Blue-Cloud

Piloting innovative services for Marine Research & the Blue Economy

Developing a marine thematic EOSC cloud to explore and demonstrate the potential of cloud based open science in the domain of ocean sustainability

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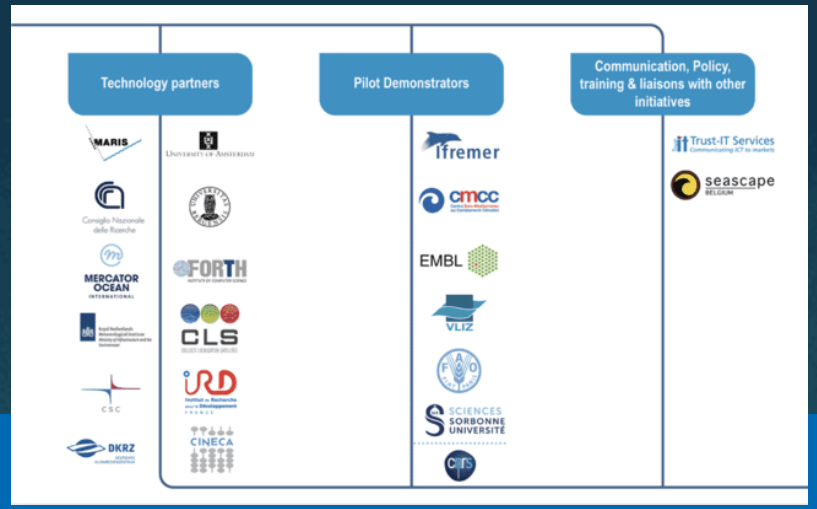
Blue-Cloud Mission

Blue-Cloud aims to promote the **sharing** of *data, processes and research findings* in the marine domain by delivering a **collaborative web-based environment** that enables *open science*, underpinned by simplified access to **an unprecedented wealth of marine data resources** and **interoperable added-value services and products**”

Funding: H2020: The ‘Future of Seas and Oceans Flagship Initiative’ (BG-07-2019-2020) topic: [A] 2019 - Blue Cloud services
Timing: 36 Months (start October 2019)
Budget: 5.9 Million Euro
Partnership: 20 partners + **13 Blue federated Infrastructures**



Co-creating a Digital Twin of the Ocean

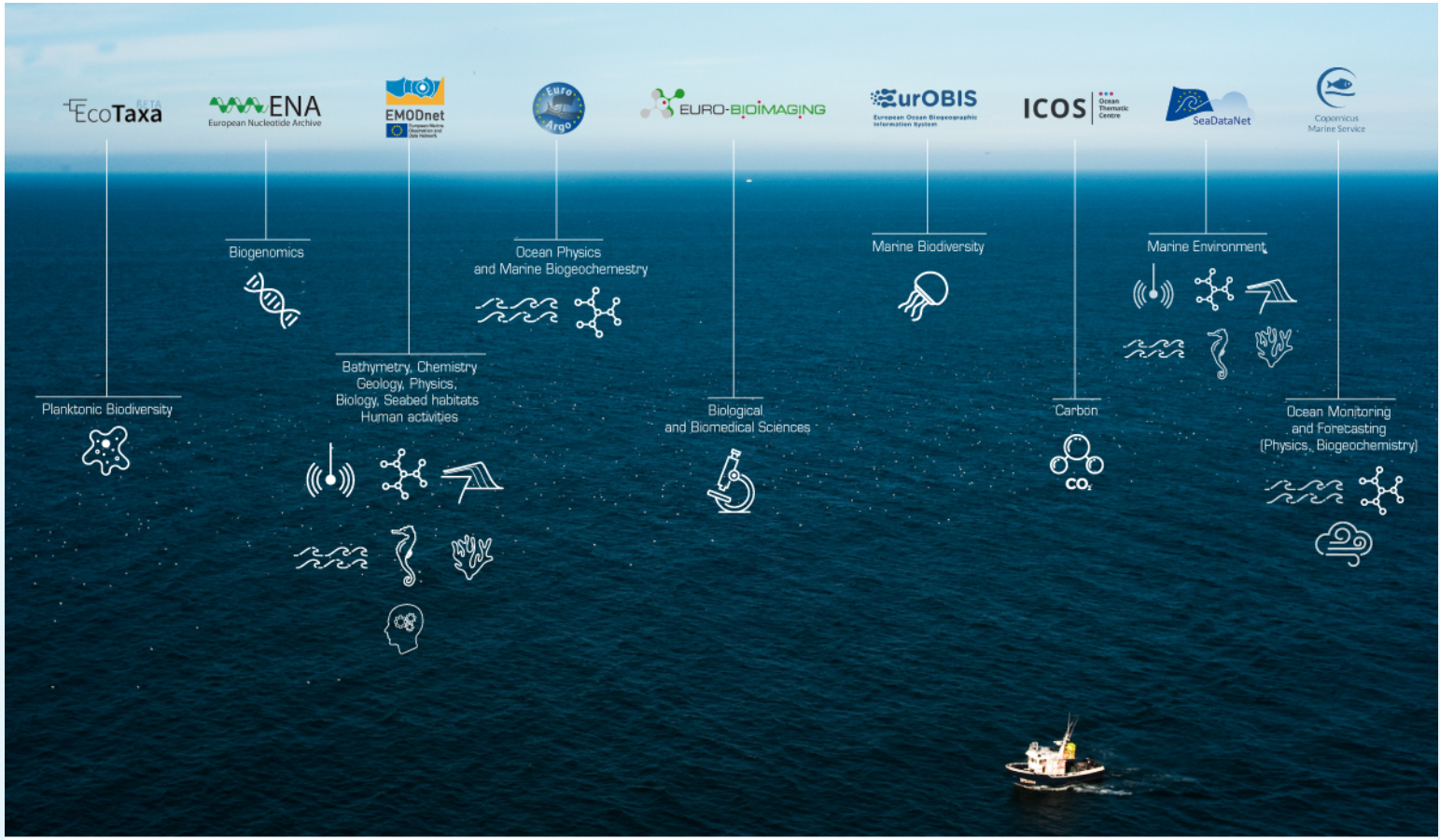
January 2021 marks the official start of **UN the Decade of Ocean Science for Sustainable Development,** to encourage decision makers to **invest in ocean science.** As part of the **"Future of Seas and Oceans Flagship Initiative"**, Blue-Cloud is working on a practical approach to showcase the potential of **cloud-based open science** to marine research.

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

- **Blue-Cloud cyber platform** responds to **the Digital Twin of the Ocean**'s need to integrate data sources, to transform data into knowledge and to connect citizens, governments and industries
- The **five Blue-Cloud real-life demonstrators** address different areas of ocean science and fit in the context of specific **UN Sustainable Development Goals** 2 - Zero Hunger, 13 - Climate Action and 14 - Life Below Water.

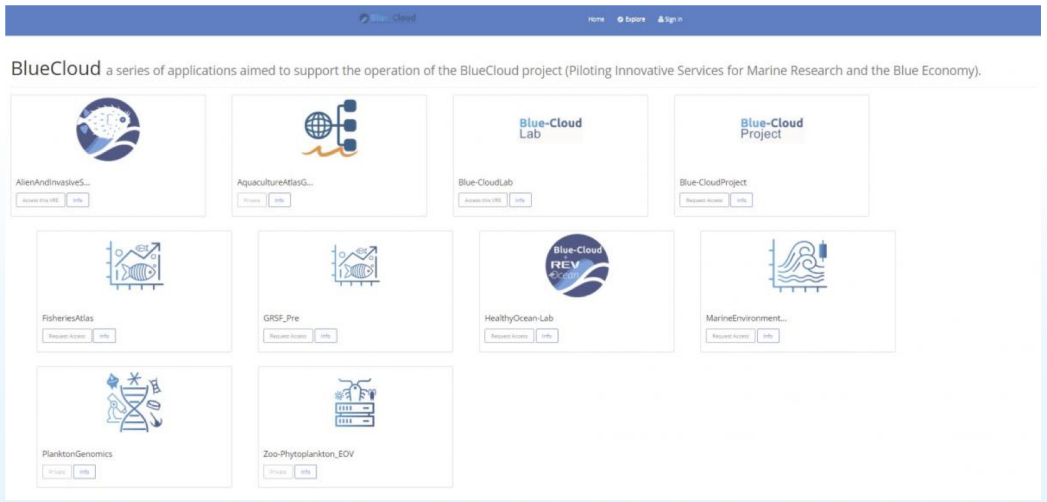
The Blue-Cloud Offer

Blue-Cloud is federating **leading European horizontal e-infrastructures** (e.g. EUDAT & D4Science, Copernicus DIAS), **with long-term marine data management infrastructures** to create a trusted virtual space - the *Blue-Cloud Technical Framework* - where scientists can access the **ocean data, tools, services and research outputs** they need to perform research in a more efficient way



https://www.blue-cloud.org/data-infrastructures

Blue-Cloud Virtual Research Environments & demonstrators



Blue-Cloud VRE includes:

- services that facilitate **collaboration**
- services supporting **analytical tasks** in a distributed computing infrastructure
- services enabling the co-creation of new entire **Virtual Laboratories**

Five Blue Cloud **Demonstrators** are being developed to showcase the the potential of the European Open Science Cloud to support thematic communities.

Zoo & Phytoplankton EOV products

Plankton Genomics

Marine Environmental Indicators

Fish a matter of scales

Aquaculture Monitor

https://blue-cloud.d4science.org/

EUROPEAN OPEN SCIENCE CLOUD

What Blue-Cloud brings to EUROPEAN OPEN SCIENCE CLOUD ?

A FAIR approach to Open Science in the marine domain via

- A **pilot thematic EOSC** as a model for the development of other thematic clouds;
- A **methodology for researchers** interacting with e-infrastructure developers.

EOSC-ready interoperable marine community services

- **Easy access** to blue data and services via APIs, complementing EOSC base services providing blue thematic functionalities;
- **5 Demonstrators** showcasing practical implementation of thematic VREs.
- **Catalogue** featuring the Blue-Cloud VRE and related services accessible via the EOSC Portal Catalogue and Marketplace;

Policy vision and roadmap

- **Dynamic examples** of how Blue-Cloud framework can **enable decision makers** address Blue Economy policy challenges;
- A **global Blue Economy community**
- A **policy-oriented Blue-Cloud Roadmap** to 2030

Blue-Cloud is working towards the establishment of a marine-thematic EOSC serving the Blue Economy, Marine Environment and Marine Knowledge agendas.

The road ahead

Co-creating a shared Vision & Action Plan

Blue-Cloud

EUROPEAN OPEN SCIENCE CLOUD

By 2030 Blue-Cloud should…

96% agree that B-C should **support open science**

95% be actively used by the **marine research & science community**

93% inform better **science-based policies**

88% be actively used by **other stakeholders**

83% believe it should **drive innovation** across the **blue economy**

What **actions** and **incentives** will help us bring new open science practitioners, users and advocates onboard?

Who should we target?

When?

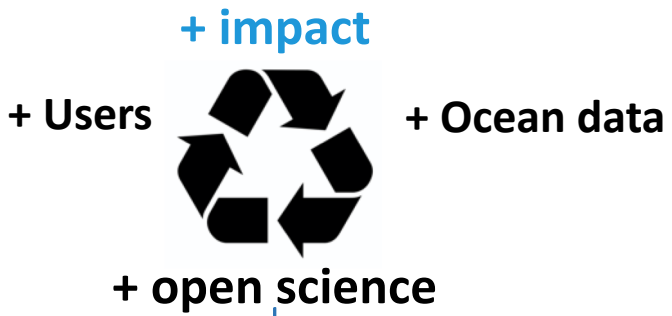
What will **draw marine scientists** into using lue-Cloud services?

What will **attract blue economy SMEs**? **Industry**?

What will draw **policy makers**? And **citizens**?

What will draw **researchers** from **other disciplines**?

The road ahead
Strategic framework



1 Promote wealth of uses and applications

Grow a wealth of uses and applications of web-based open science in the marine domain, working around areas where **collaborative research** has a higher degree of **feasibility** and can deliver **higher impact** towards the **EU Green Deal** and the **UN Agenda 2030**.

2 Build a thriving community

Evolve a thriving, **diverse** and **representative community** of **open science practitioners**, **users** and **advocates** in the marine and maritime domain: scientists & researchers, blue economy SMEs, industry, monitoring agencies, policy makers, civil society & citizens.

3 Advance FAIR & open data

Support **EU** and **international** efforts towards **FAIR & OPEN Ocean data** to make marine data more readily available and **accessible to all**.

4 Federate blue data infrastructures & e-infrastructures

Align with efforts towards full **interoperability** of marine data infrastructures, Research Infrastructures and e-infrastructures to make **digital objects** and **computing resources** available and deployable on any infrastructure, **on-demand**.

Open consultation launching in June up until Sep 2021

Blue-Cloud synergies

Usage and exploitation of Blue-Cloud VRE services: marine datasets coming from the synergies can be integrated to the Blue-Cloud thematic VREs and enrich their content.

Connecting Data to key European Data Management service providers via Blue-Cloud: Blue-Cloud dataset (enriched by data provided by its synergies) are going to be integrated in the EOSC Portal, making the data accessible not only for the blue economy sector, but also for stakeholders from different field across Europe.

Roadmap - Contribution to Blue-Cloud Roadmap: the synergies established will help better shape the strategic Blue-Cloud Roadmap to 2030 from technical, commercial and industrial viewpoints.

Collaboration with international initiatives

Blue-Cloud

Thank you!

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