



# EU policy drives and EC support to the European Open Science Cloud (EOSC)

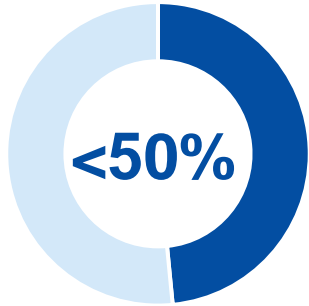
*EOSC tripartite event by eoscfFrance 2023  
Montpellier, 13 June 2023*

*Michel Schouppe, Teamleader, Open Science and Research Infrastructures (RTD.A4)  
Tobias Wiesenthal, DHoU Open Science and Digital Modelling (CNECT.C1)*

# EOSC support by the European Commission

- Keeping the **policy momentum: EOSC as a pillar of the digital transition**
  - ‘Open Science including EOSC’ fully embedded in the *ERA Policy Agenda*
  - EOSC as a sectoral data space of the *European Strategy for Data*
- Support through the **Horizon Europe programme**
  - Implementation of *Research Infrastructure Calls*: direct EU investment in EOSC developments of up to €490 million
  - Including also *procurement of EOSC managed services* by the EC
  - *Studies* commissioned by the EC, e.g. the European Research Data Landscape study
- Continued involvement notably in:
  - The *EOSC governance* (EOSC Steering Board, EOSC Partnership Board)
  - EOSC *coordination with ERA-Forum, ESFRI and various MS-driven think tanks*
  - *EOSC thematic demonstrators and good practices* (e.g. the European Covid-19 Data Platform, the Blue Cloud, the science clusters)
  - The *monitoring* of the uptake of Open Science and ‘EOSC readiness’

# Some figures about Open Science ...



**Scientific publications<sup>1</sup>**  
available in open access  
(aggregated figure over time)  
[> 65 % in 2021]



Authors who retain copyright<sup>2</sup> in contracts  
with largest subscription journals

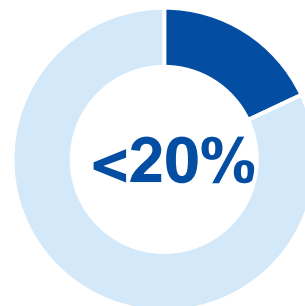


**3€ billion per year**

National public funding for  
pan-European Research  
Infrastructures<sup>3</sup>



Researchers who occasionally store  
research data in shared repositories<sup>4</sup>



Researchers who put FAIR  
principles into practice<sup>5</sup>

Sources:

- <sup>1</sup> Open Science observatory by OpenAIRE  
<https://osobservatory.openaire.eu/home>
- <sup>2</sup> Morrison, J Secker, B Vézina, I Labastida I Juan, V Proudman (2020)
- <sup>3</sup> ESFRI roadmap 2021
- <sup>4 & 5</sup> European Research Data Landscape study (2022)  
<https://data.europa.eu/doi/10.2777/3648>

# Strategic objectives for Open Science in Europe

**Immediate** and **unrestricted**  
open access to research  
outputs

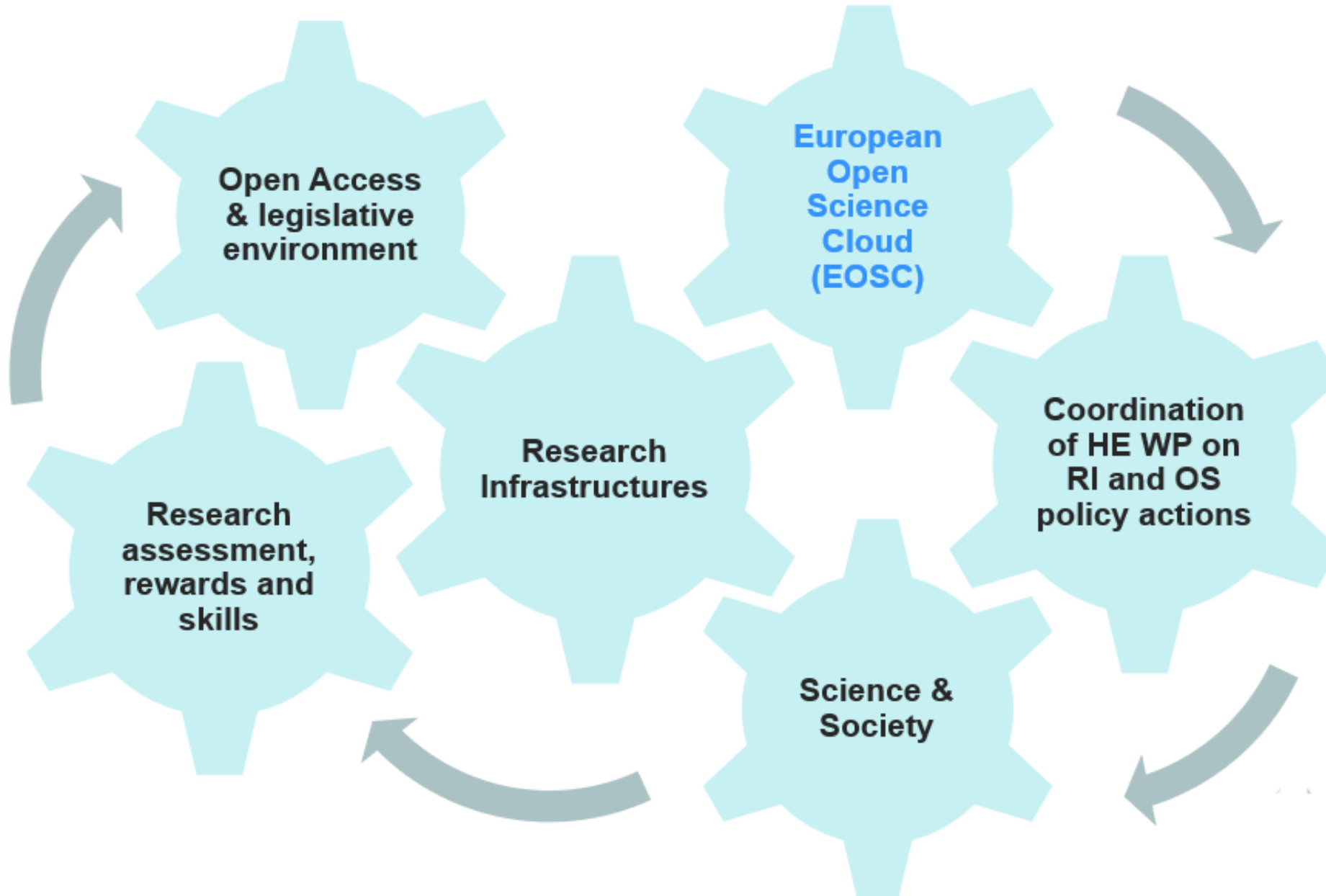
**Responsible** research  
output management, in line  
with **FAIR** principles

**Early** and **open** sharing of  
research: methods, data,  
preprints

European ecosystem of  
research infrastructures that  
is more **effective** and  
**efficient**, **open** and  
**accessible**, and **sustainable**

**Open collaboration**, within  
science and with broader  
public and private sector

# Key enablers of Open Science practices



# EOSC in the ERA policy Agenda (2021-2024)

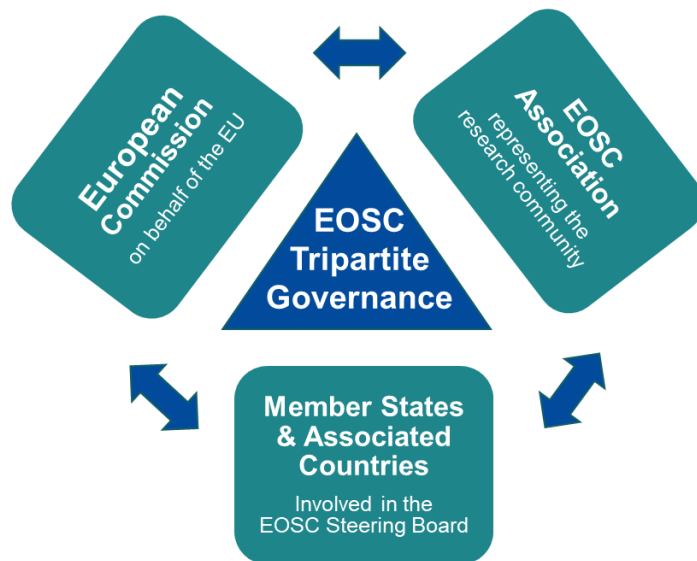
**ERA Policy Action 1:** *“Enable the open sharing of knowledge and the re-use of research outputs, including through the development of the EOSC”*



- **Deploy Open Science principles and identify Open Science best practices**
  - Mainstreaming OS across national programmes, catalogue of OS practices, tools and services, data scientists and data stewards, national EOSC tripartite events ...
  
- **Deploy the core components and services of EOSC and federate existing data infrastructures in Europe, working towards the interoperability of research data**
  - Horizon Europe support to EOSC Partnership, connection of national/regional research infrastructures to EOSC federation, community frameworks for interoperability & quality control ...
  
- **Establish a monitoring mechanism to collect data on investments, policies, digital research outputs, open science skills and infrastructure capacities related to EOSC**
  - Co-development of EOSC national surveys, roll-out of key layers of monitoring mechanism ...

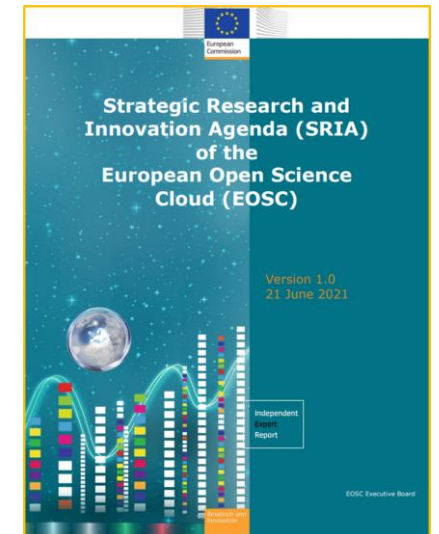
# Enabling Open Science through EOSC

- **A community-driven process** (commitments by EU Member States, Associated Countries, research stakeholders)
- **Gradual implementation** based on **mutual alignment** and pooling of resources at European, national and institutional levels. Move **from prototyping to operations**



With direct support by: 

- **EOSC European Co-programmed Partnership** to pool commitments and resources along priorities set in the EOSC Strategic Research and Innovation Agenda
- **EOSC tripartite governance** to ensure dialogue and strategic coordination between EC, EU Member States and Associated Countries, and EOSC Association



# Monitoring national contributions to EOSC in 2022-2023

- Based on the **Monitoring framework for national contributions to EOSC**
  - Published in December 2022  
<https://doi.org/10.5281/zenodo.7410762>
  - 3 dimensions \* 8 categories

categories	dimensions		[Impact]
	Policies	Practices	
Publications	Countries with a National Policy	Countries with National Monitoring	
Data			
Software	Countries with a Financial Strategy	Countries with Use Cases	
Services			
Infrastructure	Country RPOs with a Policy	Country Investments	
Skills/Training			
Assessment	Country RFOs with a Policy	Country Outputs	
Engagement			

Implemented through the **EOSC Observatory** (launched in Nov 2022)

- <https://eoscobservatory.eosc-portal.eu/home>





# Overview of EU investments...

## Enabling Open Science

Supporting an EOSC-ready digitally **skilled workforce**  
HORIZON-INFRA-2021-EOSC-01-01  
**SKILLS4EOSC (7Mio€)**

Services that underpin a **research assessment** system that incentivises Open Science  
HORIZON-INFRA-2021-EOSC-01-06  
**GRASPOS (8 Mio€)**

Supporting institutional **open access publishing** across Europe  
HORIZON-INFRA-2022-EOSC-01-02  
**CRAFTOA (5 Mio€)**

## FAIR implementation

Deploying **EOSC-Core components for FAIR**  
HORIZON-INFRA-2021-EOSC-01-03  
**FAIRCORE4EOSC (10 Mio€)**

Enabling **discovery and interoperability** of research objects across communities  
HORIZON-INFRA-2021-EOSC-01-05  
**FAIR-IMPACT (10 Mio€)**

Support to **international standards and specifications** for open sharing of FAIR research digital objects  
HORIZON-INFRA-2022-EOSC-01-04  
**RDA TIGER (3 Mio€)**

**Planning, tracking and assessing scientific knowledge production**  
HORIZON-INFRA-2023-EOSC-01-03 (8 Mio€)

**Improving the quality of scientific software and codes**  
HORIZON-INFRA-2023-EOSC-01-02 (8 Mio€)

## Uptake – Use cases

FAIR and open data sharing in support of the **Cancer Mission**  
HORIZON-INFRA-2021-EOSC-01-06  
**EOSC4CANCER (8Mio€)**

FAIR and open data sharing in support of the Mission on **oceans & waters**  
HORIZON-INFRA-2022-EOSC-01-03  
**BLUE CLOUD 2026 AND AQUAINFRA (16 Mio€)**

FAIR and open data sharing in support of the Mission **climate adaptation**  
HORIZON-INFRA-2024-EOSC-01-01  
**(16 Mio€)**

**Build on the science cluster approach to ensure EOSC uptake**  
HORIZON-INFRA-2023-EOSC-01-01  
**(25 Mio€)**

## EOSC partnership

Supporting activities of the European EOSC Partnership  
HORIZON-INFRA-2021-EOSC-01-02  
**EOSC-FOCUS (4Mio€)**

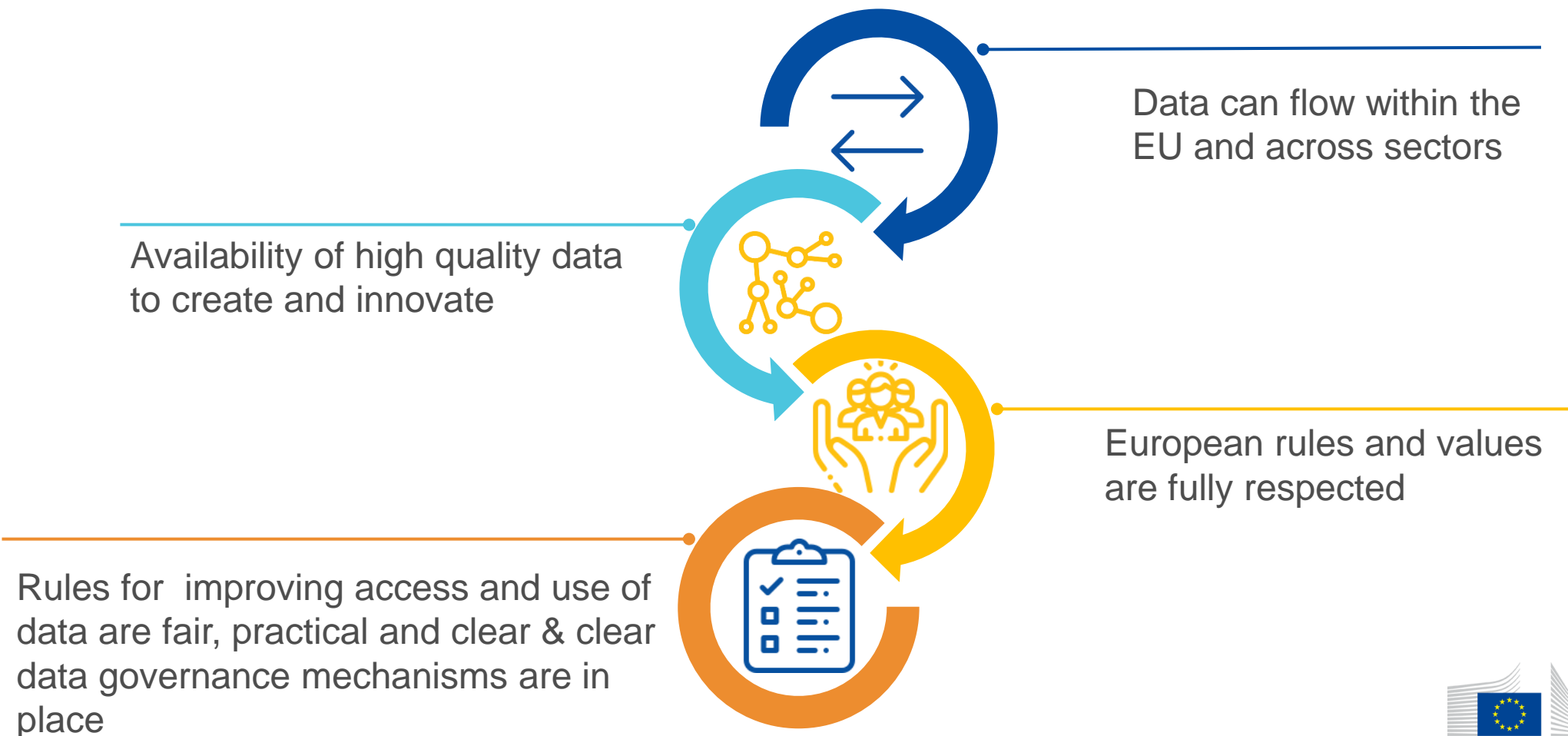
Supporting activities of the European EOSC Partnership  
HORIZON-INFRA-2024-EOSC-01-02  
**(4 Mio€)**

**Long term access and preservation infrastructures and data quality**  
HORIZON-INFRA-2024-EOSC-01-04 (8 Mio€)

**Enabling a network of EOSC federated and trustworthy repositories**  
HORIZON-INFRA-2024-EOSC-01-03 (5 Mio€)

# Commission Communication of 20 February 2020: European Strategy for Data

A common European data space, a single market for data



# Common European Data Spaces

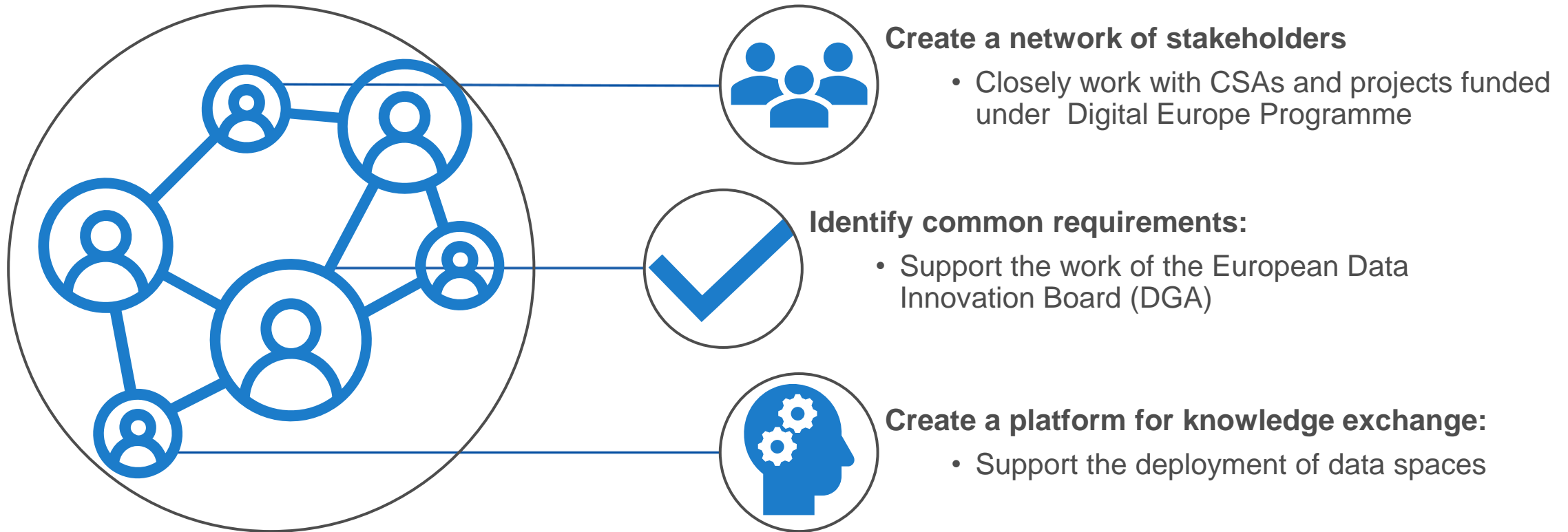


High Value Datasets from public sector

- Driven by stakeholders
- Rich pool of data of varying degree of openness
- Sectoral data governance (contracts, licenses, access rights, usage rights)
- Technical tools for data pooling and sharing

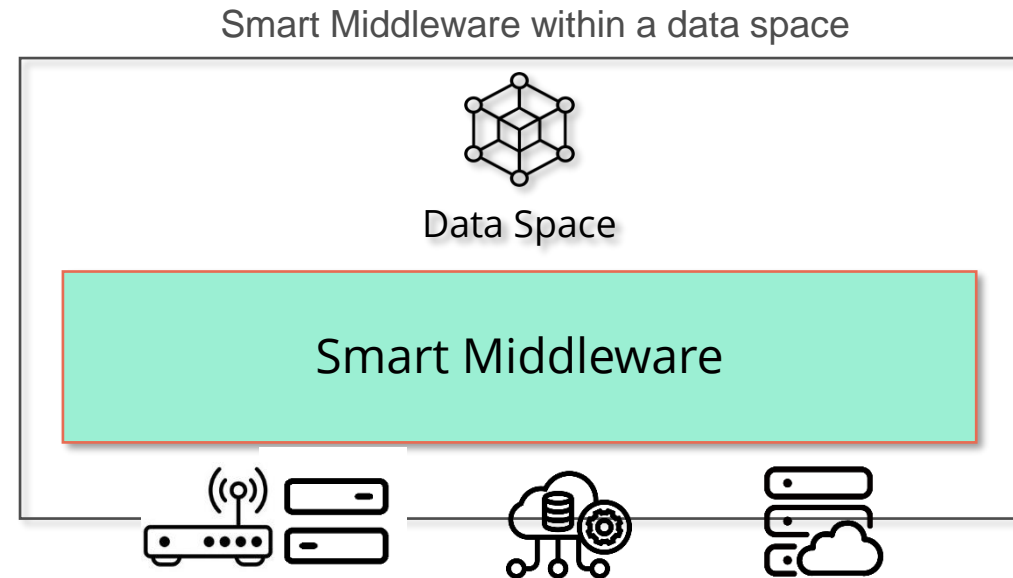
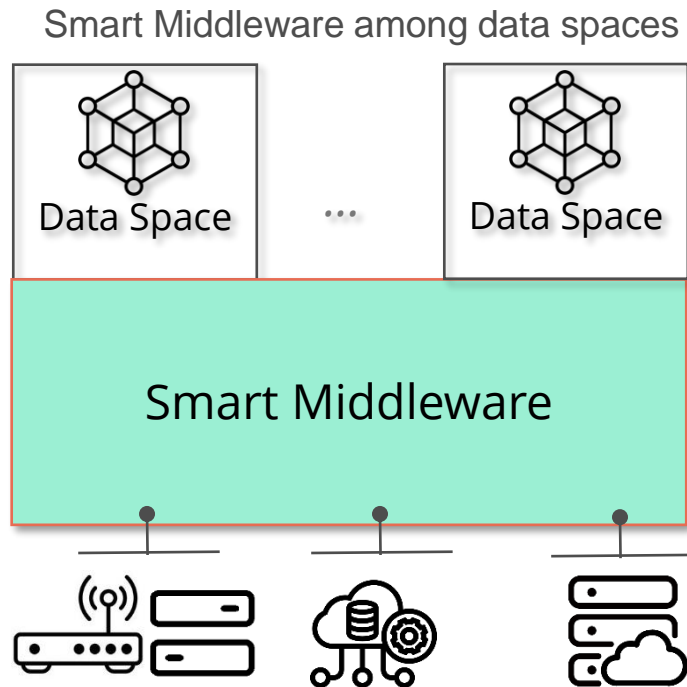
*“**EOSC** is the basis for a science, research and innovation data space that will bring together data resulting from research and deployment programmes and will be connected and fully articulated with the sectoral data spaces.”*  
(European Data Strategy, COM(2020) 66 final)

# Data Spaces Support Centre

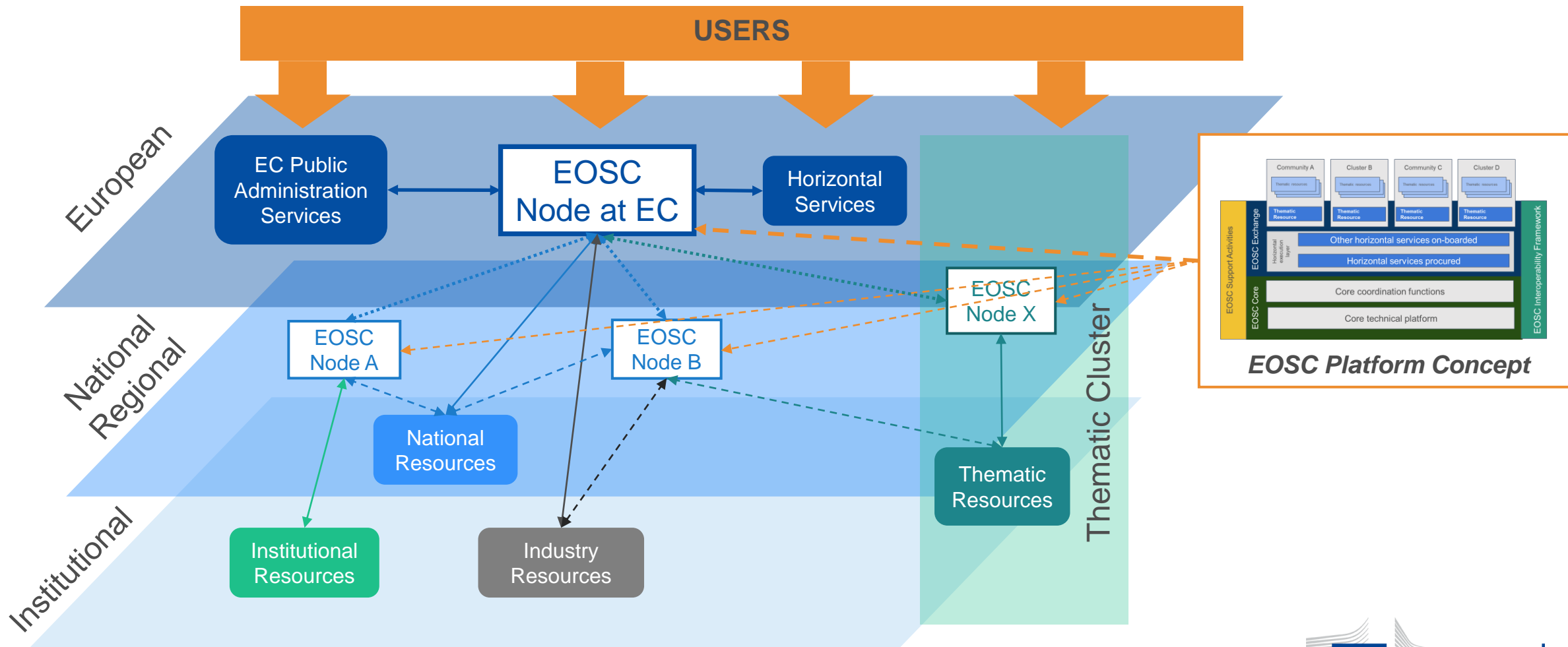


# Smart Middleware to support Data Spaces

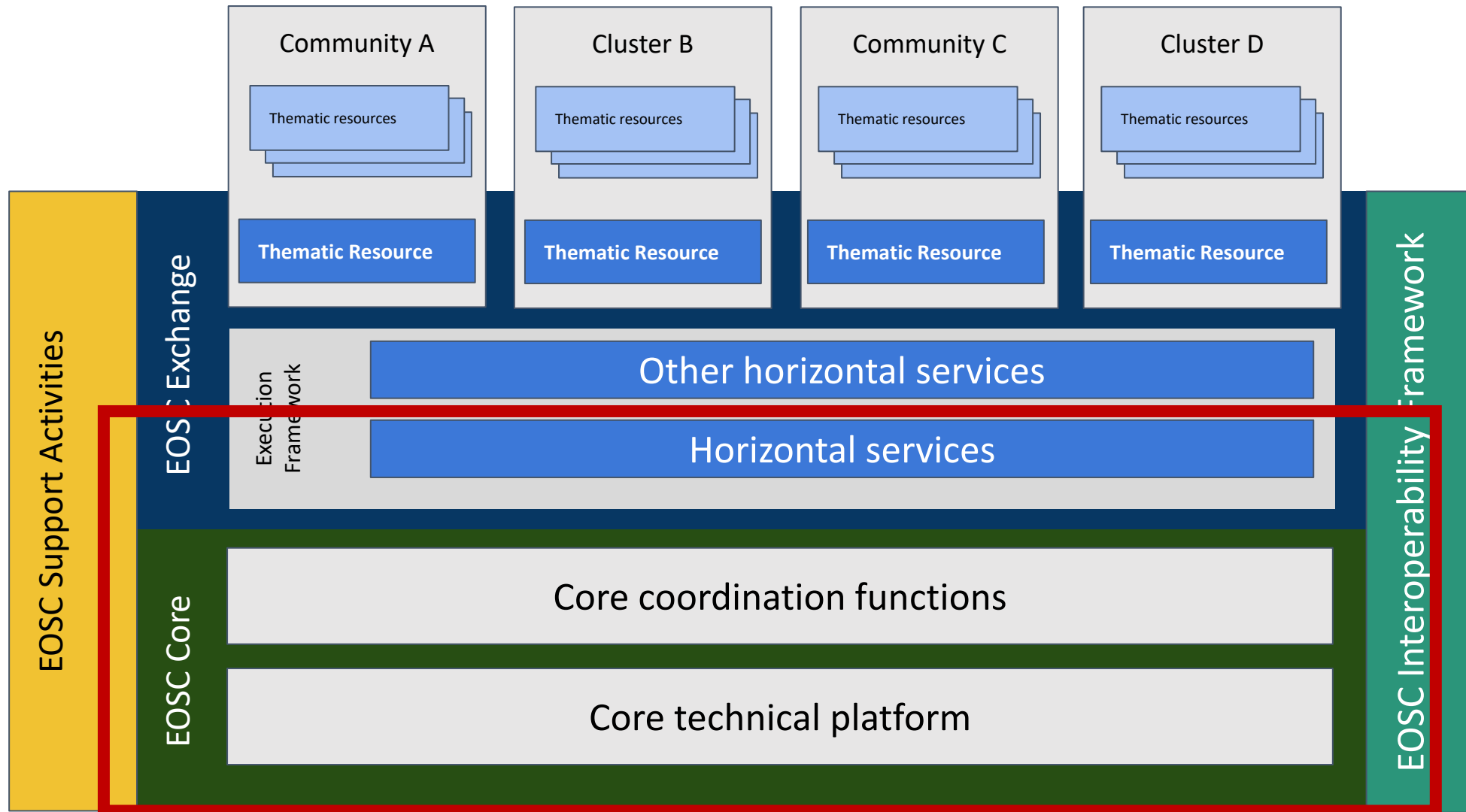
**Smart Middleware (SIMPL)** will be a **software stack** that provides **common services and capabilities** to **Data Spaces** on top of what is offered by the operating systems of **Edge and Cloud computing infrastructures**



# EOSC federated 'system of systems'



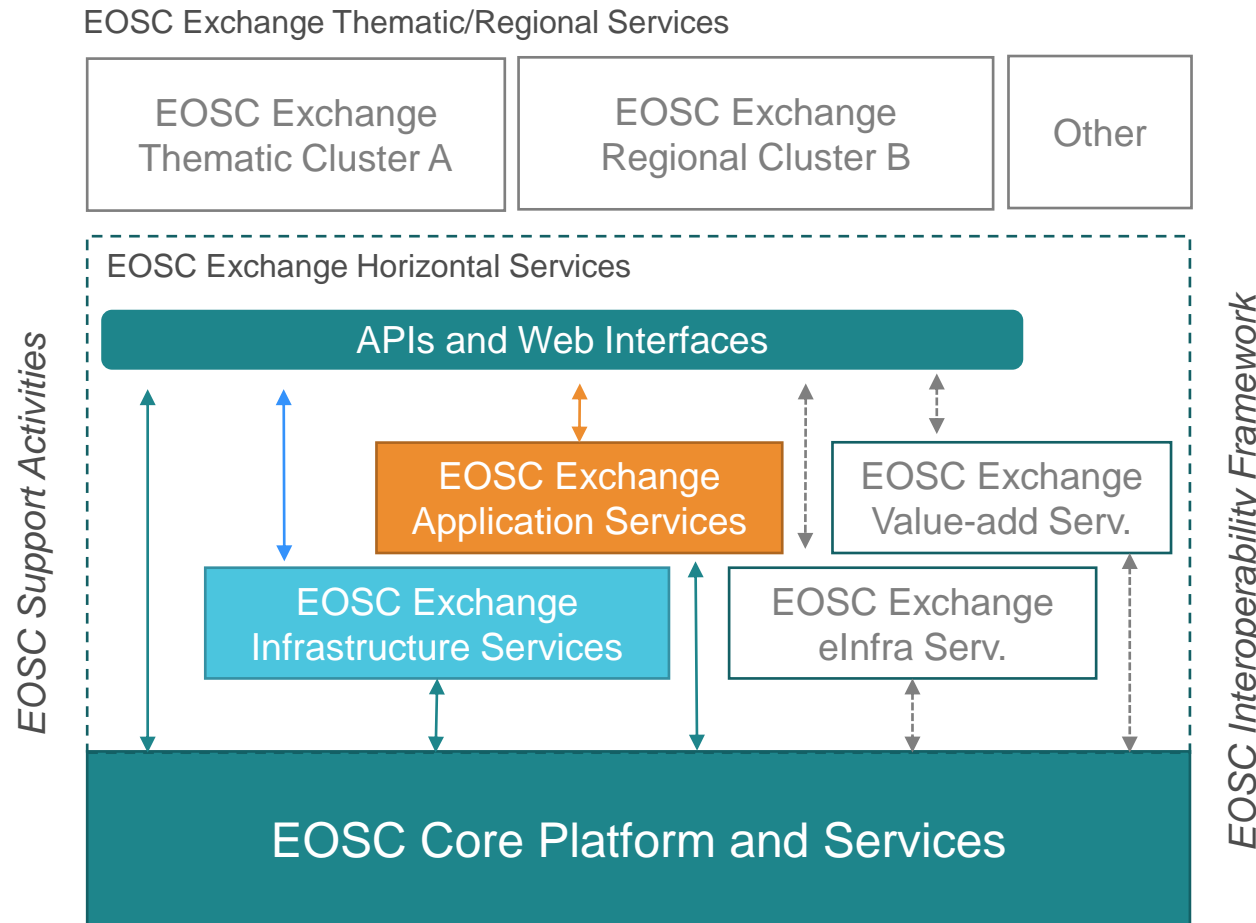
# Scope of the EOSC Procurement Action



Input from the EOSC Future project  
public deliverables  
<https://eoscfuture.eu/library/>

Scope of the EOSC  
Procurement Action

# Scope of the EOSC Procurement Action



## Procurement Lot Structure

Lot 3

Managed Collaborative Data Platform, Interactive Data Analytics Platform and Visualization Services for the EOSC Exchange (Application Services)

Lot 2

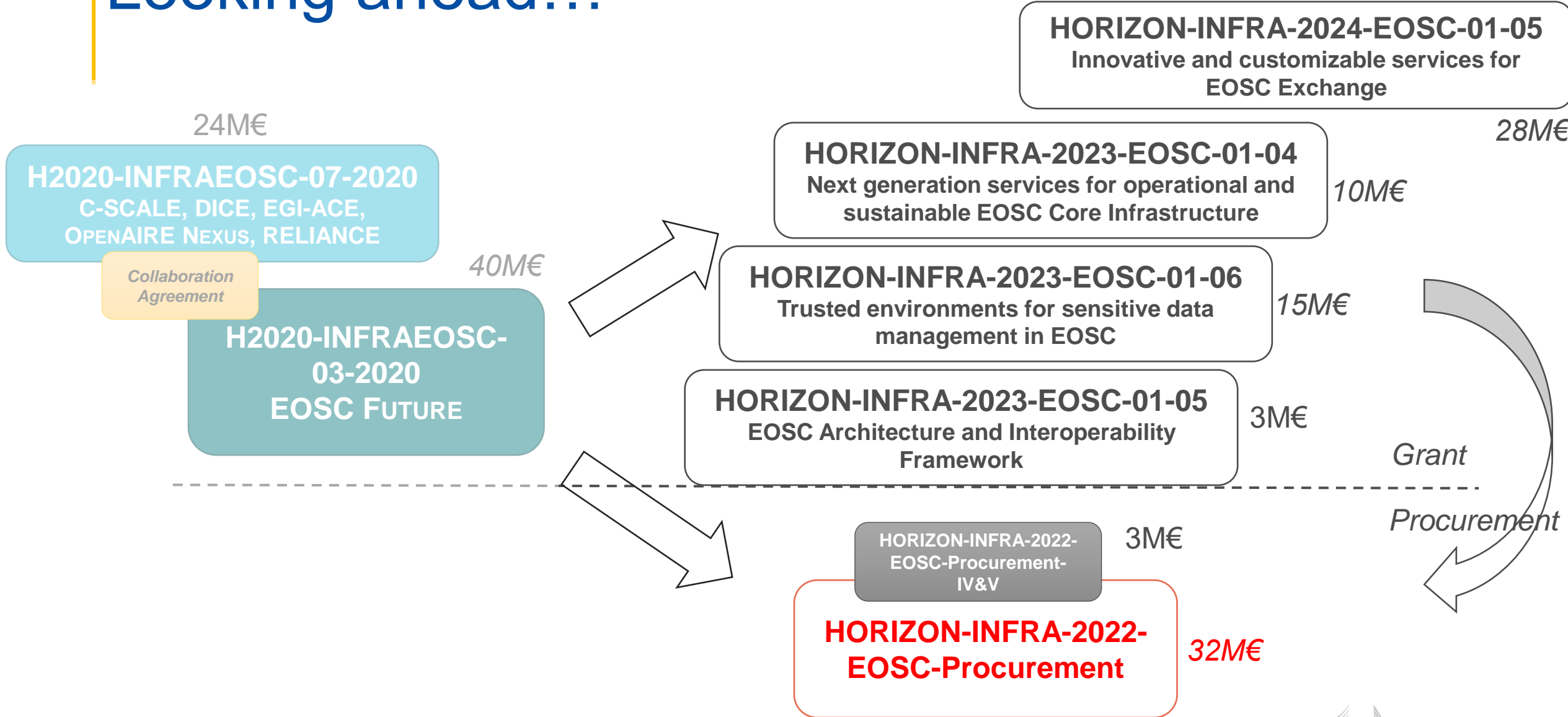
Managed Container Platform and Virtual Machine Services for the EOSC Exchange (Infrastructure Services)

Lot 1

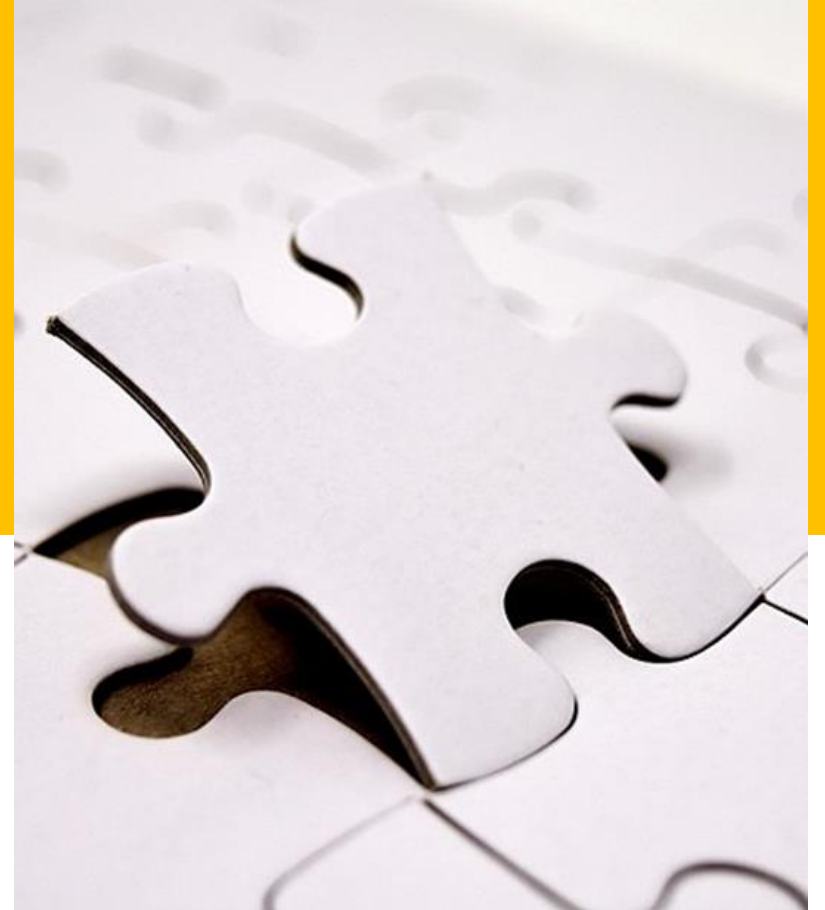
Managed Services for the Development, Integration, Deployment and Operations of the Federated EOSC Core



# Looking ahead...



# Thank you



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