



EOSC in the EU's Open Science Policy

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European Commission (DG RTD)

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Why Open Science?

Improves research QUALITY: Transparent, accessible, reusable methods and outputs - facilitate verifiability and reproducibility of research results - leading to higher robustness and reliability

Accelerates research EFFICIENCY: Sharing and reuse of methods and outputs - enables researchers to build upon others' work more easily and quickly - leading to faster research progress

Enhances IMPACT of research: Research methods and outputs visible and accessible to public and private sectors - facilitate their inclusiveness, valorisation and practical application - leading to enhanced trust in research and increased uptake and use of research outputs

The Commission's Objectives for Open Science in Europe

Immediate and **unrestricted**
open access to research
outputs

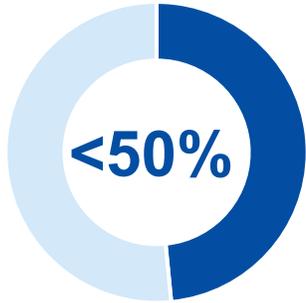
Responsible research
output management, in line
with **FAIR** principles

Early and **open** sharing of
research: Methods, data,
preprints

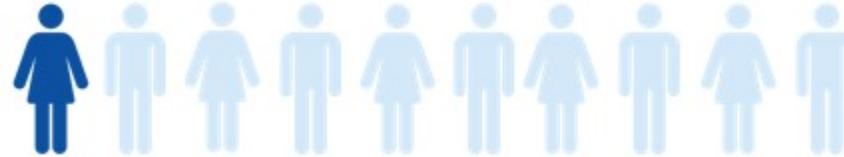
European ecosystem of
research infrastructures that
is more **effective** and
efficient, open and
accessible, and sustainable

Open collaboration, within
science and with broader
public and private sector

What is Status for Open Science in Europe?



Scientific publications¹
available in open access
(aggregated figure over time)
[> 65 % in 2021]

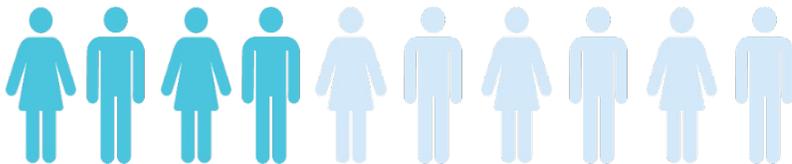


Authors who retain copyright² in contracts
with largest subscription journals

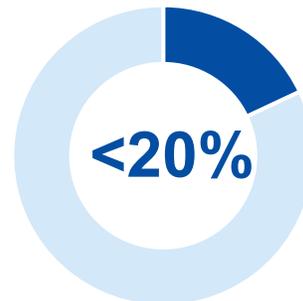


3€ billion per year

National public funding for
pan-European Research
Infrastructures³



Researchers who occasionally store
research data in shared repositories⁴



Researchers who put FAIR
principles into practice⁵

Sources:

- ¹ Open Science observatory by OpenAIRE
<https://osobservatory.openaire.eu/home>
- ² Morrison, J Secker, B Vézina, I Labastida I Juan, V Proudman (2020)
- ³ ESFRI roadmap 2021
- ^{4 & 5} European Research Data Landscape study (2022)
<https://data.europa.eu/doi/10.2777/3648>

Open Science at the centre of European Research Policy

- 2020 • Commission Communication on **'A new ERA for Research & Innovation'**
- 2021 • Council Recommendation on **'A Pact for Research and Innovation in Europe'**
Council Conclusions on the **'Future governance of the European Research Area'**
- 2022 • Council Conclusions on **'Research assessment and implementation of Open Science'**
- 2023 • Council Conclusions on **'High-quality, transparent, open, trustworthy and equitable scholarly publishing'**

Council Conclusions on the Future Governance of the ERA

ERA Policy Agenda 2022-24

| ERA Actions | Outcomes |
|---|---|
| <p>1. Enable the open sharing of knowledge and the re-use of research outputs, including through the development of the European Open Science Cloud (EOSC)</p> | <ul style="list-style-type: none"> • Deploy Open Science principles and identify Open Science best practices • Deploy the core components and services of EOSC and federate existing data infrastructures in Europe, working towards the interoperability of research data • Establish a monitoring mechanism to collect data and benchmark investments, policies, digital research outputs, open science skills and infrastructure capacities related to EOSC |
| <p>2. Propose a EU copyright and data legislative and regulatory framework fit for research</p> | <ul style="list-style-type: none"> • Identify barriers and challenges to access and reuse of publicly funded R&I results and of publications and data for scientific purposes, and identify potential impacts on research, through an analysis of relevant provisions under EU copyright and data legislation and related regulatory frameworks, and of relevant institutional and national initiatives • Propose legislative and non-legislative measures to improve the current EU copyright and data legislative and regulatory frameworks |
| <p>3. Advance towards the reform of the Assessment System for research, researchers and institutions to improve their quality, performance and impact</p> | <ul style="list-style-type: none"> • Analysis of legal and administrative barriers at national and trans-national level for a modern research assessment system • Create a coalition of European research funders and research performers who agree on a new approach for research assessment, following wide and inclusive consultations at European and international level • Implementation plan of the coalition to roll-out the new approach, including pilots in different domains |
| <p>14. Bring Science closer to Citizens</p> | <ul style="list-style-type: none"> • Propose a policy coordination mechanism on public engagement practices, including citizen involvement in scientific processes |

The Commission's Commitment to Open Science

Improve *the practice* of R&I

- Openly accessible scholarly publications
- Early sharing of all research outputs
- All data FAIR, RDM
- Reproducible results
- Societal engagement and responsibility

Develop proper *enablers*

- Rewards and incentives to adopt Open Science practices, with appropriate metrics
- Appropriate skills and education, including for research integrity
- Open Research Infrastructures including the European Open Science Cloud (EOSC)
- Legal and regulatory environment for data and copyright
- Open access publishing platforms such as Open Research Europe

European Research Area

Reform of research assessment

European Open Science Cloud

Open Research Europe publishing platform

Provisions on Open Science under Horizon Europe



Political momentum towards EOSC gained since 2018

EU political support:

- 2020: Declaration on “*Opening the Door to a World of FAIR Research Digital Objects - On the Threshold to the European Open Science Cloud*”
- 2021: Declaration on “*Riding the Next Wave of Research Data*”
- 2022: Council Conclusion on “*Research Infrastructures*” and Brno Declaration on “*Fostering a Global Ecosystem of Research Infrastructures*”
- 2023: Declaration on “*Maximising the Benefits of Research Data*” & Declaration on “*Global dimension and sustainability of research infrastructures*”

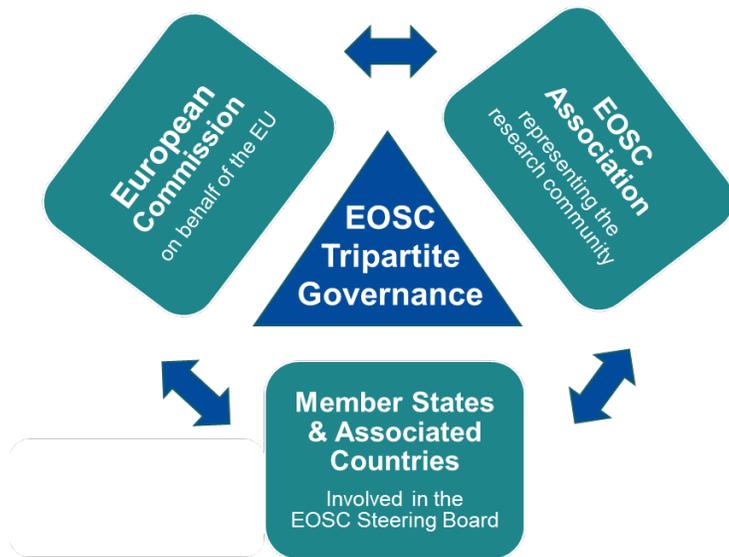
Also important:

- 2021: Council conclusions on “*The future governance of the ERA*”
- 2022: Council conclusion on “*Research assessment and implementation of Open Science*”



Enabling Open Science through EOSC

- **A community-driven process** (commitments by EU Member States, Associated Countries, research stakeholders)
- **Gradual implementation** based on **mutual alignment** and pooling of resources at European, national and institutional levels. Move **from prototyping to operations**



With direct support by: 

- **EOSC European Co-programmed Partnership** to pool commitments and resources along priorities set in the EOSC Strategic Research and Innovation Agenda
- **EOSC tripartite governance** to ensure dialogue and strategic coordination between EC, EU Member States and Associated Countries, and EOSC Association



The Commission's Support for EOSC

Keeping the policy momentum: EOSC as a pillar of the digital transition

- 'Open Science including EOSC' fully embedded in the ERA Policy Agenda
- EOSC as a sectoral data space of the European Strategy for Data

Support through the Horizon Europe programme

- Implementation of Research Infrastructure Calls: Direct EU investment in EOSC developments of up to EUR 490 million
- Including also procurement of EOSC managed services by the Commission
- Studies ordered by the Commission

Continued involvement notably in:

- The EOSC governance (EOSC Steering Board, EOSC Partnership Board)
- EOSC coordination with ERA-Forum, ESFRI and various member state-driven think tanks
- EOSC thematic demonstrators and good practices
- The monitoring of the uptake of Open Science and 'EOSC readiness'



The Commission's Public Procurement Managed Services for the European Open Science Cloud platform

Status update

- 4 May 2022: Prior Information Notice
- 4 May to 5 August 2022: Open Market Consultation (3 months)
- 20 December 2022: Tender Publication
- 2 May 2023: Submission of Initial Tender Response for Dialogue
- May to July 2023: Dialogue Stage (9 weeks)
- 28 July 2023: Final invitation to tender
- 7 September 2023: Final submission
- Ongoing: Evaluation (to be followed by contract signatures by the end of this year)

Procurement Lot Structure

Lot 3

Managed Collaborative Data Platform, Interactive Data Analytics Platform and Visualization Services for the EOSC Exchange (Application Services)

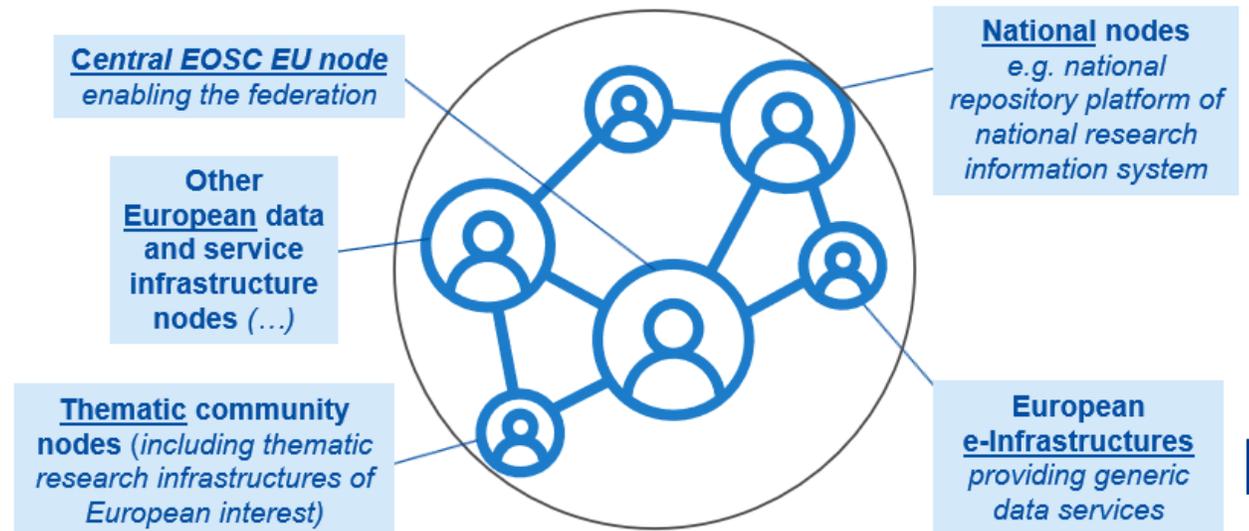
Lot 2

Managed Container Platform and Virtual Machine Services for the EOSC Exchange (Infrastructure Services)

Lot 1

Managed Services for the Development, Integration, Deployment and Operations of the Federated EOSC Core

The **EOSC EU node**
should provide
from next year onwards
core functionalities
enabling the **EOSC federation**

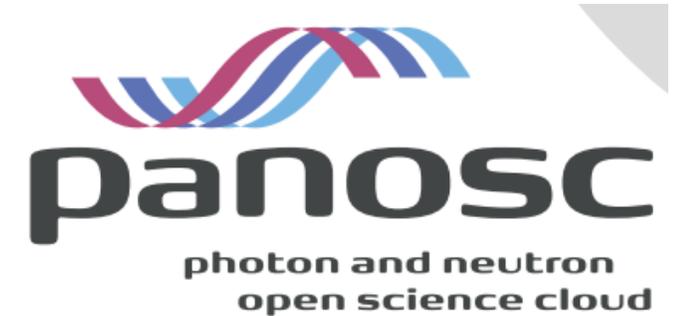


EOSC thematic demonstrators

Blue Cloud, PANOSC (and others)

Examples of EOSC thematic demonstrators delivered the last year

- **PANOSC** by the photon & neutron (PaN) community (closing event in Grenoble on 29 Nov 2022)
- **Blue Cloud** Initiative (BCI) for marine researchers and ocean modellers (final event in Brussels on 8 Dec 2022)



Similar approaches:

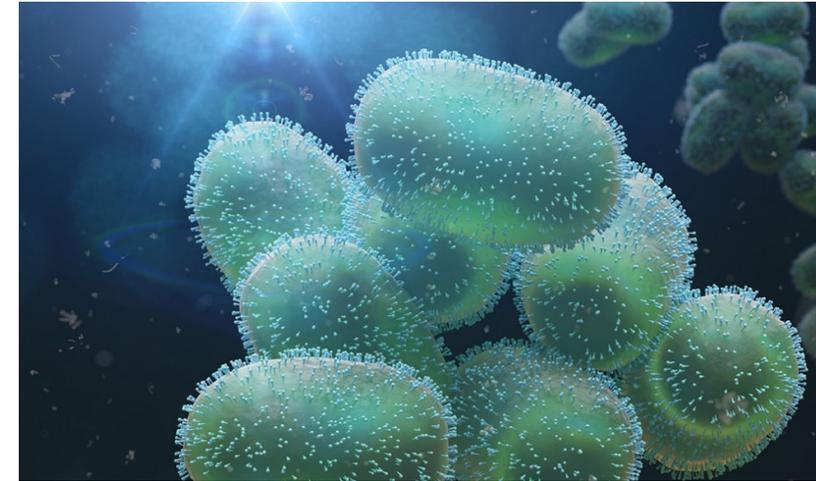
- Making FAIR data a reality within the community
 - Adoption of common FAIR data policies
 - Standard metadata and data stewardship within the community
 - Adoption of common templates for Data Management Plans
- Developing and providing services for scientific data
 - FAIR data discovery and access service
 - Virtual research environment with distributed computing and storage
 - Virtual labs with analytical services
- Connecting these resources to EOSC



The new Pathogens Portal builds on EOSC success

Launched in July 2023

- Builds on the same framework as the European COVID-19 Data Portal
- Enables sharing and analysis of pathogen data from across the world.
- Extends to the pathogen world beyond viruses
- Contains data on more than 200 000 pathogen species and strains. All data are open and FAIR
- Helps scientists, healthcare, and public health professionals to collaborate and enhance pathogen surveillance worldwide, especially during public health outbreaks and pandemics.
- Wide effort supported by EMBL and a series of EU-funded projects including EOSC-Life (no. 824087) and BY-COVID (no. 101046203)
- News release: <https://www.embl.org/news/science/pathogens-portal-launch/>



Credit: dottedyeti/stock.adobe.com



Coordination of EOSC-related projects

Face-to-face meeting in Brussels on 15-16 June 2023

Main objectives:

- Deepen the collaboration with the consortia on EOSC European Partnership and its Strategic Research and Innovation Agenda (SRIA)
- Update on respective contributions and plans.
- Discuss challenges and next steps for the implementation of EOSC

Audience:

- 59 participants including representatives from 19 EU-funded projects, the Commission, Research Executive Agency and the EOSC Association

Some highlights:

- [EOSC Macro Roadmap](#) of contributions to SRIA by the EOSC Focus project provides a tool for detailed mapping and visualisation of the contribution of all projects to the EOSC SRIA
- [Vademecum of coordination actions](#) by the EOSC Association
- Yearly [INFRAEOSC Winter School](#) for more in-depth technical cooperation
- [EOSC Multi-Annual Roadmap \(MAR\) 2025-2027](#)

Let's harness the power of
collaboration and
partnership!

#EOSC #OpenScience
#EURResearchArea



Open Research Europe (ORE): An EU Scientific Publishing Platform

ORE was launched in 2021 for Horizon 2020 and Horizon Europe participants

- Ongoing process to extend operation to 2026
- Open-source infrastructure to underpin innovative publishing workflows to be procured

Council Conclusions on Open Science (2022 and 2023):

“... INVITES Members States and research funding organisations to consider joining the ORE initiative”

- Ongoing discussion with interested national research funders and other stakeholders across Europe:
 - Further detailing the vision and implementation roadmap
 - Converging on a not-for-profit ‘business model’
 - Soliciting participation and funding commitments



Thank you



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