



Exploring the role of nodes in relation to the EOSC platform

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21 September 2023 by EOSC-A



The concept of a node

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

EOSC Nodes are the “organisational pieces” of the EOSC System called to contribute to the provisioning of one or more EOSC Services.

[. . .]

In the majority of cases, EOSC Nodes are expected to correspond to existing “systems” (EOSC is a System of Systems). However, and depending on per-EOSC Service design and deployment decisions, new nodes can be developed.”



EOESC-Association general assembly May 2023

- Many participants were not aware of the planned EOESC EU node
- The EU node is the Federating node and should operate ONLY the functions necessary for the federation (AAI, security, etc)
 - Avoids issues of budget allocation by countries/disciplines to existing infrastructures
 - Avoid questions fo what happens to the stored data at the end of the procurement contract
 - Long time preservation of data- eu node does not cover probably. Who will take the responsibility?
 - The “federated” elements should be national / thematic / regional nodes (institutions are not directly federated with the central node, they will go through the regional/national/ thematic nodes)
 - Iteratively connect/onboard other nodes (starting with the most advanced/ready) to connect with the EU node
- Architecture of the EU node needs to be defined, documented and reviewed

Exploring the role of nodes in relation to the EOSC platform

Community Workshops with Mandated Organisations (8 Sept'23) and ESFRI RIs (15 Sept'23)

EOSC Symposium unconference session (21 Sept'23)

Output: *commonly agreed draft position on the first incarnation of governance and policies for the EOSC platform that can be used by the participants in the activities towards the deployment of the MVE.*

Questions intended to focus the discussion on the governance & policy rather than technical aspects:

- Is the concept of a node necessary and does it add value?
 - What is the definition of a node?
 - What must a node contain and what is optional?
 - What defines the boundaries of one node from another?
- How do the different layers of policies for EOSC foreseen by the Rules of Participation (RoP) task force map on to nodes?
 - What policies need to apply at the EOSC platform level and what policies may vary by node?
 - Who is responsible for such policies, how are they enforced and monitored?
- Who decides if a node can be admitted or excluded to the federation and on what basis?
- Are EOSC core and Exchange services common to the whole EOSC platform or does their implementation and access vary across nodes?

These community workshops are not the end of the discussion but rather the beginning . . .

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)

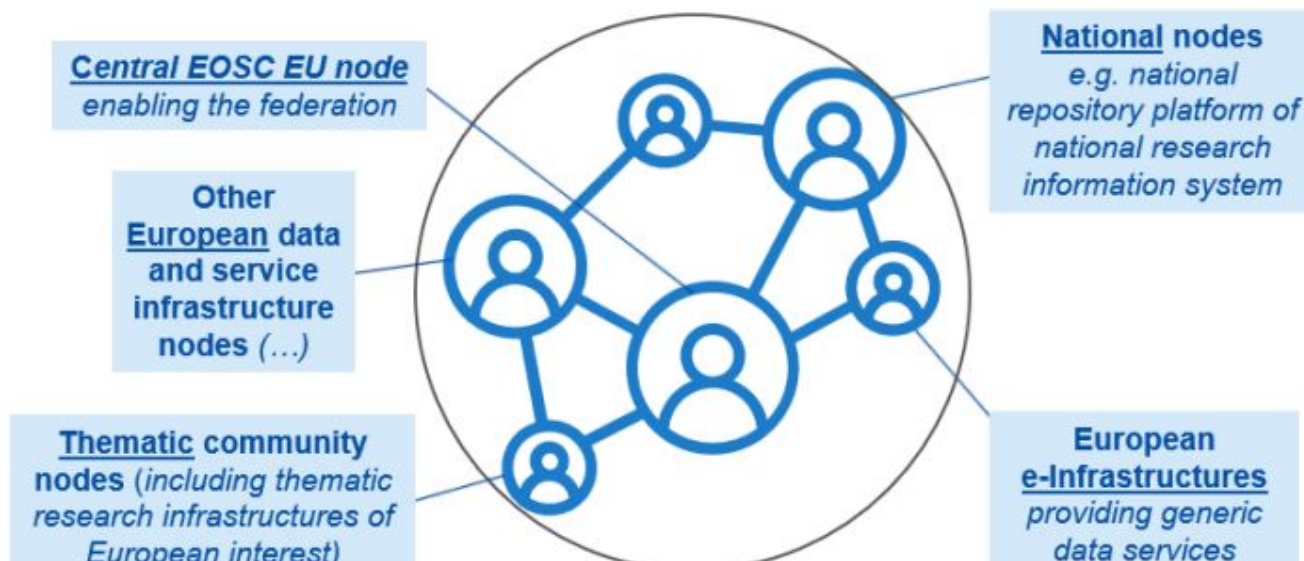
Lot 1

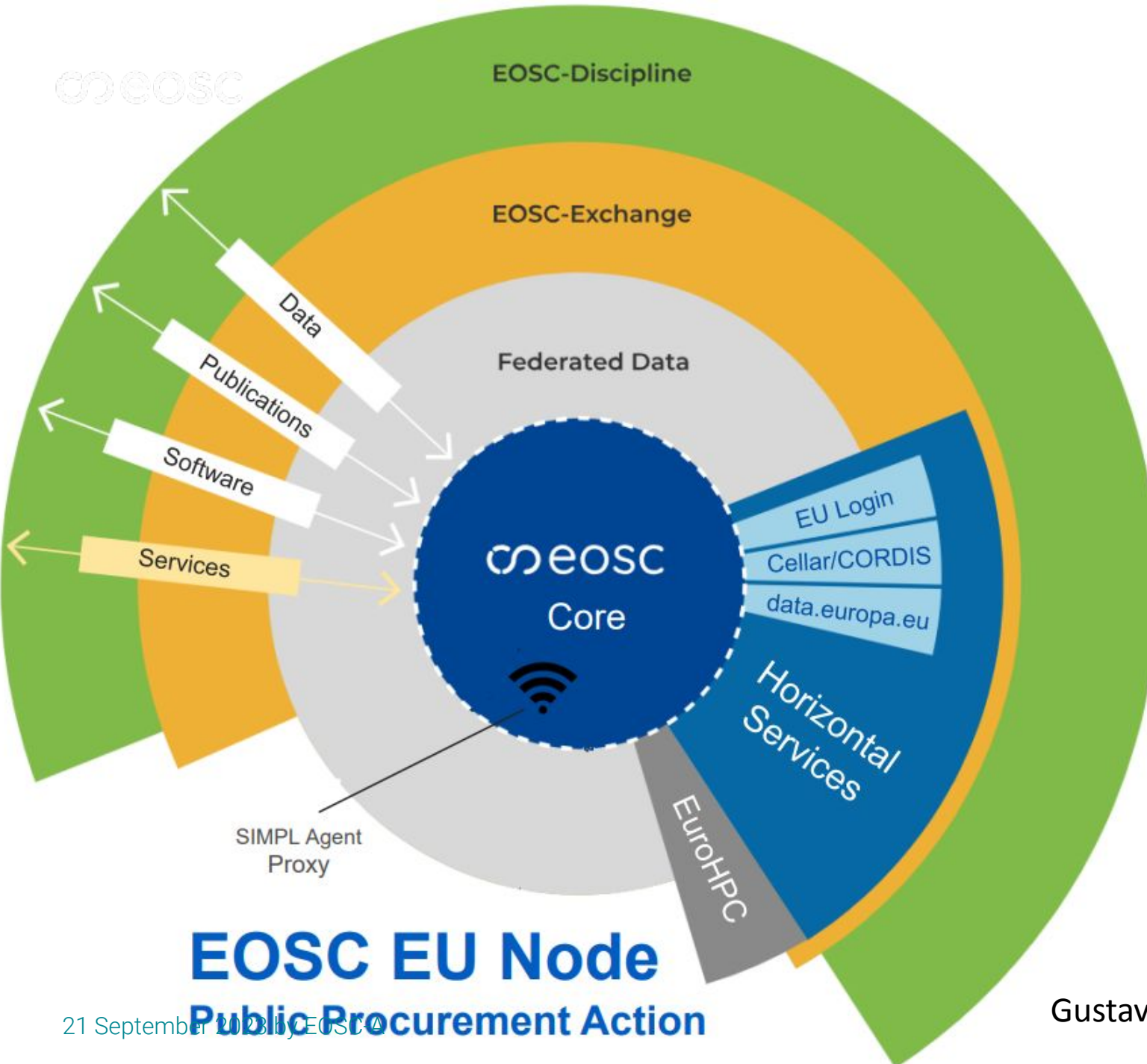
Managed Services for the Development, Integration, Deployment and Operations of the Federated EOSC Core

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

21 September 2023 by EOSC-A

Michel Schouppe, DG RTD





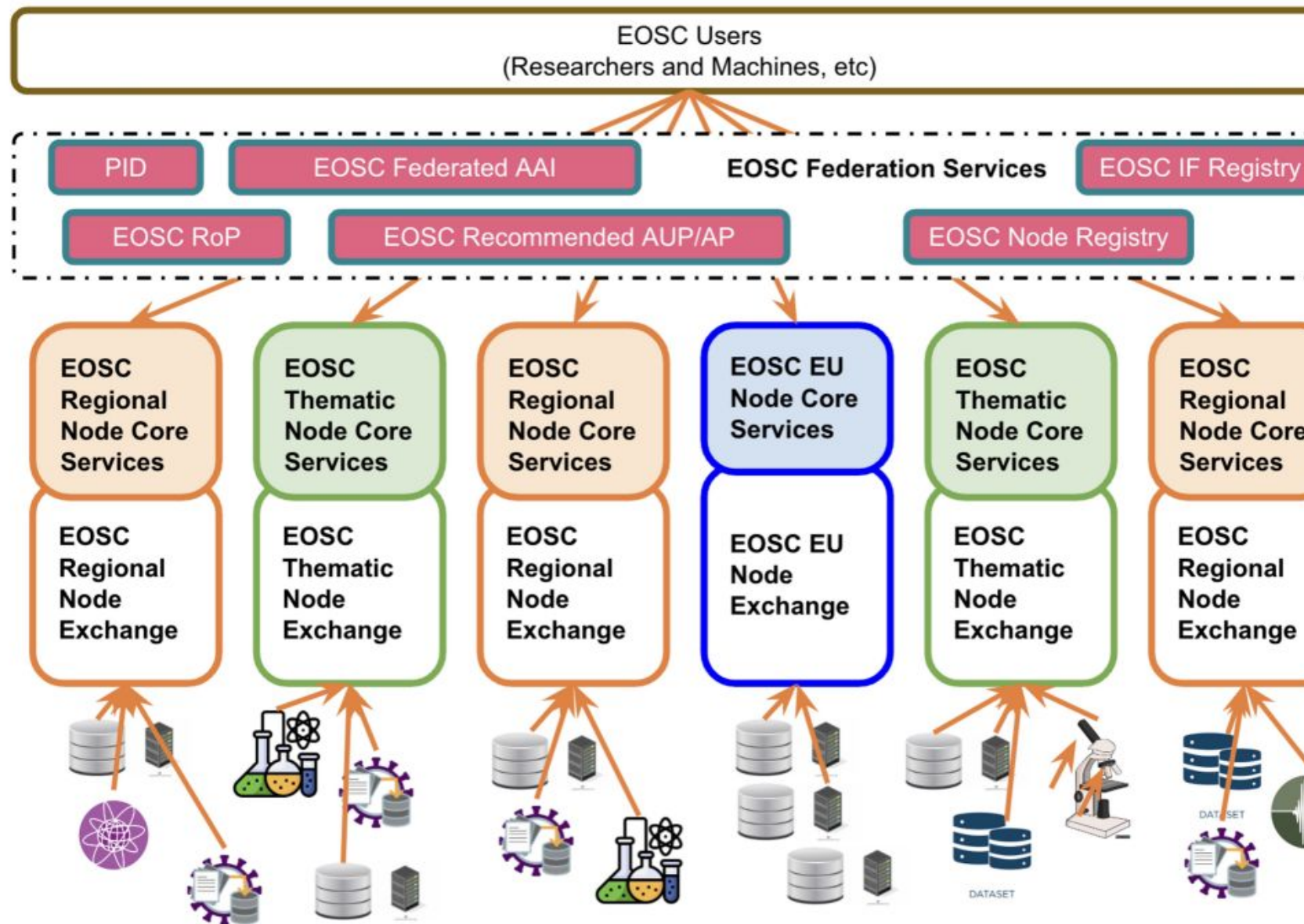
- **Create the basis for the dataspace for research and innovation** (aka. EOSC Federation) under the Open Science Policy
- **Put a “seed in the ground”** by operating 24/7 the first recognised EOSC Node at the European level for the initial 3 years
- **Offer core services** for scientific research infrastructures to federate and common **horizontal services** for end-users to benefit from
- **Define the pathway and blueprint** for the EOSC Interoperability Framework

EOSC EU Node
Public Procurement Action

How will many Nodes work together?

The key question of "Federation"

1. A Node-based architecture recognizes that the different communities ARE different.
2. Different resources are available in each Node. Explicit steps must be taken to expose resources from Node A to Nodes B, C, D etc.
3. Additional Federation Services will be needed (outside any one Node), to navigate the full landscape.
 - a. e.g. Registry of EOSC Nodes
4. Additional governance instruments (RoP, AUP, AP) will also be needed, as well as recommendations/best practises that facilitate interoperability.





A bit of terminology...

- **EOSC Core**

- Set of services that provides the key internal capabilities – the 'glue' – to support the basic operations of EOSC
- This predominantly consists of services and resources which face service providers.
- Core services with their interfaces enable the EOSC Federation, e.g. Federated EOSC AAI

- **EOSC Exchange**

- Contains the researcher-facing resources from and for the EOSC community

- **EOSC Interoperability Framework**

- Provides a flexible framework of interoperability guidelines to support the interoperability and composability of resources (services, datasets and other research products) in the EOSC Core and EOSC Exchange

- **EOSC Platform**

- The EOSC Platform delivers the EOSC Core and key horizontal services as an integrated operational environment that enables EOSC research communities to take advantage of this suite of services

- **EOSC Node**

- As a minimum, It has a registry of all assets/members (users, services, etc.) and metadata.
- EOSC Platform is a possible deployment blueprint.
- It has an identified owner (legal entity) and established policies (AUP, RoP, etc.)
- Targeting a Community of Interest, including Geographical or Thematic

- **EOSC EU Node**

- EU level EOSC Web Portal for registry services, instantiation of the EOSC Platform
- Owned by EC and governed by the EOSC Tripartite (EC, EOSC-A, MS/AC)
- Being implemented via the EOSC Procurement

Diego Scardaci, EGI

Idea of NFDI as a German National Node:

- NFDI as Bridge between the scientific communities and the technical infrastructure
- Combining „bottom-up“ (NFDI) and „top-down“ (EOSC)
- Ensuring the connectivity between both approaches
- Representing the member state with equal rights of co-determination and decision-making for all matters in the context of the EOSC

Summary from Mandated Orgs. Workshop

- The Node concept adds value by grouping resources (FAIR data & services) with common policies and ownership/responsibility
- The EOSC federation comprises multiple Nodes that work together
- There are basic policies at the EOSC federation level that apply to all Nodes
- There may be Node specific policies that vary from one Node to another
- The organisation that is responsible for a Node ensures that all applicable policies are enforced and monitored
- Nodes offer interfaces respecting the interoperability framework
- A governance structure, beyond that foreseen for the technical evolution of the interoperability framework, is needed at the EOSC federation level to determine federation policies including the inclusion/exclusion of Nodes
- The characteristics of a Node and its resources are visible to the whole federation
- The set of resources included in a Node may vary from one Node to another
- A Node may itself be a collection or federation of Nodes

The EOSC federation

- Researchers must remain the focus of the work and EOSC should offer them a seamless experience
- Many RIs are already operating distributed, multi-national federated structures and can contribute valuable experience
- EOSC should not put the entry requirements to federation too high
- RIs would find it valuable if the EOSC federation can contribute to the sustainability aspects
- The Rules of Participation for EOSC need to be compatible with those of the RIs

The EU Node

- The EU Node should be considered as a reference implementation rather than a master Node
- RIs would find it valuable if the EU Node provides additional storage and processing capacity
- There should be 2 nodes to verify federation is possible

The significance of nodes

The node concept is where governance, policy and architecture meet

The on-going procurement of the EC node and the 2024 funding call are an opportunity for the community to focus on how we want to organise the EOSC federation

Let's use this session to advance our collective understanding of what are EOSC Nodes



eosc Roundtable session intro

- 6-9 “roundtables” in each section of the room, managed by one facilitator.
- Facilitators will guide you through three questions.
- Facilitators will document discussions and open questions.
- You have time to discuss until 4:45pm.
- Break 4:45pm until 5:00pm.
- Summary of Roundtables by Facilitators, Open Questions & Next Steps from 5:00 - 6:00pm.



Questions to be addressed in the session

- What added values of an EOSC Node (Regional / National, Thematic, Institutional) would delight the corresponding end-users? and why?
- Are EOSC Core and Exchange services common to the whole EOSC platform or does their implementation and access vary across nodes?
- Who decides if a node can be admitted or excluded to the federation and on what basis?



Open Questions from the session

- What is a node? What's the definition? Why are we talking about it?
- What's the conditions to join? (rules of participation)
- How does the landscape look like?
- Who are the different endusers? What does a user see from a node? What's the trade for researchers? (personal data?)
- What is needed so that nodes can be sustainable.
- What is the role of user ratings and certifications? How does this interact with the nodes?
- Are Nodes leading to silos? or to too big nodes?
- What are the specifics of Core and Exchange Services? Who decides?
- What is the difference between EOSC Nodes and Data Spaces? Interoperable? What's the role of SIMPL?
- Who would be entitled to become a node?
- What's the national role in decision upon nodes?
- What's the role for skills and training? Part of a node?

