Launching and operating the EOSC EU Node

Approaches, milestones, and the role of the broader community

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DG CNECT Unit C.1 Open Science and Digital Modelling

Peter Szegedi

What is EOSC

A process

- Accelerate Open Science, FAIR data management and use of digital methods and services

- Stimulate co-operation in science and research, new insights and innovations, higher research productivity and improved reproducibility in science.

An open, trusted, federation of infrastructure

- Access existing Research Infrastructures in Europe;

- Enable circa 2 million European researchers to store, share, process, analyze, and reuse research digital objects (e.g. data, publications and software)

An evolving ecosystem

- Bringing together the European Commission, the governments and the many R&I stakeholders involved in the European Research Area

- Co-created across European, national, and institutional levels
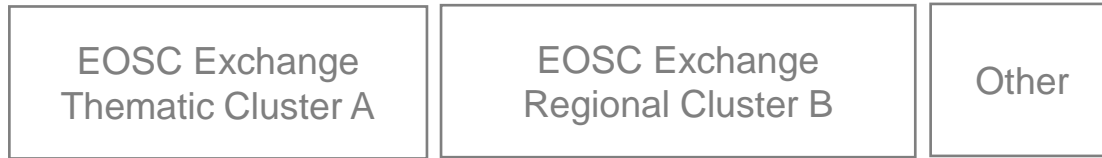
EOSC EU Node Value Proposition
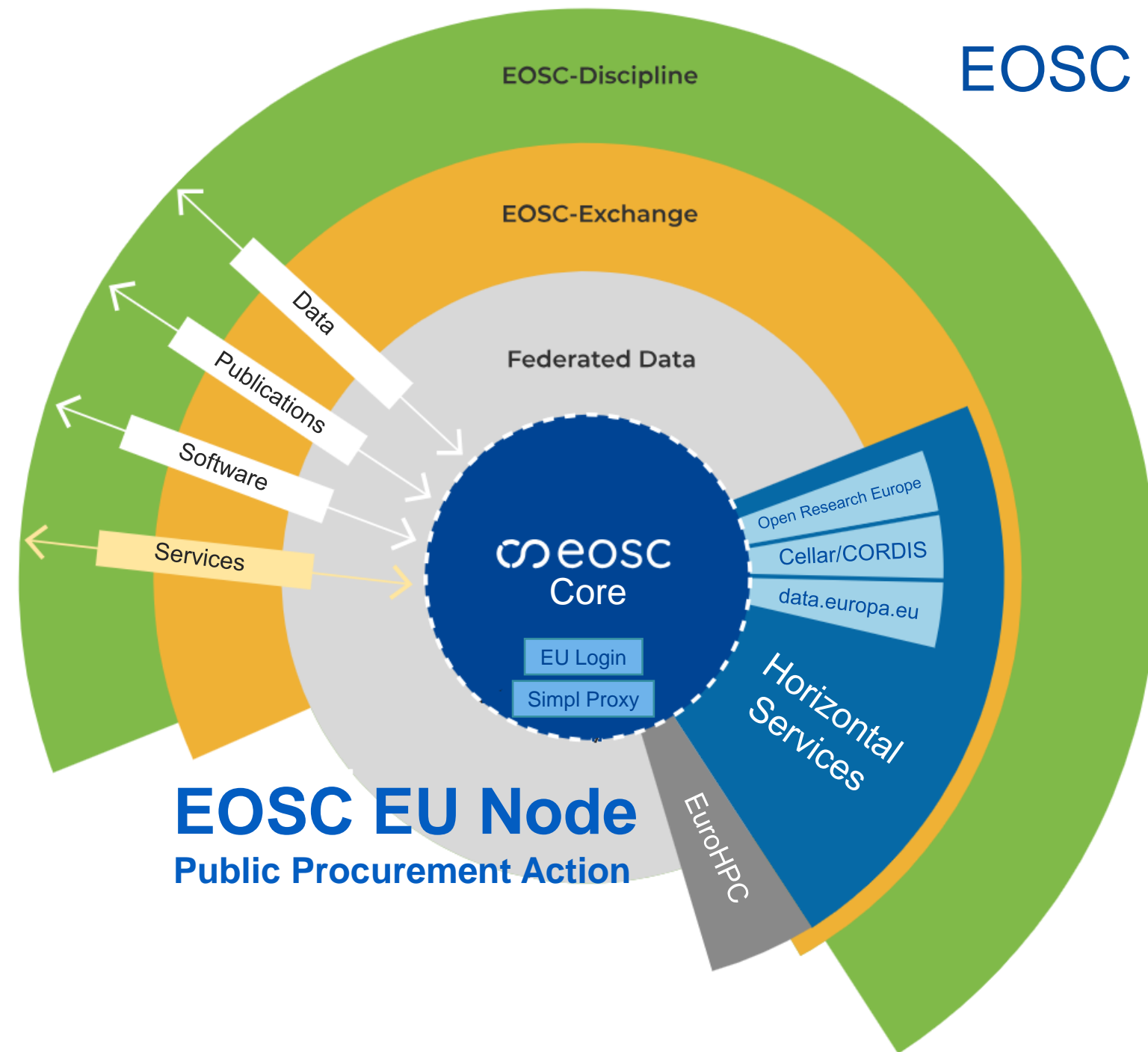
- **Facilitate** the creation of the *"Web of FAIR data and interoperable services"* (aka. EOSC Federation) under the Open Science Policy

- **Put** a *"seed in the ground"* by operationalizing the first recognised EOSC Node at the European level for the initial 3 years

- **Offer** "*core services*" for scientific research infrastructures to federate (single-sign-on, catalogues, knowledge graph, application workflow, monitoring, accounting, helpdesk) and common "*horizontal services*" for end-users to benefit from (compute, containers, data transfer, notebooks, file sharing, open research data)

- **Define** the *pathway and blueprint* (EOSC Interoperability Framework) for other potential EOSC Node operators to join the federation
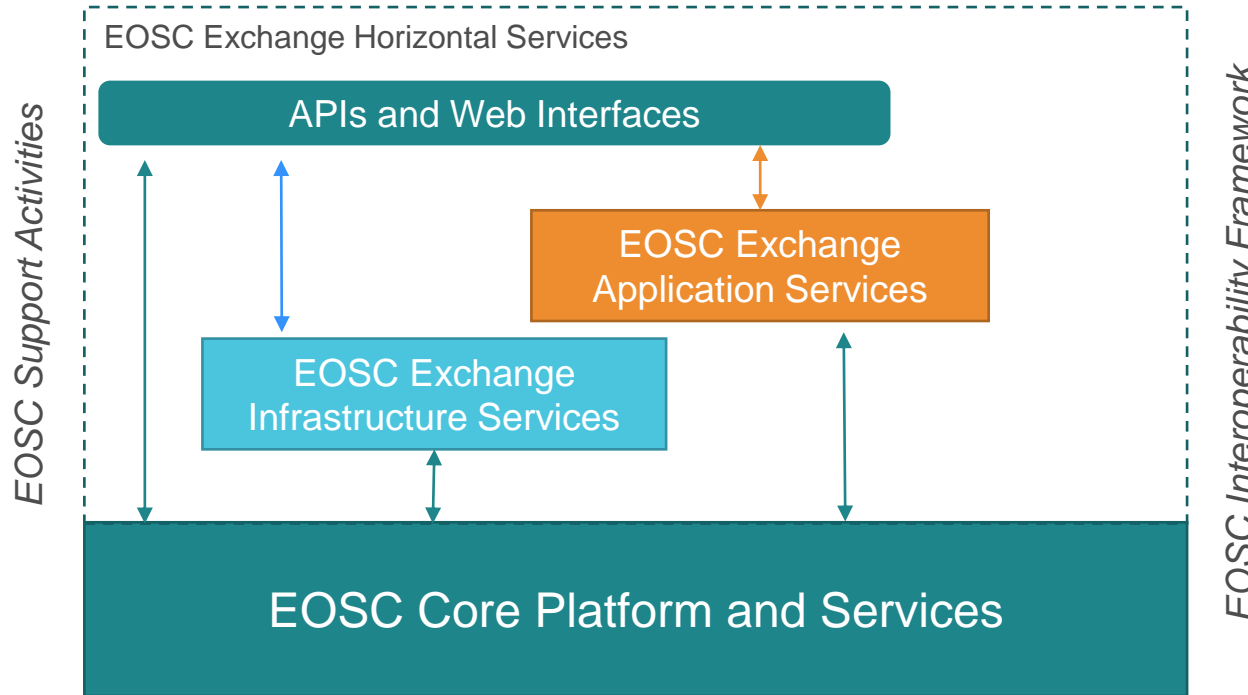
EOSC EU Node characteristics and features

- **European level multi-disciplinary and multi-national** scientific data/service portfolio for all research users (eduGAIN) and citizen scientists (EU Login/eIDAS)

- **For now, owned by the EC** and governed by the EOSC Tripartite Governance (EC, EOSC-A, MS/AC) Future ownership is under discussion.

- **Operated and maintained 24/7** by contracted third-parties (result of the EOSC Procurement Action) in production

- **SIMPL Agent proxy** to connect to other industrial Data Spaces

- **EuroHPC resources** may be offered to the EOSC Federation

- **Open concept: National, regional and/or thematic** service providers as well as autonomous EOSC Nodes can connect to the federation (established interoperability frameworks and policies)

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Hight-level EOSC EU Node architecture

EOSC Exchange Thematic/Regional Services

EOSC Exchange Thematic Cluster A	EOSC Exchange Regional Cluster B	Other

EOSC Support Activities

EOSC Exchange Horizontal Services

APIs and Web Interfaces

EOSC Exchange Application Services

EOSC Exchange Infrastructure Services

EOSC Core Platform and Services

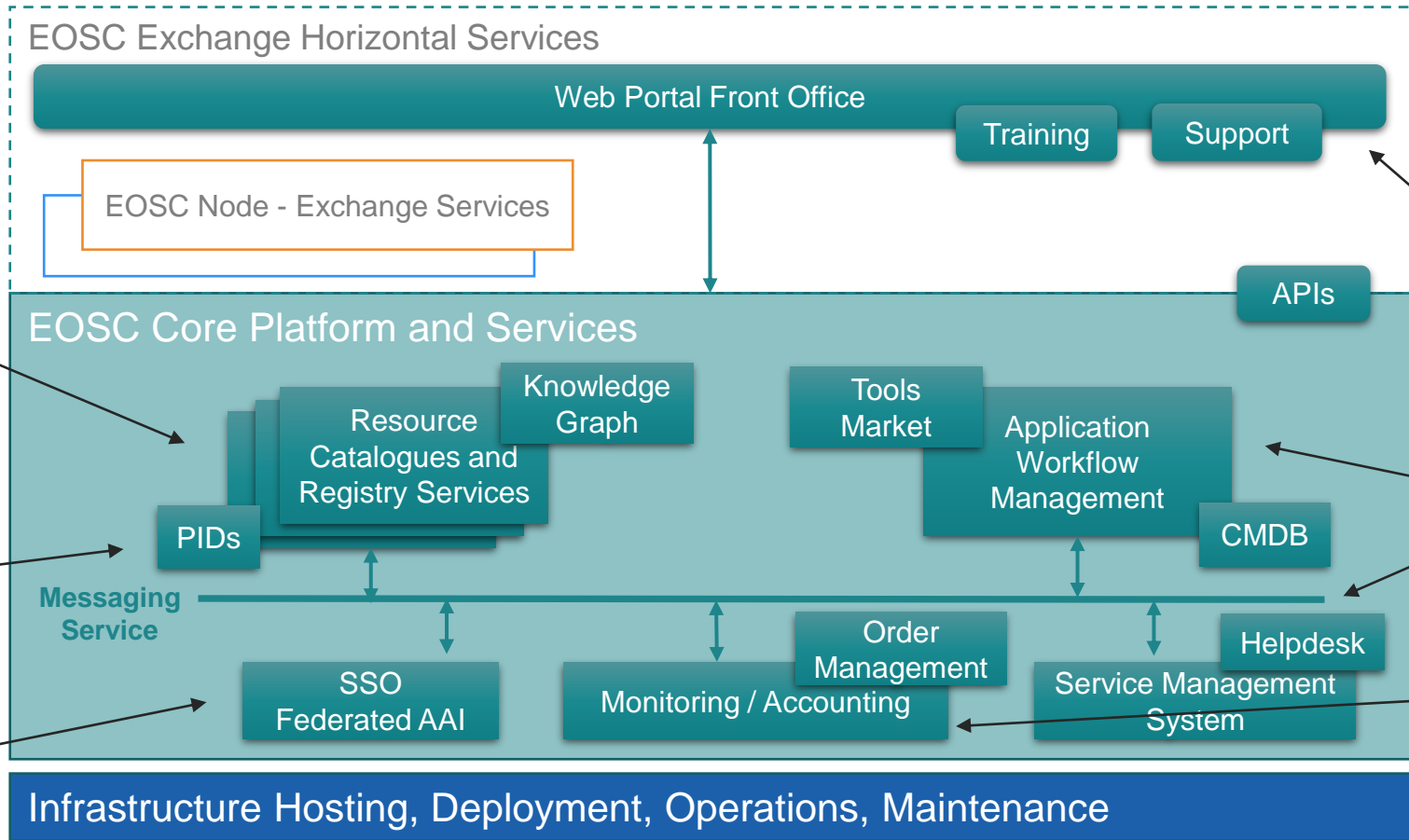*EOSC Interoperability Framework*

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

PSNC

Research & Innovation Information Technologies /ATHENA

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Procurement Lot 1 – EOSC Core Platform Services

EOSC Exchange Horizontal Services

- Web Portal Front Office
- Training
- Support

EOSC Node - Exchange Services

EOSC Core Platform and Services

- APIs
- Resource Catalogues and Registry Services
- Knowledge Graph
- Tools Market
- Application Workflow Management
- CMDB
- PIDs
- Messaging Service
- Order Management
- Helpdesk
- SSO Federated AAI
- Monitoring / Accounting
- Service Management System

Infrastructure Hosting, Deployment, Operations, Maintenance
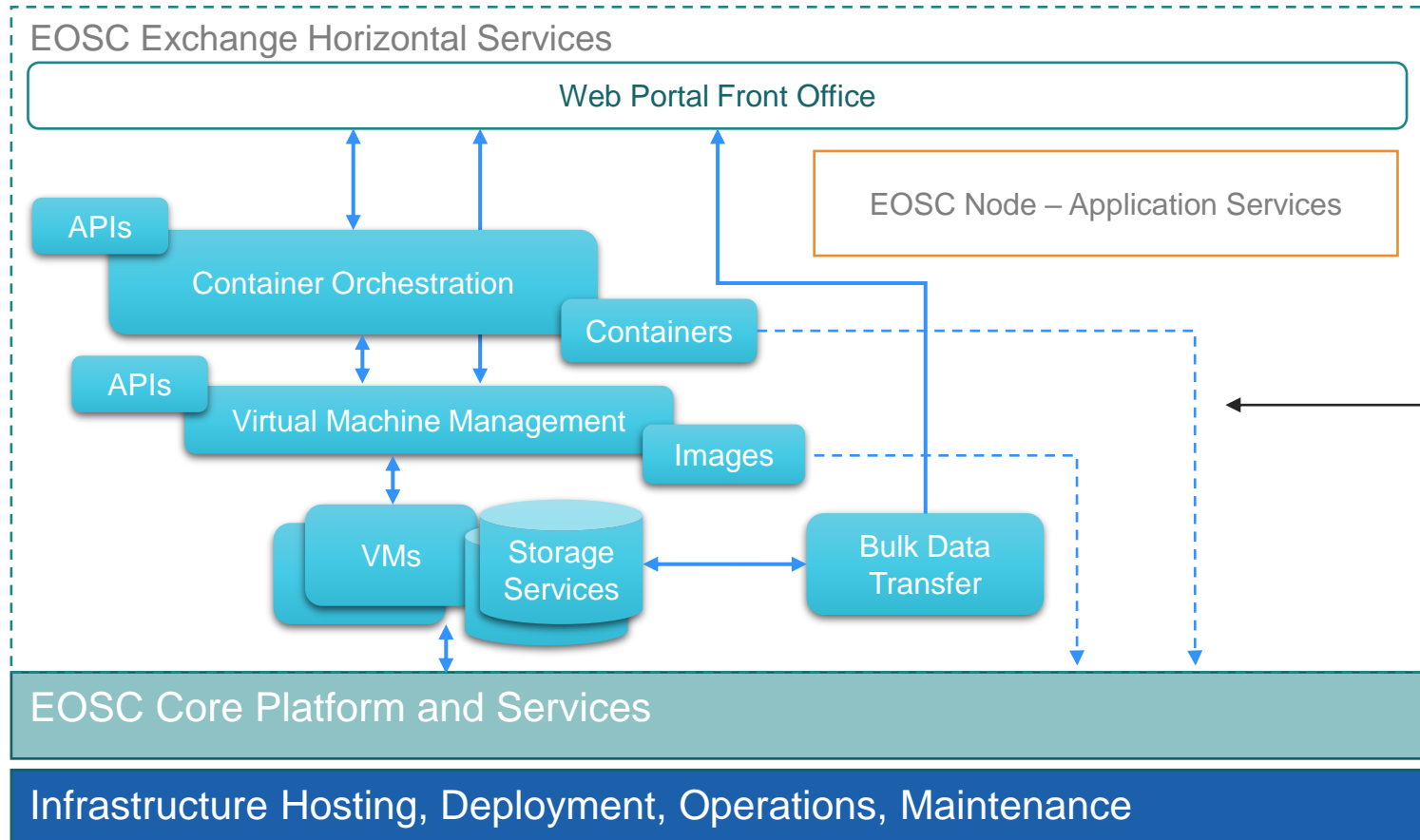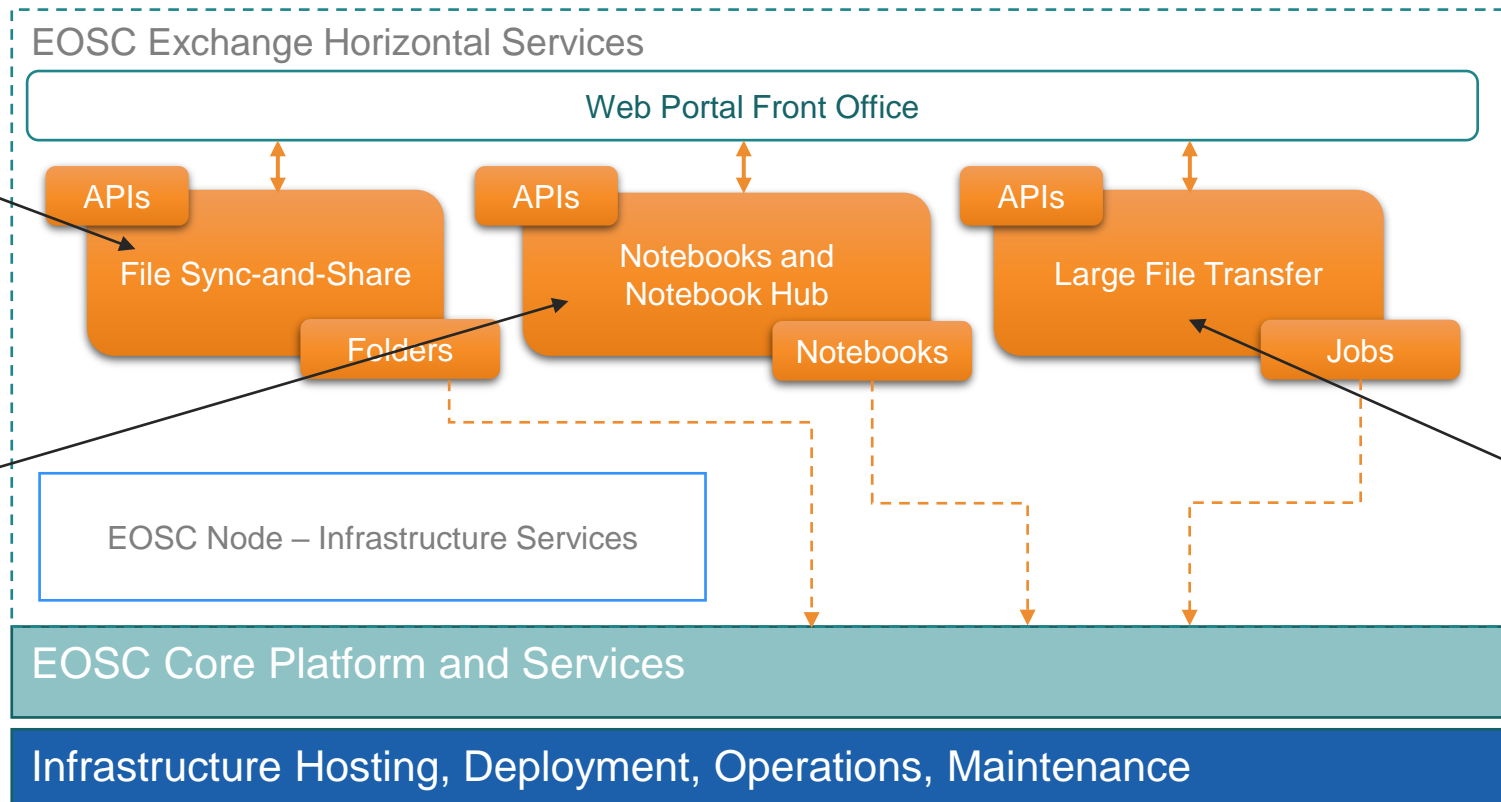
Procurement Lot 2 – EOSC Exchange Infrastructure Services

Procurement Lot 3 – EOSC Exchange Application Services

All together the awardees

Awarded Contractors

EOSC EU Node

EXCHANGE
- PSNC
- safespring
- NORDUnet — Nordic Gateway for Research & Education
- Sikt
- egi
- cesnet
- GÉANT
- ownCloud

CORE
- Research & Innovation Information Technologies / ATHENA
- OpenAIRE
- GWDG — Gesellschaft für wissenschaftliche Datenverarbeitung mbH Göttingen
- egi
- cesnet
- GÉANT
- grnet
- netcompany intrasoft
- icm
- aws
- European Commission
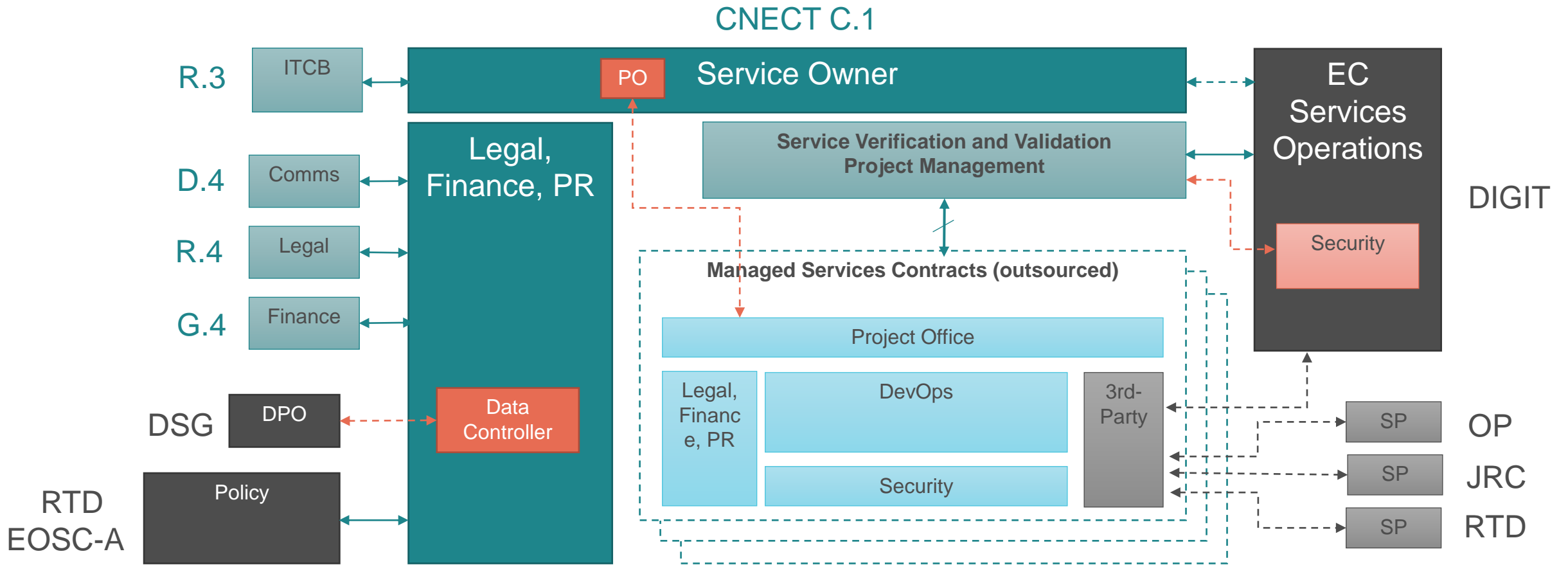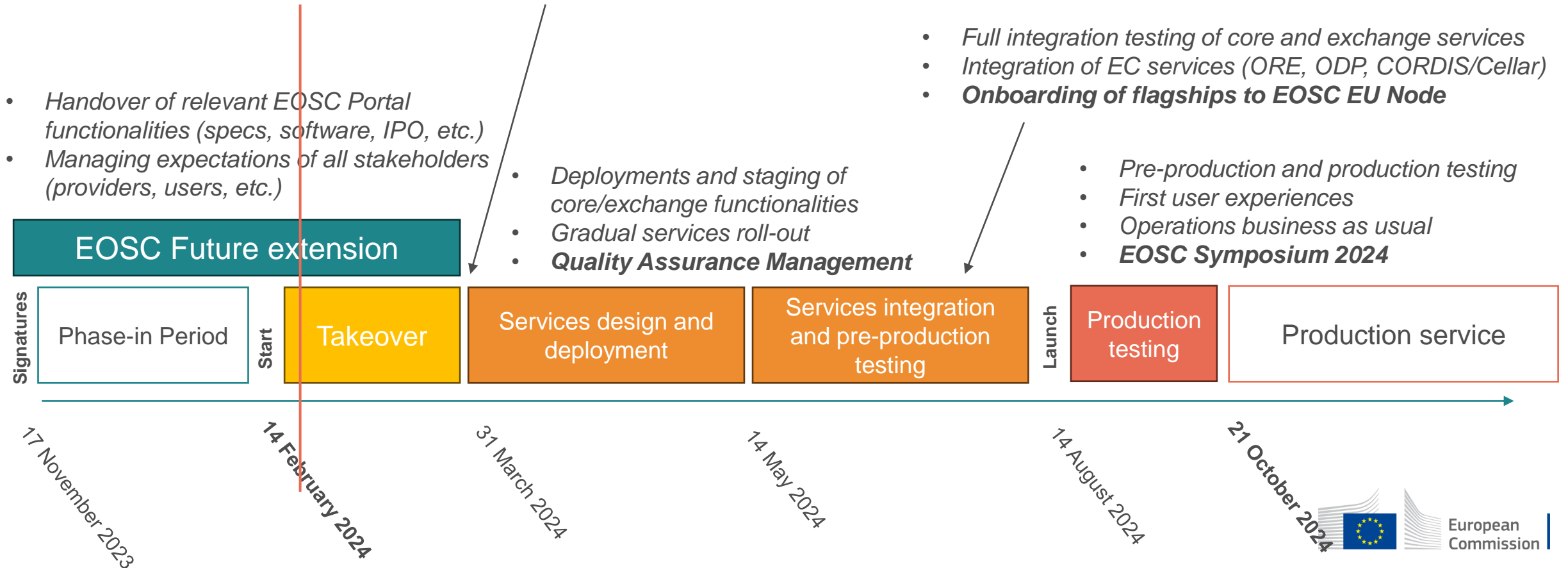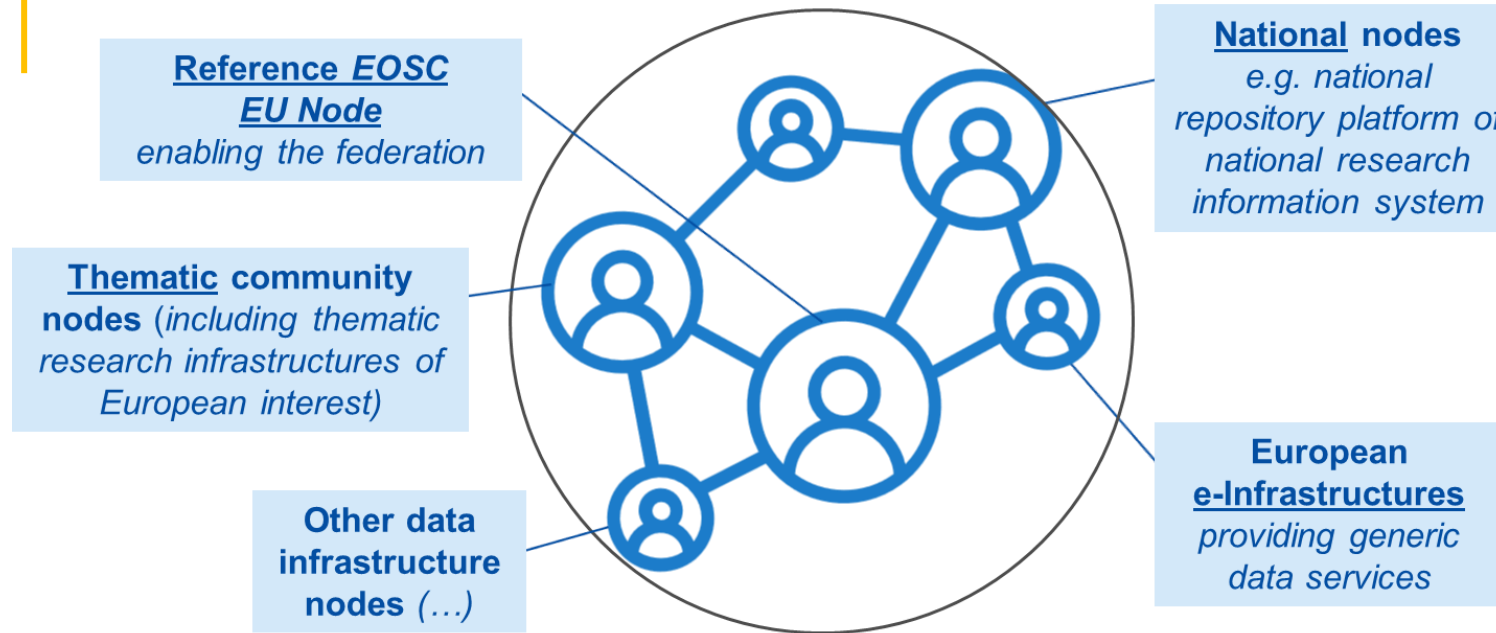
Operational Structure

EOSC EU Node Planned Timeline and Milestones

- Planning and architecting of service components
- **Compliances and approvals (EC IT Gov)**
- Definition of policies (RoP, AUP, AP)
- Production launch of the EOSC EU Node web front-office

- Full integration testing of core and exchange services
- Integration of EC services (ORE, ODP, CORDIS/Cellar)
- **Onboarding of flagships to EOSC EU Node**

- Handover of relevant EOSC Portal functionalities (specs, software, IPO, etc.)
- Managing expectations of all stakeholders (providers, users, etc.)

- Deployments and staging of core/exchange functionalities
- Gradual services roll-out
- **Quality Assurance Management**

- Pre-production and production testing
- First user experiences
- Operations business as usual
- **EOSC Symposium 2024**

EOSC Future extension

Signatures | Phase-in Period | Start | Takeover | Services design and deployment | Services integration and pre-production testing | Launch | Production testing | Production service

17 November 2023 — 14 February 2024 — 31 March 2024 — 14 May 2024 — 14 August 2024 — 21 October 2024

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About the EOSC Federation and EOSC Nodes

Reference EOSC EU Node enabling the federation

Thematic community nodes (including thematic research infrastructures of European interest)

Other data infrastructure nodes (…)

National nodes e.g. national repository platform of national research information system

European e-Infrastructures providing generic data services

EOSC policies and standards**: A baseline should be defined to ensure that each node can have a minimum working set of features and supports a minimum set of policies. It is important to mandate compliance with protocols and standards, but to give freedom to each node on how to support them.

EOSC Federation*: Open and trusted federation of collaborative, autonomous infrastructures applying agreed, consensus-based EOSC policies and rules of participation, combined into a system of systems to enable European researchers to store, share, process, analyse, and reuse research digital objects (e.g. data, publications and software)

EOSC Node*: Data infrastructure system of variable nature (national, regional, institutional or thematic) with consensus-based policies, transparent ownership and clear responsibility, connected to the EOSC Federation to share information and resources within the EOSC community and to leverage common services

* Source: "*EOSC operations and evolution post-2027*" supporting document by the EOSC-SB Policy subgroup (November 2023)
** Source: GEANT and NREN's position on EOSC Nodes (October 2023)

EOSC EU Node – Federation Approach

EOSC Federated "System of Systems"
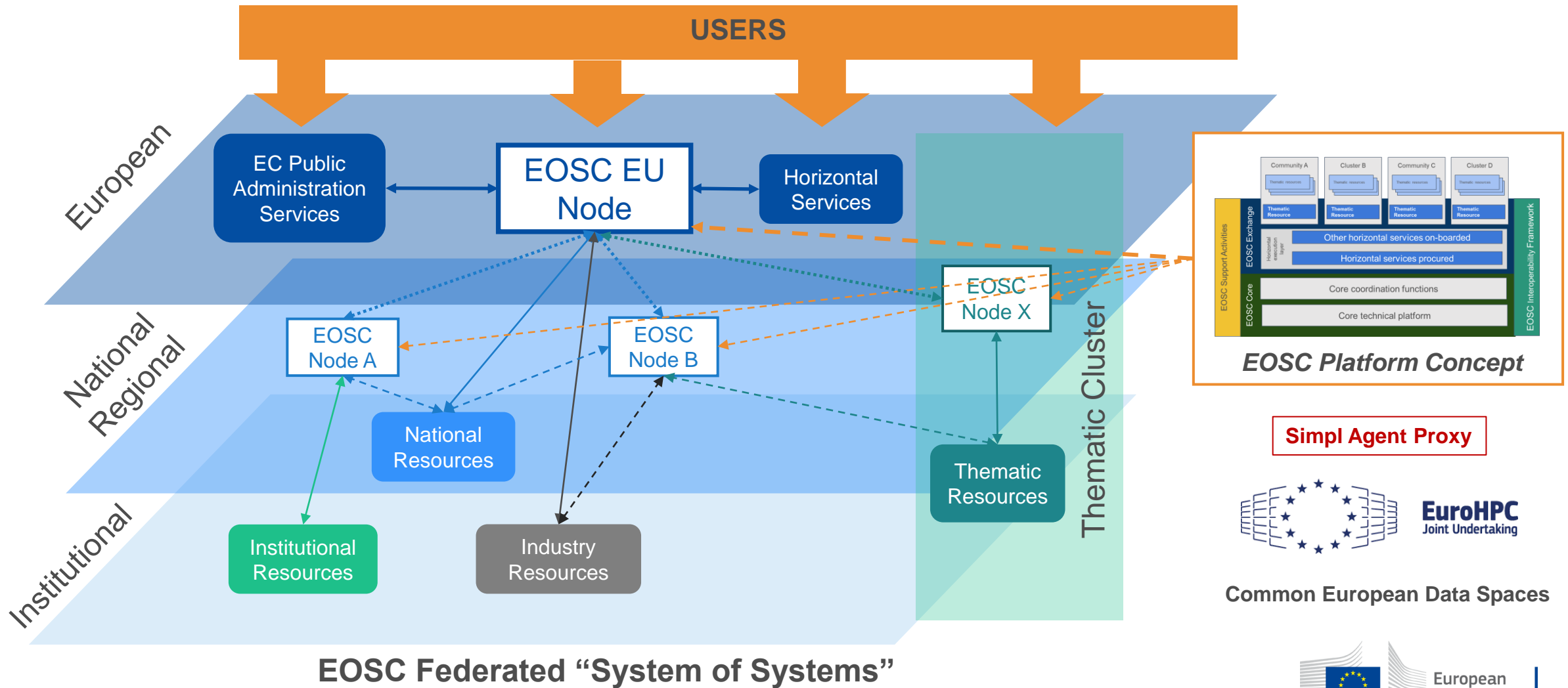
EOSC Nodes in the federation

- ## What it takes to be an EOSC Node?

  - Technical capabilities – Participate and contribute to the EOSC CORE federating capabilities (deploy, operate and manage at least one EOSC CORE capability, apply the EOSC Interoperability Framework)

  - Legal responsibilities – Established entity under a recognized legal structure (e.g., JU, ERIC/EDIC, Governmental Org, Inter-governmental Org, International Org., etc.)

  - Administrative ownership – Take ownership and participate in the EOSC Governance (e.g., EOSC Association)
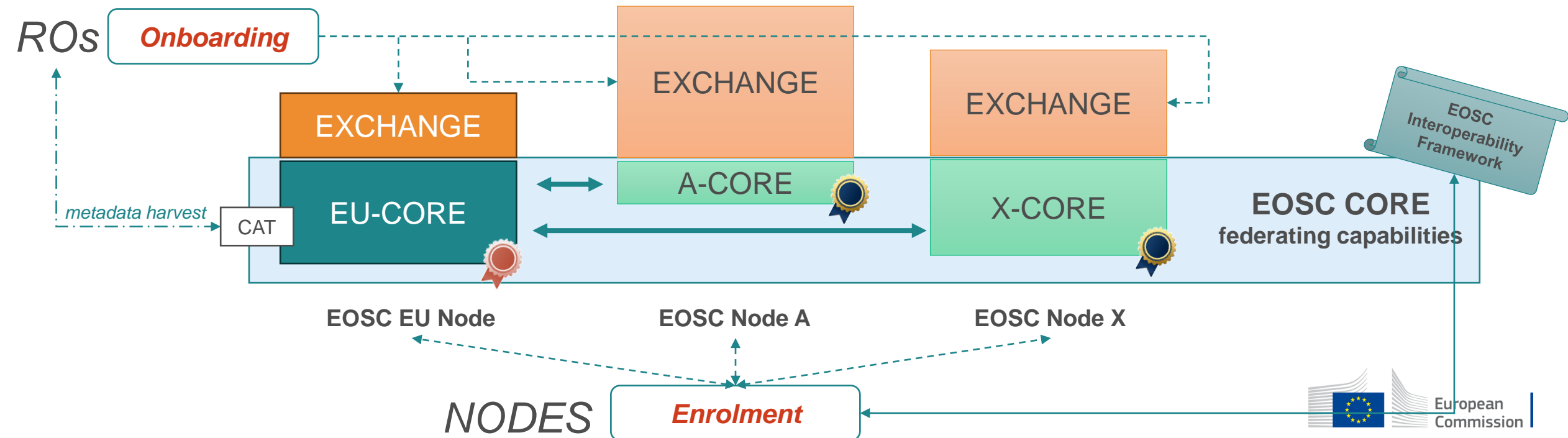
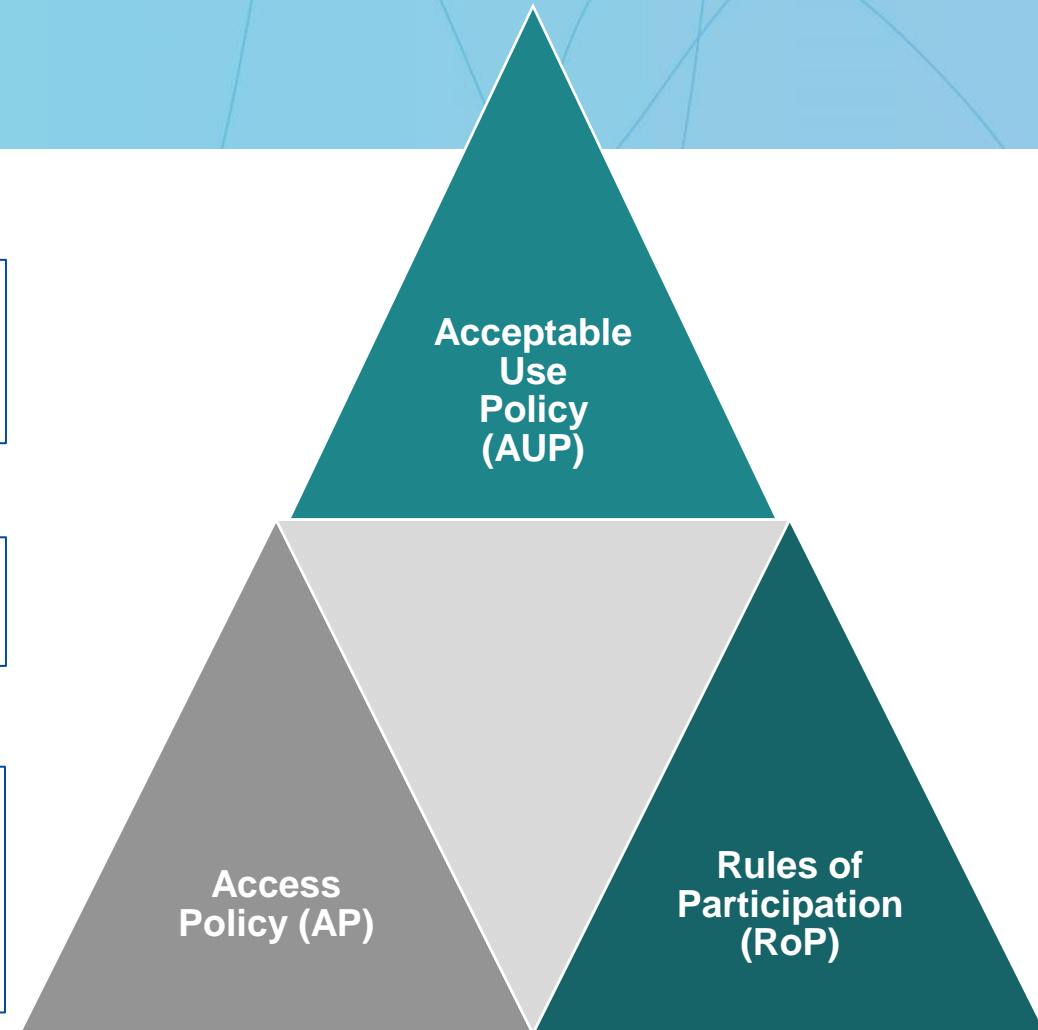# EOSC Access and Use Policies

Federation level

*The Acceptable Use Policy affect **all users** (registered or anonymous) and defines what is acceptable use of EOSC. For example: lawful, respect of intellectual property, respect of security rules...*

RO specific

The Access Policy primarily regulates the use of resources (computing, data, network) and security rules **for registered users.**

Node specific

*The Rules of Participation affect all **resource providers and/or Node operators**. Define the **minimal standards** for any 3rd party service (i.e., assets, support) provided within the Federation. Deeply related to onboarding.*

- On-boarding of Research Objects (to any Nodes)
- Enrolment of Nodes to the federation

Acceptable Use Policy (AUP)

Access Policy (AP)

Rules of Participation (RoP)

Thank you

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