

Developing the European Ocean Observing System

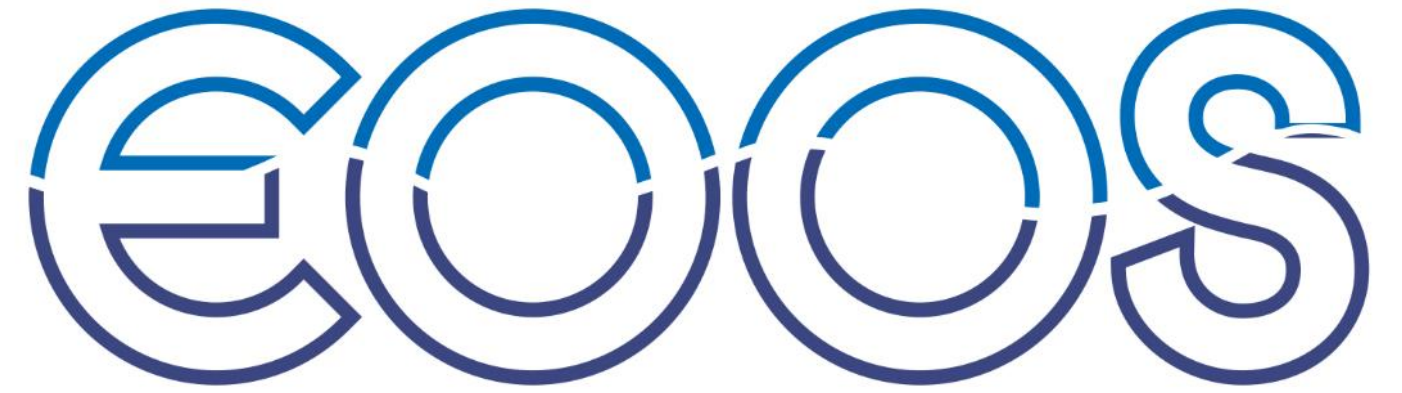
EOOS

EuroGOOS General Assembly
EuroGOOS and EMB teams

EGU 2018 abstract co-authors:

G. Nolan, D. Eparkhina, V. Fernandez, E. Buch, P. Gorrynge, EuroGOOS

K. Larkin, A. Muniz Pinella, European Marine Board



Contents

1. Who are we?
2. What is EOOS?
3. Background – Why? What has happened to date?
4. Strategy and implementation
5. How to get on board?

THE GLOBAL OCEAN OBSERVING SYSTEM, GOOS, REGIONAL ALLIANCES



EUROGOOS



GLOBAL OCEAN OBSERVING SYSTEM

EUROPEAN SCALE



BRUSSELS-BASED HEADQUARTERS



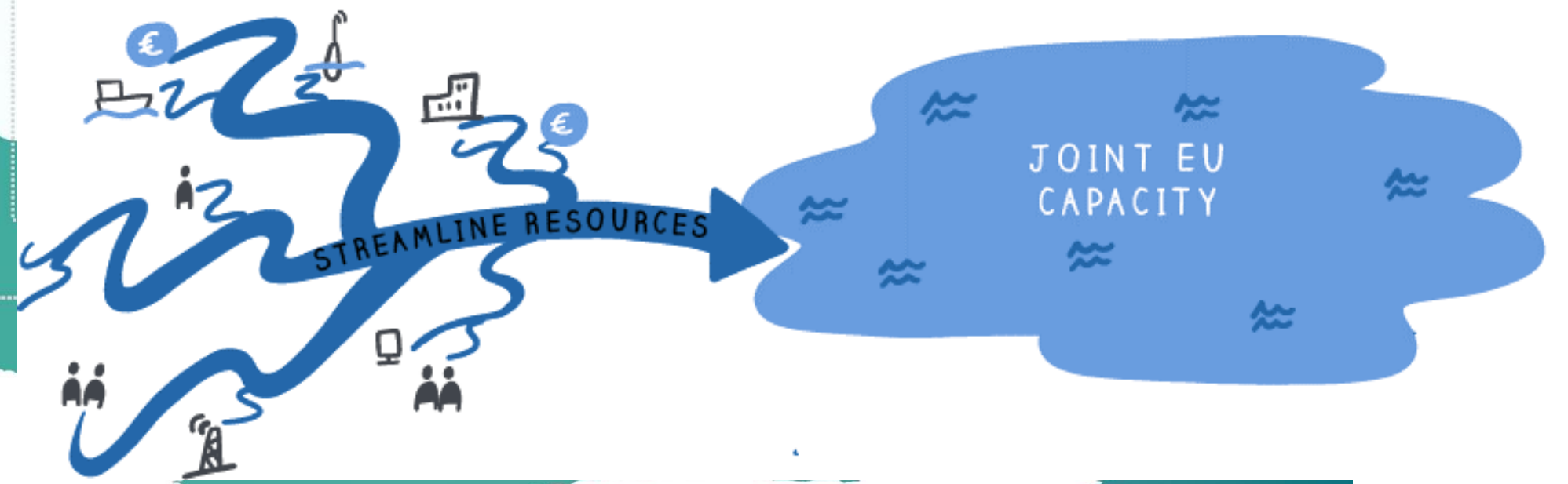
IOGO

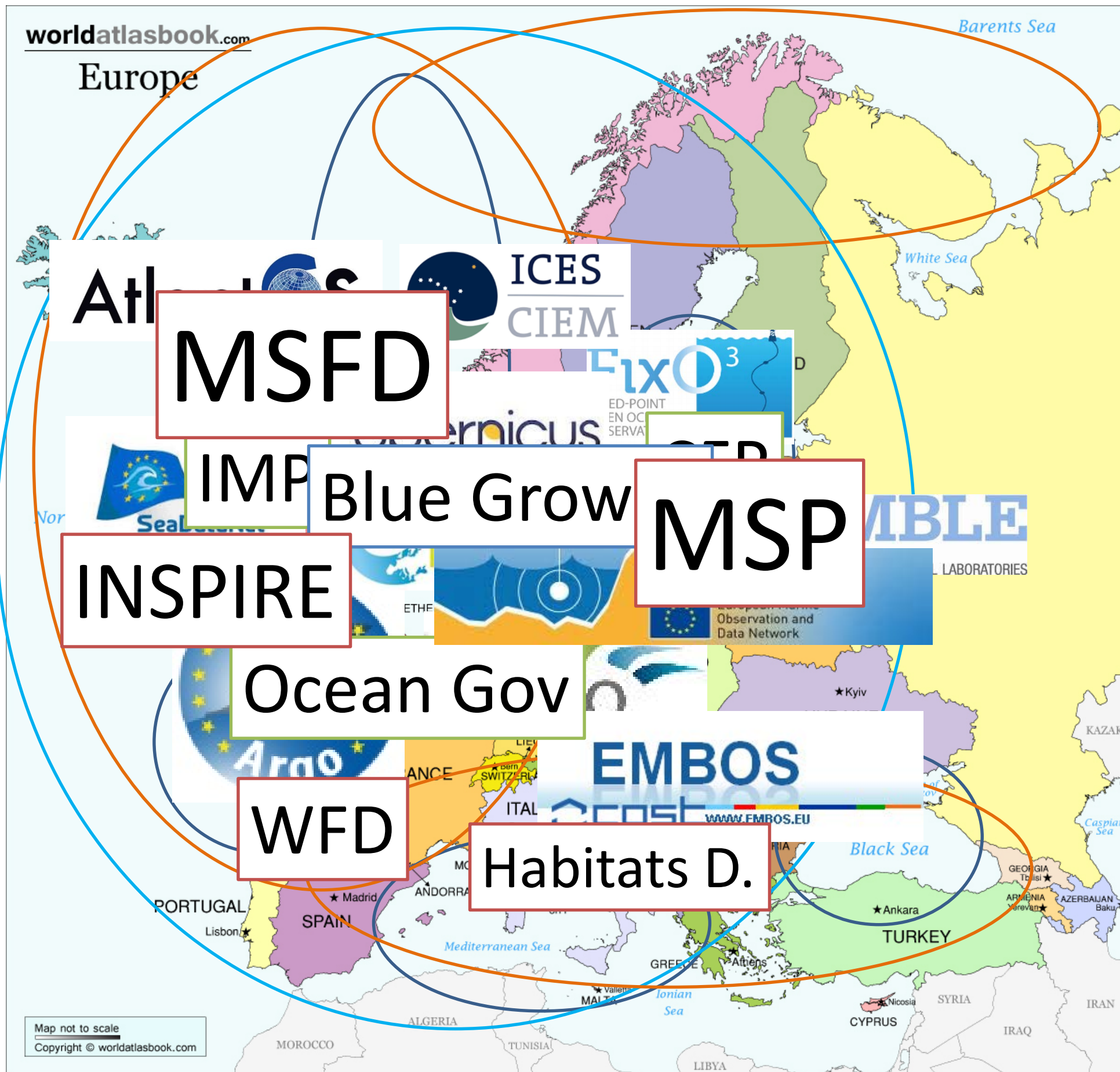


IMOS



www.eurogoos.eu
[#EuroGOOS](https://twitter.com/EuroGOOS)





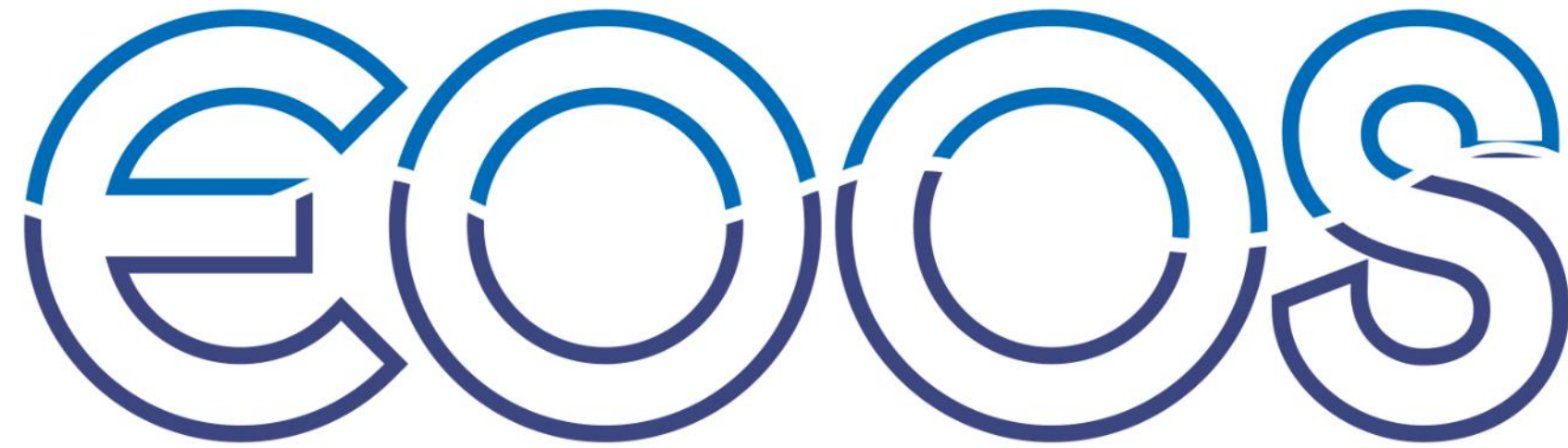
Sustained

Inclusive

Common

Focal point

EOOS



European Ocean Observing System (EOOS) is
a **coordinating framework** designed to

- **align and integrate** Europe's ocean observing capacity *in the long term*;
- **promote** a systematic and collaborative approach to collecting sustained information on the state and variability of our seas and global ocean; and
 - **underpin sustainable development** of the marine environment and its resources

- **2007-2008:** Integrated Maritime Policy; EuroGOOS and EMB deliver a vision document on an end-to-end, integrated and interoperable network of ocean observing systems in Europe
- **2010-2014:** EOOS in various strategy and policy documents
- **2015:** EMB-EuroGOOS EOOS brainstorming workshop – 20 experts in personal capacity
- **2016:** Setting up of EOOS steering group; EOOS consultation document; European Parliament event; logo; website; materials
- **2015-2017:** Active EOOS promotion at events, conferences, exhibitions
- **Dec. 2016 – Jan. 2017:** Open stakeholder survey based on the EOOS consultation document
- **2018:** EOOS strategy and implementation plan; EOOS forum and EOOS conference in Brussels

2007



Strategy and policy documents feature EOOS



2015



2016



EOOS a key priority in EuroGOOS policy brief



EOOS steering group to collect feedback on strategy and implementation plan at two events



2017



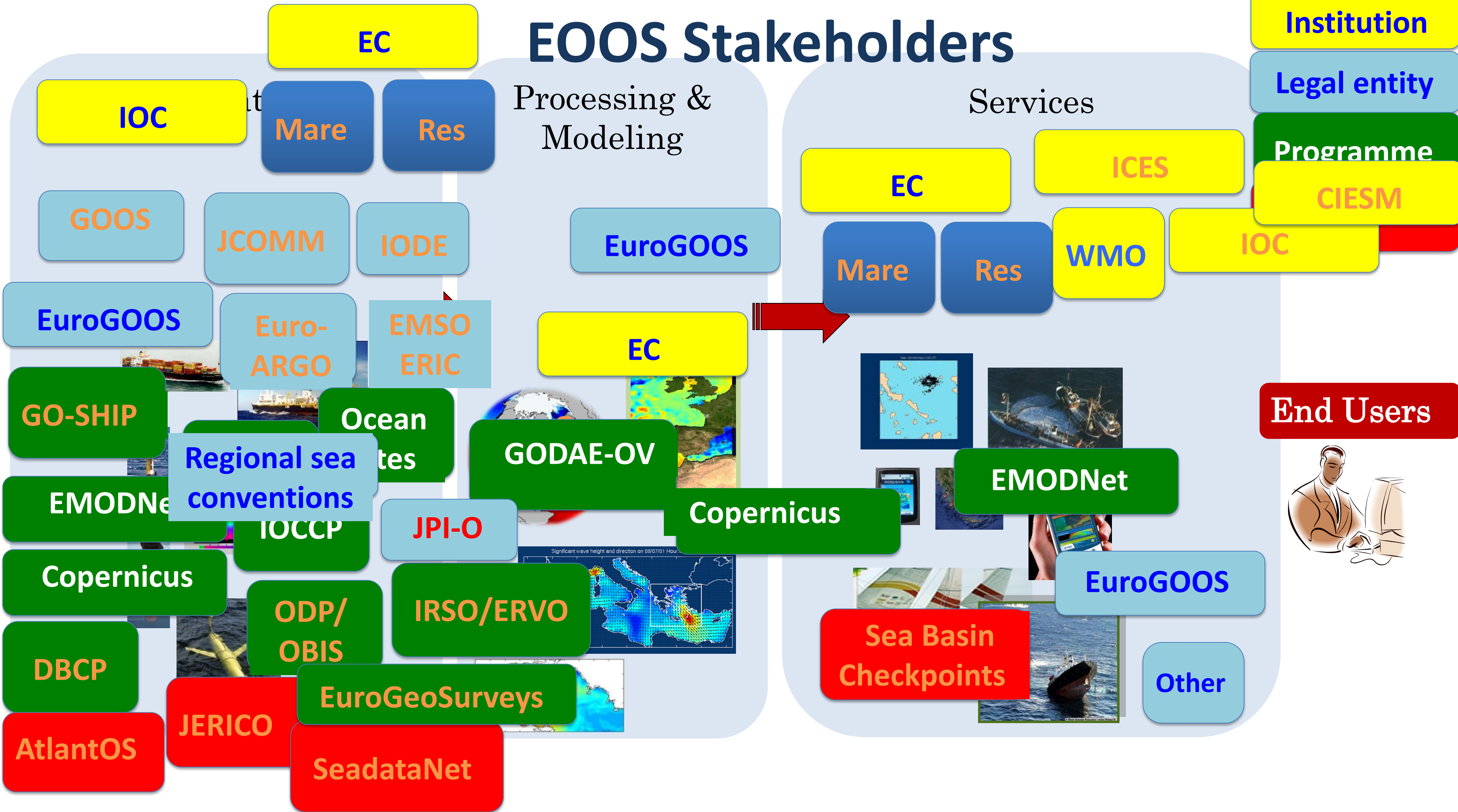
2018

Align and connect existing initiatives



European
Ocean
Observing
System

E00S Stakeholders

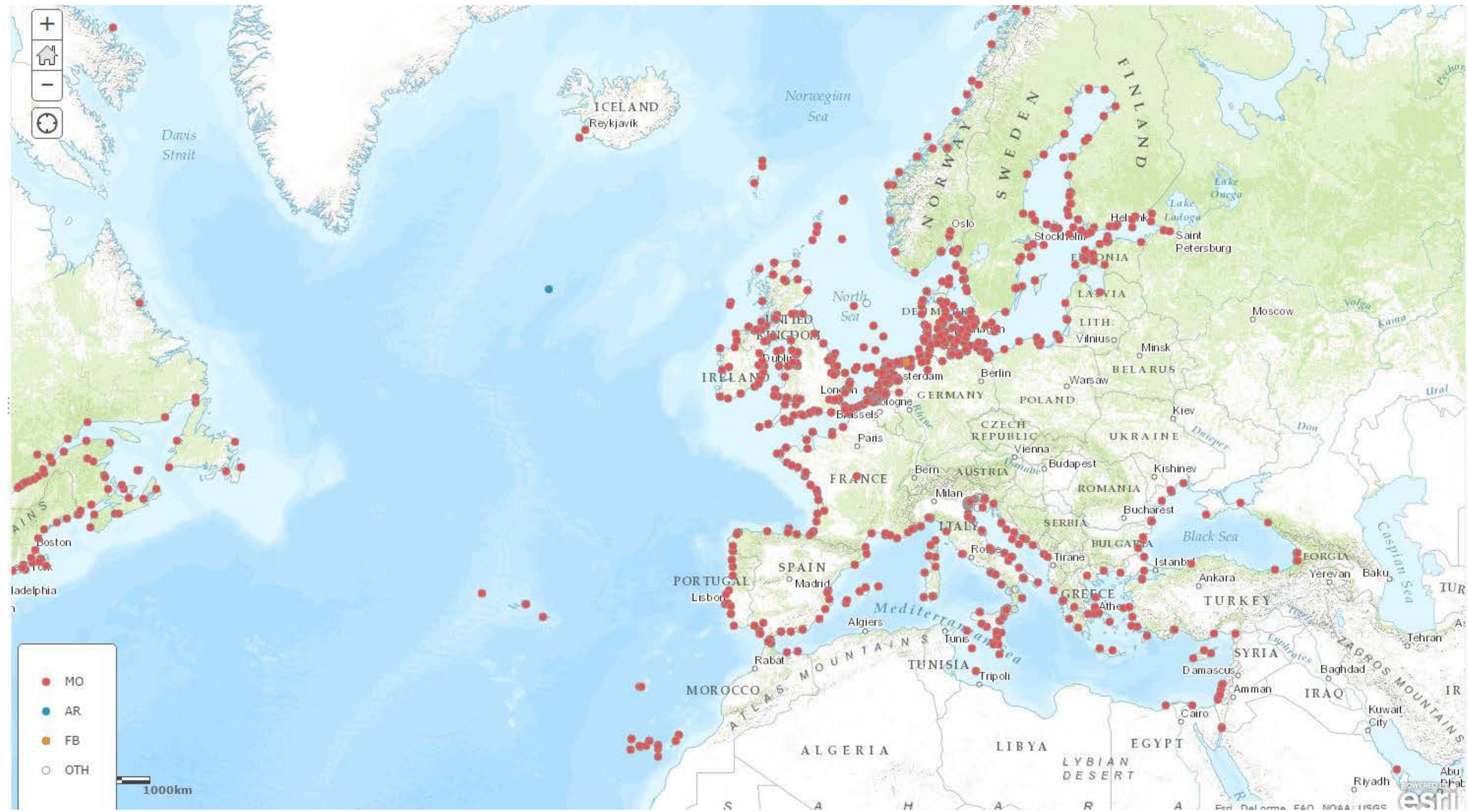


Identify gaps and foster initiatives to fill them



European
Ocean
Observing
System

Sea level stations



Chlorophyll measurements

About 10% of platforms
at sea measure some
biology



**Promote capacities that benefit multiple sectors
including
research, policy, management and industry**



European
Ocean
Observing
System

MSFD

MSP

CFP

Operational users

Products/services for
Blue Growth sectors

Collect once

Use many times

Climate studies and
assessments



Integrate effort into the global system



European
Ocean
Observing
System

Essential Ocean Variables and readiness level

CONCEPT PILOT MATURE

Physics

- Sea State
- Ocean surface vector stress
- Sea Ice
- Sea level
- SST
- Subsurface temperature
- Surface currents
- Subsurface currents
- SSS
- Subsurface salinity

Biogeochemistry

- Oxygen
- Inorganic macro nutrients
- Carbonate system
- Transient tracers
- Suspended particulates
- Nitrous oxide
- Carbon isotope (^{13}C)
- Dissolved organic carbon

Biology and Ecosystems

- Phytoplankton biomass and productivity
- HAB incidence
- Zooplankton diversity
- Fish abundance and distribution
- Apex predator abundance and distribution
- Live coral cover
- Seagrass cover
- Mangrove cover
- Macroalgal canopy cover

European needs

USERS OF MARINE INFORMATION



Local & Regional Authorities



Marine and Maritime Industries & Services (Blue Economy)



END USERS

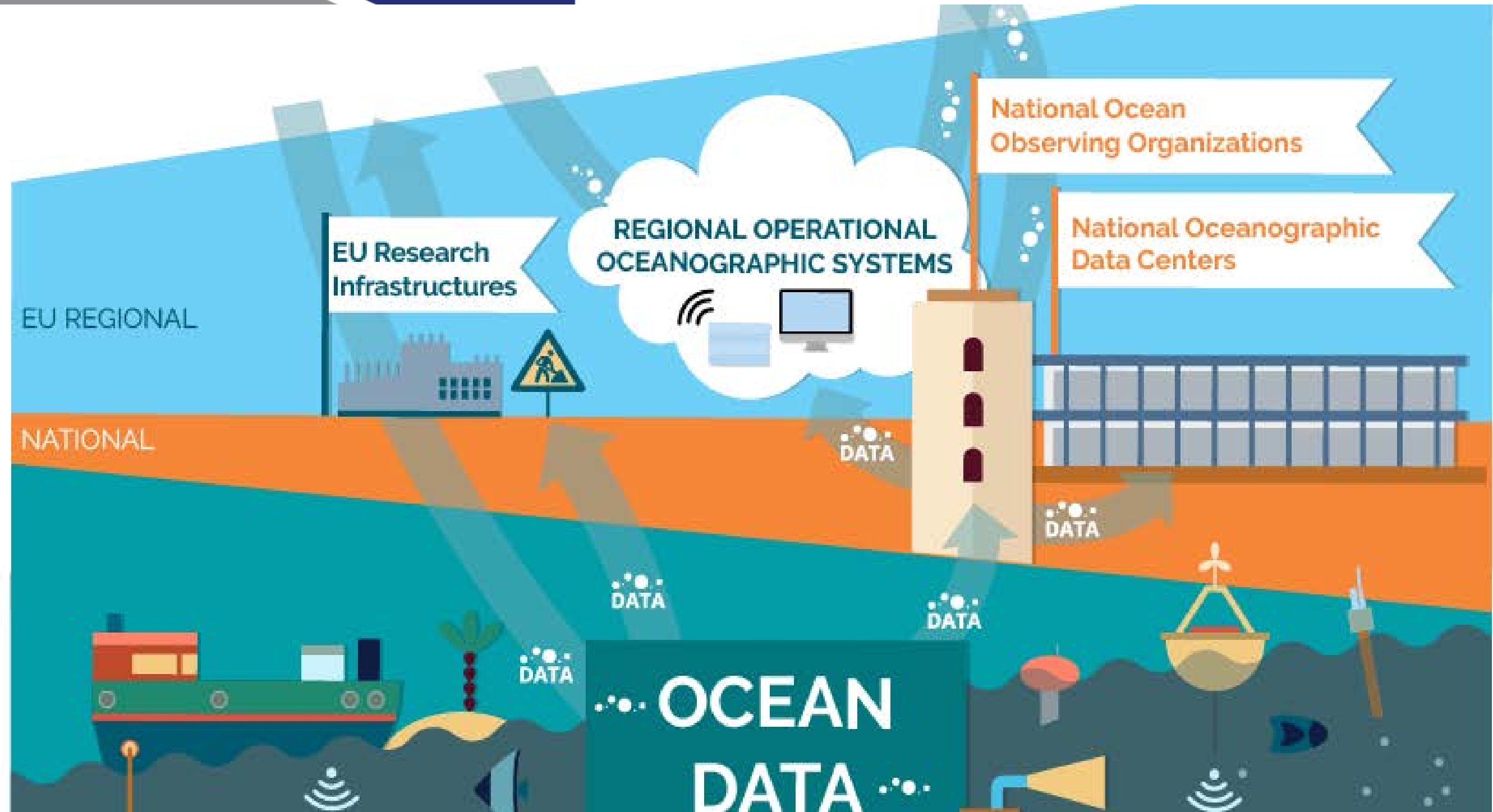


Research Community



Policymakers

OPERATORS OF INSTRUMENTS



EOOS Forum, 8 March 2018, Brussels

What are the challenges we need to address?

1. Making the European observing system fit for purpose – What are the **priorities**?
2. **Funding** EOOS – What are the benefits? What will help you **make the case**?
3. What would a **fully integrated and sustained** EOOS look like?
4. What are the **relationships and skills** needed to support an integrated system?
5. What are the **key messages** and who needs to hear them?
6. How should we **govern and coordinate** EOOS?
7. As **new technologies** come on stream, how do we ensure they're incorporated?



8 - How should we govern and coordinate EOOS?

successful implementation of EOOS e.g. ad-hoc

ementation
of the
der pe

l develop
rtion

EOOS Strategy (draft in consultation with EOOS steering group; public release 25 April)

EOOS Vision

By 2030, EOOS will build an end-to-end coordinated and connected European ocean observation community that puts user needs at its centre, promoting European leadership, driven by stakeholders, and serving the needs of science, society, and innovation.

EOOS Guiding Principles

Efficient and fit-for-purpose; Connecting communities; Innovative and adaptable; Stakeholder-driven; Sustainable

Main focal areas

- Better Coordinated and Sustained In Situ Ocean Observing
- Close association with the ocean modelling and satellite observation communities to ensure full integration and responding to user needs
- EOVs
- Non-EOVs (other relevant variables, e.g. bathymetry)
- Integrated Ecosystem Approach: from platform-specific observing to multi-platform, integrated and thematic observing

EOOS Implementation Plan (draft in consultation with EOOS steering group; public release 25 April)

Stakeholder co-design of strategy and implementation plan 2018-2022

EOOS mapping and stakeholder engagement

- Existing capabilities and infrastructures
- Stakeholder communities
- Users
- Overview of EC and national research project outcomes
- Requirements gathering (forum and conference 2018, EMODnet checkpoints, OSSE, regional conventions, ICES, ECMWF, GCOS...)
- Sustainability studies = gather national plans and RI feedback

Policy context and foresight

- Foresight activities (e.g. EMB brief on bio obs)
- Review policy context and drivers

EOOS elements

- National statements of intent – share annual status and new developments
- RI plans consulted and cross-checked with national statements
- System design tools (e.g. inventory of the design tools and best practices)
- Technology mapping & Technologies Forum (discuss, share, ensure user needs are met)

Funding

- Cost-benefit & business case for European states
- EC support for coordination and cross-cutting aspects
- Joint programming funding

Communication and outreach (bring together communities, persuade funders and users)

- Communication strategy & impact monitoring
- Web presence & targeted comms activities

Governance

- EOOS steering group + advisory committees

EOOS Pilot Projects

Activity	Pilot title	Indicative timeline and task leader(s)
Activity 1. EOOS mapping and stakeholder engagement	Pilot project 1.1 Mapping existing infrastructures and capabilities	May 2018-January 2019, EuroGOOS and EurOcean
	Pilot project 1.2 Requirements gathering for EOOS	May 2018-July 2019, EuroGOOS
	Pilot project 1.3 EOOS conference 2018	Sept.2017-Nov.2018, EMODnet, EMB and EuroGOOS
	Pilot project 1.4 Stakeholder co-design of strategy and implementation plan 2018-2022	Nov.2017-Nov.2018, EMB and EuroGOOS
Activity 2. Policy context and foresight	Pilot project 2.1 Future science brief on biological observations	2017-Sept.2018, EMB
	Pilot project 2.2 EOOS policy landscape	March -Sept. 2018, EMB
Activity 3. Implementation of EOOS observing system elements	Pilot project 3.1 EOOS Technologies Forum	2018-July 2019, EuroGOOS
Activity 4. EOOS Funding	Pilot project 4.1 EOOS cost-benefit analysis	From 2018, EuroGOOS with additional stakeholder help
Activity 5. Communications and outreach	Pilot project 5.1 EOOS communication strategy	By Nov.2018, EuroGOOS
	Pilot project 5.2 Maintain and evolve EOOS web presence	From 2016, EuroGOOS
Activity 6. Governance	Pilot project 6.1 Evolution of EOOS governance	March-Sept. 2018, EuroGOOS and EMB EOOS steering group co-chairs

EOOS events 2018

- EOOS Forum (March 8th)
- OceanObs Whitepaper submission (March-September 2018) pending abstract acceptance
- EuroGOOS Sustainability Workshop (May 8th and 9th)
- Blue Planet Symposium (July 4th to 6th, Toulouse)
- EOOS Conference (November 21st to 23rd)
- EMB Working Group activities
- EuroGOOS Coastal working Group (membership call ongoing)

23



How to get on board?

- EOOS for and by stakeholders. Inclusive and bottom-up. While seeking and hoping to secure political and funding support
- Strategy and Implementation plan consultation open on 25 April
- Subscribe to EOOS mailing list at www.eoos-ocean.eu/contact/
- Website for all info www.eoos-ocean.eu

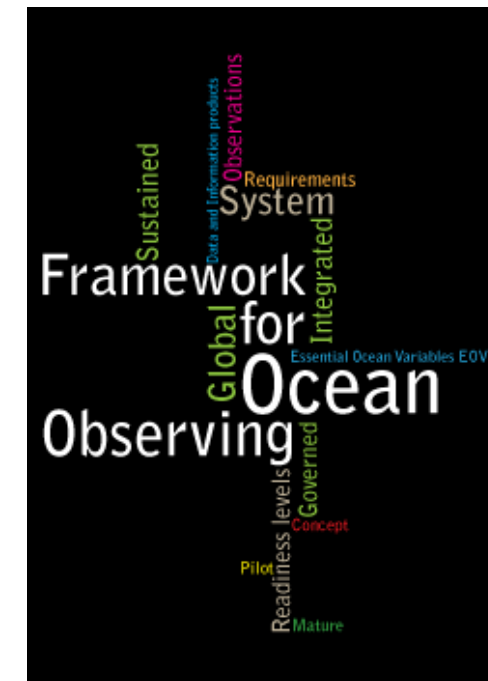
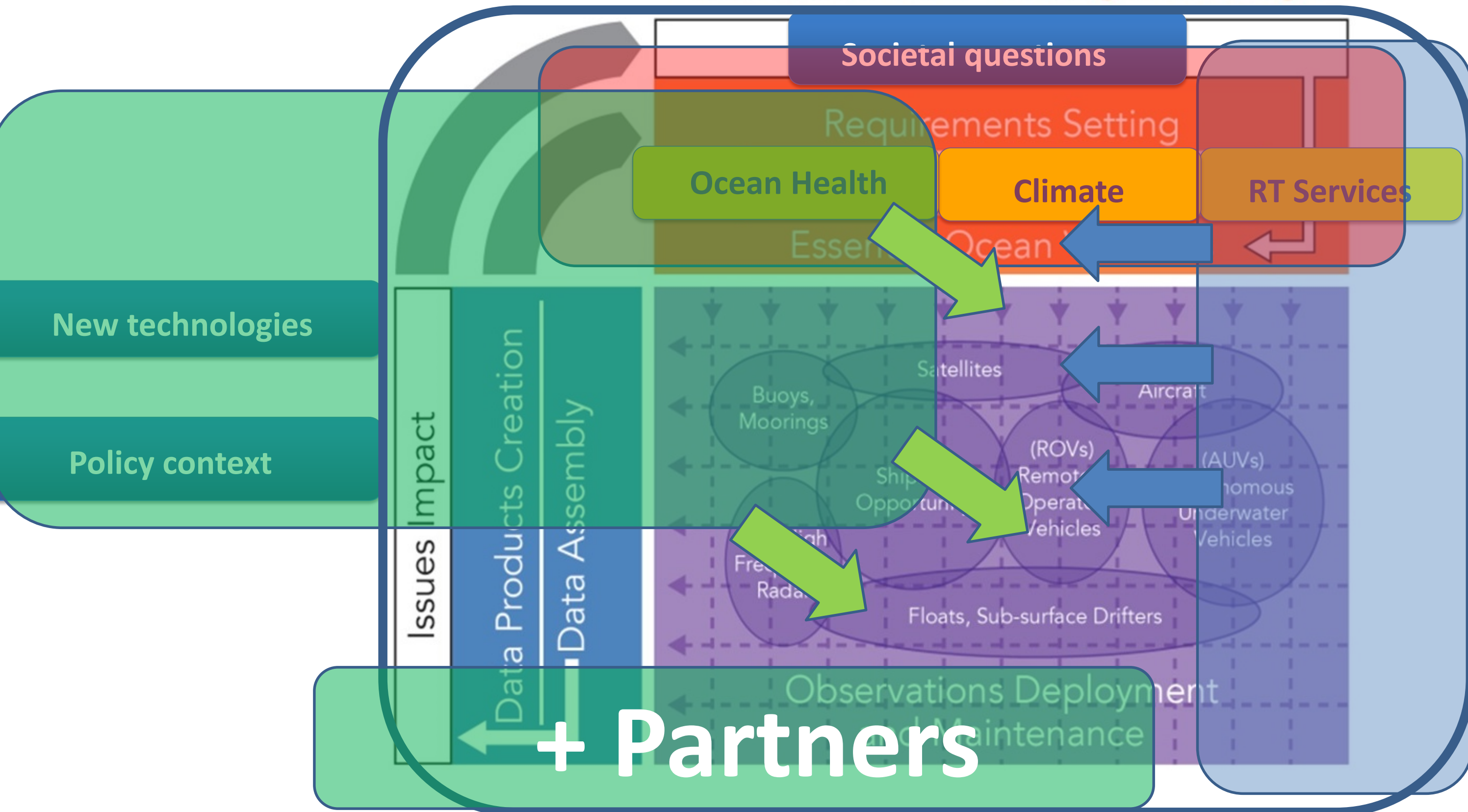
Conference 21-23 Nov. registration ongoing:
www.eoos-ocean.eu/conference-2018/



Framework for Ocean Observing A systems approach

EOOS

Framework for Ocean Observing Process Diagram



EMB

GOOS

EuroGOOS