

# Future of EOSC

EOSC Tripartite Spain  
Tuesday, 19.09.2023



- The concept of EOSC Nodes.
- The “Helicopter View” Tasks for EOSC beyond 2027
- Legal structures.



# The concept of a node

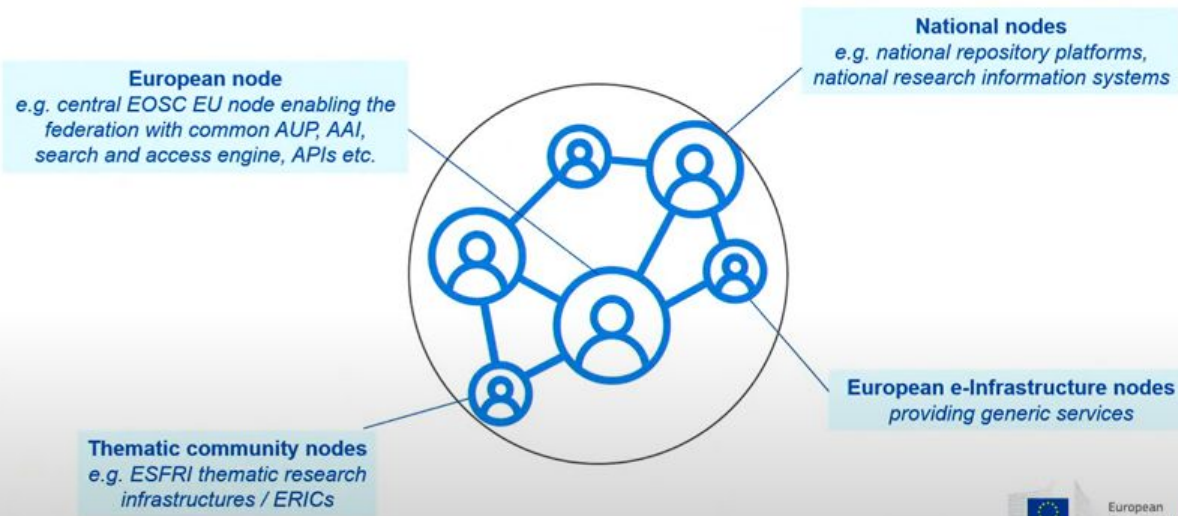
The term **node** was introduced by the EOOSCpilot project in 2018

Retaken in the EOOSC EC procurement

- The EOOSC Node is a particular implementation of the EOOSC Platform concept.
- The EOOSC procurement action is to build and deploy a fully operational EOOSC Node at the European level.
- This EOOSC Node may act as the master node for the federation and may serve as a deployment blueprint and operations guideline for future, national, regional and/or institutional (even thematic) implementations of the EOOSC nodes, not covered in this procurement



## European Open Science Cloud data space



The Potential of Research Data: How Research Infrastructures Provide New Opportunities and Benefits for Society, Lund, Sweden, 20 June 2023, **Michael Arentoft, Head of Unit for Open Science and Research Infrastructure, DG RTD**

Taken from presentation of Peter Szegedi, DG Connect, 08.09.2023

## Node concept for the EOOSC Procurement

Competitive Dialogue Descriptive Document – December 2023

### Section 4. Technical Specifications

*“The public procurement action is to build and deploy a fully operational enabling infrastructure for EOOSC, providing access to a rich portfolio of FAIR (Findable, Accessible, Interoperable, Reusable) data and professional quality FAIR services in all relevant domains from data handling to computing, processing, analysis and storing. The procurement also covers operations, maintenance and support of the EOOSC platform and services for 36 months.”*

- **EOOSC Platform:** EOOSC Core Platform (technology, coordination, and support functions) and EOOSC Exchange Services (set of horizontal IaaS/PaaS/SaaS services)
- **EOOSC Node:** Particular implementation of the EOOSC Platform in the form of managed services. First EOOSC Node to be procured by the Contracting Authority at the European level, more nodes might be federated at a later point.

*Note that the Contractor(s) of the EOOSC Node at the European level are going to contribute to the EOOSC Interoperability Framework with the implementation choices they apply.*

# 1a) The concept of a node / EC Perspective

Taken from presentation of Peter Szegedi, DG Connect, 08.09.2023

## EOSC as an overall construction

- **EOSC is not a single monolithic infrastructure or resource provider**
  - It is a federation (federated architecture) built out of many independent organisations and resource providers as in a System of Systems approach (i.e., web of FAIR data and services).
- **EOSC must ensure independence and autonomy of resource providers**
  - Scientific resource/service providers are widely distributed across Europe, have the mandate to serve one or more research disciplines in various geographies, and have to comply with different national and European legislations.
- **EOSC is recognized as a System of Systems, its design principles are to be flexible and inclusive rather than selective**
  - Various metadata standards from communities should be acceptable, multiple service framework standards adopted by the communities should be applicable.

**Conclusion: The system of systems approach to work properly and to ensure interoperability has to define some boundaries and to select deployment options.**

- Choices have to be made for this EOSC Procurement Action to select appropriate standards, best practices, tools and APIs that are suitable for the EOSC platform and services implementation at the European level.

Taken from presentation of Peter Szegedi, DG Connect, 08.09.2023

## What is an EOSC Node (minimum)

1. **LEGAL:** It has an identified owner (legal entity) and established policies

### You know who to contact

- *Governance model and structure may be in place...*
- It has autonomous domains/services connected *i.e. signed agreements with the legal owner (RoP accepted)*
- It has users (IdPs) identified accessing the services *i.e. legal consent given (AUP/AP consented)*

2. **TECHNICAL:** It has a registry of all assets/members (users, services, etc.) and metadata

### You know what and how to find

- *Other CORE services may be offered to support the user community and the service providers (e.g., federated identity management, monitoring & accounting, catalogues, helpdesk, etc.)*

# 1a) The concept of a node / EC Perspective

Taken from presentation of Peter Szegedi, DG Connect, 08.09.2023

## Nature of an EOSC Node (flexibility)

- Determined based on the scope of the users and services (membership/assets)
  - a) Thematic area, i.e. primary scientific discipline (based on key services) – *ESFRIs*
  - b) Geographical area: i.e. national or regional scope (based on primary beneficiaries) - *eInfras*
  - c) Any combination of these...
    - Multi-disciplinary and/or multi-national (well defined by legal owner)



Taken from presentation of Peter Szegedi, DG Connect, 08.09.2023

## What is the “EOSC EU Node”

### 1. **LEGAL:** Owned by the European Commission (Horizon Europe RI WP, Open Science Policy)

- *Governed by the EOSC Tripartite Governance (EC, EOSC-A, MS/AC)*
- EC Services are connected by default (EU Login, CORDIS/Cellar, data.europa.eu, ORE, Zenodo...)
  - Additional Horizontal Services are also provided by default
    - Virtual Machine, Container, Bulk Data Transfer
    - Notebook, Sync&Share, Large File Transfer
  - Other third-party/autonomous SPs can connect (**RoP**)
- Users of eduGAIN and eIDAS/EU Login are enabled by default (**AUP/AP**)

### 2. **TECHNICAL:** EU level EOSC Web Portal for registry services (eosc.europa.eu)

- *In addition EOSC CORE services are: Tools Market, Knowledge Graph, Federated Identity Management, Monitoring, Accounting, Helpdesk*

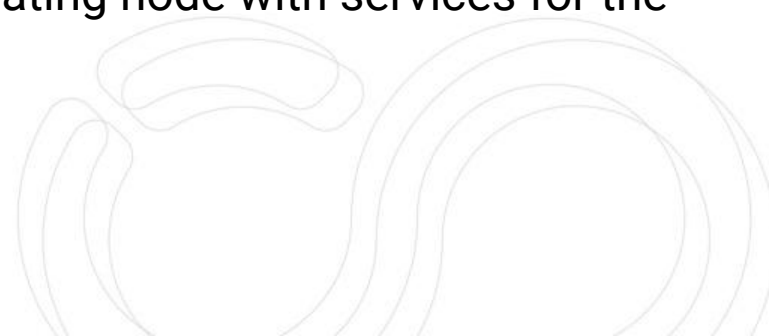
# Q&A



# eosc 1c) Exploring the role of nodes

Editor's link: <https://www.mentimeter.com/app/presentation/al5yuomp95vx7s32nt822e62153m5qxd/dxs3y1xqjpaz/edit>

- Prioritise items in multiple choice with respect to the features of a node
  - Central managed infrastructure at national level.
  - Network of institutional providers with central services.
  - Federation of institutional and regional providers with a central coordinating entity.
  - Thematic networks of providers by communities
  - Federation of distributedly managed services with no central coordinating entity (or very thin).
  - Federation with a central coordinating node with services for the long-tail-of-science.
  - Other one (raise your voice)



# eosc 1c) Exploring the role of nodes

Editor's link: <https://www.mentimeter.com/app/presentation/al5yuomp95vx7s32nt822e62153m5qxq/dxs3y1xqjpaz/edit>

- Provide examples of potential nodes at Spanish level.



## 2) The Future post-2027

“Helicopter view”

Five Tasks implemented  
through different instruments

### Main EOSC tasks for the future

**Task 1:** Deploying and operating the EOSC EU node  
(Core, Exchange, FAIR Data Federation)

**Task 2:** Maintaining and updating the EOSC EU node and expanding  
the EOSC federation  
(with elements that are close to the ‘market’)

**Task 3:** Enabling a ‘web of FAIR data and services’ for science

**Task 4:** Develop, prototype and test new elements  
supporting the evolution of the EOSC Core and Exchange  
and the tools enabling the federation  
(elements that can be made ready for the ‘market’)

**Task 5:** Enabling Open Science policies and the uptake of Open  
Science practices

# Q&A



# Entrusted Legal entity vs. Open Science EC programm

<https://www.menti.com/aln2v5ptvs46>

1. Deploying and operating the EOSC EU node (Core, Exchange, FAIR Data Federation)
2. Maintaining and updating the EOSC EU node and expanding the EOSC federation (with elements that are close to the 'market')
3. Enabling a 'web of FAIR data and services' for science
4. Develop, prototype and test new elements supporting the evolution of the EOSC Core and Exchange and the tools enabling the federation (focus on elements that can be made ready for the 'market')
5. Enabling Open Science policies and the uptake of Open Science practices

Mentimeter scales



# eosc Points where Spain should focus

<https://www.menti.com/aln2v5ptvs46>

1. Deploying and operating the EOSC EU node (Core, Exchange, FAIR Data Federation)
2. Maintaining and updating the EOSC EU node and expanding the EOSC federation (with elements that are close to the 'market')
3. Enabling a 'web of FAIR data and services' for science
4. Develop, prototype and test new elements supporting the evolution of the EOSC Core and Exchange and the tools enabling the federation (focus on elements that can be made ready for the 'market')
5. Enabling Open Science policies and the uptake of Open Science practices

Mentimeter Scales





## 2b) The Future post-2027

### Developing Scenarios

<https://www.menti.com/alxyinwf3oj8>

1. As is (coprogrammed partnership through the EOSC-A, with limited capability).
2. ERIC
3. EDIC
4. Joint Undertaking
5. Geant-like organization.
6. Other (raise voice).

Mentimeter

