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• **Building a prototype for Earth Science Data and HPC Services**

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In today's world, more and more data are constantly being generated, resulting in changing the nature of computing, with an increasing number of data-intensive critical applications.

As the Council adopted a regulation on establishing the European High Performance Computing Joint Undertaking (EuroHPC) in July 2021, the regulation paves the way for the development within Europe of the next generation of supercomputers, strengthens research and innovation capabilities, the development of a supercomputing infrastructure ecosystem and the acquisition of world-class supercomputers.

PHIDIAS (Prototype of HPC /Data Infrastructure for On-demand Services) will be building a prototype for Data/High Performance Computing services based on Earth sciences cases. The aim of the project is to enable the Earth science community to discover, manage and process spatial and environmental data spanning the Earth's surface, the atmosphere, and oceans. The project foresees the development of three use cases.

- Intelligent screening of a large amount of satellite data for detection and identification of anomalous atmospheric composition events;
- Processing on-demand services for environmental monitoring; and
- Improving the use of cloud services for marine data management.

In addition to developing datasets to be added into the EOSC catalogues, PHIDIAS will optimise workflows to facilitate data reuse, will provide open access to standardised HPC services, and will render the data FAIR.

PHIDIAS will explore a distributed model for data transfer and resource allocation between two European computing centres (CINES in France and CSC in Finland). The project will develop data post-processing methods coupled with HPC capabilities, which will be deployed as a service for several end-users (scientific communities/public authorities/private players/citizen scientists).

The data generated and services created will be available on the relevant EU portals (EU Open Data Portal/EUDAT/EOSC) and will be preserved using the long-term preservation services of the EOSC. This PHIDIAS project will then propose a generic workflow for massive scientific data by combining computing, dissemination and archiving resources in a single framework.

Most suitable track

Delivering services and solutions

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