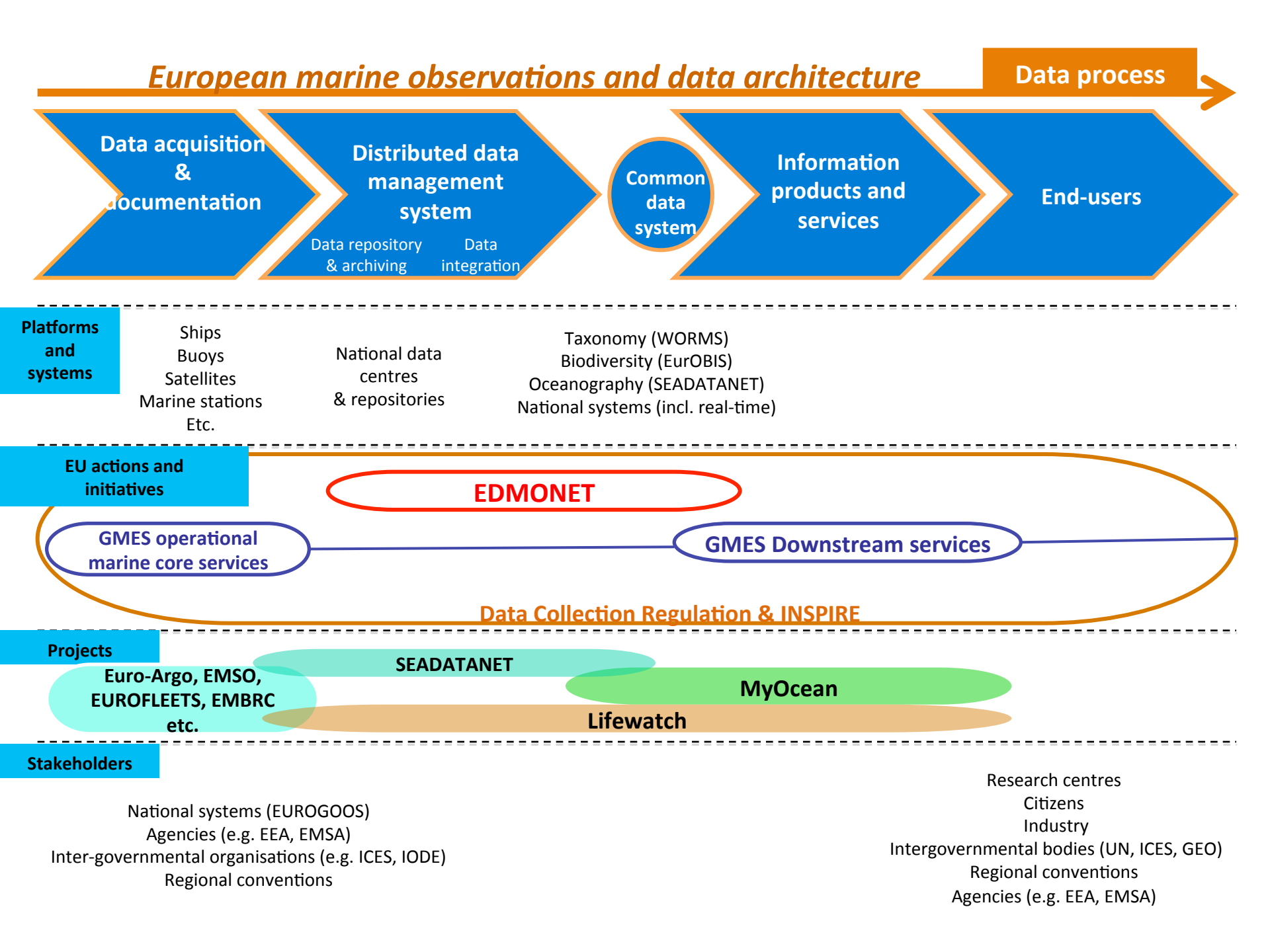
- Spatial gaps
  - horizontal – SE European seas;
  - vertical – deep sea is under-sampled;
- Temporal gaps
  - few complete time series;
- Parameter gaps
  - biochemical; sensors are now available;
- Long term commitments
  - more than 70% based on short term research funding;
- Integrated monitoring strategy at European level
  - Reduce overlaps; maximize synergies and benefits





Proposed way ahead

- Launch a concerted flagship initiative: **EOOS**
  - With specific Strategy, Implementation Plan, Budget
- Building upon and combining all available resources
  - National and European
  - Research, Operational, Structural
  - Public and Private
  - Existing and New investments
- Engaging all stakeholders (EU, MS, Regions, Industry)
  - EMODNET (DG Mare)
  - Copernicus (DG Enter)
  - ESFRI, FP7-8, JPI-Oceans (DG Res)
  - EuroGOOS, **EMB**, EUMETNET, , ….,
- In partnership with international – global initiatives
  - GEO, IOOS-OOI, IMOS, …, ICES, UNEP, OSPAR, …


European marine observations and data architecture
Data process
Data acquisition & documentation
Distributed data management system
Data repository & archiving
Data integration
Common data system
Information products and services
End-users
Platforms and systems
Ships
Buoys
Satellites
Marine stations
Etc.
National data centres & repositories
Taxonomy (WORMS)
Biodiversity (EurOBIS)
Oceanography (SEADATANET)
National systems (incl. real-time)
EU actions and initiatives
EDMONET
GMES operational marine core services
GMES Downstream services
Data Collection Regulation & INSPIRE
Projects
Euro-Argo, EMSO, EUROFLEETS, EMBRC etc.
SEADATANET
MyOcean
Lifewatch
Stakeholders
National systems (EUROGOOS)
Agencies (e.g. EEA, EMSA)
Inter-governmental organisations (e.g. ICES, IODE)
Regional conventions
Research centres
Citizens
Industry
Intergovernmental bodies (UN, ICES, GEO)
Regional conventions
Agencies (e.g. EEA, EMSA)

Concluding messages

- Europe needs to develop its own integrated and sustained Ocean Observing System, in support of science, policy, and societal needs (EOOS).

- EOOS should transform the present scattered capacities into an integrated **system** with specific design, implementation plan, budget and governance structure.

- The process of developing EOOS should involve all stakeholders and key-actors: Members States, EU structures (EMODNET, Copernicus, ESFRI), Research and operational networks (JPI-Oceans, EuroGOOS, EMB, ….,)


Thanks for the attention
Integrated
Long-term
Sustained
European Ocean Observing System