



EuroGOOS

European Global Ocean
Observing System

EuroGOOS overview

Erik Buch

EuroGOOS chair

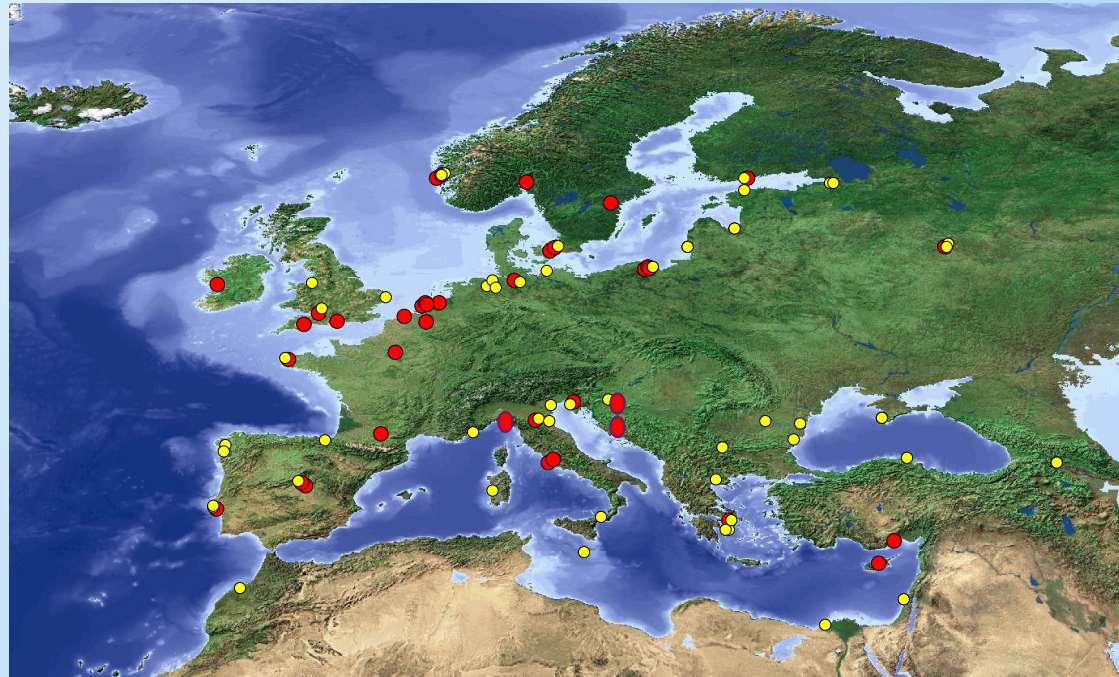


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EuroGOOS

EuroGOOS AISBL is an International Non Profit Association of 40 national agencies, institutes, research organisations and private companies in 19 European countries promoting and implementing Operational Oceanography.

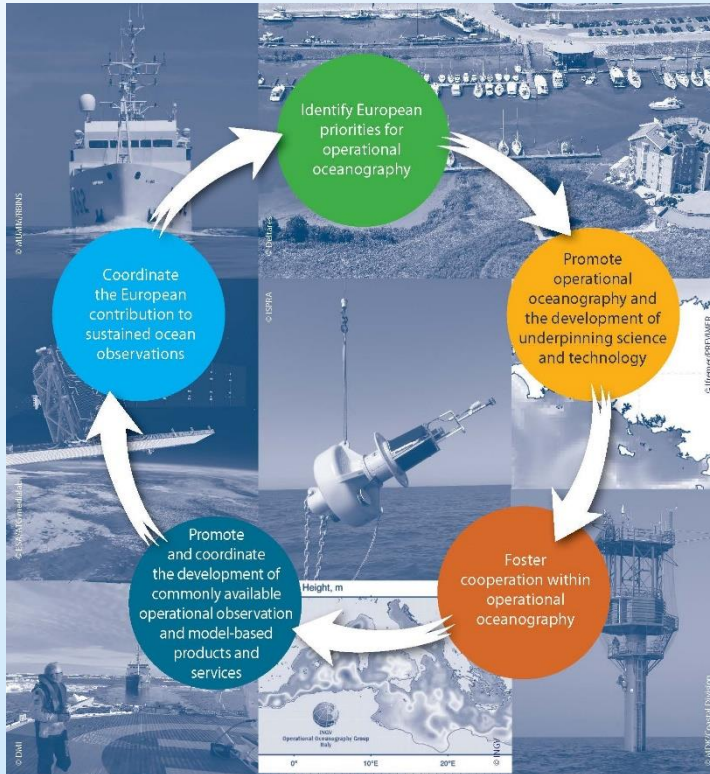




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EuroGOOS Objectives



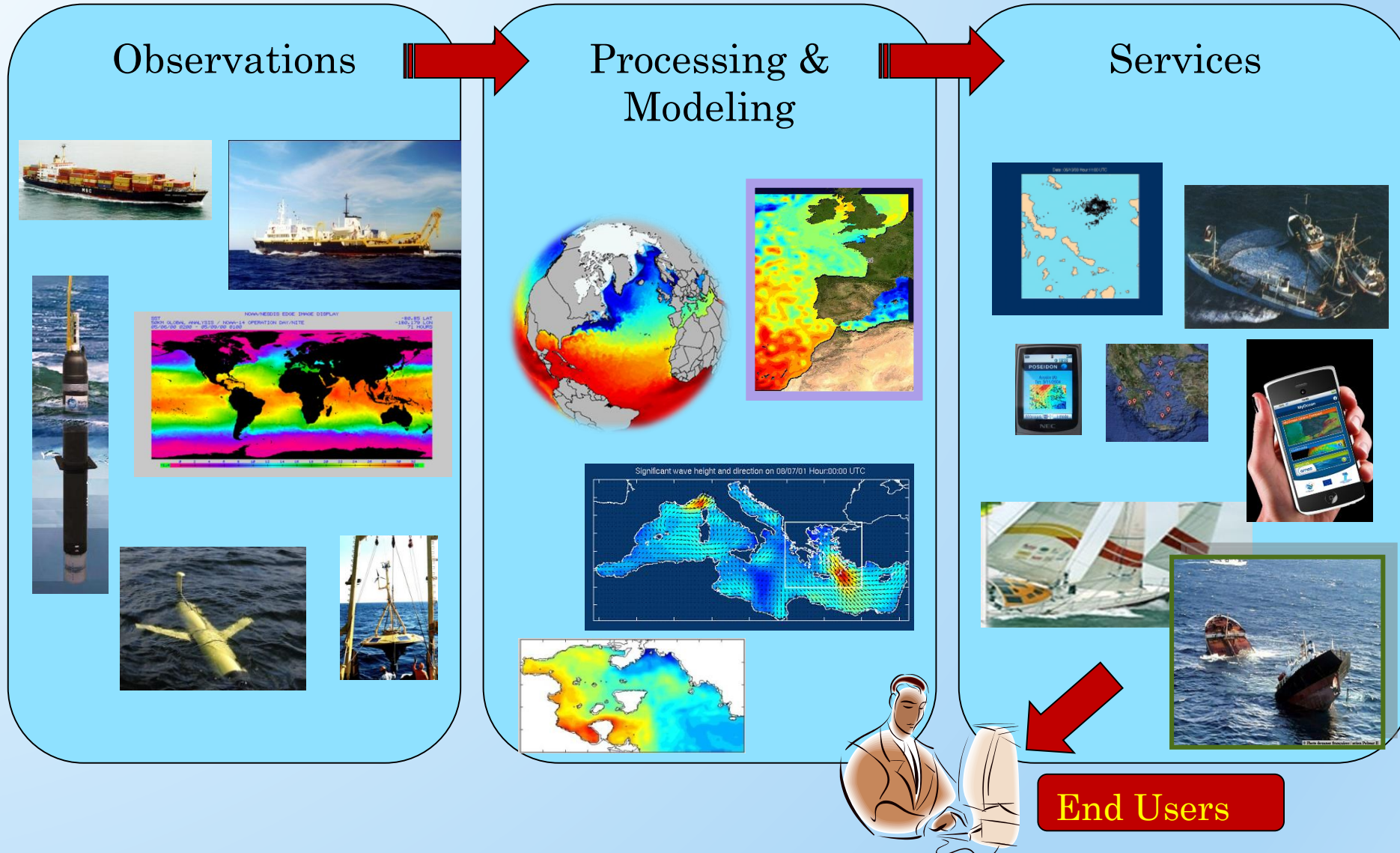
- Operational oceanography – strategies and priorities for Europe
- Promotion
- Cooperation
- Co-production
- Sustained ocean observations



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Operational Oceanography





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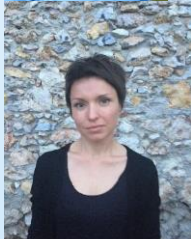
EuroGOOS Office



- **Glenn Nolan, Secretary General**



- **Patrick Gorringer, Senior science officer**



- **Dina Eparkhina, Coordination and Communication Officer**



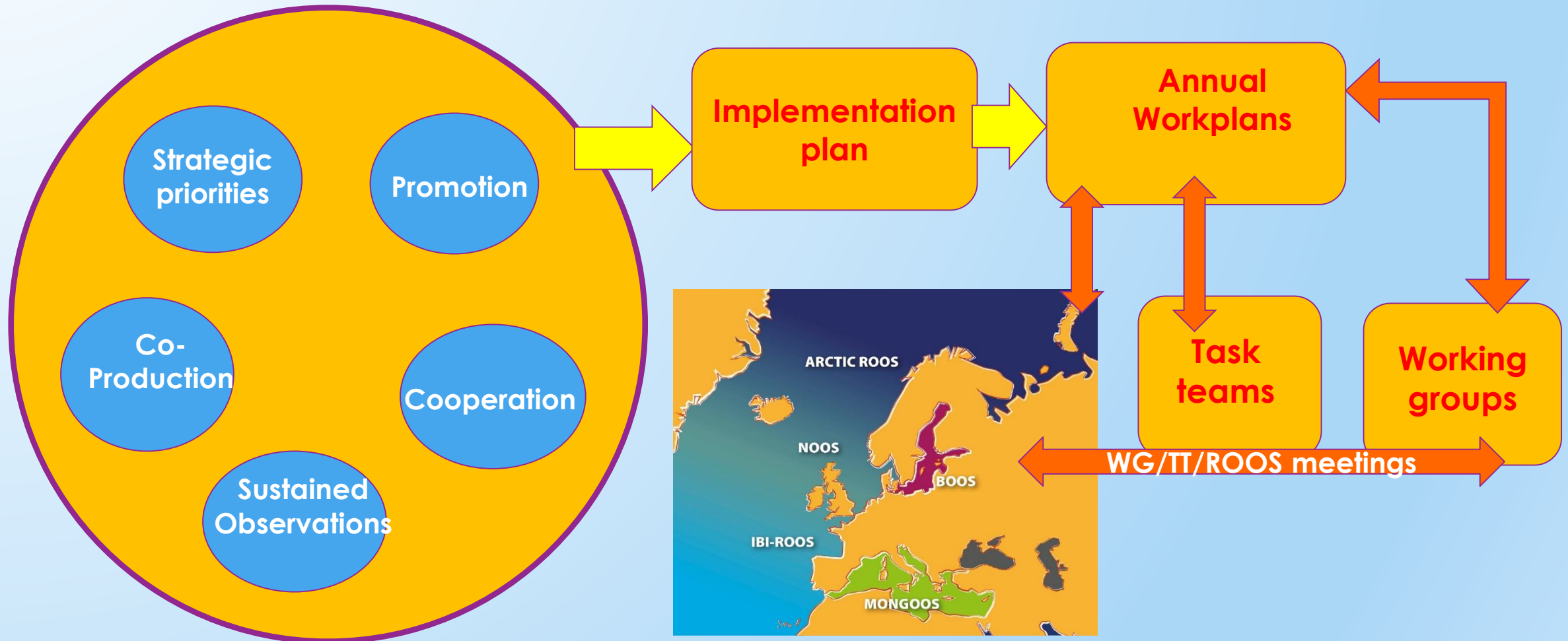
- **Vincente Fernandes, Project officer**



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EuroGOOS Strategy 2014-2020



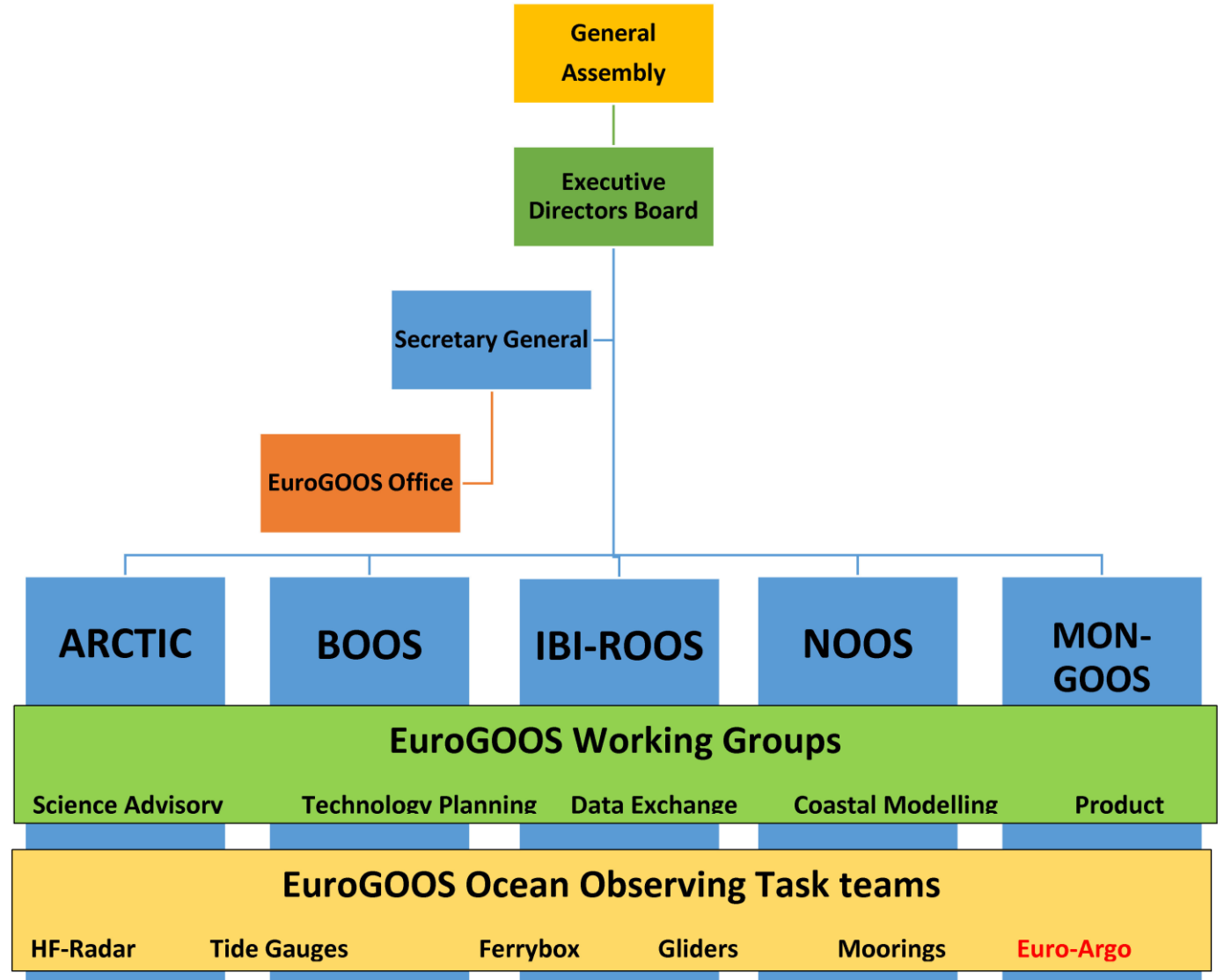


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- ✓ Strategies and actions are decided by an General Assembly and the Executive Directors
- ✓ Actions are carried out by the EuroGOOS Office, the Board, the Chair and the members/partners.
- ✓ Development of O.O. systems is carried out by the Regional Systems
- ✓ Working groups produce strategies, priorities and standards for O.O.
- ✓ Ocean Observing Task Teams organizes and develops the individual observation communities and foster cooperation

Structure





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ROOS

(Regional Operational Oceanography Systems)



- The ROOSs are the operational arm(s) of EuroGOOS
- About 50 additional partners in Regional Operational Oceanographic Systems (ROOS)
- The ROOSs cooperation focus on improved national and regional services and products
- ROOSs coordinate the observations and the data transfer for internal use and to other users i.e. acting as the regional data broker





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Working Groups



- Science
- Technology
- Data Exchange
- Product
- Coastal





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Ocean Observation Task Teams



- HF-Radar,
- FerryBox,
- Tide Gauges,
- Gliders
- **EURO-Argo**

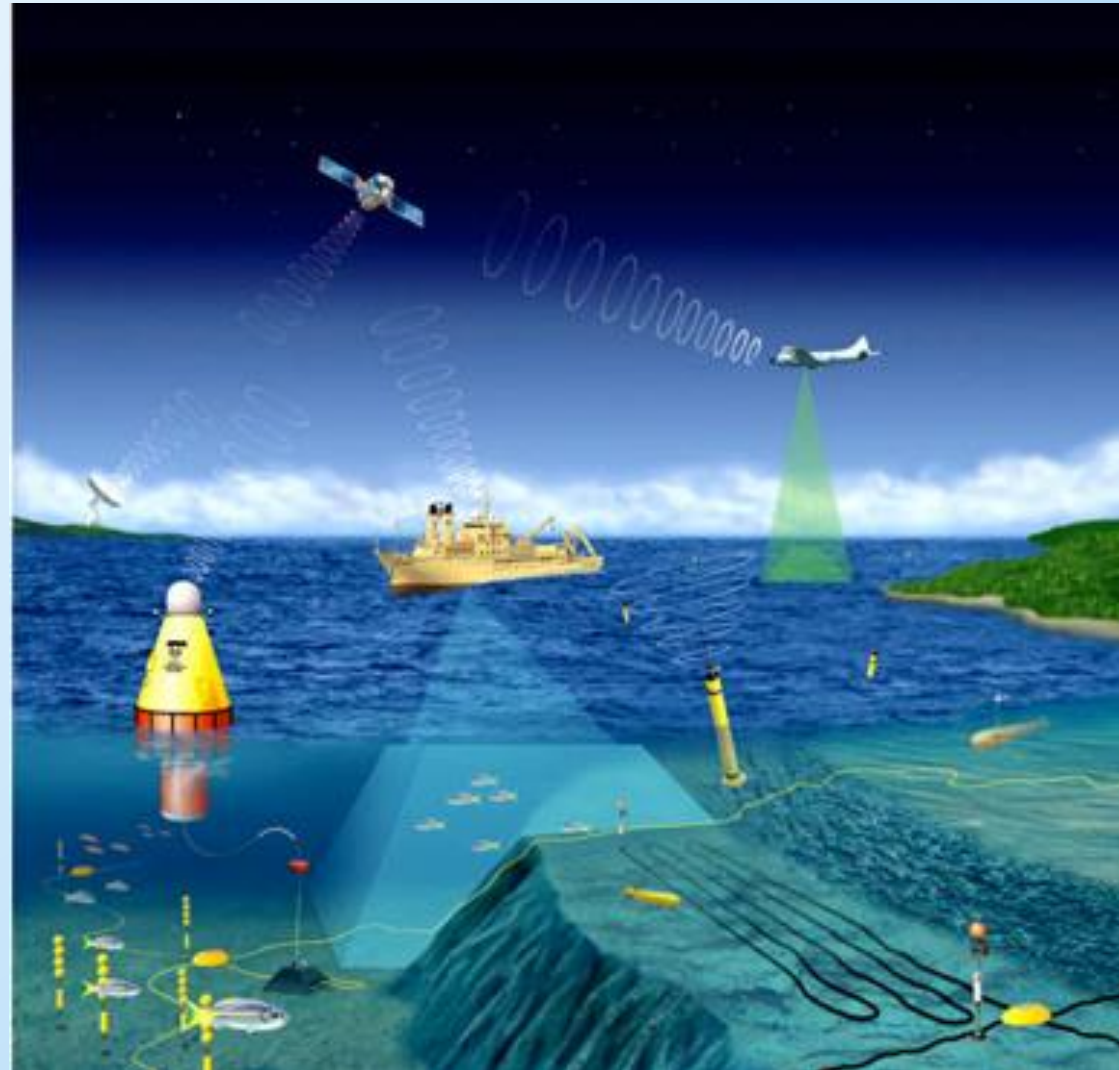
- Fixed Platforms
- Marine mammals



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**We cannot manage what
we do not measure**



EuroGOOS AISBL eurogoos@eurogoos.eu - <http://www.eurogoos.eu>



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EOOS

**European Ocean
Observation System**



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EOOS Context

2008: Joint EMB-EuroGOOS paper on EMODNET

2009: Framework for Ocean Observing (basis for AtlantOS)

2010: Ostend Declaration: “Support the development of a truly integrated and sustainably funded “European Ocean Observing System” to establish Europe’s global leading role in marine science and technology...”.

2013 (January) : Marine Research Infrastructures report

2013 (June): Navigating the Future IV (Chapter 11 describes EOOS)

2014: Rome Declaration ‘Making EOOS a reality’, Jan Mees (Chair of EMB) and Erik Buch (Chair of EuroGOOS), made a call for action.

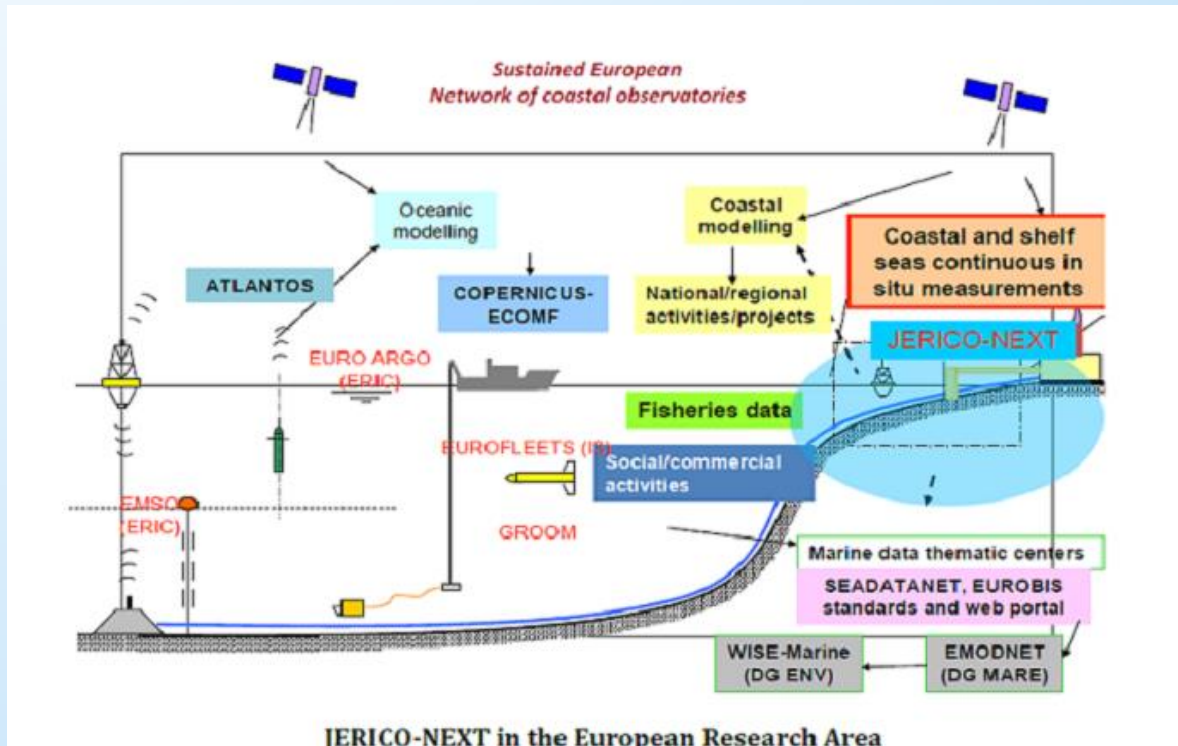


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What do we have today in Europe ?

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





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What is missing ? (gaps)

- **Spatial gaps**

- horizontal – SE European seas;
- vertical – deep sea is under-sampled;

- **Temporal gaps**

- few complete time series;

- **Parameter gaps**

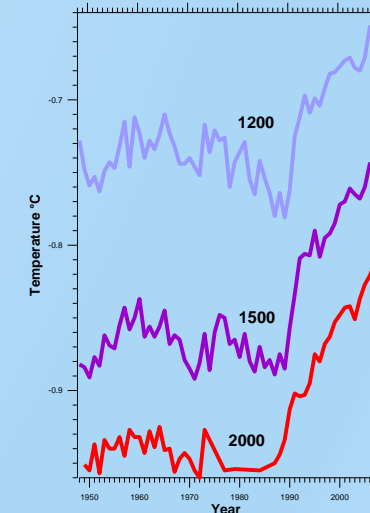
- biochemical; sensors are now available;

- **Long term commitments**

- more than 70% based on research funding;

- **Integrated monitoring strategy at European level**

- Reduce overlaps; maximize synergies and benefits

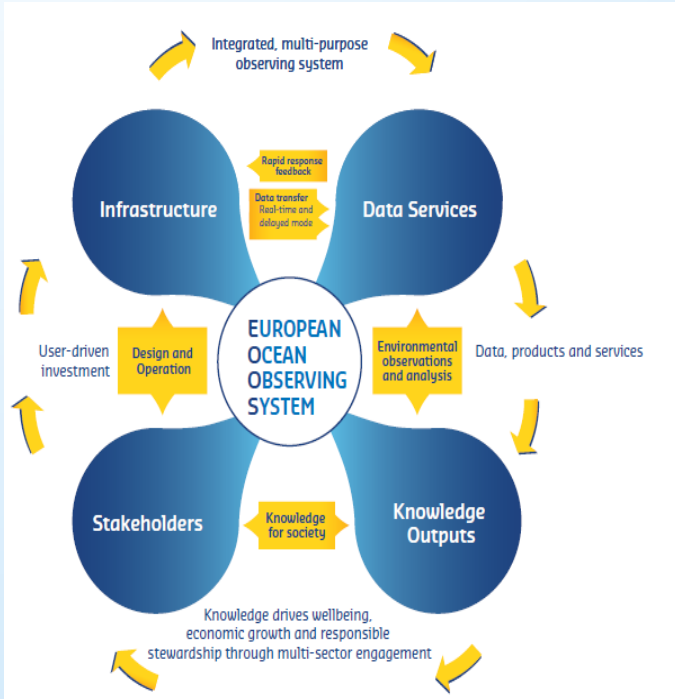




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Concepts: Framework



- Provide strategic oversight
- Fit for purpose
 - Societal needs – not national or personal priorities
- Full system – instruments to data services incl. free open and quality assured data
- Provide maximum benefit by optimising and integrating – avoid duplication
- Measurable impacts
- Clearer role of science
- Economy
 - Saving time and money (emphasise cost effectiveness)
 - New investments
 - Re-design of existing network
- Governance
- Emphasise European specificities

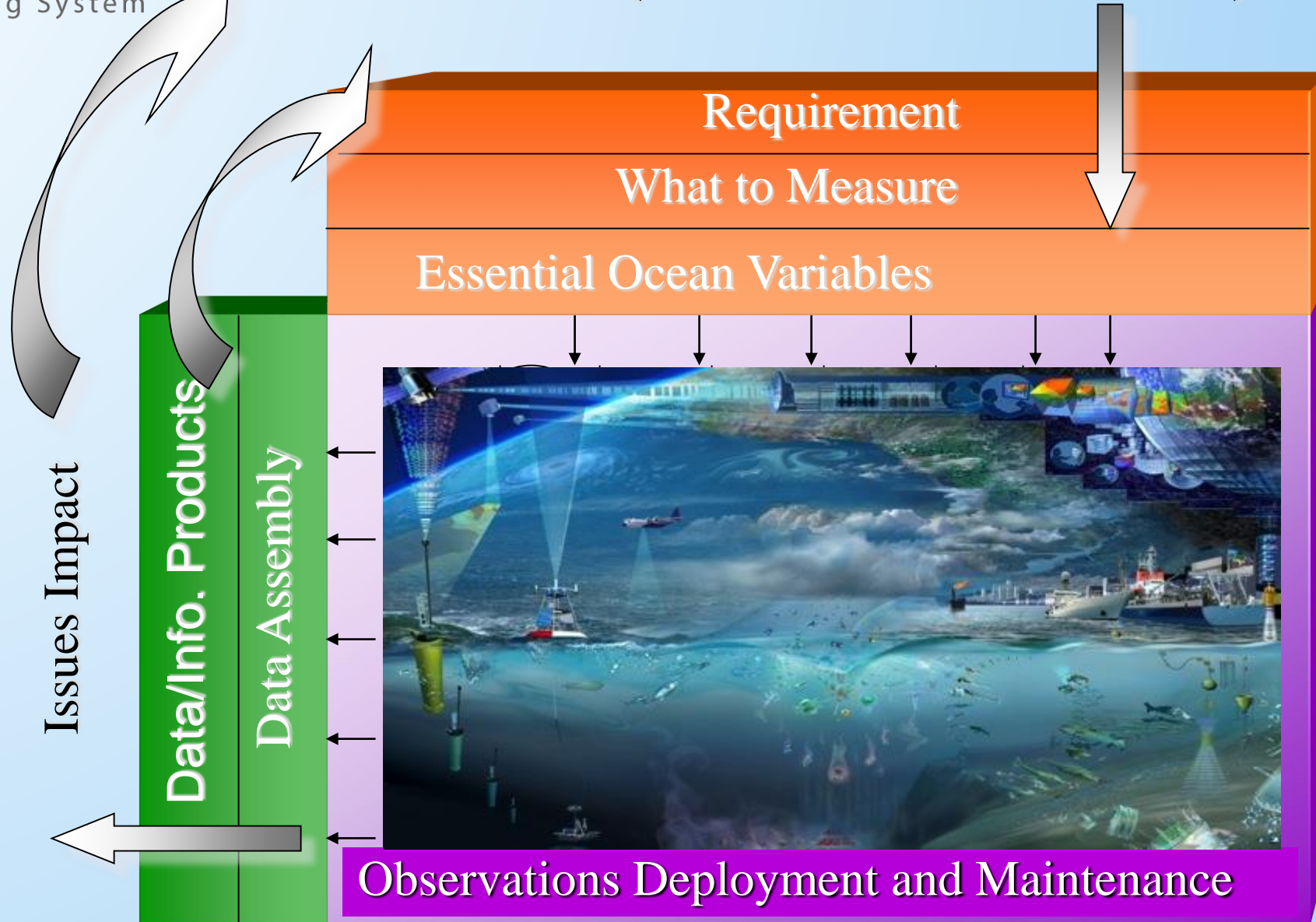


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Structure of the Framework

Issues (Scientific and societal drivers)



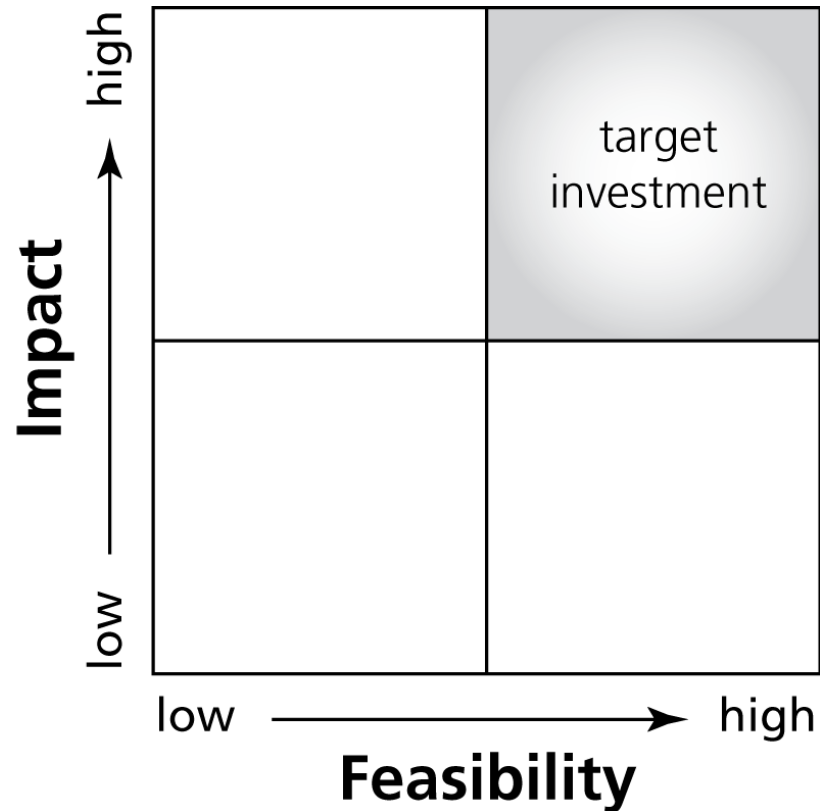


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Essential Ocean Variables

Driven by requirements, negotiated with feasibility



- We cannot measure everything, nor do we need to
- Including new elements of the system is driven by requirements, negotiated with feasibility
- Allows for innovation in the observing system over time



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EOOS Brainstorming Workshop

- EMB and EuroGOOS cooperation
- 20 observing experts
- Focus on:
 - Drivers
 - Definition
 - Purpose
 - Roadmap for the coming 2-3 years
- Report soon





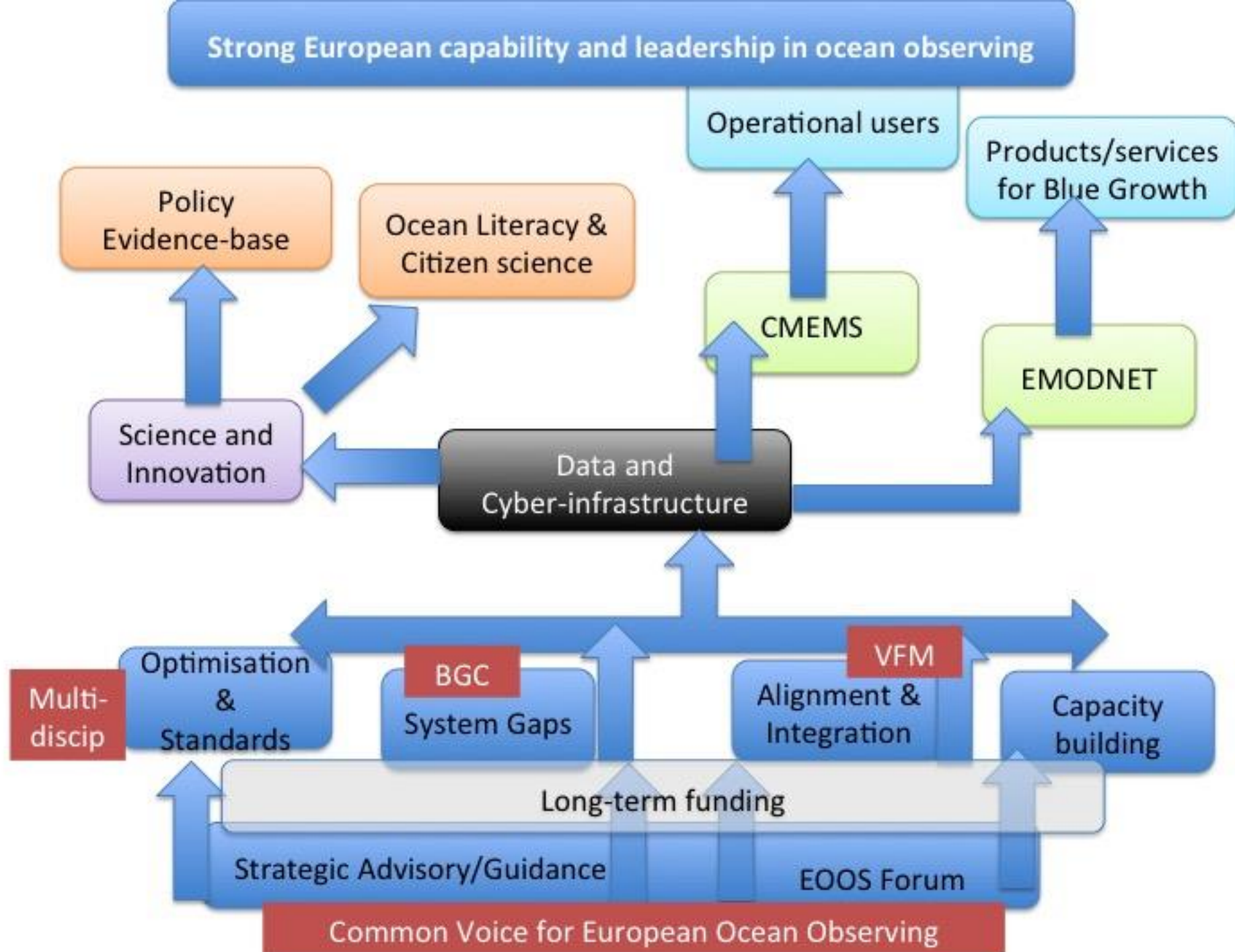
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EOOS definition

Def 1: “EOOS is a sustained and integrated observing system for Europe’s seas in order to understand the current state and key processes that underpin the sustainable management of marine resources”

Def 2: “EOOS is a sustained and integrated observing system that characterises the state of the European seas and oceans providing effective management into the future”

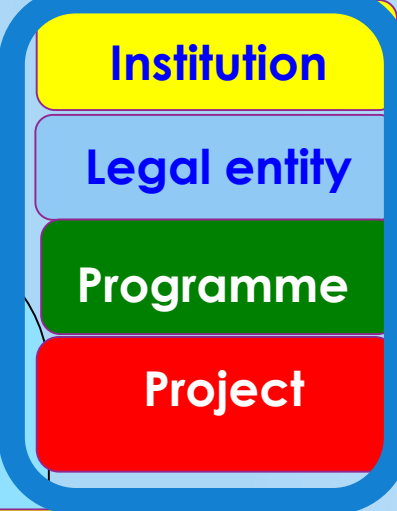
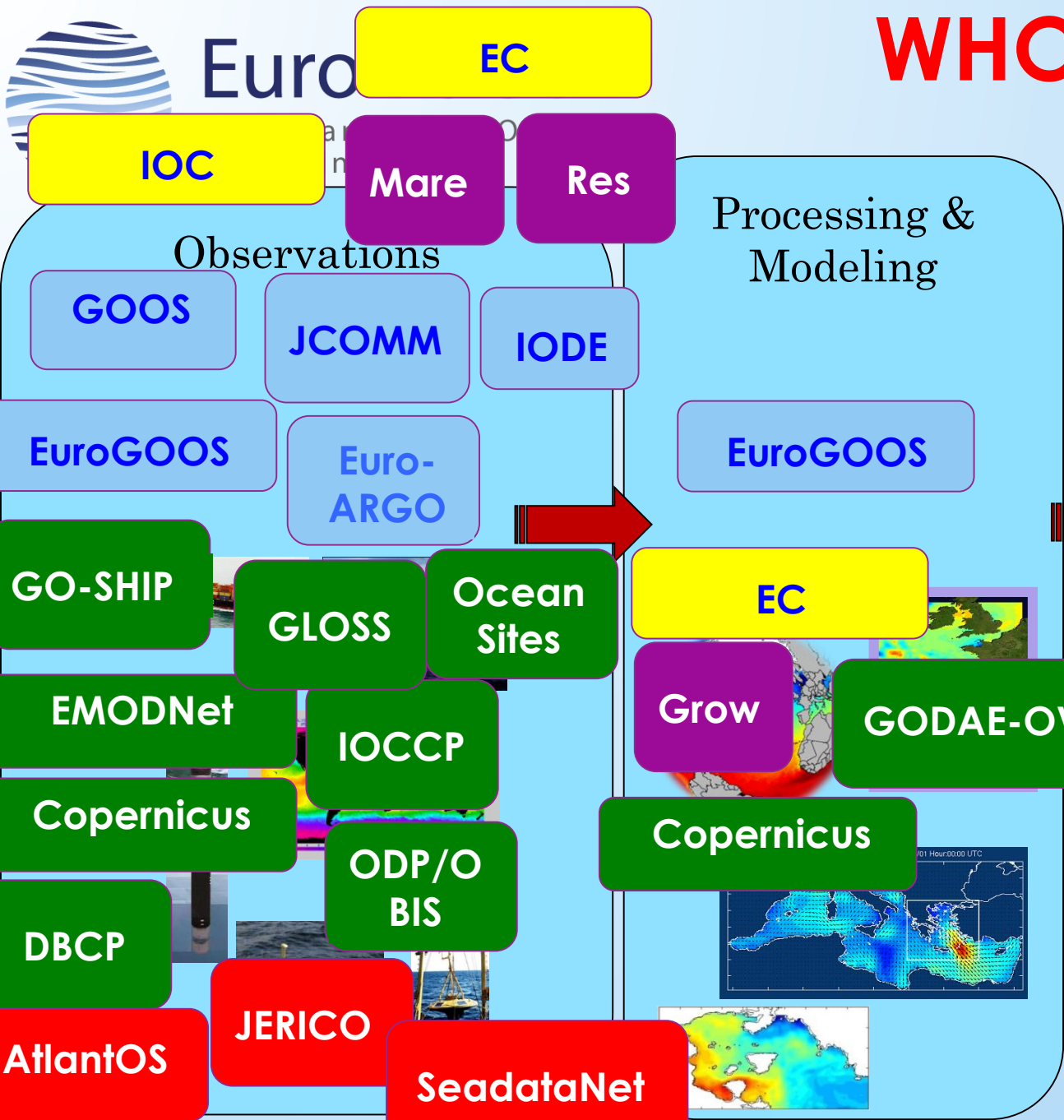
Def 3: “EOOS creates knowledge to drive sustainable development and blue growth through understanding and predicting the state of the European seas and oceans”





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WHO??



End Users





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Roadmap elements

**Strawman
(post
workshop)**

**Consultation
with key
actors**

Forum

EOOS Board

**Funding
(CSA?)**

**Brochure and
support
material**

EOOS Office

**Conference
and launch**



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Project participation

- **EMODnet II**
- **AtlantOS**
- **Columbus**
- **Jerico Next**
- **ENVRI+**
- **Copernicus INSTAC**
- **EMODnet Checkpoints**
 - **Baltic**
 - **Atlantic**

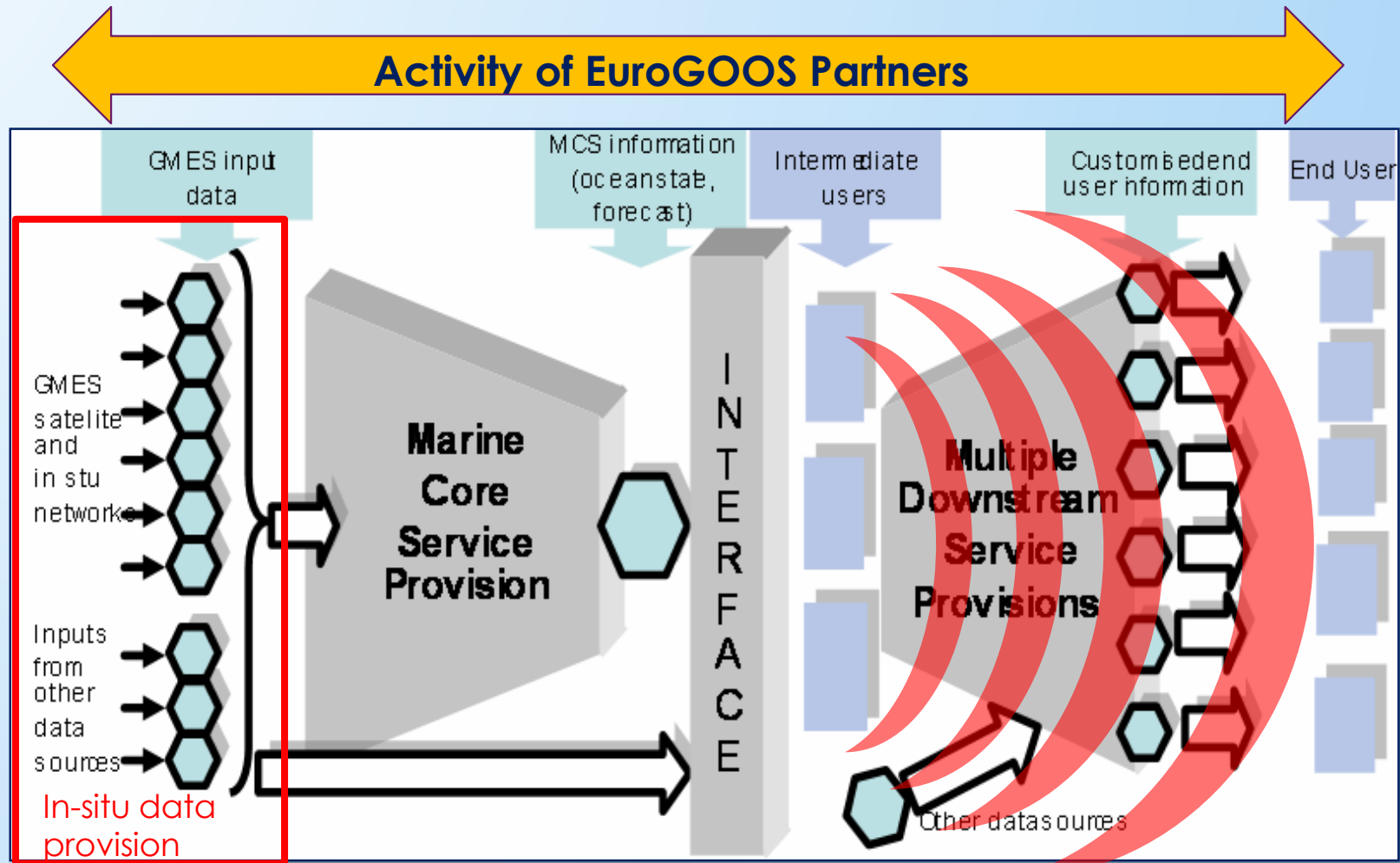




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Implementing the Copernicus Marine Service



1 A reliable production & service

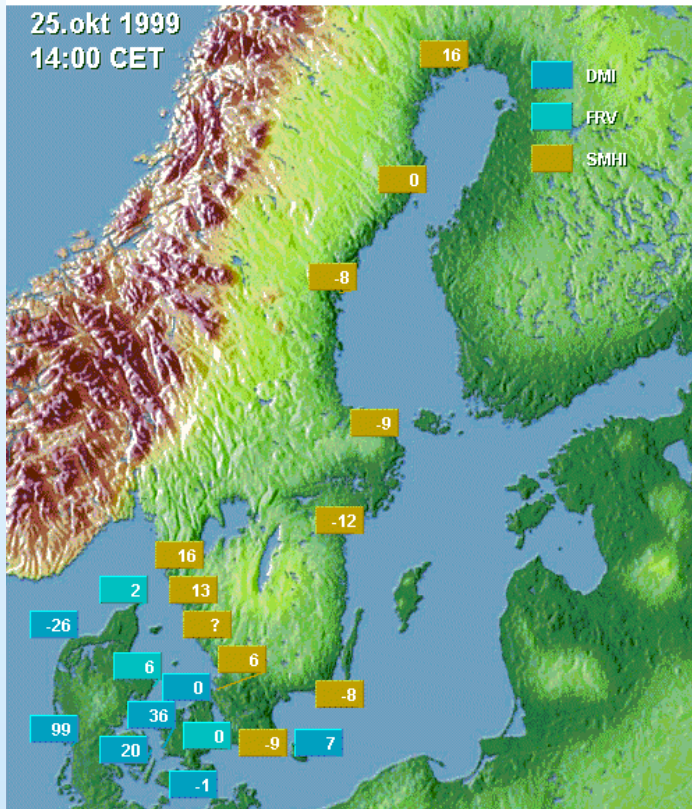
2 A deep and efficient user uptake



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Baltic Water Levels



Slipshavn
Korsør
Hornbæk
Drogden
Gedser
Tejn
Kalix
Ratan
Spikarna
Rönneby

Graphics

Show data

25. okt 1999
24. okt 1999
23. okt 1999
22. okt 1999
21. okt 1999
20. okt 1999
19. okt 1999

Show map

Development

EMODNET October 2015

Browser: http://www.emodnet-physics.eu/Map/

EMODnet
European Marine Observation and Data Network

PLATFORM TYPE
PARAMETERS
SEA BASIN
DATA PROVIDERS
INITIATIVES

AVAILABLE 8135
SHOWN 2465

SEARCH PLATFORM (E.G. ARKONA)

LATITUDE LONGITUDE

Last 7D Last 60D Recent

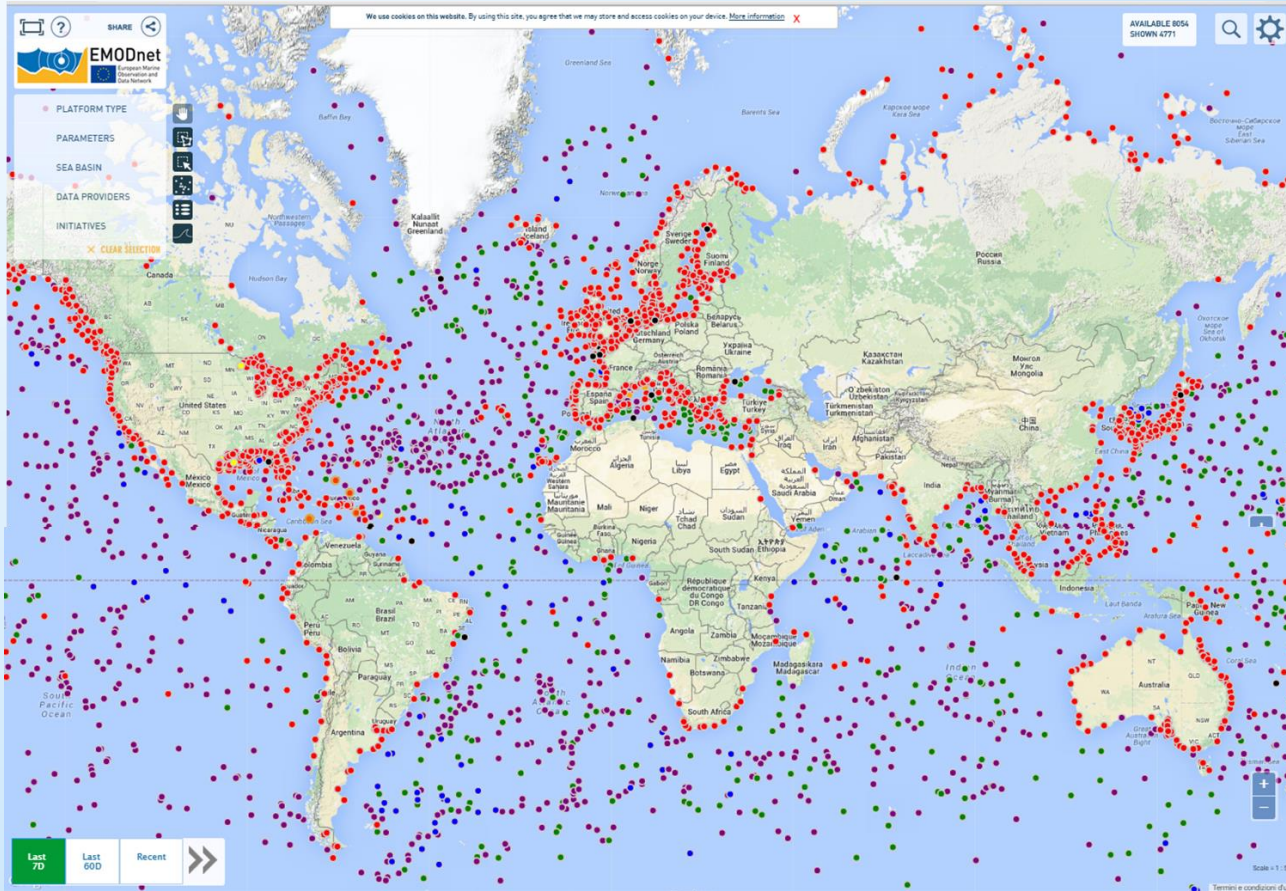
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EMODNET European, US, Australia RT/NRT data



GOOS data portal?

- EU DG Mare supportive
- GRA members

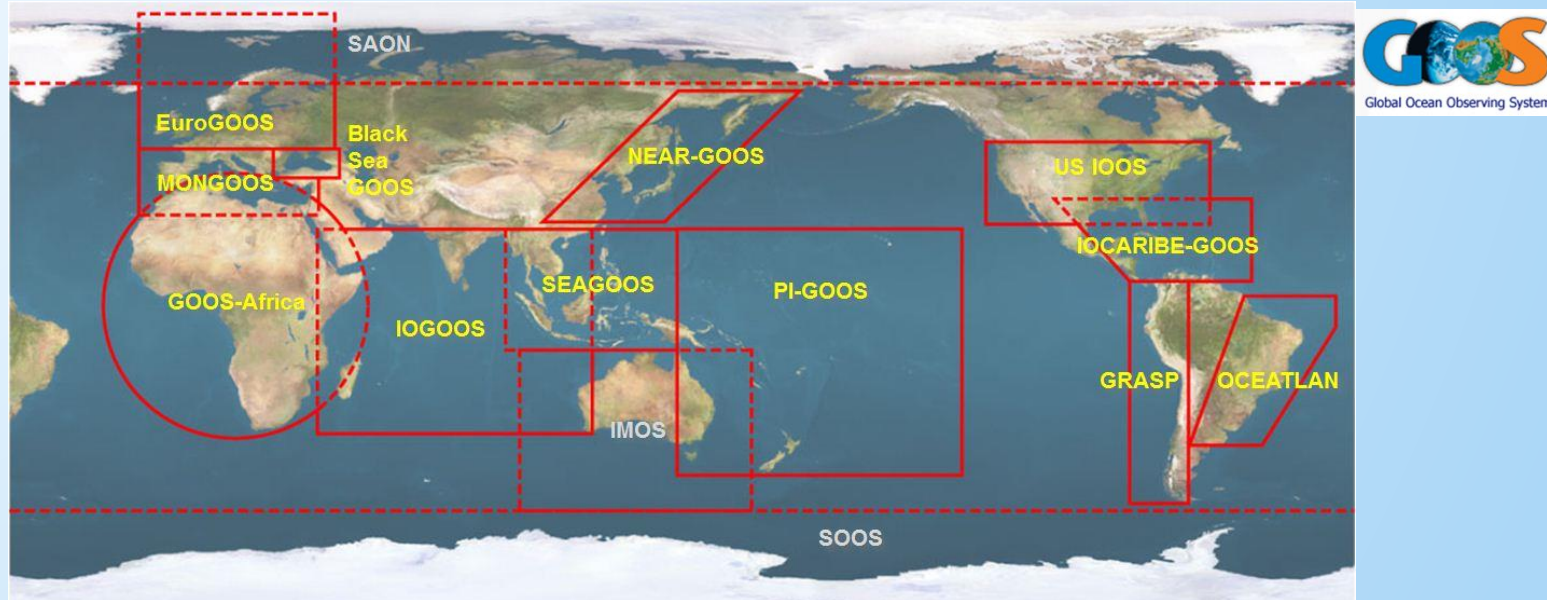


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Part of the Global effort

EuroGOOS is one of the thirteen GOOS Regional Alliances (GRAs) that develop the system in different parts of the World Ocean.



GOOS establishes a permanent global system for observations, modelling and analysis of marine and ocean variables to support operational ocean services worldwide

GOOS is a platform for:

- International cooperation for sustained observations of the oceans
- Generation of oceanographic products and services
- Interaction between research, operational, and user communities



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Arctic GOOS

- **Idea launched at Arctic ROOS annual meeting 2014**
- **IOC contacted February 2015**
 - Support from GOOS Office, Secretary General Vladimir Ryabinin, and new IOC Chair Peter Haugan
- **IOC Science day**
- **Contact to representatives of USA, Canada, Russia**
- **GRA meeting September 2015**



Rethinking the GOOS Regional Alliances

- EuroGOOS chair suggested some changes to GOOS structure, but resistance from GOOS SC Chair
- Arctic GOOS

Mismatch between GOOS Projects and GRA Projects

- GOOS projects have higher “status” than GRA at present

North Africa and wider capacity building

- Joint MONGOOS EuroGOOS activity proposed
- Wider initiatives on capacity building suggested (training + fellowship programme)

Global modelling inventory and data portal

- EuroGOOS presented the work undertaken by Patrick Gorryng (EuroGOOS) and Laura Greisbauer (NOAA) as well as a pilot global data portal for real-time oceanographic data.

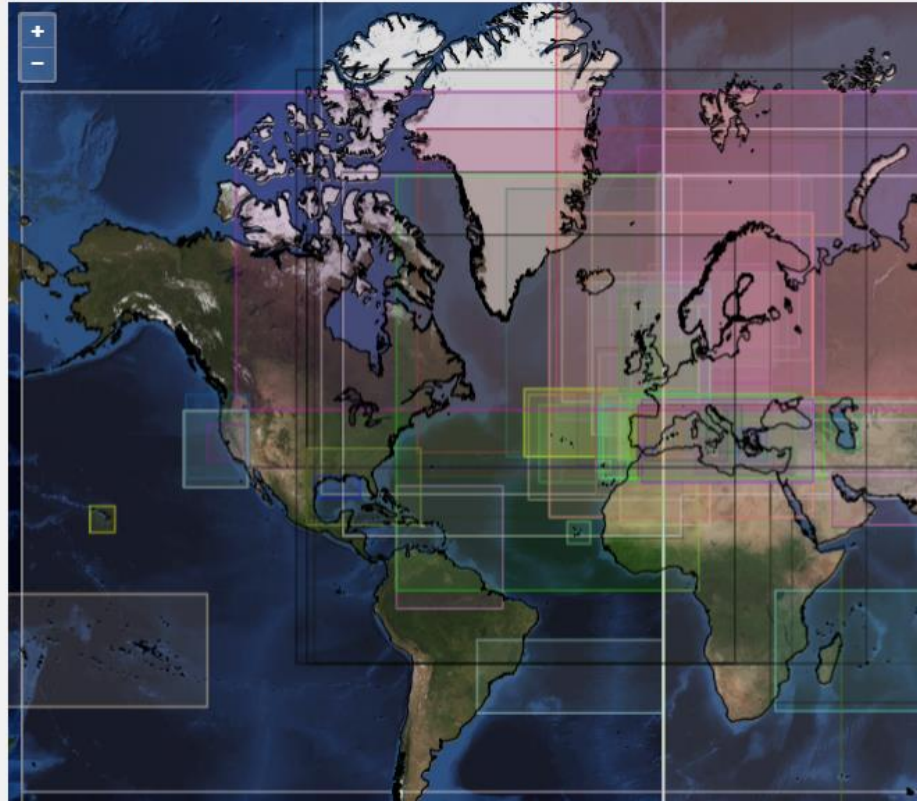
Chair and vice-chair

- Tim Moltmann of IMOS elected GRA chair, Erik Buch elected GRA vice chair



The information on this page is based on a modelling inventory made by the GOOS Regional Alliances (GRAs). The information has been provided by modelling experts in the respective GRAs.

- Black Sea GRA
- EuroGOOS
- IMOS
- IOGOOS
- MONGOOS
- PI-GOOS
- US IOOS



Summary
Number of models: 77
Parameters
<ul style="list-style-type: none">• Significant wave height Wave direction Wave period: 1• Water temperature: 1• sea surface temperature: 1• salinity: 25• sea surface height: 1• and sea-ice concentrations: 1• Seafloor depth Topographic elevation (land): 1• wind velocity and direction: 1• wave height: 1• period and direction: 1• direction and height of primary and secondary swell: 1• 3D temperature: 1• zonal and meridional currents: 1• 2D surface height: 1• water level: 1• currents: 22• temperature: 6• and/or salinity⁰: 1• SST: 1• SSH: 1• MOM4P1: 1• water level: 4• Significant wave height and direction: 8• swell wave height: 8• mean wave period (Tm-1): 1• 0): 1• sea surface elevation and transport: 3• peak wave direction: 7• mean wave period: 7• Predicted surges: 1



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Summary

- **EuroGOOS has 40 members in 19 countries, but via the ROOS cooperation we have close links to around 50 other organisations.**
 - This has been the basis for establishing professional networks that together have formed project consortia for numerous projects over the past 20 years
- **EuroGOOS is in process of expanding its membership in order to further strengthen the organisation and increase its influence on the European and global scene**
 - All relevant organisations in Europe
 - Links to private sector
- **EuroGOOS have established:**
 - ROOS's that coordinate work and developments in the European regional seas
 - WG that over the years have set the scene on science, technology development, data format, quality requirements, products, and recently coastal modelling
 - Observational Task teams (new initiative) with purpose to organise the various ocean observation communities to further develop and generate the necessary funding



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Summary

- EuroGOOS has established close contacts to relevant EU directorates: DG-MARE, G-GROW, DG-Research with regular meetings on strategy, project developments etc.
- Cooperate with several European organisations such as EEA, EMB, ICES, EMSA, Copernicus Marine Service
- Define priorities in operational oceanography in Europe and coordinate with the rest of the world
- Has taken a leading role in planning a European Ocean Observation System (EOOS) that shall serve operational services as well as research, environment, climate etc.
- EuroGOOS is a leading organisation with regard to organising exchange of in-situ data in Europe, and the integration with the rest of the world. A key element in the practical setup of the system is the EuroGOOS ROOS data portals – a system invented and developed by EuroGOOS members supported by Copernicus and EMODNET
- EuroGOOS are active in promotion of operational Oceanography
- EuroGOOS raises the professional profile of its members in Europe