

Blue-Cloud – Piloting innovative services for Marine Research & the Blue Economy

Dick M.A. Schaap – MARIS (Blue-Cloud Technical Coordinator

OSFAIR2021

20 September 2021

@BlueCloudEU
#OSFAIR2021



Blue-Cloud has received funding from the European Union's Horizon Programme call BG-07-2019-2020, topic: [A] 2019 - Blue Cloud services, grant Agreement number 862409

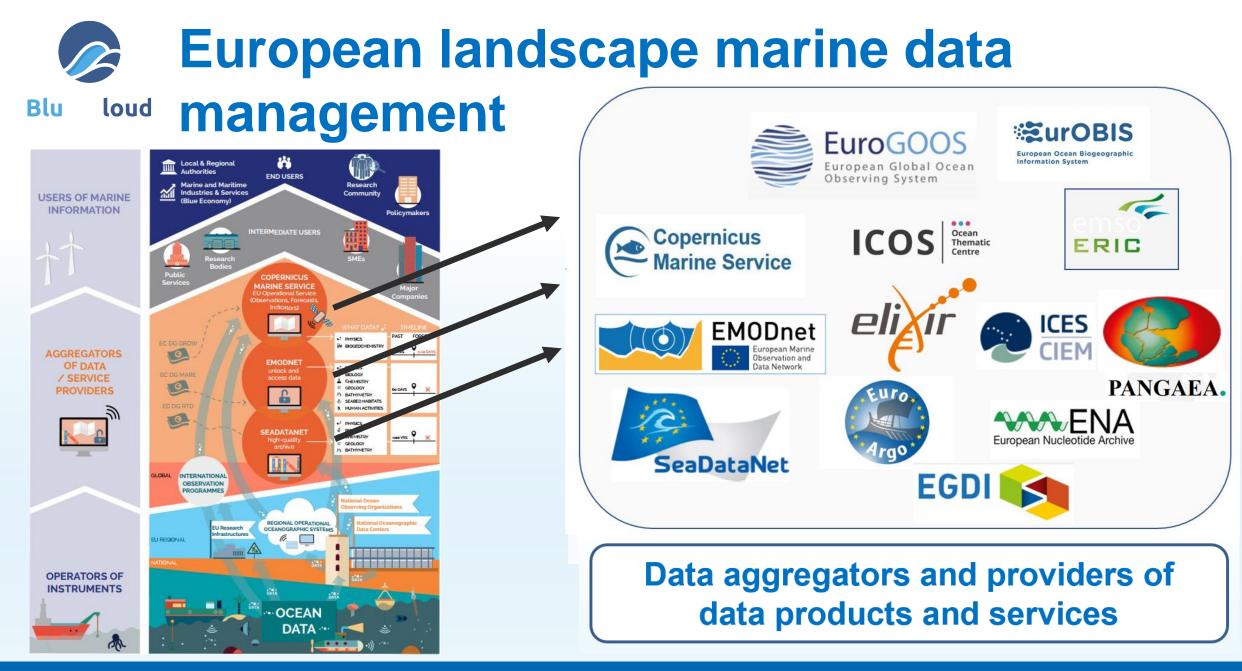
Acquisition of marine and ocean data

GOOS

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) (According to EMODnet study)

- 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



Demonstrating the potential of Blu Loud Open Science in the marine domain

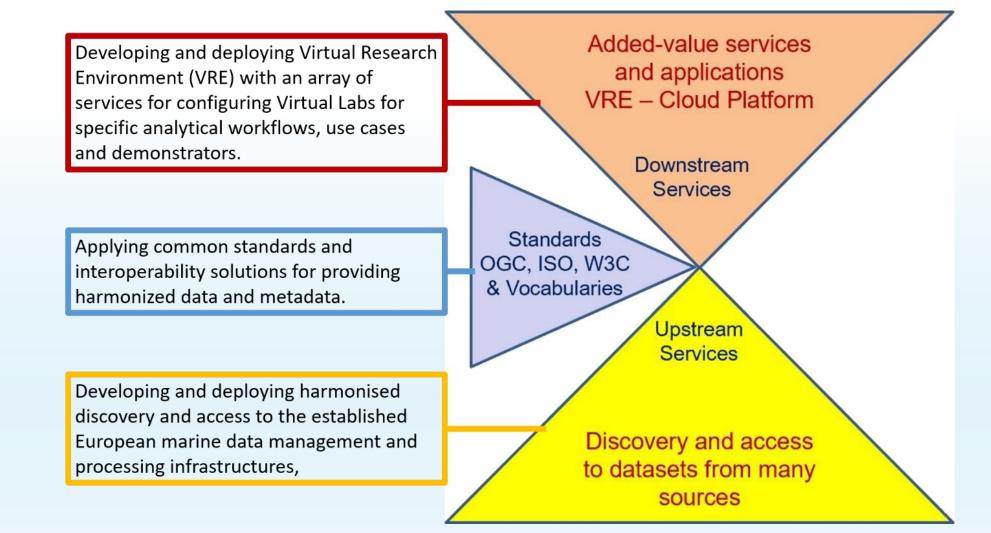
EU H2020 Blue-Cloud project 'Future of Seas and Oceans Flagship Initiative'

October 2019 – September 2022; 20 partners

Marine thematic contribution to European Open Science Cloud (EOSC)

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" Blue-Cloud Mission 2022

Blue-Cloud overarching concept

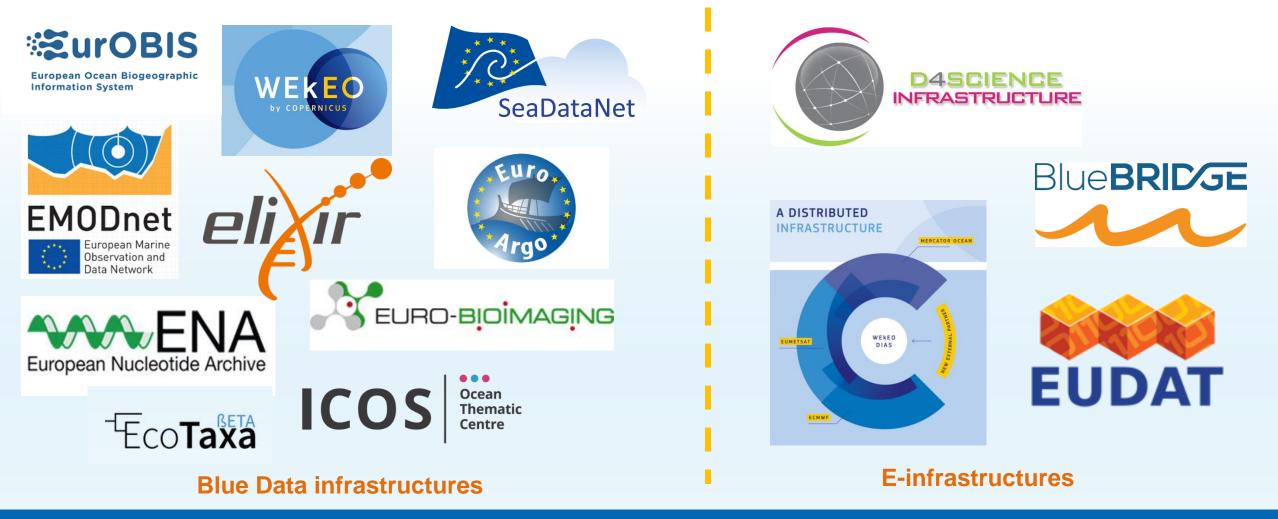


loud

Blu



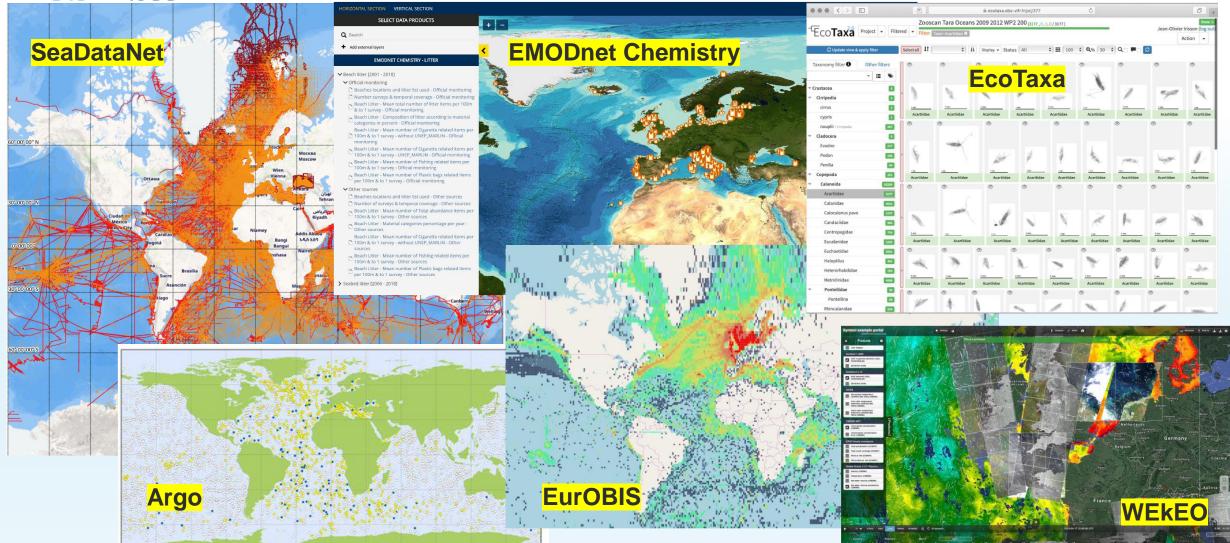
Blue-Cloud federation of major infrastructures





Illustrations of data coverage

Blu loud





C	

•••••••••••••••••••••••••••••••••••••••
••••••
••





Zoo & Phytoplankton EOV products

Plankton Senomics

Aarine Environmental Indicators



-

LIÈGE











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



Blu

loud

Blue-Cloud Data Discovery & Access service

Blue-Cloud Disting innovative services for Marine Research & the Blue Economy		DATA DISCOVERY AND ACCESS SERVICE		FEED	BACK 📮 LOGIN 👂	DATASET BASKET 0 🏋 💼
Filter search	Blu	ue Data infrastructures	Level 2 Search	Level 1 Results (24964)	Level 1 Total	Last update
Free search	-Есотаха Есо	otaxa	Level 2 Search 🗗	10	10	2021-09-16
Date search From yyyymmdd To yyyymmdd	eligir mena EL	IXIR-ENA	Level 2 Search 🗗	32	32	2021-09-16
Geographic search	EMODnet EN	AODnet Chemistry	Level 2 Search 🗗	202	202	2021-09-16
West East 🏹	Eu	iroArgo – Argo	Level 2 Search 🗗	16349	16349	2021-09-16
SEARCH RESET	Curobis Entransition States	IrOBIS – EMODnet Biology	Level 2 Search 🗗	893	893	2021-09-16
		OS data portal	Level 2 Search 🖍	140	140	2021-09-16
	SeaDataNet	aDataNet	Level 2 Search 🗗	818	818	2021-09-16
	SeaDataNet Se	aDataNet-products	Level 2 Search 🗹	49	49	2021-09-16
	socat So	cat	Level 2 Search 🗗	6471	6471	2021-09-16



Blu

ARGO

Level 2

loud

Blue-Cloud Data Discovery & Access service

Blue-Cloud DATA DISCOVERY AND ACCESS FEEDBACK LOGIN 🔎 DATASET BASKET 0 📜 亩 SERVICE Results found: 164396 in 0.21 Seconds VIEW RESULTS (1 - 1000) Filter search Reset all You searched for: Hamilto Monro ÷ Alexandi 33.52918, -68.97656, -2.17969, 30° 00' 00" N -7.24623 de Gran Cana Free search 1 Date search From 20° 00′ 00″ N yyyymmdd 1 То yyyymmdd os SEARCH RESET Ouaga 0° 00' 00" N à **Platform Type** More + C 49953 SOLO W APEX 41373 POSITION ARVOR 26877 S2A 23921 PROVOR 7173 INDEX PROVOR_III 5129 ±. NAVIS A 1971 **Country Code** More + 91872 Romania 90° 00' 00" W 80° 00' 00" W 60° 00' 00" W 50° 00' 00" W 40° 00' 00" W 20° 00' 00" W 10° 00' 00" W 0° 00' 00" 10° 00' 00" E 21207



Blue-Cloud VRE

Tailored environments virtual laboratories

Standard analytical tools

Distributed computing resources

Distributed marine data resources

Blue Cloud VRE **Blue-CloudLab;** Zoo-Phytoplankton EOV; Plankton Genomics, Marine Environmental Indicators; Fish, a matter of scale; Aquaculture Monitor

JupyterHub, Rstudio, Analytics Engine, ...

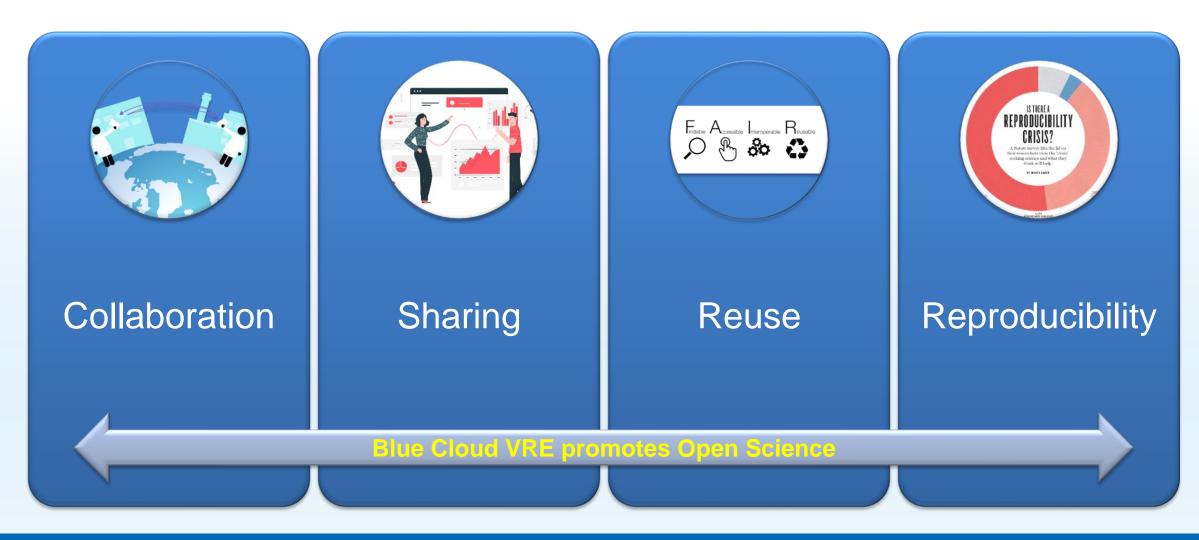
D4Science Infrastructure, WEkEO, EUDAT, EOSC, EGI

EcoTaxa, European Nucleotide Archive (ENA), EMODnet Central, EMODnet Chemistry, EuroArgo. EuroBioImaging, EurOBIS, EMODnet Biology, ICOS-Marine, SeaDataNet, WEkEO

Trusted virtual space where scientists can access the ocean data, tools, services and research outputs they need to perform research in a more efficient way



Blue-Cloud VRE





5 Virtual Labs at the VRE











Have your say before 22 October 2021!

Blue-Cloud Blue-Cloud Roadmap to 2030 **Exploitation & Sustainability** Measures, and trans-European Liaisons Public Consultation Summer 2021

https://www.blue-cloud.org/form/blue-cloud-roadmap-2030-2nd-online-consultation



ANY QUESTIONS?