

The EU mission objectives and Open Science expectations

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Introduction



- The European Union has long been committed to promoting **Open Science** as a fundamental principle in its research and innovation activities. Open Science is a concept that aims to make scientific research and its outcomes more accessible, transparent, and collaborative.
- The **European Open Science Cloud (EOSC)** aims at providing European researchers, innovators, companies and citizens with a federated and open multi-disciplinary environment where they can publish, find and re-use data, tools and services, for research, innovation and educational purposes.
- **EU missions** are large-scale, cross-disciplinary initiatives designed to address some of the most pressing societal challenges, such as climate change, health, and digital transformation, to provide solutions and to deliver concrete results by 2030.

EOSC plays a crucial role in realizing the ambition of the EU missions by facilitating and supporting open science practices and research collaboration across Europe

Ambitious goals



Cancer Mission: Reduce the cancer burden in the European population by at least 30% by 2030, focusing on prevention, early diagnosis, treatment, and improving the quality of life for cancer patients.

Climate-Neutral and Smart Cities Mission: Accelerate the transformation of cities into climate-neutral, smart, and sustainable urban areas by 2030.

Healthy Oceans, Seas, Coastal and Inland Waters Mission: Restore and protect the health of European marine and freshwater ecosystems and promote sustainable management of oceans and waters.

Soil Health and Food Mission: Make soil health a central element of sustainable agriculture and food systems in Europe.

Adaptation to Climate Change, Including Societal Transformation Mission: Accelerate the development and implementation of adaptation strategies and measures to protect European regions and communities from the impacts of climate change.

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Expectations

In all the Missions, Open Science expectations include transparent sharing of data, research findings, methodologies, and fostering collaboration among researchers, institutions, and the public.

Open Science principles can accelerate progress toward achieving the mission objectives by promoting accessibility, transparency, and collaboration in research and innovation efforts.



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Expectations

The EU Missions and Open Science expectations share **common principles of openness, collaboration, transparency, and engagement.**


The 5 Missions aim to address significant societal challenges while aligning with Open Science practices to ensure that **research and innovation outcomes are accessible, inclusive, and beneficial for society** as a whole.



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Expectations

- **Alignment with Societal Challenges:** The 5 EU Missions focus on tackling major societal issues such as climate change, cancer, oceans, cities, and soil health. These missions are directly aligned with the broader goals of sustainability, health, and well-being. **Integrating them into EOSC research activities ensures that the resources and expertise of EOSC contribute to these critical objectives.**



Collaborative Research: The EU Missions encourage collaboration across different countries, sectors, including academia, industry, and civil society. **EOSC** aims to break down geographical and institutional barriers, enabling researchers to collaborate across borders **facilitating the cooperation needed to address complex mission objectives effectively.**

- **Open Science Principles:** **EU missions prioritize data sharing practices.** Researchers are encouraged to make their data available in standardized and interoperable formats, enabling reuse and replication of experiments **in line with open science principles and EOSC**, including open access to publications and data. By ensuring that research outputs are openly available, both contributes to transparency, reproducibility, and the widespread dissemination of knowledge, which are essential for EU missions



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Socio-economic Impact

The EU Missions will deliver impact by putting research and innovation into a new role, combined with new forms of governance and collaboration, as well as by engaging citizens to boost societal uptake of new solutions and approaches.

- **Public Engagement:** The EU Missions aim to engage and involve the public in addressing societal challenges. EOSC can support outreach and engagement efforts by providing a platform for disseminating mission-related information, educational materials, and interactive tools to involve citizens in mission activities.
- **Innovation and Technology Transfer:** EOSC supports innovation and technology transfer by providing a platform for researchers, industry partners, and startups to collaborate and develop new technologies and solutions to address the challenges posed by EU missions. These innovations can be applied non only to mission-specific challenges but also to broader societal and economic benefits.
- **Capacity Building:** EOSC offers training and capacity-building programs to help researchers and institutions make the most of the available resources and tools. This helps ensure that researchers are well-equipped to contribute effectively to EU missions.



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Technical aspects

Data Management and FAIR Principles: EOSC helps researchers manage and make their data Findable, Accessible, Interoperable, and Reusable (FAIR). This ensures that data generated as part of EU missions can be easily discovered and reused by other researchers, maximizing the impact of the missions.

Data Sharing and Integration: EOSC provides a platform for researchers to share and integrate data from various sources and disciplines. This is essential for the success of EU missions, as they often require access to diverse data sets to develop effective solutions.

Interdisciplinary Collaboration: EU missions typically involve collaboration across different scientific domains and sectors. EOSC fosters interdisciplinary collaboration by providing a common framework for researchers from various fields to work together and share knowledge and resources.

Access to Research Infrastructure: EU missions often require access to advanced research infrastructure, such as high-performance computing facilities, data repositories, and laboratories. EOSC can help coordinate access to these resources, ensuring that researchers have the tools they need to carry out their work.

EU Missions and EOSC Interplay

Policy and Governance aspects



Data-driven Decision-Making: Achieving the objectives of the EU Missions often requires data-driven decision-making. **EOSC** can provide the necessary infrastructures and services for researchers to analyze and interpret data effectively, **enabling evidence-based policy recommendations and actions.**



Policy Alignment and Governance: The European Commission strongly supports both EOSC and the EU Missions. **Integrating the Missions into EOSC demonstrates a commitment to aligning research efforts with EU priorities,** which can lead to increased funding and support for research activities. Integrating the EU Missions into EOSC **can help establish a unified policy and governance framework that ensures data sharing and access to resources are in line with the missions' objectives.** This can help overcome barriers related to data ownership, privacy, and access rights.



Policy and Governance: EOSC establishes policies and governance structures that promote responsible data sharing and research practices. This is **important for maintaining ethical standards and data security in the context of EU missions.**



Thank you!



EOSC and EU Missions in practices



HE INFRA projects aligned with **EU Mission “Restore our Ocean and Waters”**



eOSC | AquaINFRA projects have been funded

through the EOSC initiative with 16MEU.

Both projects will demonstrate the interplay between the EOSC data space and the Green Deal data space and act as EOSC blueprints for ‘blue research’.

They will involve several research communities and data infrastructures in **multi-disciplinary use cases demonstrating the value of the EOSC** and contributing to the science base **enabling the Mission’s ‘Digital Ocean and Waters Knowledge System’, and its ‘Digital Twin’ of the Ocean** in particular.

Both projects have different, but complementary, foci that will **support the uptake and continued development of the EOSC as a federated European infrastructure.**

EOSC and EU Missions in practices

HE INFRA projects aligned with EU Mission “Cancer”



project has been founded through the EOSC initiative and

brings together 29 organisations from 13 countries: cancer centers, computational infrastructures, research infrastructures, research performing organizations

EOSC4Cancer contributes infrastructures and well-curated data sets for the EU Mission on Cancer.

EOSC4Cancer contributes to EOSC by bringing diverse kind of cancer-related data onto a platform that is free and accessible for the purposes of research and innovation and by developing services and tools for cancer research .



Thank you!

