



# EOOSC Building – Sharing Perspectives and Thoughts for the Future

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# EOSC is not just about technical implementation



- The establishment of EOSC is not only a technical implementation issue
- There are at least six other crucial areas for its success
  - Governance
  - Financing
  - Policies and Regulations
  - Stakeholder Engagement & Adoption
  - Monitoring

# Core funding for the EOSC development (2018-2027)

EOSC phase 1: preparatory 2018 - 2020	EOSC phase 2: convergence 2021 - 2027	EOSC phase 3: operation Post-2027
<b>Funding instruments:</b> H2020 calls/grants approach	<b>Funding instruments:</b> HE INFRAEOSC calls / grants approach EOSC Procurement In kind contributions from the EOSC Association members	<b>Funding instruments:</b> Under discussion
<b>Funders:</b> European Commission (DG CNECT; DG RTD)	<b>Funders:</b> European Commission (DG CNECT; DG RTD) Members of the EOSC A, countries part of the EOSC SB & other in kind contributions	<b>Funders:</b> Under discussion
<b>Total funding:</b> 350 M€	<b>Total funding:</b> 1 billion € (500M€ from the EC + 500M€ as in kind contributions from the EOSC Association members) + other in kind contributions	<b>Total funding:</b> Under discussion
<b>Main purpose:</b> To support the implementation strategy defined in the EOSC roadmap 2018-2020 by the European Commission	<b>Main purpose:</b> To support the implementation of the <b>strategic priorities identified in the Multi Annual Roadmap 2021-2022; 2023-2024; 2025; 2026-2027 of the Strategic Research and Innovation Agenda (SRIA)</b>	<b>Main purpose:</b> To support the EOSC strategy and governance post 2027

# 04 July 2022

Kick-off of the Discussions on the Future of EOSC post-2027

- Informal brainstorming meeting in the context of the Tripartite Collaboration in Brussels
- Agreement on drafting a “Reflection Paper” on the “EOSC operations and evolution post-2027”

# Reflection Paper / Discussion

European Tripartite Event in Prague,  
14 November 2022

- Where do we plan to be by 2027?
- What governance do we need for the EOSC federation post-2027?
- What funding sources and tools to cover what EOSC operations/development?
- Do we need to evolve the current partnership in FP10?
- What process and milestones in the period 2023-2024?

## Supporting document EOSC operations and evolution post-2027

For discussion in the EOSC Tripartite event on 14 November 2022

Authors: EOSC Association and Commission services

This document supports an initial strategic discussion at the level of the tripartite governance of the European Open Science Cloud (EOSC) regarding the **models for operating, governing, evolving and sustaining the EOSC Federation after 2027**. The document lists the main EOSC deliverables expected by 2027, thus portraying 'where we plan to be in 2027' and defines three main questions respectively on the governance, the funding and the partnership approach for the EOSC federation post 2027.

Following the discussion at the November 2022 Tripartite event, retained options will be further explored during 2023-2024, so as to be well prepared for incorporating the best scenario into the FP10 proposal foreseen for 2025, in view of the expected launch of FP10 in 2028.

The EOSC vision is to set up a 'Web of FAIR Data and Services' for science in Europe. Central to this ambition is the deployment of a trusted, virtual, federation of existing infrastructures in Europe to store, share and reuse FAIR research outputs across borders and scientific disciplines also called the "**EOSC Federation**". Such a distributed EOSC 'system of systems' shall bridge across thousands of participating research infrastructure nodes of different nature operated across the EU and associated countries. EOSC can be seen as a thin federation layer based on the FAIR principles. The EOSC Federation should provide coordinated entry points primarily for researchers in Europe to find and access FAIR data and interoperable services that address elements of the whole research cycle (from discovery and mining to storage, management, analysis, publication, and re-use). The EOSC federation should also enable the monitoring of the re-use of research outputs and of the uptake of open science practices across borders and disciplines.

### 1. Where do we plan to be by 2027?

The overall objectives set for EOSC are to deploy operations to serve EU researchers and to progressively open-up, connect and articulate EOSC with the wider public sector and the private sector<sup>1</sup>.

The successful uptake of such a federation depends on multiple aspects ranging from the adoption of minimum common technical solutions to the uptake of appropriate governance,

<sup>1</sup> As defined in the European data strategy (COM(2020) 66 final) which defines the European Open Science Cloud (EOSC) as "the basis for a science, research and innovation data space that will bring together data resulting from research and deployment programmes and will be connected and fully articulated with the sectoral data spaces."

# eosc Feedback from the Tripartite Discussion in Prague

## Establishment of a Process

- EOSC implementation steering by research projects is too fragmented
- In-kind contributions at national and institutional levels are massive but a complementary approach is needed once EOSC operations will have to be sustained
- There will be a need for financial contributions in a hybrid mode, at EU and MS levels
- Need for 'game changer' in 2027: will have to manage and sustain an operational EOSC capacity
- EOSC is unique and may well require novel approach in terms governance, financing and legal implementation
- Need to get feedback/reflections by the three parties on the current supporting paper early in 2023, also having in mind to reduce the range of options
- Identify a few scenarios of governance and funding models and develop related SWOT analyses
- Meet again at tripartite level in 2023 to decide on next steps

## The Future of EOSC post-2027

### Preferred Models

#### ***Indirect management***

We define “indirect management” as a model that entrusts tasks to an entity other than the Commission and its Executive Agencies.

- ***Article 185 TFEU***: a private law body entrusted with a public service mission. This is the governance model for both ***GÉANT*** and ***Prima***.
- ***Article 187 TFEU***: in particular, a ***Joint Undertaking***.

In addition, we wish to better understand the model of a “***European Cooperative Society***”, which has been discussed within the EOSC-A Financial Sustainability Task Force. We are aware that this model has not been part of the initial Reflection Paper, however, we consider it relevant to further discussions.

Corrigendum:  
GÉANT not under  
Art. 185 TFEU

# EOSC 'helicopter view'

Slide from M. Schouppe (EC)

EOSC-SB meeting #16, Stockholm, 26 April 2023,  
and 24 May 2023 Tripartite event on EOSC post-2027

## 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')

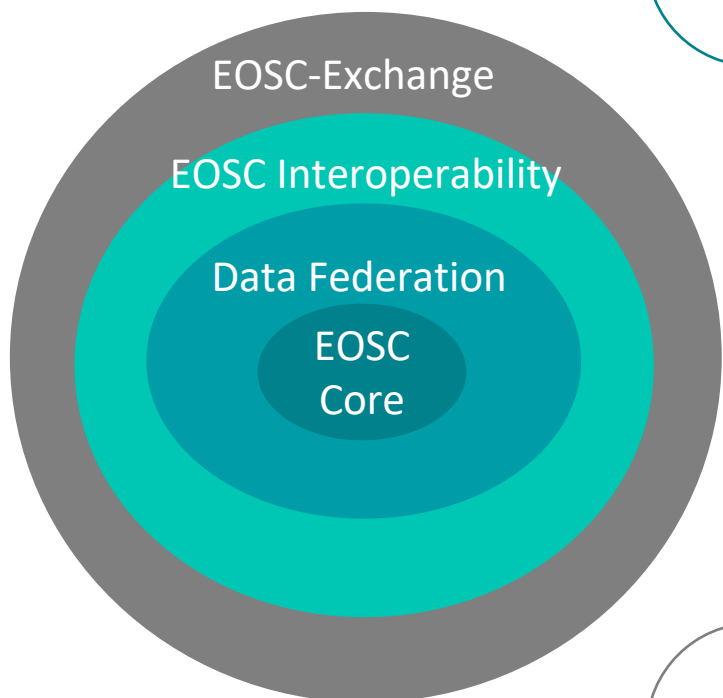
**Task 3:** Enabling a 'web of FAIR data and services' for  
science

**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



The MVE shall deliver on the core SRIA objectives and provide functional support for Open Science in Europe. The MVE is composed by four components:



- EOSC-Core**  
The prerequisite **service component enabling** the large-scale brokering of research data and services between the participants in the **EOSC Federation**
- Data Federation**  
**FAIR Data need to be federated** in such a way that **metadata on research outputs is harvested into a cross-search to enable** greater **discovery and reuse** of data residing in multiple institutional, domain-specific and national repositories across Europe
- EOSC Interoperability Framework**  
**Set of standards and guidelines to support interoperability and composability of resources across borders and disciplines** while respecting privacy and security
- EOSC-Exchange**  
The Exchange is the **pan-European marketplace for the EOSC federated resources**. It enables the **brokering of community services between federation participants and gives access to procurement contracts**.

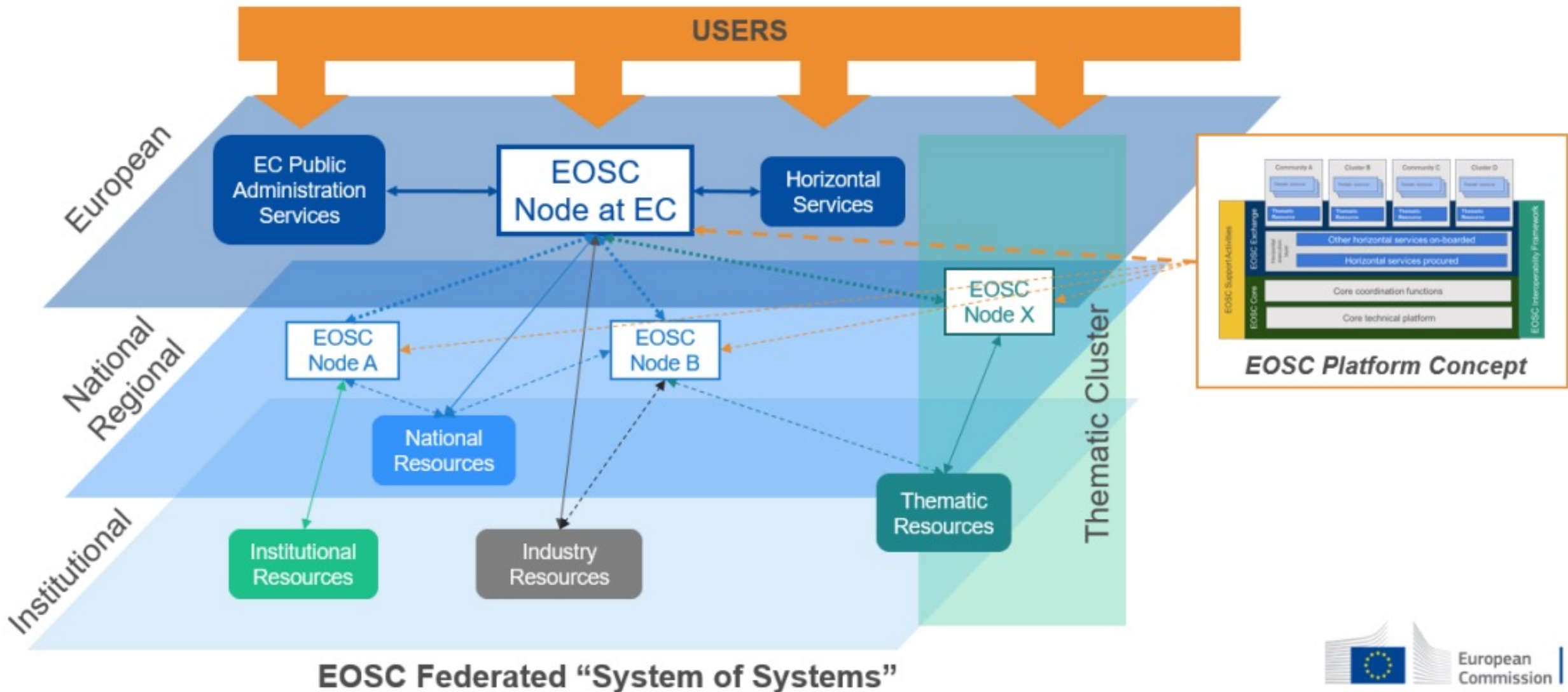
The building elements of the MVE are progressively delivered through the EC funded projects. From September 2023, the MVE prototyping phase will be moved to operation via the “Managed Services for the EOSC Platform” Procurement

# eosc MVE vs EOSC EU node

The EOSC EU node is the federating element of the MVE

- The “[Managed Services for the EOSC Platform](#)” Procurement refers to an “EOSC European node”
- The “EOSC European node or EOSC EU node” can be considered ***the European centrally financed instance of the MVE***
- The ***EOSC EU node will enable the federation of existing data, research and e-infrastructures nodes*** operating at institutional, national, regional, pan-European and thematic level
- The ***EOSC EU node will be operational by the end of 2023*** and ***will include the minimum set of MVE components necessary to enable the EOSC federation***
- In the future, R&D projects will be conducted to develop and prototype new elements supporting the evolution of the tools enabling the federation

# EOSC Federation at a glance (EC schema)



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# 6<sup>th</sup> General Assembly Brussels, 22-23 May 2023





# GA#6 / Interactive Table Discussion

Session	Topic	Colour
<b>Part I</b> 9:15 - 10:15 (1 hour)	EOSC vision and roles	BLUE
	Engagement: Who is EOSC for? What is the role of intermediaries?	YELLOW
	EOSC scope and technical implementation	PINK
	EOSC relevant policies and strategic initiatives	RED
<b>Part II</b> 10:30 - 11:30 (1 hour)	Deploying and operating the EOSC EU node	GREEN
	Maintaining and updating the EOSC EU node and expanding the EOSC federation as a System of Systems	ORANGE
	Develop, prototype and test new elements supporting the evolution of the EOSC Core and Exchange and the tools enabling the EOSC federation	PURPLE
	Enabling a 'web of FAIR data and service' for science	BLACK
<b>Part III</b> 12:00 – 12:50 (50 mins)	Reporting - Plenary	

# eosc European Tripartite Event, 24 May 2023

Online



# Virtual tripartite event on 24 May 2023 - Conceptual agenda

## SESSION 1 (PLENARY)

14:00-14:45

### 1) State of play of the EOSC post-2027 reflection

- Supporting document “EOSC operations and evolution post-2027” and related webinars
- 5 main tasks for EOSC post-2027
- Pre-identified features and criteria
- Decision flowcharts under development
- Overview of input received

### 2) Potential high-level scenarios to trigger the discussion

- Scenario 1: Direct management of Tasks 1 to 5 by the EC
- Scenario 2: Indirect management of Tasks 1 to 5 by an external entity
- Scenario 3: Hybrid management:
  - Tasks 1 and 2 by an external entity;
  - Tasks 3 to 5 by the EC

### 3) Proposed way forward for the reflection in 2023

## SESSION 2 (PARALLEL SESSIONS)

14:45-16:00

### Breakout groups

#### Group 1

Moderator  
Rapporteur  
Note taker  
About 15 participants

#### Group 2

Moderator  
Rapporteur  
Note taker  
About 15 participants

#### Group 3

Moderator  
Rapporteur  
Note taker  
About 15 participants

#### Group 4

Moderator  
Rapporteur  
Note taker  
About 15 participants

### All groups discuss all following issues:

1. Pros and cons of scenarios 1, 2 & 3
2. Do we aim at higher levels of integration (management, financial, scientific) ?
  - For the operation of the EU node and the EOSC federation?
  - For the implementation of the EOSC SRIA post 2027 at European, national, institutional scale?
3. What role for an evolving EOSC Association?
4. How about the proposed way forward for the reflection in 2023

## BREAK

16:00-16:10

## SESSION 3 (PLENARY)

16:10-17:00

### 1) Report by the rapporteurs on each of the discussed issues followed by a discussion

### 2) Proposed way forward until the next tripartite event on 23 November in Madrid

### 3) Wrap up and conclusions

# eosc Different hypotheses

Horizon Europe expires in 2027. Until then, the development, operation and further development of the EOSC will be defined as a co-programmed European partnership, i.e. a partnership between the European Commission and the EOSC-A.

**Model 1 - Indirect Governance:** This is a model that entrusts tasks to an entity other than the Commission and its Executive Agencies. Such an entity could be the EOSC-Association. An example for this model is GÉANT, which as a private law body is entrusted with a public service mission (i.e. the provision of a European National Research and Education Network).

**Model 2 – Direct Governance:** This model requires the strong leadership and commitment of at least three Member States/Associated Countries. An example is an ERIC (European Research Infrastructure Consortium). However, the lead-time for ERIC implementation is, on average, too great to accommodate the timeframe in question. However, it might be suggested to maintain consideration for a later stage in the development of EOSC.

**Model 3 – Shared Governance:** Co-programmed European partnership or Co-funded European partnership. Continue as before, with all advantages and disadvantages (e.g. development of EOSC by projects which are not obliged to cooperate and which have no reporting obligation to the EOSC-A).



# Model 4 – Indirect and shared Governance

*(Combination of Model 1 and 3)*

Tasks	Governance
1. Deploying and operating the EOSC EU node	Indirect governance <i>For instance EOSC-A?</i>
2. Maintaining and updating the EOSC EU node and expanding the EOSC federation	
3. Enabling a 'web of FAIR data and services' for science	Shared governance (partnership)
4. Develop, prototype and test new elements supporting the evolution of the EOSC Core and Exchange and the tools enabling the federation	
5. Enabling Open Science policies and the uptake of Open Science practices	

Keep it open to facilitate innovation and co-building

# Pathway to next Tripartite Event Madrid, 23 November 2023

Proposal to support via EOSC Focus



June

Summer Break

September

October

November

**28.06. EOSC-SB  
Agreement of  
discussion format,  
frequency,  
participants**

**Preparation of autumn  
activities**

**Online workshops with  
case studies from  
existing entities**

**Satellite meeting at  
EOSC Symposium  
(combined with EOSC-  
SB #18?)**

**19/20 October  
EOSC Celebration Event  
in Austria**

**Satellite meeting**

**23 November  
European Tripartite  
Event in Madrid**

# eosc Where do we stand?

- After an initial period of many projects without much convergence (2015-2020) we have to see that we get our aims sufficiently developed in the present period of convergence (2021-2026).
- For this it is essential that we get a Minimal Viable EOSC (MVE / EOSC-EU-node) operational asap and as good as possible aligned with work done by all the relevant communities (European, National and Institutional).
- And to organise the EOSC Federation that shall be populated with a valuable corpus of interoperable data





# Getting ahead of the curve and advancing to the next level, means:

- Take advantage of ongoing EU and national policy making
- Understand the evolving objectives of the funders of this transition
- Realise that FAIR is the most important requirement;
- Educate staff and 'train the trainer';
- Create 'Data/Digital Competence Centres';
- Connect to other relevant initiatives at domain-specific levels as well as on the national level
- Join this powerful movement to make Open Science the new normal