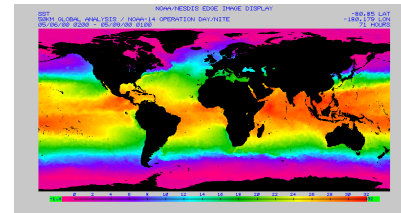
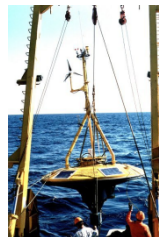
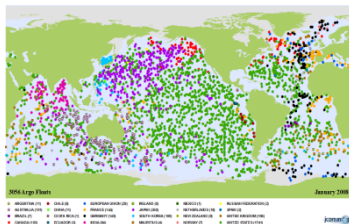


# Towards an integrated European Ocean Observing System

Kostas Nittis

EuroGOOS, Secretary General  
European Marine Board, Chair



## The Ostend Declaration

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



### Ostend Declaration

The European marine and maritime research community stands ready to provide knowledge, services and support to the European Union and its Member and Associated States, recognising that:

**"The Seas and Oceans are one of the Grand Challenges for the 21<sup>st</sup> Century".**

In doing so, we acknowledge:

- The critical role of the oceans in the earth and climate systems;
- The importance of coasts, seas and oceans 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 transmit 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 policies such as the European Fisheries Policy;
- Good governance of the oceans.

The European marine and maritime research community stands ready to provide knowledge, services and support to the European Union and its Member and Associated States, recognising that:

### Addressing

The EurOCEAN 2010 Conference identified food, global environmental change, or coastal mapping. The Conference calls the seas and oceans and the coastal challenges.

The European marine science and technology challenge is partnership with industrialised States to facilitate this response.

#### 1. Joint Programming

Develop an integrating framework across the Grand Challenge infrastructures. The basic principles of integration and should be actively supported by the European Commission and Member States.

#### 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.

#### 3. Research to Knowledge

Establish appropriate mechanisms to keep under review current marine and maritime research programmes and projects with a view to enhancing their impact by (i) exploiting the results of this research; and (ii) identifying existing and emerging gaps. This should be supported by a **repository for the reports and findings of national and for marine and maritime research projects, programmes and initiatives**, with capacity for archiving, monitoring, analysing, reporting and developing integrated knowledge products to facilitate policy development, decision making, management actions, innovation, education and public awareness.

Ostend Declaration – Adopted on 13 October 2010

## 2. European Ocean Observing System

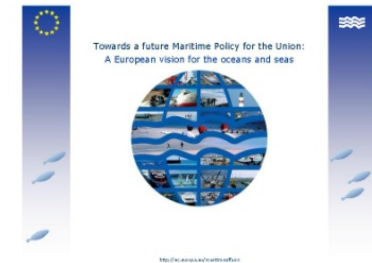
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✓ **Europe's leading role** in marine and maritime science and technology



✓ **Integrated Maritime Policy** (EMODnet)

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

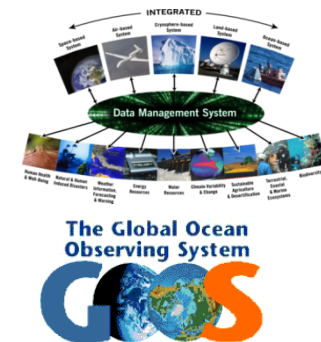


✓ **GEO-GEOS** and the EU contribution

✓ Rio– Agenda 21: **GOOS** – UNESCO

✓ **UNFCCC** – GCOS

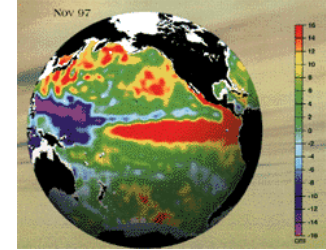
✓ **CBD** – GOBI



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

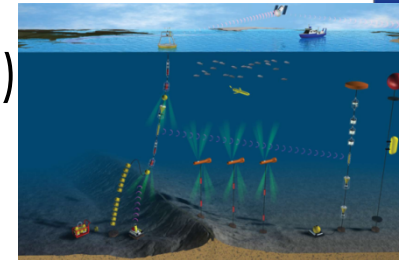
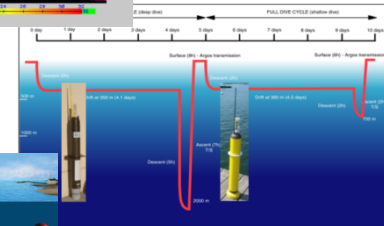
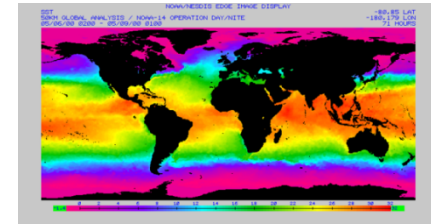
Deliver data and information products in support of:

- ✓ 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)



# Observing systems are now available (*technology push*)

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







**EuroGOOS**  
European Global Ocean  
Observing System

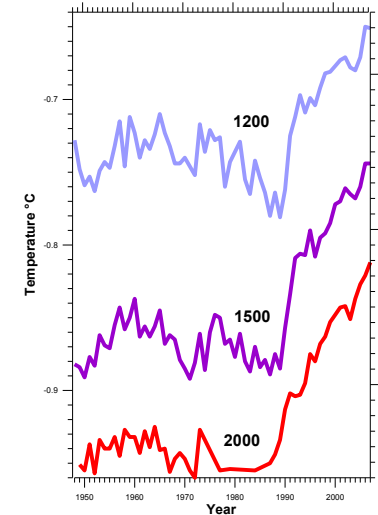
# What do we have today in Europe ?

- 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



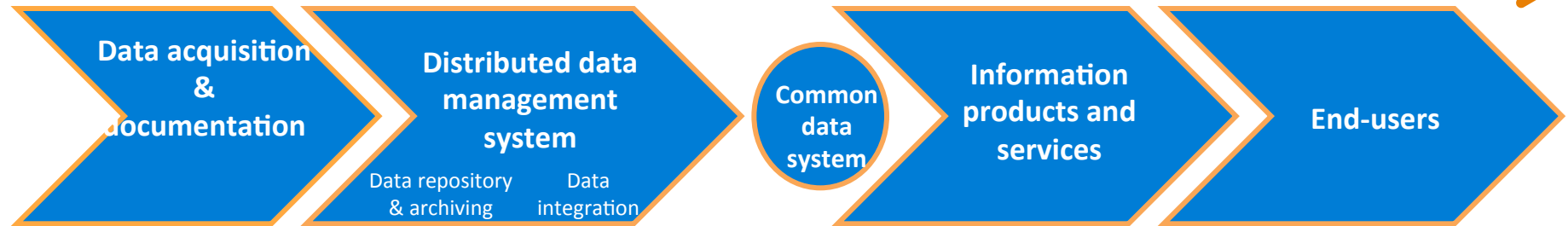
# Proposed way ahead

- 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



## 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*