The European Marine Data landscape and Blue-Cloud initiative

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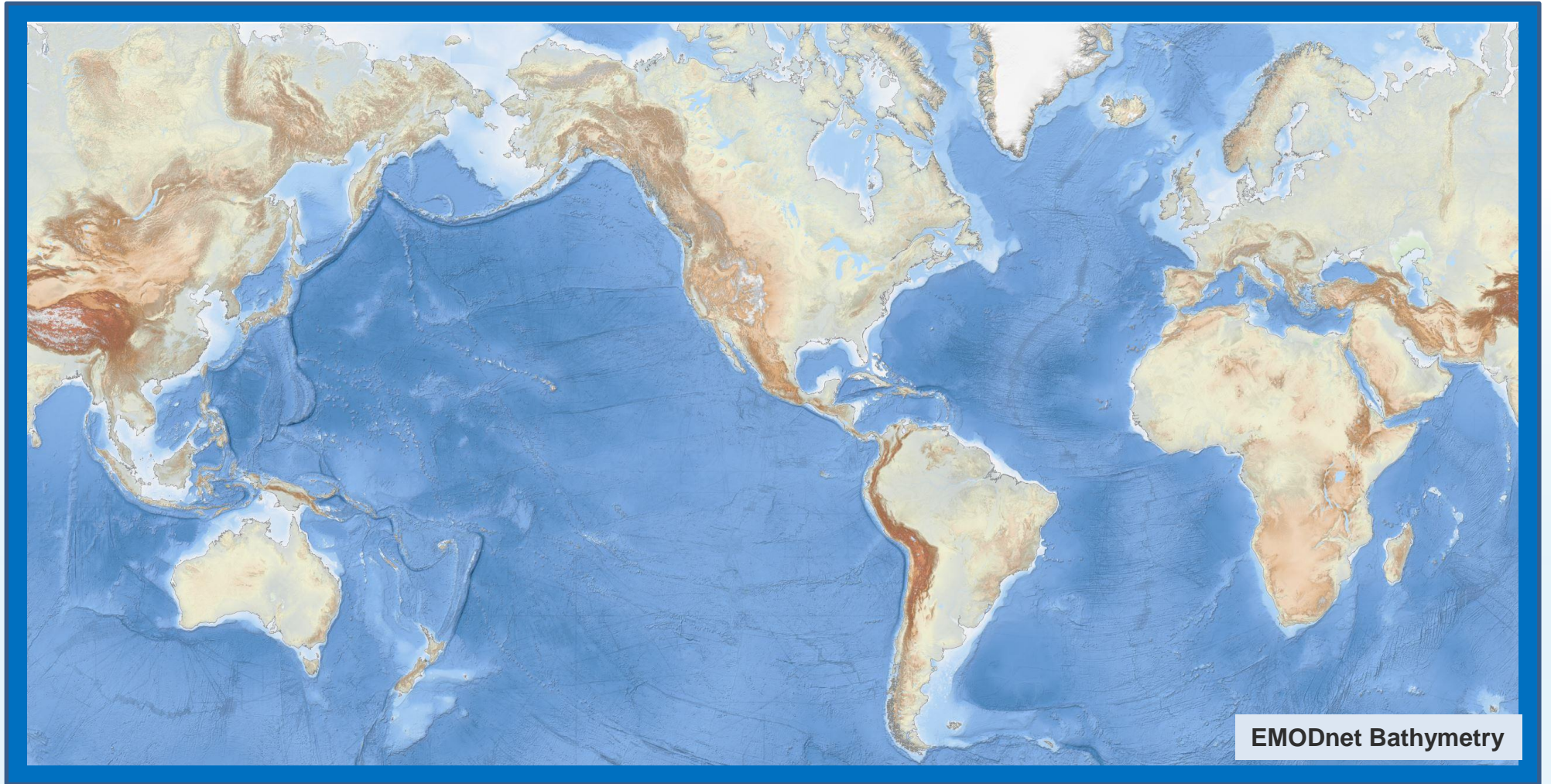
Blue-Cloud Workshop 23 March 2021

Oceans and seas are important

EMODnet Bathymetry

Climate, Energy, Food, Tourism, Trade, Health, ….

Acquisition of marine and ocean data

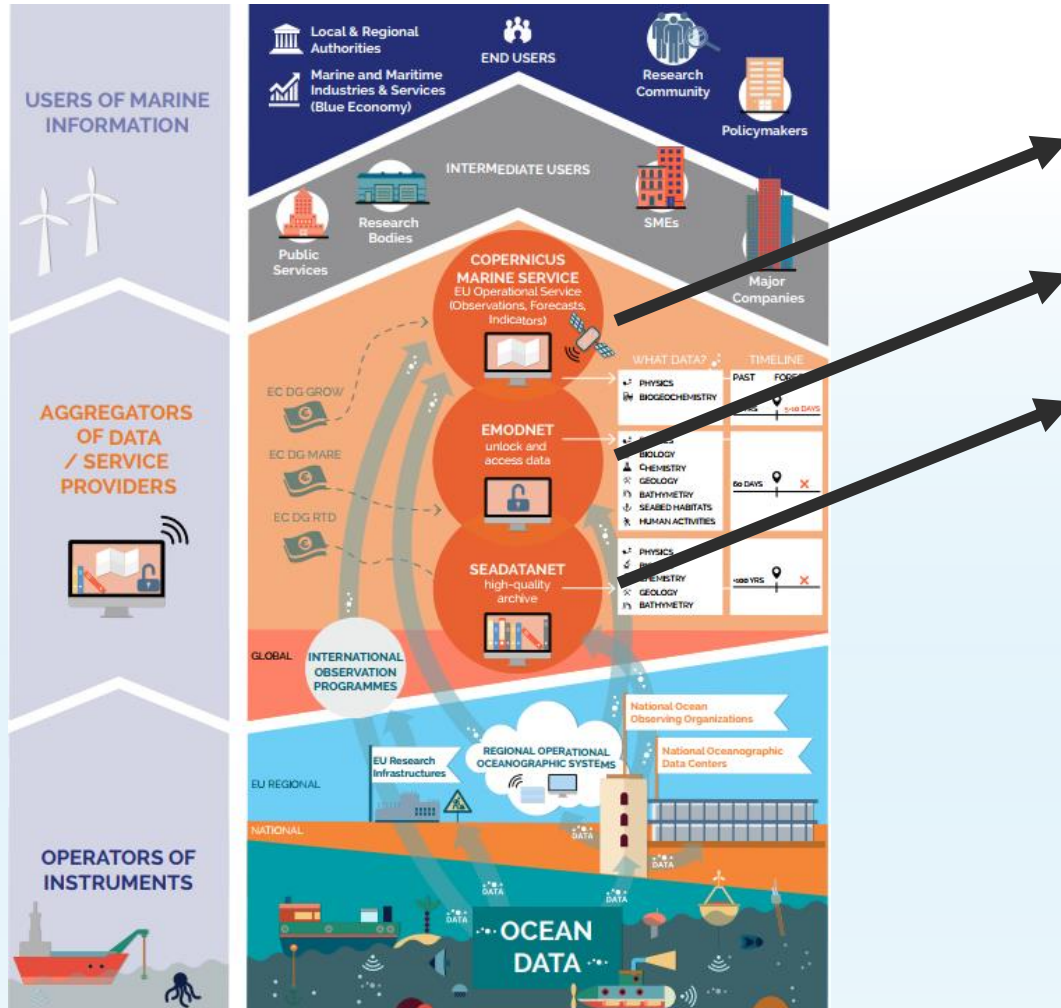In Europe we spent circa 1.4 Billion Euro a year in marine data acquisition (1.0 BE in-situ; 0.4 BE remote sensing)

Relevant for many uses and users

- Scientific Research to gain knowledge and insight

- Modelling (including hindcast, nowcast, forecast)

- Economic activities: shipping, offshore industry, dredging industry, fisheries, tourism, engineering, ..

- Environmental Management: monitoring and assessment (water quality, climate status, stock assessment)

- Marine Conventions and Directives, in Europe: Water Framework Directive (WFD), Marine Strategy (MSFD), Marine Spatial Planning (MSP), Coastal Zone Management

- EU Strategies, such as Green Deal, Blue Environment, Blue Economy

Blu loud

European landscape marine data management

Additional marine infrastructures

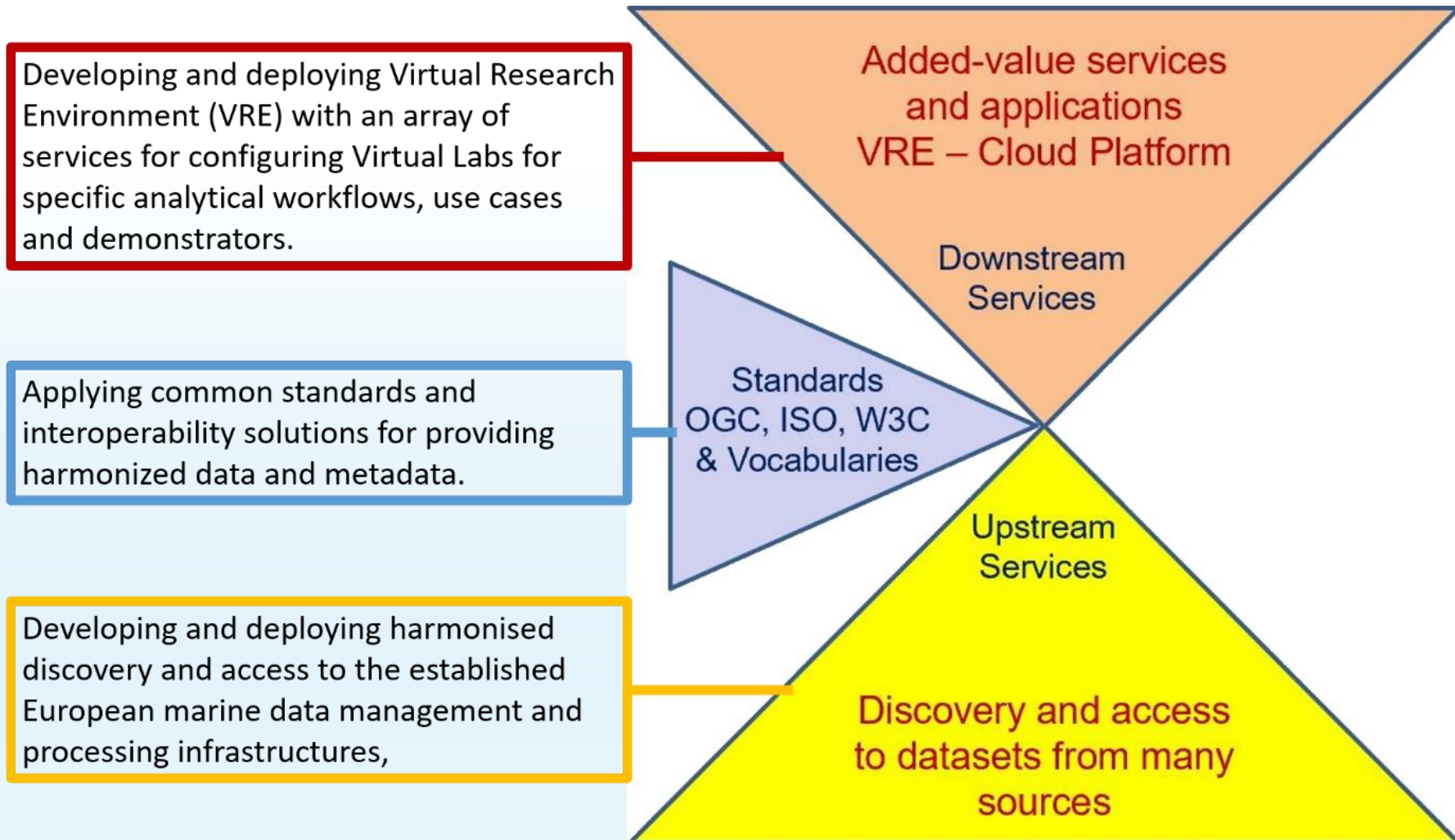Data aggregators and providers of data products and services

Blue-Cloud initiative

- To explore and demonstrate the potential of **cloud based open science** supporting research for ocean sustainability, and UN Decade of the Oceans and G7 Future of the Oceans

- To deploy a **cyber platform with smart federation** of multidisciplinary data repositories, analytical tools, and computing facilities

- To develop a marine thematic EOSC serving the blue economy, marine environment & marine knowledge agendas
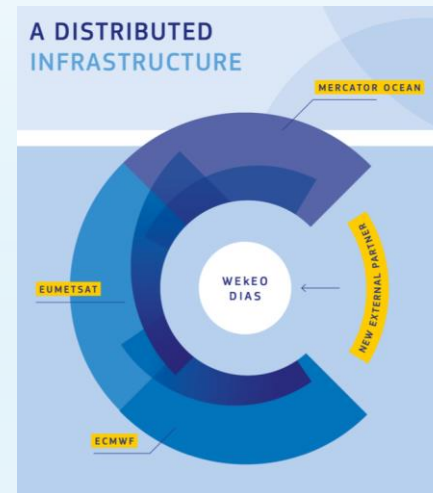
Blue-Cloud overarching concept

Developing and deploying Virtual Research Environment (VRE) with an array of services for configuring Virtual Labs for specific analytical workflows, use cases and demonstrators.

Applying common standards and interoperability solutions for providing harmonized data and metadata.

Developing and deploying harmonised discovery and access to the established European marine data management and processing infrastructures,

Added-value services and applications
VRE – Cloud Platform

Downstream Services

Standards
OGC, ISO, W3C
& Vocabularies

Upstream Services

Discovery and access to datasets from many sources

Blue-Cloud federation of major infrastructures

Blue Data infrastructures

E-infrastructures

Key products and services

- **Blue-Cloud Data Discovery & Access service**, federating key European data management infrastructures, to facilitate users in finding and retrieving multi-disciplinary datasets from multiple repositories

- **Blue-Cloud Virtual Research Environment infrastructure** to provide a range of services and to facilitate orchestration of computing and analytical services for constructing, hosting and operating Virtual Labs for specific applications

- **Blue-Cloud Virtual Labs**, configured with specific analytical workflows to serve as **Demonstrators,** which can be adopted and adapted for other inputs and analyses

www.blue-cloud.org