neosc

Blue-Cloud2026

A federated European FAIR and Open Research Ecosystem for oceans, seas, coastal and inland waters

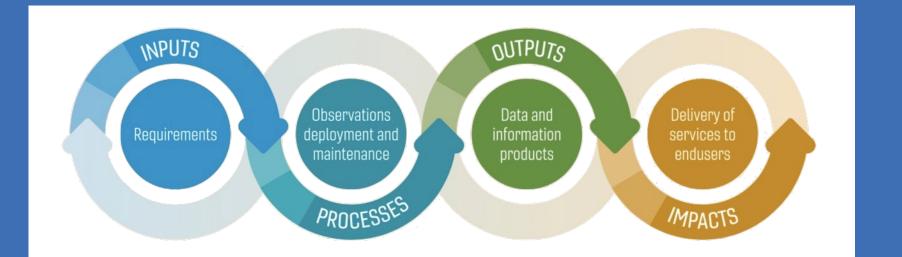
Exploitation opportunities for the observing system

Blue Cloud KoM, Feb 13, 2023 Toste Tanhua

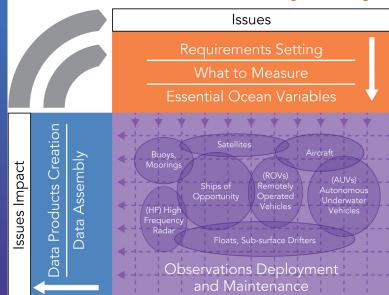


EureSea

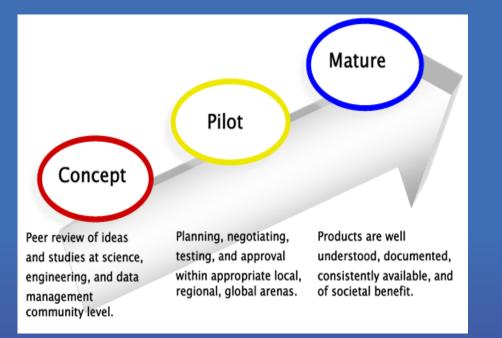
The ocean observing value chain

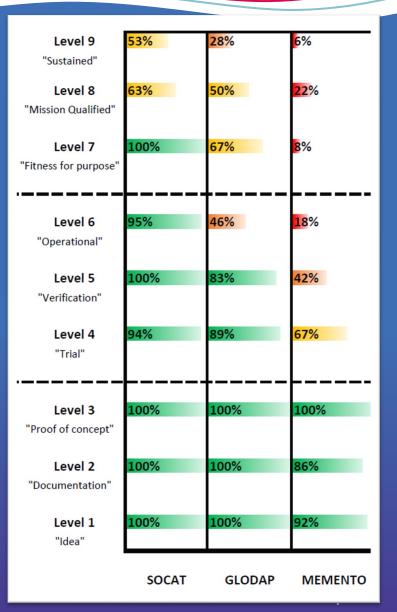


Framework for Ocean Observing Process Diagram



Innovation potential aong the value chain





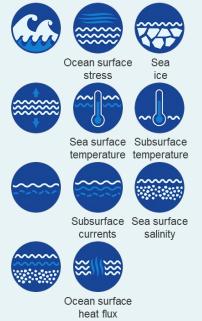
EureSea

Blue Cloud 2026, KoM

Essential Ocean Variables

34 Essential Ocean Variables (EOVs)

Physics



Biogeochemistry

Oxygen Nutrients



matter

Particulate Nitrous

oxide

Stable carbon isotopes

Inorganic

carbon

tracers

Dissolved

organic

carbon

Cross-disciplinary







(*emerging)





Phytoplankton Zooplankton





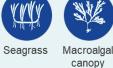
Fish

Marine

Sea turtles Seabirds









Mangroves (*emerging) (*emerging)

Because EOVs are perennial, they allow the observing system to change and develop around them as technology and capability evolve.

Focusing on EOVs enables ocean observations that cut across different observing platforms and offer the best, most cost effective plan for providing an optimal global view for each EOV.

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Delivery of EOV information – EOV Workbenches

EOV Work Bench for physics: temperature and salinity



EOV Work Bench for eutrophication: chlorophyll, nutrients, oxygen



EOV Work Bench for ecosystem-level EOVs





EureSea

The Ocean Information value chain

End user, societal, and economic information needs and requirements related to the ocean End user and societal services and benefits realized: ecosystem services, efficiencies, safety, etc. FureSea

of Ocean Science

The New Blue Economy in the US is valued at US\$8 billion in annual revenue.

Canada estimates the revenues of the Canadian activities to between \$1.1-\$1.3 billion CAD

the United Kingdom estimated the market size at £1.65 billion

Blue Cloud 2026

marine technology

Global Ocean

Observing System

Market size and growth potential

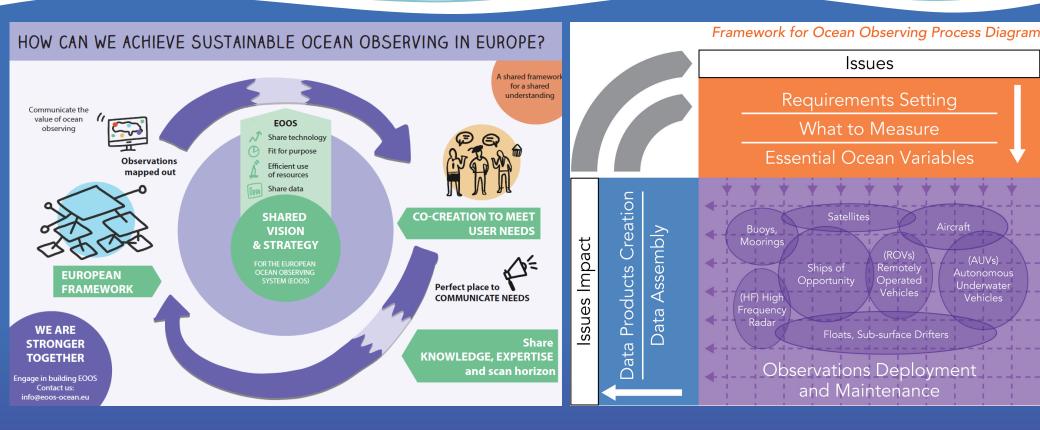
Virtual Labs – From Observations to Value

Physics Biology Chemist	1	
Data Type Biological data Plankton data Quantitative images of plankton providing concentrations & trait values HF radar, drifter and altimetry data Ocean and climate variables HF radar, drifter and altimetry data Ocean and climate variables HF radar, drifter and altimetry data Ocean and climate variables HF radar, drifter and altimetry data Carbon data Inorganic carbon data Inorganic carbon data EU HF radar Multiparametric and wave buoys and gliders EU HF radar NODE Salinity, oxygen and chilter data HF radar and drifter data Physical data Physical data Physical data Physical data Physical data Biological data HF radar and drifter data HF radar and drifter data HF radar and drifter data Biological data Plankton data Plankton data Plankton data Ocean and climet data Plankton data	 Nutrients data Physics, biogeochemistry, biology data HF radar and drifter data 	Physical and biochemical data
VLab1 Coastal oceans observations along Europe VLab2 Coastal currents from observations VLab3 Carbon-Plankton dynamics VLab4 Marine Environmental Indicators	VLab5 G Fisheries	

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The Feedback loop



European Ocean Observing System (EOOS) Framework for Ocean Observing Strategy, 2018

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Thank you

For more information

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Project coordination

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