



EOSC in the Data Spaces frame

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President EOSC Association

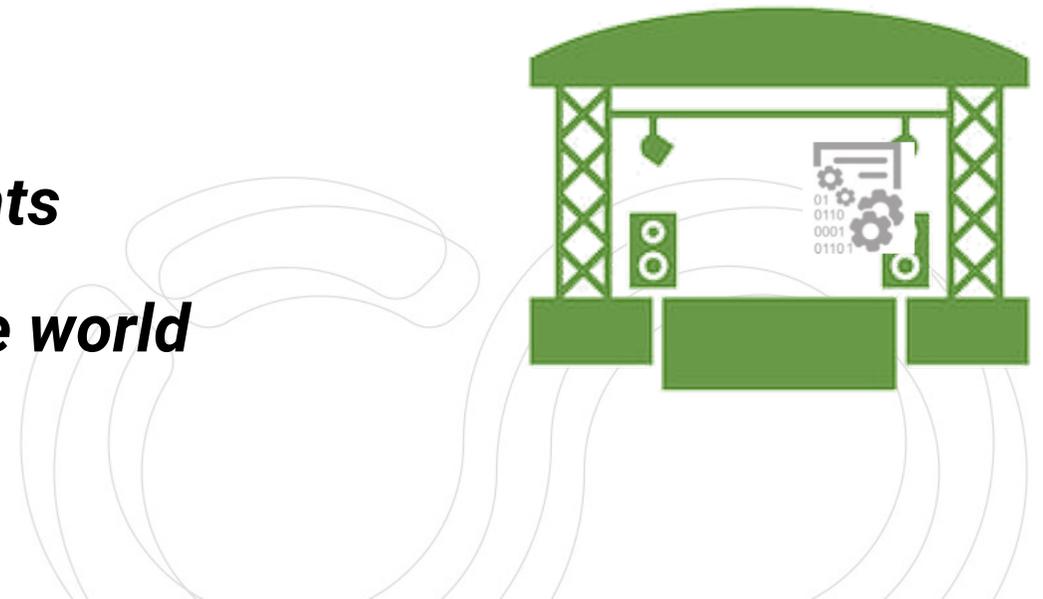
Webinar "EOSC and Data Spaces"

26 June 2023, on-line



“A web of scientific insight”

- *Web of FAIR Data and related Services*
- *Federation of relevant existing and future data sources*
- *Virtual space where science producers and consumers come together*
- *An open-ended range of content and services*
- *Based on the FAIR principles*
- *Meeting all European data requirements*
- *In interaction with other regions of the world*





EOSC – additionality to the web of FAIR data

EUROPEAN OPEN SCIENCE CLOUD

WORLD WIDE WEB

INTERNET

NETWORKS

COMPUTERS

[Modelled after: World Wide Web - Wikipedia](#)

Guiding principles for EOSC

The overarching principle for developing EOSC is that research has to be at the centre of the EOSC initiative.

- ***Multi-stakeholderism***

EOSC will succeed if and only if it follows a multi-stakeholder approach;

- ***Openness***

EOSC will ensure research artefacts be 'as open as possible, as restricted as necessary';

- ***FAIR principles***

EOSC research artefacts need to be findable, accessible, interoperable and reusable;

- ***Federation of infrastructures***

EOSC will federate existing and upcoming data- and e-infrastructure;

- ***Machine-actionable***

EOSC will ensure that machines can find, access and interoperate on data helping people in servicing the needs of European scientists.

EOSC vision in a nutshell

What

EOSC is the European web of FAIR data and related services for research

Research data that is easy to find, access, interoperate and reuse (FAIR)
Trusted and sustainable research outputs are available within and across scientific disciplines

Why

Unlock the full potential of research data to accelerate discoveries and innovation

How

- ***Ensure that Open Science practices and skills are rewarded and taught, becoming the 'new normal'***
- ***Enable the definition of standards, and the development of tools and services, to allow researchers to find, access, reuse and combine results***
- ***Establish a sustainable and federated infrastructure enabling open sharing of scientific results***

As described in the Strategic Research and Innovation Agenda (SRIA)

EOSC – a Common European Data Space



Health



Industrial &
Manufacturing



Agriculture



Finance



Mobility



Green Deal



Energy



Public
Administration



Skills



EOSC: a crosscutting data space for Research and Innovation

Data Spaces Support Centre (dssc.eu)

- coordinating the development of data spaces
- assuring common standards and interoperability

“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 articulated with the sectoral data spaces”

(European Data Strategy, COM(2020) 66 final)

*Taken from EC
slides*

Requirement for EOSC to offer access to:

- ***Relevant data***
- ***Sufficiently rich metadata***
- ***Search mechanism***
- ***Software (often self made)***
- ***Compute power (usually available)***
- ***Storage (usually available)***
- ***Automatic referencing***
- ***Safe access***
- ***.....***



eosc EOSC Association – the Voice of the Community

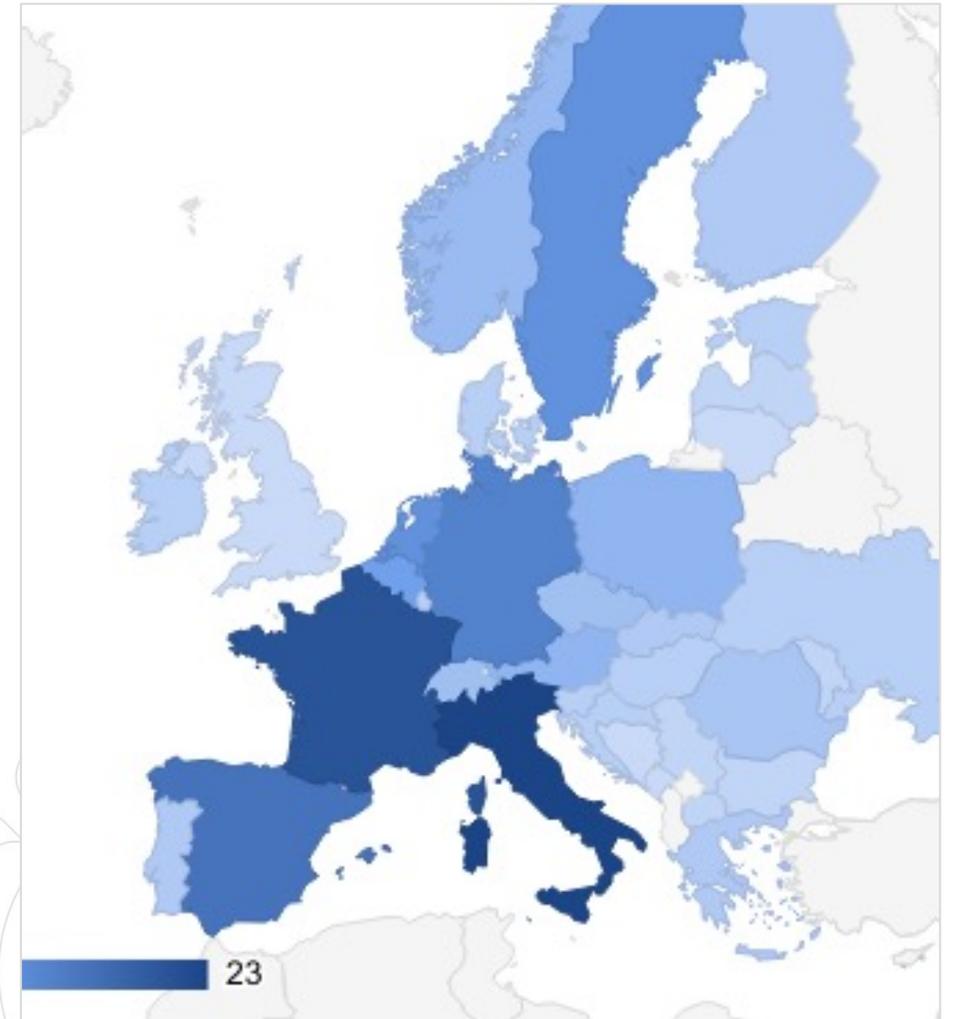
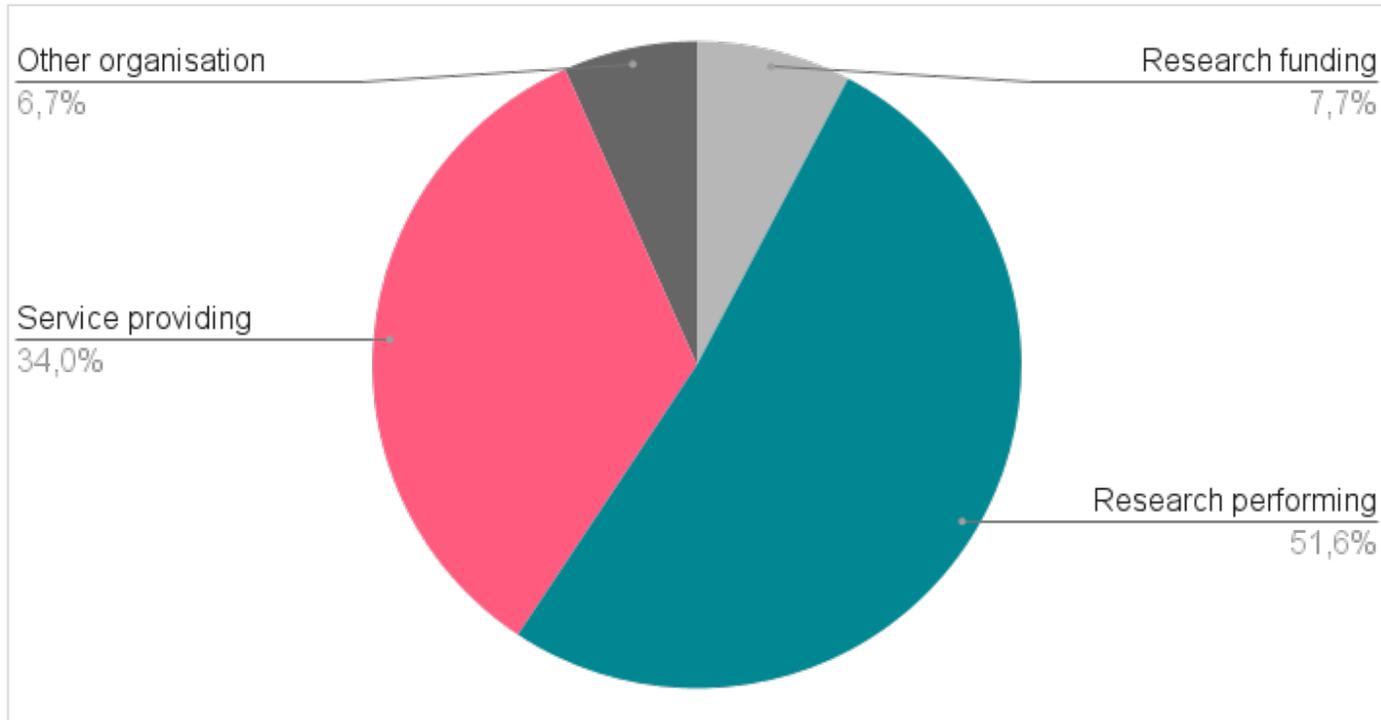


General Assembly #6, 22-23 May 2023

eosc

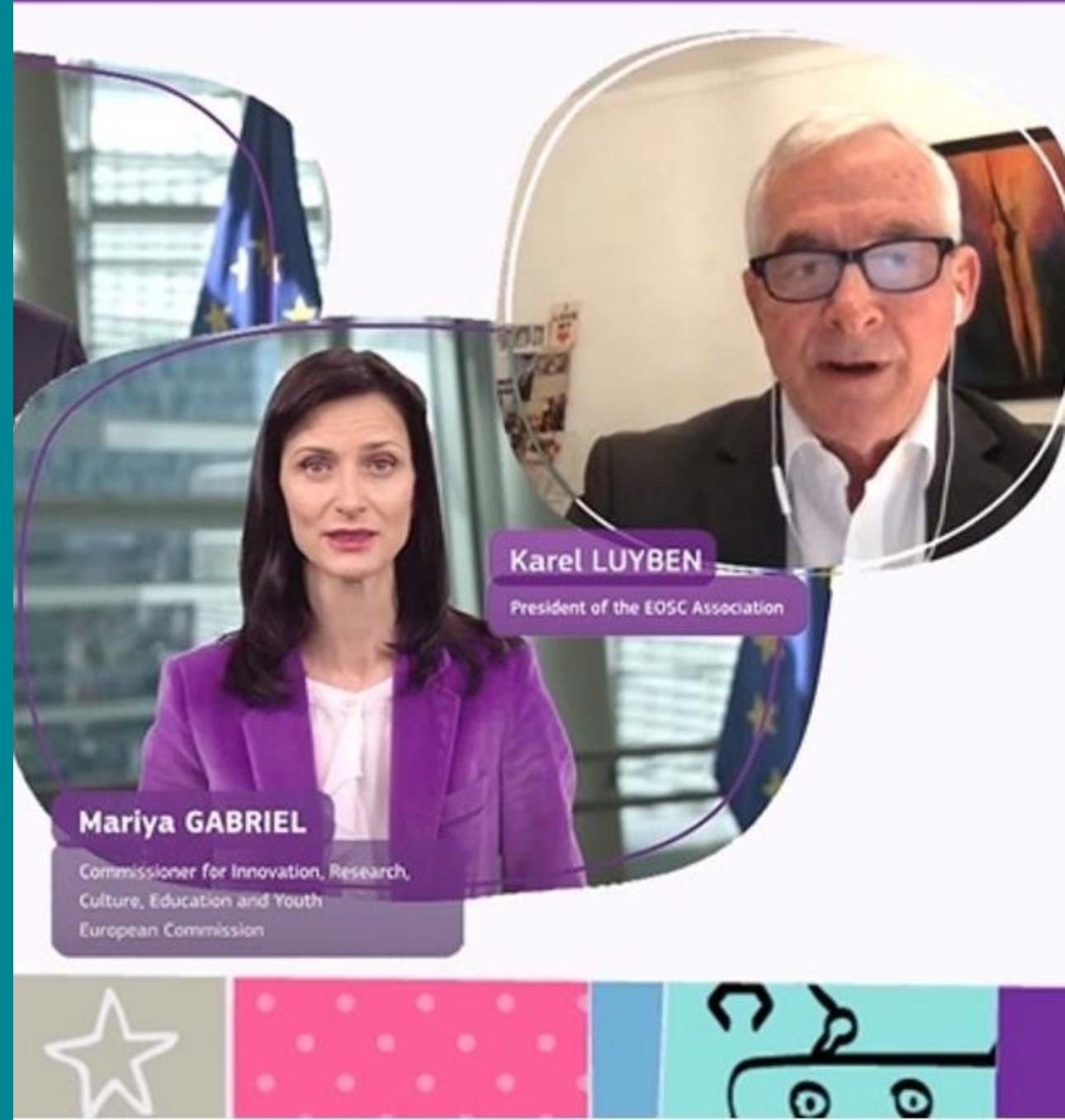
eosc 168 Members and 81 Observers

A strong memberbase

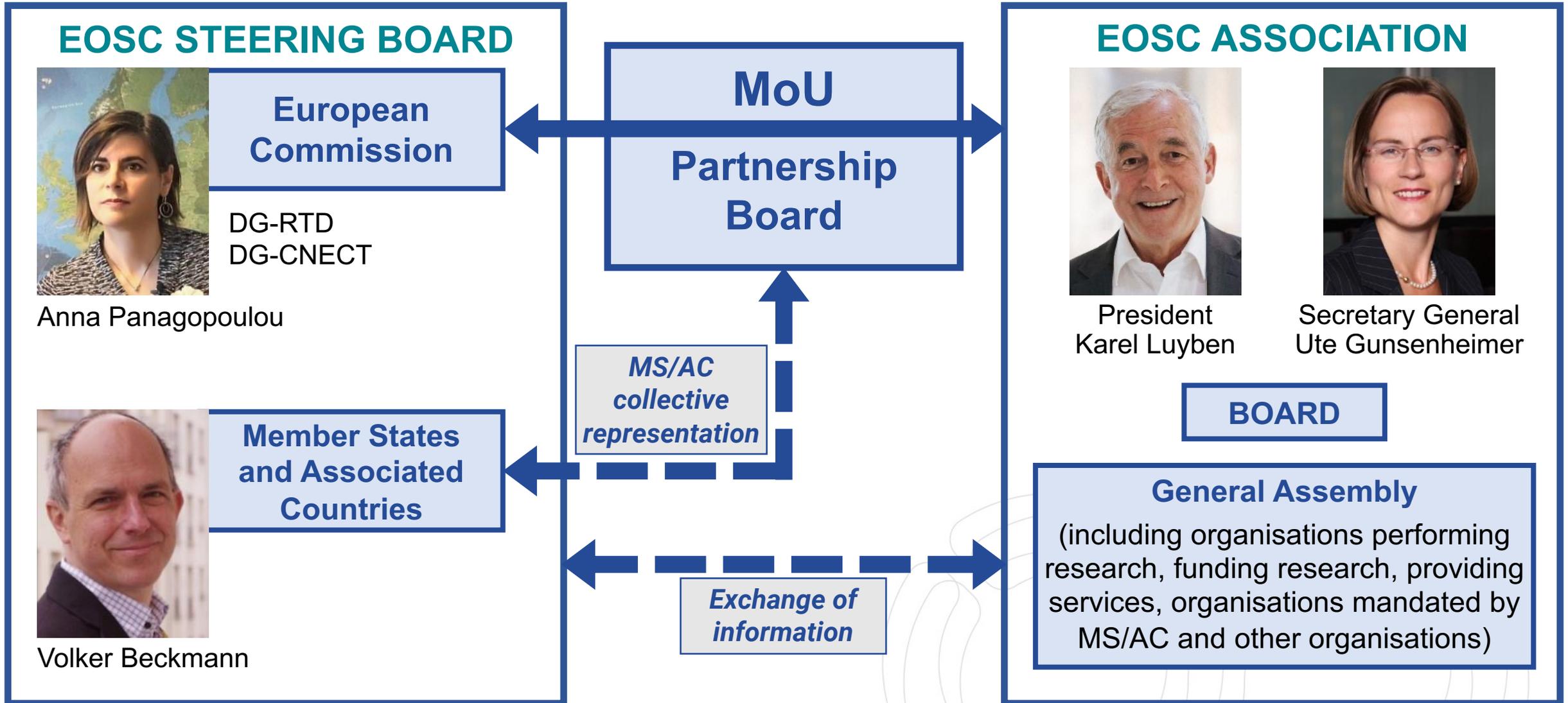


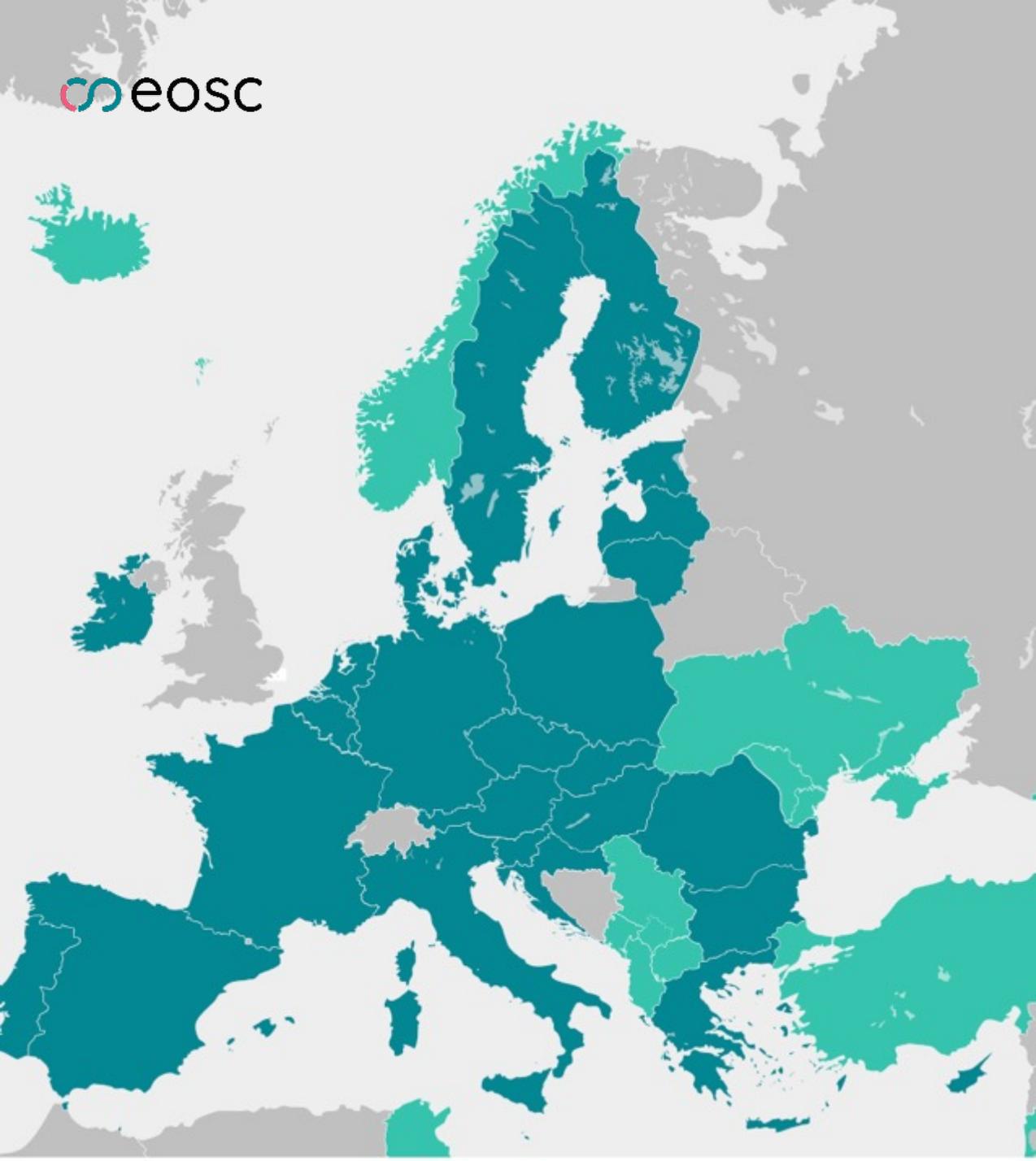
Horizon Europe co-programmed EOSC Partnership

- Launched June 2021
- One billion euros commitment by the European Union and the EOSC Association



European Open Science Cloud Partnership





Tripartite Collaboration

European Commission

EO SC Association

EO SC Steering Board



EOSC as a policy action

- The EOSC initiative is a **policy priority of the European Union** since 2016 driven by DG RTD and DG CNECT.
- “The EOSC is recognised by the Council of the European Union among the 20 actions of the policy agenda 2022-2024 of the European Research Area (ERA) with the specific objective to deepen open science practices in Europe.
- The development of the EOSC is a key enabler for **Action 1**. Supplying the infrastructure sustaining the transition to open science and the digital transformation of research.
- **25 Member States (MS), 3 associated countries (AC) and 9 stakeholders (SH)** have committed to actively participate in implementing **Action 1**.

European Commission website

research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/open-science/european-open-science-cloud-eosc_en

Strategic Research and Innovation Agenda



Open Science practices and skills are rewarded and taught, becoming the 'new normal'

Standards, tools and services allow researchers to find, access, reuse and combine results

Sustainable and federated infrastructures enable open sharing of scientific results

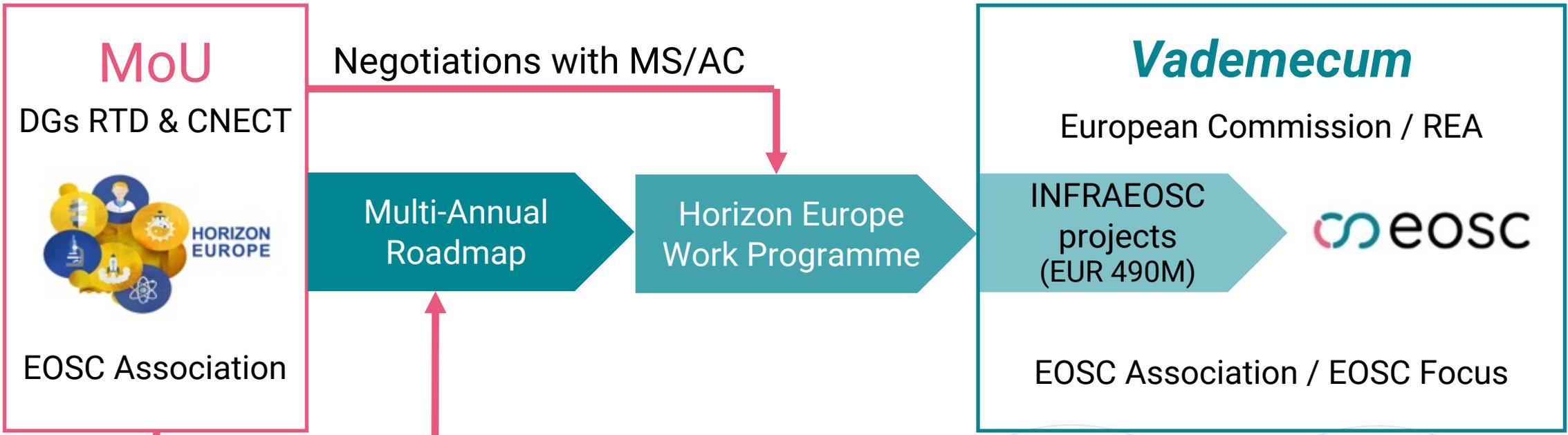
Multi-annual roadmap sets priority activities and outcomes grouped by three implementation levels – European, National, Institutional

Three phases of MAR

- 2021-2022: development towards a functional federation of infrastructure
- **2023-2024: expansion to production that generates added value**
- 2025-2027: expansion to develop impact from Open Science

eosc Delivering EOSC – the Process

The critical role of the INFRAEOSC Projects



Present action: update of MAR 2025 - 2027

eosc *New division of Task Forces over the advisory groups*

Technical challenges on EOSC

Technical interoperability of data and services
Infrastructure for quality research software
AAI Architecture
Long-term data preservation



Metadata and data quality

Semantic interoperability
FAIR metrics and data quality
PID policy and implementation



Research careers and curricula

Data stewardship curricula and career paths
Research careers, recognition and credit
Upskilling countries to engage in EOSC
Researcher engagement and adoption



Sustaining EOSC

Financial sustainability
Rules of Participation compliance monitoring



eosc ESFRI RI Working Group

Evolving Collaboration

- 1. Coordinated contribution to MAR 2025 – 2027 consultation**
- 2. Next step: Discussion on policies regarding participating with nodes**

The ESFRI Research Infrastructures have addressed similar questions in the preparation and deployment of their infrastructures and can bring valuable experience to the cross-discipline and transnational generalisation that the EOSC platform represents.

EOSC-A member RI name	RI Domain
EBRAINS	DIGIT
PRACE	DIGIT
LifeWatch ERIC	ENV
BBMRI ERIC	H&F
EATRIS ERIC	H&F
ELIXIR	H&F
ERINHA	H&F
Euro-BioImaging ERIC	H&F
INSTRUCT ERIC	H&F
ELI ERIC	PHYS
ESRF EBS	PHYS
European Spallation Source ERIC	PHYS
European XFEL	PHYS
FAIR	PHYS
HL-LHC	PHYS
ILL	PHYS
CESSDA ERIC	SCI
CLARIN ERIC	SCI
DARIAH ERIC	SCI
ESS ERIC	SCI
OPERAS	SCI

eosc *What do we concretely aim for?*

- Researchers performing publicly funded research make relevant results available, as openly as possible;
- Professional data stewards are available in research-performing organisations in Europe to support RDM for Open Science;
- Research data produced by publicly funded research in Europe is FAIR (by design);
- The EOSC Interoperability Framework supports a wide range of FAIR digital objects including data, software and other research artefacts;
- EOSC Federation is populated with a valuable corpus of interoperable data;
- EOSC (version x) is operational and provides a stable infrastructure, supporting the research process and helping to address societal challenges;
- The scope of EOSC is widened to serve the public and private sectors;
- EOSC is a valuable and valued resource to a wide range of users from the research and education, public and private sectors (including for-profit).

- After an initial period of many projects without much convergence (2015-2020)
- We are now getting 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).





Demonstrating Added Value by 2025 – EOSC-A

Additional Activities of EOSC-A Members



22-23 May 2023
6th General Assembly

AAP 2021 (Pilot)
EUR 309.005.000
Eligibility of all months unclear

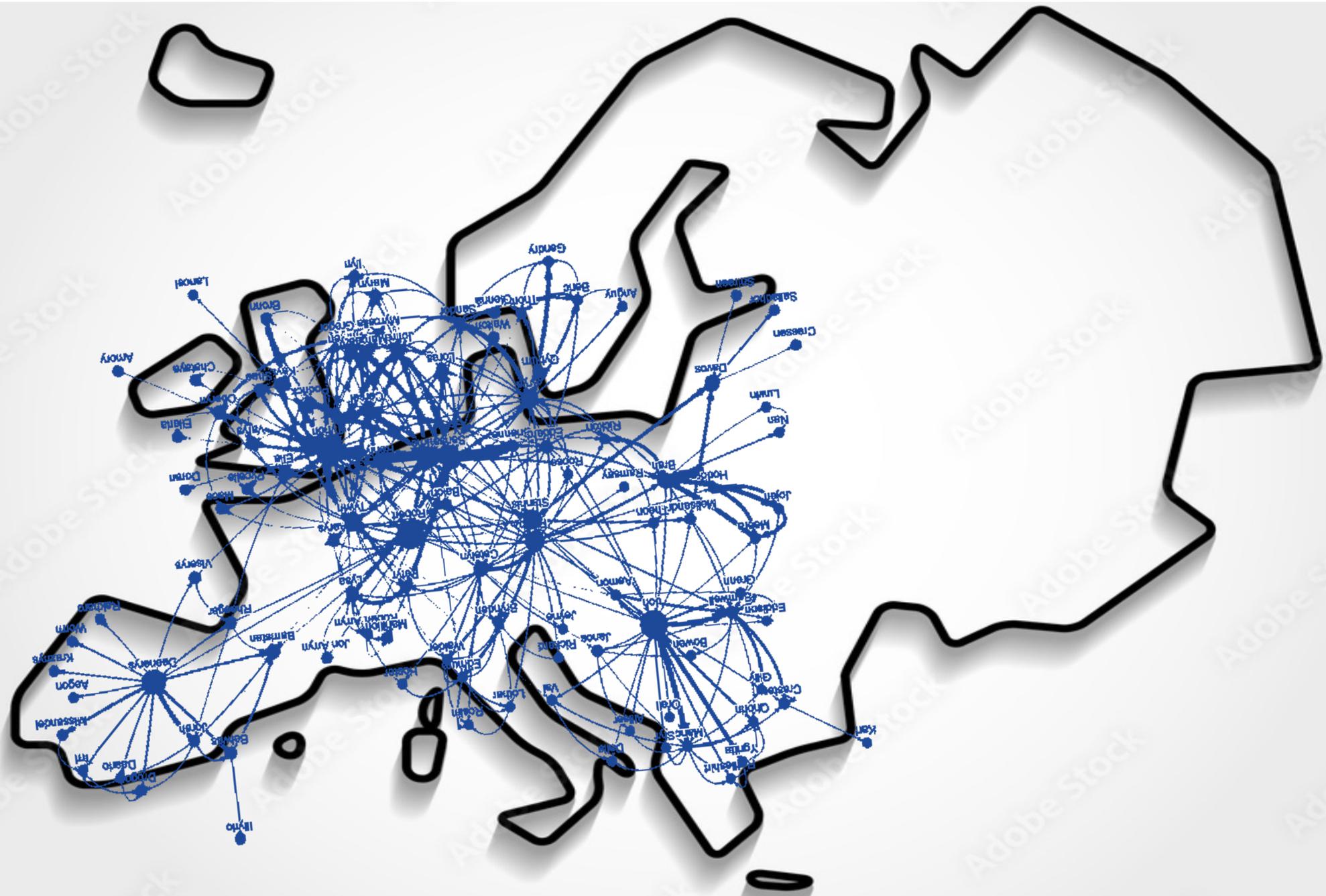
AAP 2022
EUR 312.453.697
1468 FTEs
Demonstrators: EUR 64M

AAP 2023
EUR 383.929.296
2105 FTEs
Demonstrators: EUR 94M

Tasks on the way to create EOSC

Operational and development tasks in discussion with the EC

1. Deploying and operating the EOSC EU node
(Core, Exchange, FAIR Data Federation)
2. Maintaining and updating the EOSC EU node and expanding the EOSC federation
(with elements that are close to the 'market')
3. Enabling a 'web of FAIR data and services' for science
4. Develop, prototype and test new elements supporting the evolution of the EOSC Core and Exchange and the tools enabling the federation
(focus on elements that can be made ready for the 'market')
5. Enabling Open Science policies and the uptake of Open Science practices





Tasks for EOOSC Association to see to:

- ***Outreach to stakeholders***
- ***Manage the 'EOOSC' trademark(s)***
- ***Monitor additional activities and KPI***
- ***Contribute to Horizon Europe ERA Actions***
- ***Further develop and govern the EOOSC-EU-node***
- ***Manage the AAI***
- ***Manage PID policies***
- ***Manage an Interoperability Framework***
- ***Manage the compliance framework***

Mission and expected outcome: Create the European part of the Web of FAIR Research Data and Services for these data; this will more than proportionally contribute to the impact of research being done in Europe.

Main stakeholders involved: Research Performing Organisations (incl. RIs); Research Funding Organisations; Organisations providing services to the research process.

Organisation of the community: European EOSC Co-Programmed Partnership with a Tripartite Governance structure (European Commission, EOSC-Association and EOSC-SB); implementation at European, National and Institutional level.

Engagement opportunities: Those eligible for EU funding can apply for EOSC related projects in Horizon Europe; Legal entities in the MS/AC can become a member of the EOSC-A and e.g. by participating in Task Forces contribute to the SRIA / MAR.

State of the art developments: Next to creating the EOSC-EU-Node and the execution of more than 20 European EOSC-related projects, the tripartite is developing the structure for after 2027.



EOSC Association AISBL

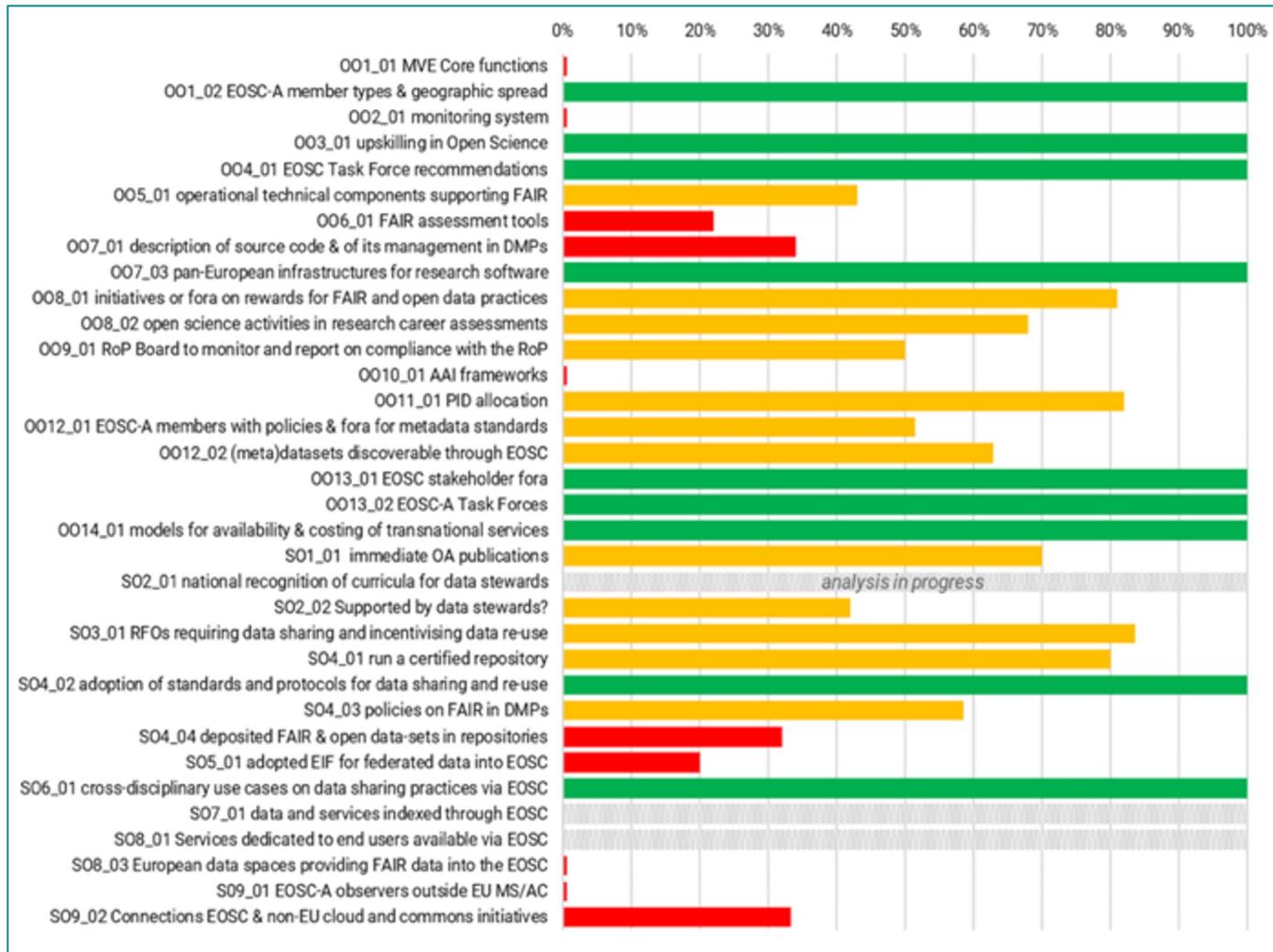
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THANKS



EOSC Partnership KPIs

Monitoring Framework KPI Baseline



Access Policies for EOSC Platform

Activity	Description
Acceptable Use Policies of Services	Assessment of range of relevant AUPs and identification of common denominator
Rules of Participation	RoP of other services (such as store, connect, compute) with what is currently being procured by the EC
Access to procured horizontal services	On request baseline approach for every public / academic user

