

EOSC priorities 2025-2027 and EOSC federation

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What

EOOSC is the European web of FAIR data and related services for research

Research data that is easy to find, access, interoperate and reuse (FAIR)
Trusted and sustainable research outputs are available within and across scientific disciplines

Why

Unlock the full potential of research data to accelerate discoveries and innovation

How

- Ensure that Open Science practices and skills are rewarded and taught, becoming the 'new normal'
- Enable the definition of standards, and the development of tools and services, to allow researchers to find, access, reuse and combine results
- Establish a sustainable and federated infrastructure enabling open sharing of scientific results

Strategic
Research and
Innovation
agenda (SRIA)
eosc.eu/sria-mar

eosc How EOSC is implemented

Co-Programmed European Partnership



Strategic Research & Innovation Agenda (SRIA)



3 General objectives

9 Specific objectives

14 Action Areas

- Identifiers
- Metadata and ontologies
- FAIR metrics/certification
- AAI
- User environments
- EOSC interoperability framework
- Resource provider environments
- Rules of participation
- Landscape monitoring
- Business models
- Skills and training
- Rewards and recognition
- Widening public/private/global
- Communication

In kind contributions

- EOSC Association members
- Countries represented in the EOSC Steering Board

H2020 & HE projects

- H2020 projects: 350M€
- HE 2021: 6 topics / 59M€
- HE 2022: 4 topics + Pu Pr / 65 M€
- HE 2023: 6 topics + 2 GIB / 70M€
- **HE 2024: 5 topics / 61 M€**

INFRAEOSC – 2024 Call

5 topics / 61 M€ / opening 6 December 2023 / deadline 12 March 2024

RIA
16M€
2 projects

EOSC-01-01: FAIR and open data sharing in support of the mission adaptation to **climate change**

CSA
4M€
1 project

EOSC-01-02: Supporting the **EOSC Partnership** in further consolidating the coordination and sustainability of the EOSC ecosystem

CSA
5M€
1 project

EOSC-01-03: Enabling a network of EOSC federated and trustworthy **repositories** and enhancing the framework of generic and discipline specific services for data and other research digital objects

RIA
8M€
1 project

EOSC-01-04: Long-term access and **preservation** infrastructure development for EOSC, including data quality aspects

RIA
28M€
4 projects

EOSC-01-05: Innovative and customizable **services for EOSC Exchange**

About the MAR

- The Multi-Annual Roadmap is a part of the **Strategic Research and Innovation Agenda (Chapter 8)**
- The MAR sets priorities for activities in a given period of work
- The MAR informs the Work Programme which is defined by the European Commission
- The MAR under development is for **2025-2027**

EC request for a separate document

“Input and advice by the EOSC Association for the definition by the EC of call topics to be included in the Horizon Europe Work Programme 20xx”

The process to establish the MAR

- Autumn of 2022: Task Forces were asked for inputs
- **The Board reviewed and selected from these to propose topics to the EC in December 2022**
- The Board worked up a preliminary text according to the MAR structure
- Further iterations were made with Task Forces
- **A finalised draft version for consultation was agreed on by the EC early March and put out for consultation to members and observers until April 2022**
- Draft version agreed on by the board on 4 August 2023
- Draft delivered to the EC on 1 September 2023
- **Discussion with community on 20 September 2023**
- Finalising draft in October 2023
- Integration in SRIA >>> SRIA 1.2 in October 2023
- **Adoption of MAR by EOSC-A at GA#7 on 21 November 2023**
- **Adoption of SRIA 1.2 by Partnership Board in December 2023**

eosc European level priorities for 2025-2027

- A. **Align on core curricula for data stewardship, Open Science and FAIR** for both support staff and researchers (2025)
- B. Support the **development and sustainability of networks for data stewards, research software engineers, semantic artefact curators and Open Science communities**, leveraging on existing national networks and coordinating these at European level to promote the added value of EOSC (2025)
- C. Collect, connect and scale up ongoing **good practices and case studies for the research and career assessment of open science practices in collaboration with the Coalition for Advancing Research Assessment (CoARA)** (2025)
- D. **Support and complement the CoARA movement** with developing tools and processes for the research and career assessment of open science practices.
- E. **Pilot indicators/metrics at the European level for the research and career assessment of open science practices** and disseminate them Europe-wide.
- F. Support and embed **appraisal and preservation procedures for long-term data preservation** and monitor their value and costs. Practices should be transparent, aligned where possible and interoperable (i.e. through machine actionable rights management).
- G. **A dedicated provision for supporting the EOSC Partnership in its concertation actions.** A cascading grant mechanism should support widening activities with under-represented countries and national competence centres, amongst other things.



eosc National level priorities for 2025-2027

- H. Support the implementation of **aligned European curricula** for data stewardship and encourage the inclusion of these as a core element in research programmes. The establishment of proper career paths for research support professionals is also needed.
- I. **Establish the cost of data management, data stewardship, maintenance and preservation of research outputs** (including software and semantic artefacts) as **eligible within national funding schemes**.
- J. **Leverage existing national Competence Centres** and strengthen their participation in coordination networks.
- K. **Use cases from the public sector, citizen science and industry** should be encouraged in the next period in parallel to the research sector, whilst ensuring that services developed remain under the control of academics. Also use cases running at national or regional level are interesting. Emphasis should be to support uptake (2025).



eosc Institutional level priorities for 2025-2027

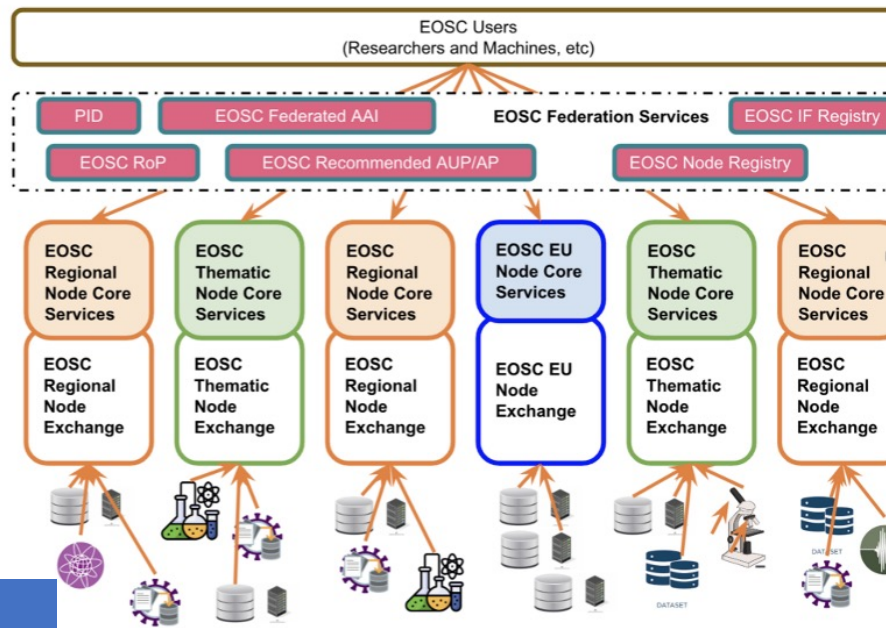
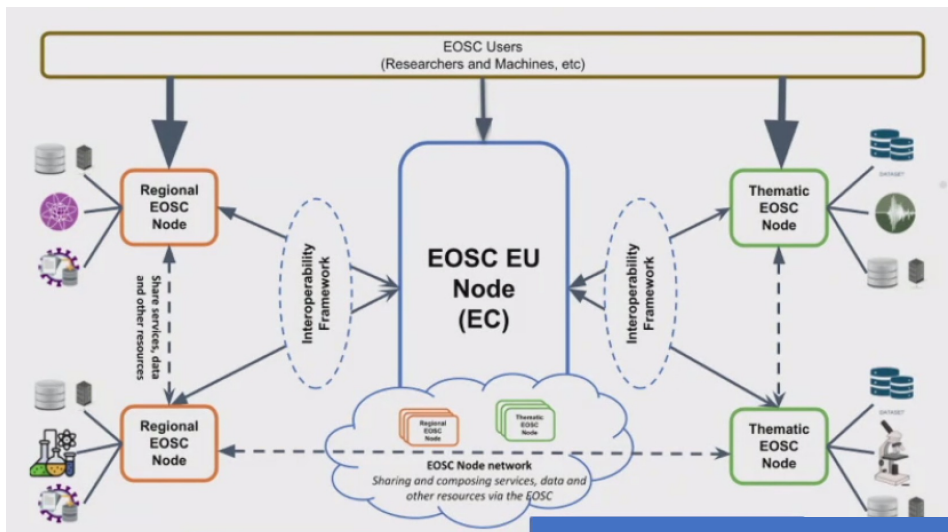
- L. Offer codified and certificated core Open Science, FAIR and CARE training to researchers and research support units at all levels and recognise the skills as part for their professional development through different certified means.
- M. Support professional development programmes to ensure research support staff have the required data stewardship skills.
- N. Engage in competence centres and networks for data stewards, research software engineers, semantic artifact curators and Open Science communities to share models and harmonise best practises.
- O. Adjust, follow up, and evaluate research review mechanisms to ensure FAIR research outputs and Open Science are appropriately recognised and rewarded.
- P. Define and implement training and procedures to select data, software, and other research outputs that retain the value necessary to be preserved



eosc EOSC federation



EOSC intends to become a **federation of distributed systems**, combined into a system of systems, **consisting of multiple "nodes"** that are interconnected and can **collaborate to share and manage information and resources (FAIR data & services) across thematic and geographical boundaries.**



Courtesy of EGI

EC public procurement

Managed Services for the European Open Science Cloud platform

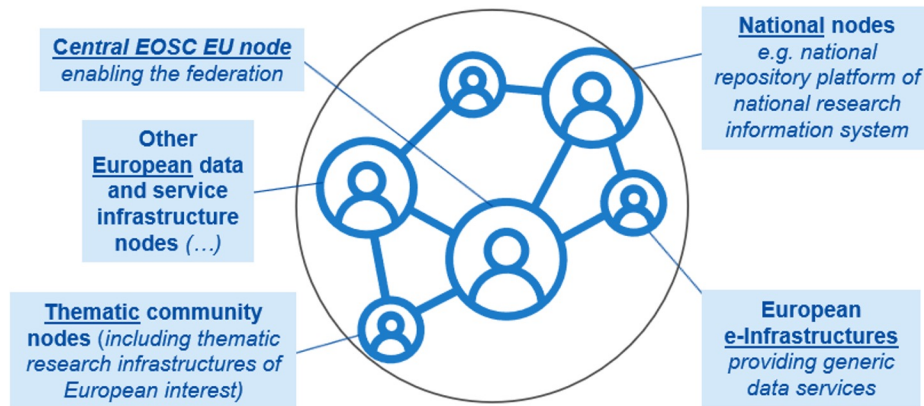
Status update

- 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 The concept of “node”

Main inputs captured via community consultations

- The EU node is the federating node and should operate

Take-away 1: Multiple nodes x country

- There should be basic policies at the EOSC federation level that apply to all Nodes (MOs)
- There may be Node specific policies that vary from Node to another (MOs)
- The organisation that is responsible for a Node should ensure that all applicable policies are enforced and managed (MOs)
- A Node may itself be a collection or federation of Nodes (MOs)

Take-away 2: A node might itself be a collection of nodes

- Many RIs are already operating distributed, multi-national federated structures and can contribute valuable experience (RIs)
- EOSC should not put the entry requirements for federated structures (RIs)
- RIs would find it valuable if the EOSC considered sustainability aspects (RIs)
- The Rules of Participation for EOSC nodes should be considered as a reference node of the RIs (RIs)

Take-away 3: No EU master node but reference node

- RIs would find it valuable if the EU Node provides additional storage capacity (RIs)

EOSC Association Board position paper on the EOSC Federation and the role of Nodes

EOSC Association Board of Directors

Draft dated 13th October 2023

This document provides a high-level description of EOSC. EOSC is an open, trusted, federation of infrastructures that enables European researchers to store, share, process, analyse, and reuse research digital objects (e.g. data, publications and software). EOSC accelerates Open Science, FAIR data management and use of digital methods and services in research by stimulating cooperation across European, national, and institutional levels, resulting in increased research productivity and reproducibility. To achieve these goals, EOSC brings together the European Commission, the MS/AC governments and the many stakeholders involved in the European Research Area, in particular Research Infrastructures, to collaborate in its co-creation process.

To fulfil this vision, EOSC intends to become a federation of distributed systems, combined into a system of systems, consisting of multiple "nodes" that are interconnected and can collaborate to share and manage information and resources (FAIR data & services) across thematic and geographical boundaries. The node concept adds value by grouping resources with common policies and ownership or responsibility.

Examples of existing federated, distributed systems where nodes play a crucial role include those established by many Research Infrastructures. These systems will continue to exist and remain the means for serving their primary user communities. The EOSC Federation permits such systems to share resources with other EOSC communities and leverage common services.

The precise definition and characteristics of a node vary depending on the specific context (national, regional, institutional) or thematic, but they share some common characteristics, including:

- **Collaboration:** Nodes in the EOSC Federation enable collaboration to achieve common goals. This involves sharing information, coordinating activities, or combining resources to complete tasks. This benefits the end-users by making more service and resources available, and by increasing the number of ways an end-user can combine those resources to reach their own objectives. The concept of node and EOSC Federation should be transparent to the end-users.
- **Governance:** A governance structure is established at the EOSC Federation level to determine federation policies including the inclusion/exclusion of nodes. There are basic policies, rules of participation as well as technical profiles and standards at the EOSC Federation level that apply to all nodes. These rules are intended to maximize the possibility of additional "systems" (or nodes) joining the EOSC Federation, while at

EOSC node main characteristics

- **Collaboration:** Nodes in the EOSC Federation **enable collaboration to achieve common goals.**
- **Governance:** A governance structure is established to determine federation policies incl. the **inclusion/exclusion of nodes.** Each node has an identified **legal representative** that takes responsibility for ownership and accountability.
- **Autonomy:** There may be node specific policies that vary from one node to another.
- **Interconnectivity:** Nodes offer interfaces that **respect the EOSC Interoperability Framework.**
- **Resources:** All nodes **contain resources** (FAIR data and/or services) that should **add value to the EOSC Federation** (as well as its users). The services may be of a **technical nature** (i.e. allow to perform actions on data) but may also include **training services or expertise** such as centres of competence.
- **Scalability:** The federation can be scaled by adding new nodes.
- **Heterogeneity:** Nodes belonging to different categories may vary in the collection of resources to which they provide access and the infrastructure on which they are built.

Defining the EOSC federation

- **EOSC A will continue to lead** on shaping the **definition of the EOSC Federation and the role of Nodes**
- The EOSC-A Board of Directors will **present its position paper to the EOSC Partnership** in December 2023
- In 2024 the ambition is to **evolve and extend the paper into a formalised handbook of operations*** that provides guidelines for administration of and engagement with the EOSC nodes.
- A key dependency to this evolution, and indeed that of the nodes concept itself, is the definition of **access policies at both the node and Federation levels**

Conclusions

- EOSC is a federated initiative that aims to promote the production and reuse of research data
- EOSC has entered a critical convergence phase. In 2024
 - the EU node will become operational
 - the EOSC Federation will be defined and started
 - the sustainability plan for EOSC beyond 2027 will be decided
- And in parallel ... several other challenges:
 - demonstrate EOSC added value to the research process; showcase demonstrators; increase uptake by researchers;
 - EOSC as a public good: researchers primary users; open progressively to public/private sectors
 - Deploy EOSC as a European data space, and connect other data space
 - EOSC enabling citizen science
 - EOSC support to EU Missions
 - ...





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Many Thanks... and stay tuned

