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Enhancing collaborative ocean science with the Blue-Cloud services

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Blue-Cloud is the thematic EOSC for the marine domain supporting FAIR and Open Science by developing a web-based environment to provide scientists & researchers with enhanced analytical capabilities and cloud-computing resources, underpinned by simplified access to a wealth of multidisciplinary and interoperable marine data services.

The project builds on existing European marine data infrastructures and e-infrastructures federating their services within the Blue-Cloud framework, enabling researchers to find, access, share, combine and reuse quality data across disciplines and countries. These infrastructures include key players such as EMODnet, Copernicus, SeaDataNet, Euro-Argo, D4Science, EUDAT, and more.

The federation is taking place at the levels of (meta)data resources, computing resources and analytical service resources, driven by collaboration across research, data and e-infrastructures.

- A Blue-Cloud Data Discovery and Access Service (DDAS) is being finalised to facilitate access to multi-disciplinary datasets. The overall concept is that the DDAS functions as a broker both for metadata and for data access, interacting with web services and APIs from each of the blue data infrastructures (BDIs) as federated in the Blue-Cloud. This way, it facilitates users to discover first at the collection level which BDIs might have data sets, interesting for their use case, and next, to identify and download relevant data sets at granule level from those selected BDIs, by means of a common interface.
- A Blue Cloud-Virtual Research Environment (VRE) has been established to enable collaborative research. Services include Data Analytics (Data Miner, Software and Algorithms Importer (SAI), RStudio, JupyterHub), Spatial Data Infrastructure to store, discover, access, and manage vectorial and raster geo-referenced datasets, and services and components enabling users to document and then either share with selected colleagues or make available online any generated product (e.g. analytical methods, workflows, processes, notebooks).
- This innovation potential is explored and unlocked by a series of Virtual Labs developed by five real-life demonstrators, addressing societal challenges in the domains of genomics, fishery, aquaculture, biodiversity and environment.

The demonstrators are showcasing how Blue-Cloud can enhance collaborative research in support of the EU Green Deal and key international initiatives, such as the United Nations Decade of Ocean Science for Sustainable Development.

The poster highlights the key services developed within the Blue-Cloud technical framework and their potential impact on marine research towards tackling global challenges.

Federico Drago is a Copywriter and Digital Marketing Specialist, currently involved in projects related to the European Open Science Cloud (EOSC) and to ocean sustainability. Holding a Master's degree in English and Chinese from the University of Naples "L'Orientale", I have worked in a range of international environments between Italy and China, including education, tourism, and culture at large. Outside of Trust-IT, I write about metal music & the climate crisis.

Most suitable track

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Primary author: DRAGO, Federico (Trust-IT Services)

Presenter: DRAGO, Federico (Trust-IT Services)

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