

eoosc

The role of thematic Research Infrastructures in the EOOSC nodes ecosystem and beyond

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E-IRG workshop
5 June 2024



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1. EOSC Nodes and Federation - concept + process
2. Added value for RI infrastructures
3. PaNOSC as an EOSC Node



EOSC as a Federation of Nodes

Guiding principles

- **Concepts**
 - **Nodes** are the building blocks for organizing the services for Open Science
 - **Federation** is the collection of Nodes agreeing to implement common rules
- **Baseline**
 - **Nodes** maintain their autonomy + scientific content
 - **Federation** provides added value for Nodes
- **Process**
 - Driven by the **Tripartite Group**
 - Tasks delegated to **EOSC-A** e.g. Handbook, with the **Community**
- **Learning** from the past
 - **Marketplace** did not attract scientists
 - Large body of **OS practices** but a fragmented landscape

The EOSC Federation and the role of Nodes

Main points in the position paper

<https://eosc.eu/wp-content/uploads/2023/11/20231112-Short-paper-on-the-EOSC-Federation-draft-v3.pdf>

EOSC Federation

- is a federation of distributed systems ('system of systems')
- enables collaboration to achieve common goals and users to access additional resources beyond their usual environment
- has policies and rules defined by the legal entity governing the EOSC Federation
- consists of multiple "Nodes"
- can be scaled by adding more Nodes

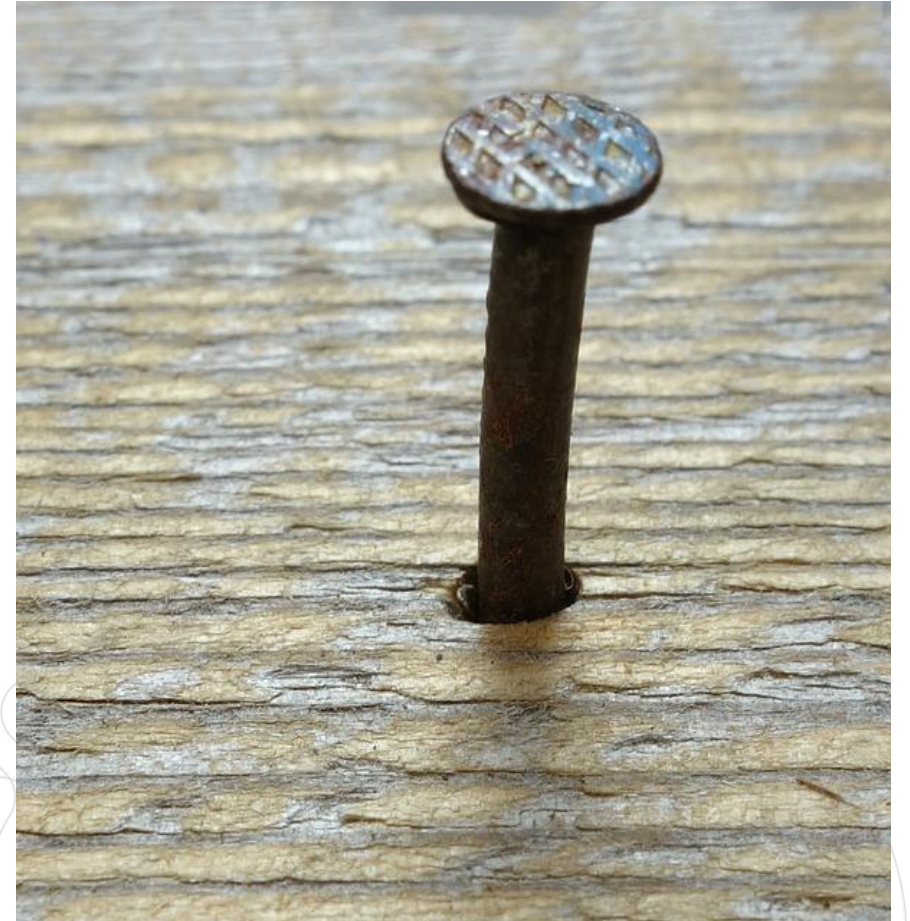
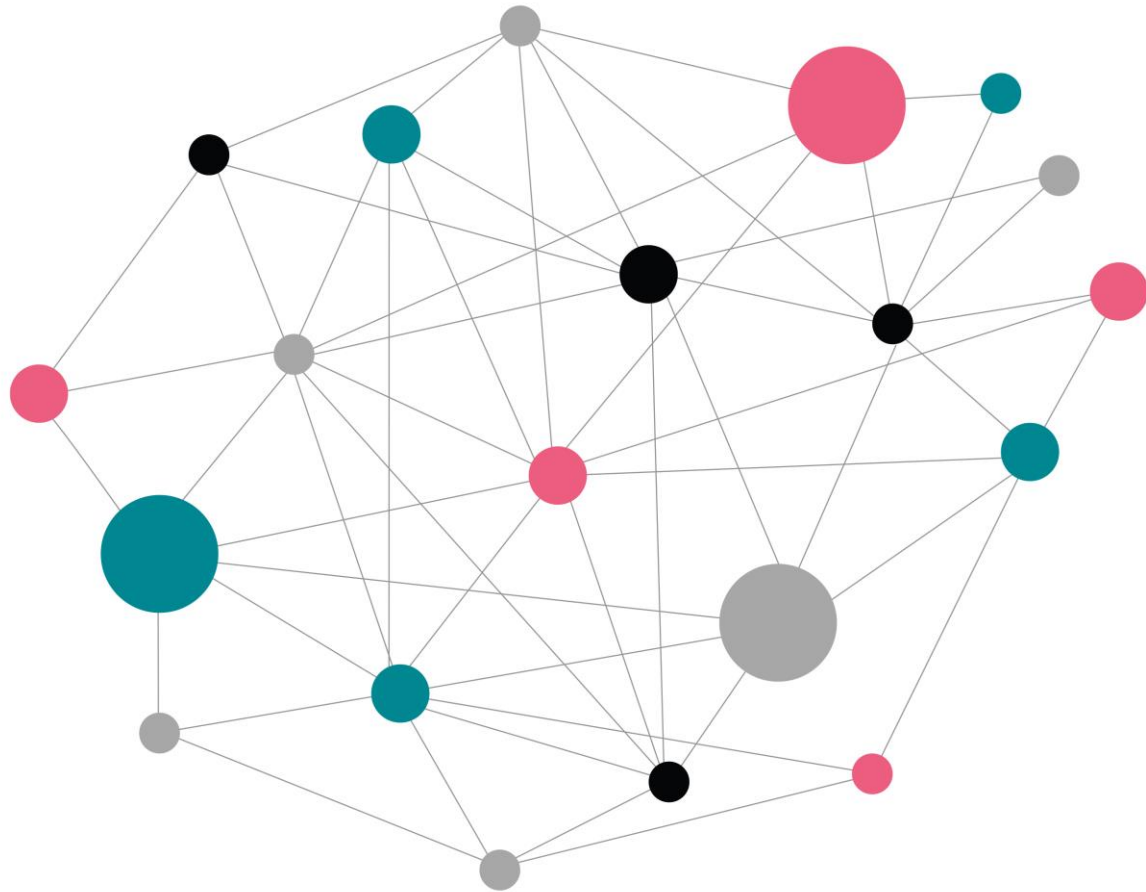
EOSC Nodes

- contain resources adding scientific value to the Federation
- act as the legal representative that can interact with EOSC's governance structure
- offer interfaces that comply with the EOSC Interoperability Framework
- control their own operations and resources and ensure that policies are followed within the Node
- may vary in their local policies, the resources to which they provide access and the infrastructure on which they are built

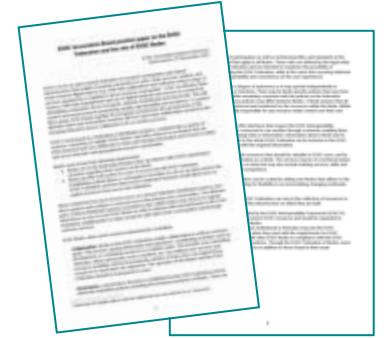
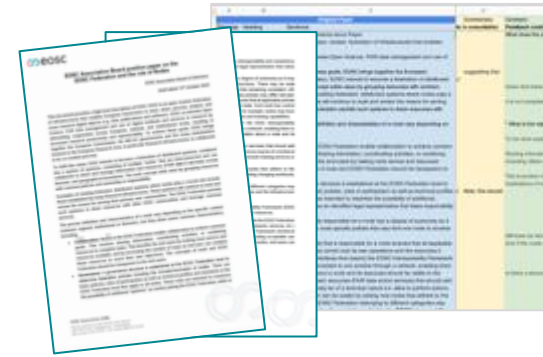
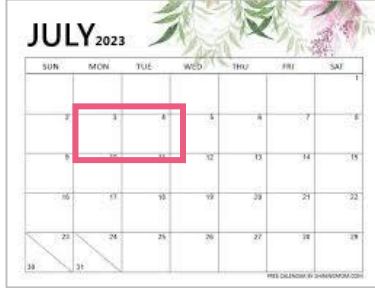
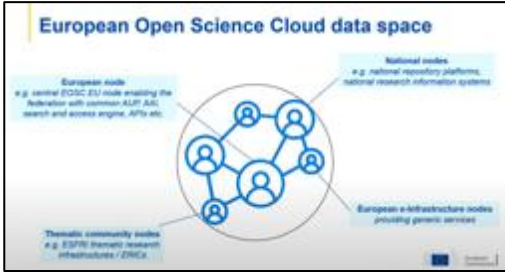
Initiatives (European, national, regional, institutional or thematic) may join the EOSC Federation and become EOSC Nodes when they meet the requirements listed above

eosc A system of systems ?

Two images come to mind



Evolution of Node Concept in 2023



Spring

July

September

October

November

Introduction
EOSC EU Node
and concept of
nodes by EC

Meetings with
Mandated
Organisations
and ESFRI RI
Working Group
to prepare
September
workshops,
03./04.07

Community
Workshops
MOs & ESFRI RI
WG (08./15.09.)
Unconference
EOSC
Symposium
(21.09.)

Publication of
Draft Position
Paper on the
EOSC
Federation and
the role of
Nodes (13.10.)
&
Consultation

Publication of
revised version
of Draft
Position Paper
(12.11.)
&
Consultation

eosc Evolution of Node Concept in 2024



January

February

March

April

May

16/17 January:
2 Community
webinars

Integration of
community
feedback &
drafting of table
of contents for
EOOSC
Federation
Handbook

Discussion of
EOOSC
Federation
Handbook
concept with
EC and EOOSC-
SB Policy
Group

Presentation of
“Minimum
requirements of
Nodes” draft at
European
Tripartite Event,
16 April

15 May:
online
workshop with
potential
Candidate
Nodes

Status of the EOSC Federation development

Ongoing activities

- Definition of the **“node” concept**:
minimum requirements for being a node;
benefits of becoming a node;
duties of a node, etc.
- Definition of the **“rules of participation” (enrolment of nodes)** in the EOSC Federation
- Definition of the **process to enrol new nodes** (multiple waves of enrolment foreseen)
- **Financial and governance implications** of the EOSC Federation

The process

EOSC-A Handbook

The EOSC Association is collecting contributors to draft the Handbook of the EOSC Federation

New EOSC Tripartite Group

Representatives of the Tripartite Governance and experts appointed by the 3 parties are meeting every 2-3 weeks to discuss:

- Development of the Handbook
- Governance and financial implications of the EOSC Federation

EOSC Tripartite Governance

The EOSC tripartite group will inform the current EOSC Tripartite Governance that will take the final decisions concerning the EOSC Federation



Consultation
with the
community
at the
EOSC-A GA
during the
Breakout
sessions



eosc Breakout sessions: EOSC Nodes and Federation

Engaged participants

160 out of 208 Slido participants engaged with polls or Q&A.



Q&A engagement

150 out of 208 participants asked a question or voted in Q&A.



Poll engagement

63 participants voted in a poll.



Participants asking in Q&A

65

Participants up or down voting in Q&A

146

Participants voting in polls

63

Anonymous / all questions

63

Answered / unanswered

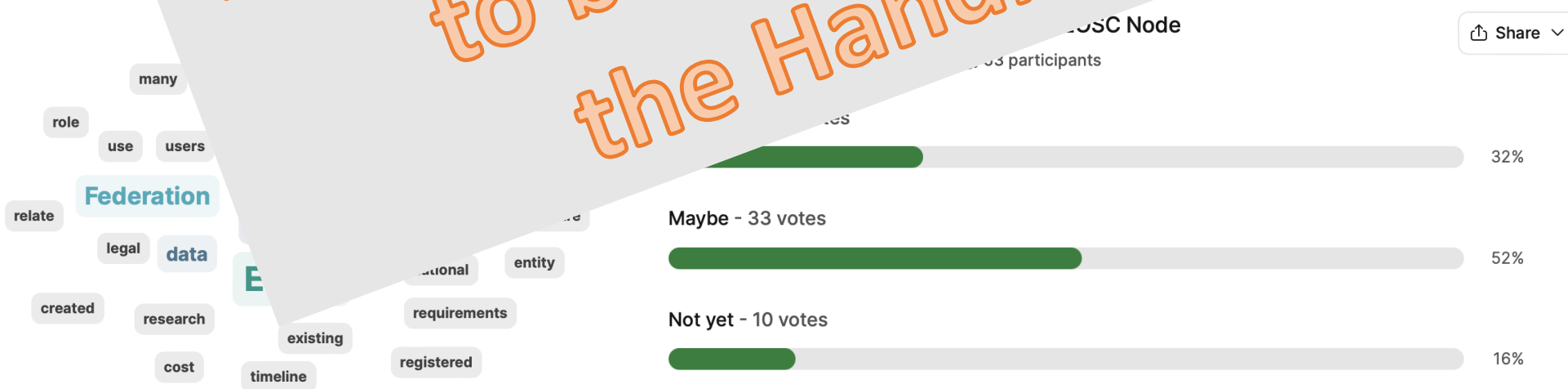
1

Engaged participants score

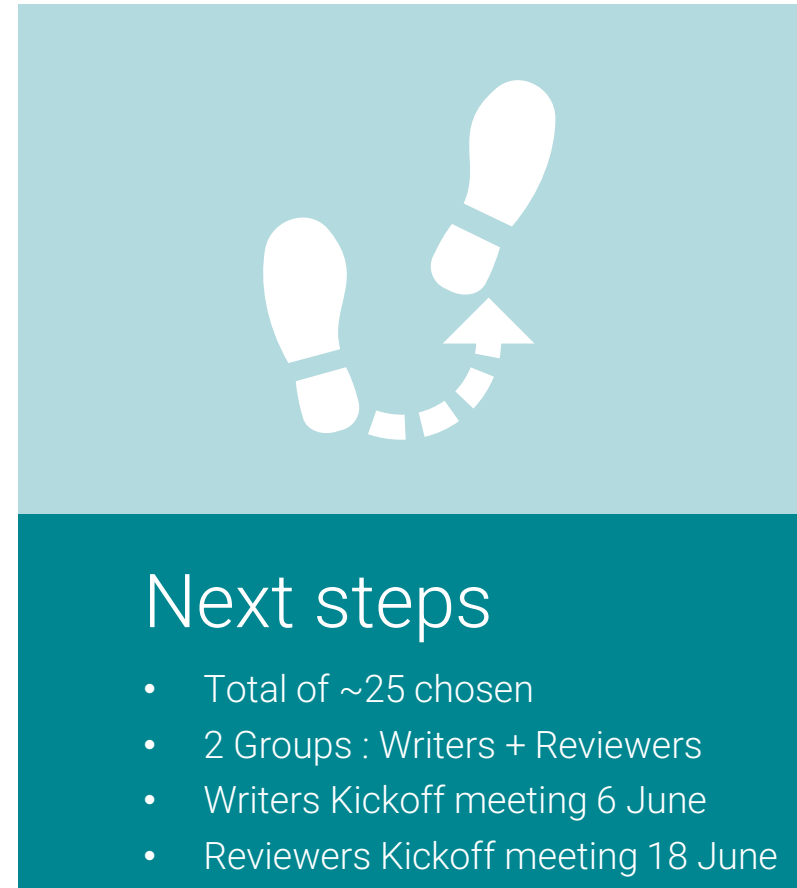


30%

151 Questions which need to be addressed in the Handbook



Call for Contributors



Next steps

- Total of ~25 chosen
- 2 Groups : Writers + Reviewers
- Writers Kickoff meeting 6 June
- Reviewers Kickoff meeting 18 June

EOSC Federation Handbook / Priorities

Table of Contents

The EOSC Federation Handbook is a process which will improve with each new version

1. Purpose [June]

1. Goals & purpose of EOSC Federation
2. Success criteria

2. Operational Priorities [July]

1. Governance (Access Policy, Security, ELSI, IP, etc.)
2. Communication and External Relations
3. Management

EOSC platform [October]

1. FAIR Data & Services (Core, Exchange)
2. Interoperability (EOSC Interoperability Framework)
3. Provisions for cybersecurity coordination
4. Links to external entities (e.g. other data spaces, EuroHPC, etc.)
5. Scientific services (discovery)
6. Training

5. Technical Operations [November]

eosc Proposed timeline for first nodes





EOSC Federation Added value for RIs



Bringing Science to the EOSC

- **Research Infrastructures**
 - Are the scientific powerhouses of the EU
 - Providers of scientific data and services
 - Have their own infrastructure for their communities
 - Some of them provide services to general communities
- **EOSC 2015 - 2023**
 - A large body of knowledge and outcomes from many EOSC projects
 - Many different scientific outcomes e.g. science clusters
 - Still fragmented landscape
- **EOSC Federation – the European Open Science Platform**
 - Unify the outcomes and RIs scientific data and services
 - Promote scientific data and make them more accessible + reused
 - Define a common set of rules and how to join the federation (the handbook)

eosc Research Infrastructures + Open Science

- EOSC has played as strong role in advancing Open Science practices
- EOSC should be the community for OS practices + activities
- OSCARS 1st Open Calls has been a success thanks to EOSC!



PaNOSC as an EOOSC Node



eosc PaNOSC as an EOSC Node

What would PaNOSC gain from becoming an EOSC Node and joining the Federation?

- The **Photon and Neutron community (PaNOSC)** consists of over 20 RIs in Europe
- Producers of **petabytes of scientific data** which are only **~50% FAIR**
- **OSCARS Open Calls** produced 21 proposals from **PaNOSC community**
- Becoming an **EOSC Node** will ensure:
 - Provide a framework for consolidating and adopting Open Science practices
 - Make data more Findable + Reusable i.e. approach 100% FAIR data
 - Bring FAIR data users and domain expert scientists together
 - Improve the quality of data + linking them to international metadata standards
 - Foster the creation of Open Data repositories in many domains
 - Provide common services for common problems e.g. AAI, PIDs, downloading
 - Share training and tools for metrics of scientific indicators
 - Provide a long-term perspective for the EOSC

Human Organ Atlas

EXPLORE SEARCH 3D RECONSTRUCTIONS TUTORIALS

Patients

FO-20.129

male 54 yo

died from COVID-19 21 days after hospitalisation, mechanical ventilation, pulmonary failure, renal failure, bacterial pneumonia with Klebsiella aerogenes, general brain edema, subarachnoidal and intracranial bleeding

LADAF-2020-31

female 69 yo 40 kg 145 cm

type 2 diabetes, pelvic radiation to treat cancer of the uterus, right colectomy (benign lesion on histopathology), bilateral nephrostomy for acute obstructive renal failure, cystectomy, omentectomy and peritoneal carcinoma with occlusive syndrome

LADAF-2021-17

male 63 yo 60 kg 178 cm

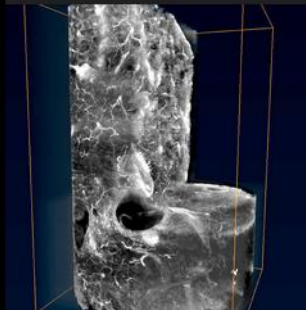
stomach hypertrophy noticed during autopsy, stomach liquid into the lungs

Organs

Left lung



Right lung



Paleontology database

EXPLORE SEARCH HELP

Domains

Vertebrate Paleontology

Vertebrate Biology

Invertebrate Paleontology

Paleoanthropology

Archaeology

Paleobotany

Ichnology

Samples

Neognathae

Crocodylian eggs and embryos

Chelonians

Pan troglodytes

Birds

Hylobatid

Pongo pygmaeus

Gorilla gorilla

Sarcopterygians

Paleognathae

Squamata

Datasets

CCEC 50001988 Gorilla gorilla female adult

Vertebrate Biology Africa Cenozoic

Quaternary

3D reconstruction for Gorilla gorilla female adult CCEC-50001988. For further details regarding samples, measurements and data analysis, refer to the files and the article.



CCEC 50001761 Gorilla gorilla juvenile

Vertebrate Biology Africa Cenozoic

Quaternary

3D reconstruction for Gorilla gorilla juvenile CCEC 50001761. Complete skull and dentition of a juvenile Gorilla gorilla. The complete skull scan has some issues with corrupted slices, but the general morphology can still be studied. For further details regarding samples, measurements and data



eosc PaNOSC federated data portal – an unexploited gold mine



germanium



6 documents found

Facility

all

Chemical Formula

Incident Wavelength

min



max



nm

Incident Photon Energy

min



max



eV

Temperature

min



max



K

Pressure

min



max



Pa

10.15151/ESRF-ES-749920826 [↗](#)

0.900

Martensitic and order-disorder transformations studied by in-situ synchrotron X-ray diffraction

The current proposal is a continuation of an ongoing project involving two PhD students, where we aim at investigating the crystal structures, and phase transformations in two different material classes: (1) MM'X-type compounds showing a martensitic structural...

> [Details, services ...](#)

Released by **ESRF** on May 2nd 2025

10.5291/ILL-DATA.TEST-2530 [↗](#)

0.900

4D resolution of the IN5 ToF by measuring a germanium single crystal

> [Details, services ...](#)

Released by **ILL** on October 22nd 2020

10.15151/ESRF-ES-684321602 [↗](#)

0.825

XMCD study of epitaxial 2D ferromagnets

The field of 2D ferromagnets is rapidly growing as in the last decades scientists have been learning how to master their synthesis with improved accuracy. Epitaxial methods allow precise control on the number of layers, favor the stabilization of different phases and allo...

> [Details, services ...](#)

Released by **ESRF** on February 14th 2025

- The **EOSC is still a moving target** – we have seen multiple views of it today
- The **EOSC Federation of Nodes** would provide a **common coherent view**
- The **RIs** would **profit** from having an **Open Science platform** with a common practices
- We need to **put the Scientists and Science** back into the **core of the EOSC**
- The **EOSC Nodes** will ensure **scientific domains** are better (strongly?) represented and will ensure there is no domination by a few non-scientific nodes
- The **EOSC Federation** will structure the EOSC ecosystem into the **EOSC organization** and give it a **single face and a voice** to represent it

We need EOSC but we also need to bring Science and Scientists back into the EOSC !