"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**
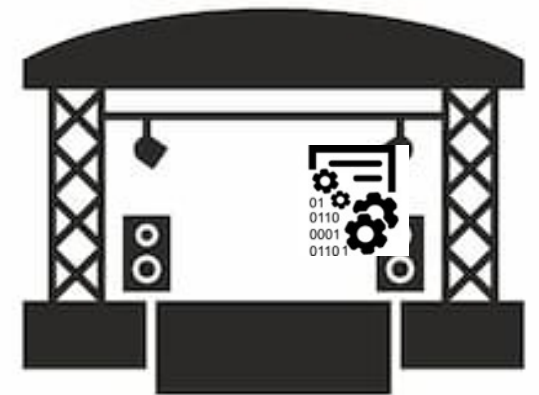
EOSC – additionality to the web of FAIR data

EUROPEAN OPEN SCIENCE CLOUD

WORLD WIDE WEB

INTERNET

NETWORKS

COMPUTERS

Modelled after: World Wide Web - Wikipedia

EOSC is to be an infrastructure and could be seen as a twin sister (or brother) of the European e-infrastructure organisations.

The last offering the store, compute and connect services used by EOSC to offer the servicing of data and creating interoperability.

The combination forms the EOSC-ecosystem (yin / yang).

e-infra-structures

Ten things EOSC is not …

… a cloud infrastructure

… synonymous to Open Science

… the EOSC Portal

… the EOSC Association

… a new research data repository or data management system

… owning the data it will help to provide access to

… a new pan-European e-infrastructure

… substitution of any existing data- or (e-)infrastructures

… directly for individual researchers, but it is for research

… in competition with anything or anybody

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-infrastructures;
- **Machine-actionable**
  EOSC will ensure that machines can find, access and interoperate on data helping people in servicing the needs of European scientists.

Important requirements for EOSC to deliver

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

What do we concretely aim for?

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

Where do we stand?

- After an initial period of many projects without much convergence (2015-2020) we have to see that we get 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).

Position of EOSC according to the European Commission

Taken from EC slides

Health · Industrial & Manufacturing · Agriculture · Finance · Mobility · Green Deal · Energy · Public Administration · Skills

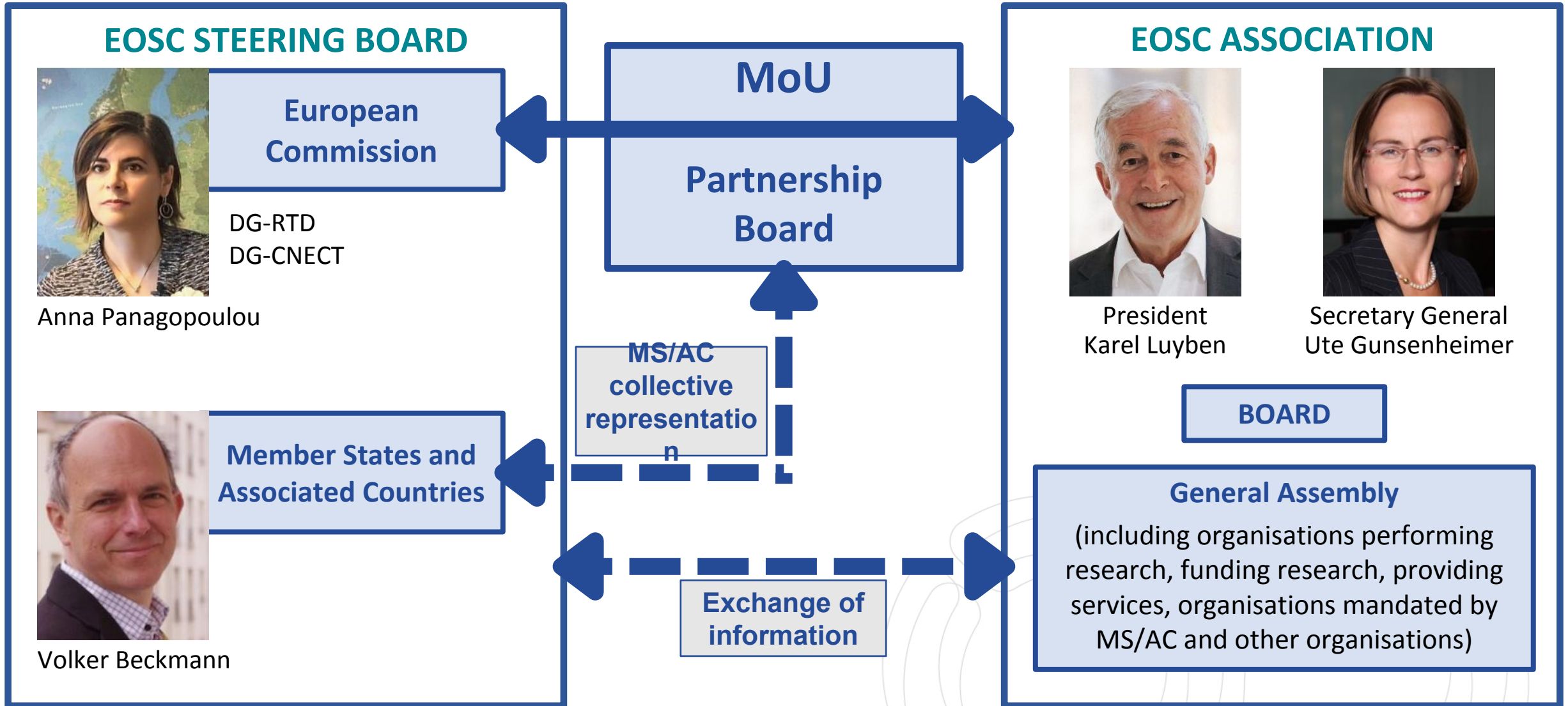**EOSC: a crosscutting data space for Research and Innovation**

"**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)

Horizon Europe co-programmed EOSC Partnership
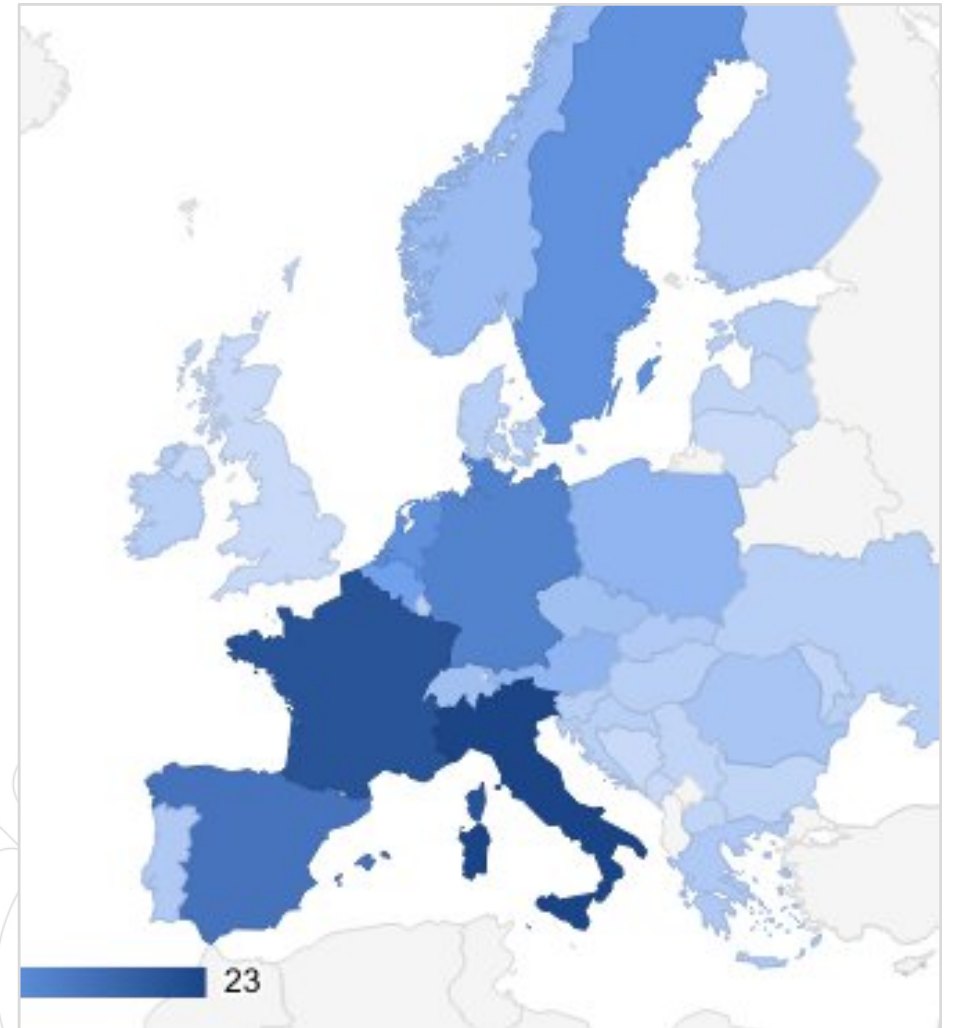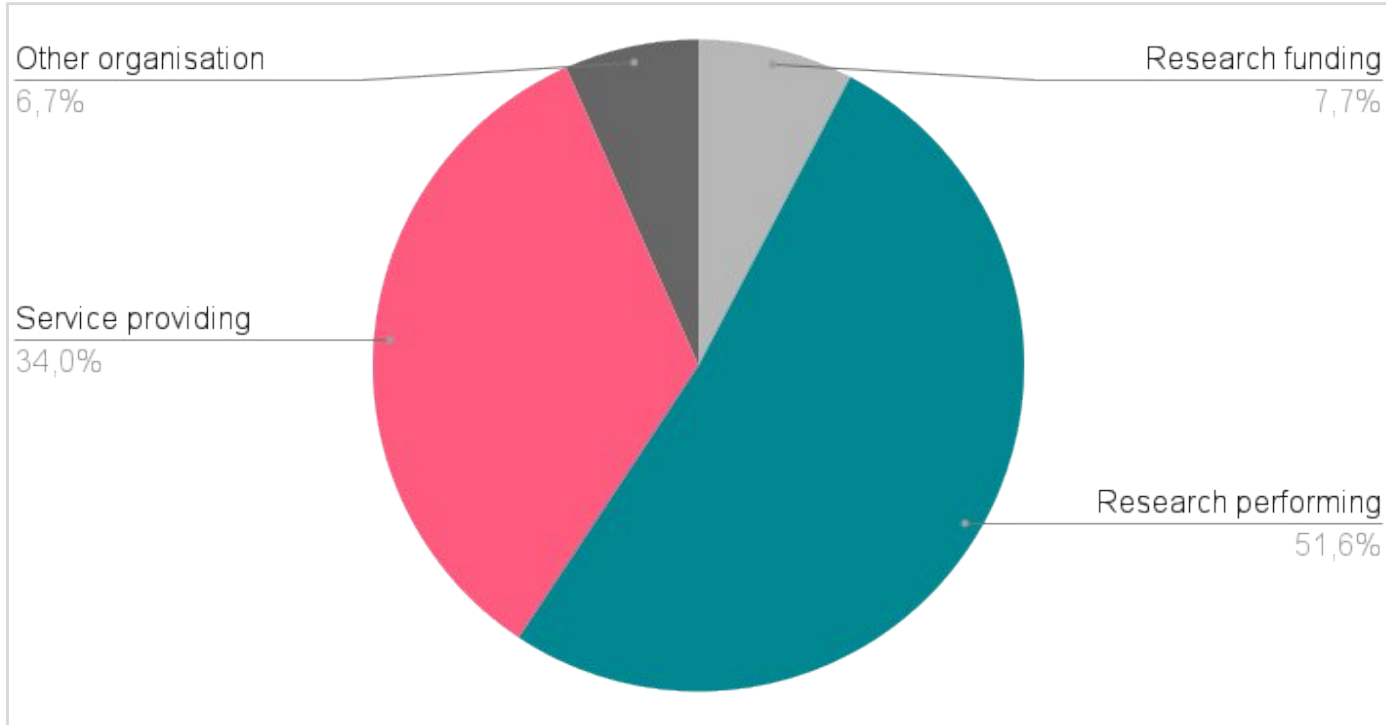
- Launched June 2021

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

171 Members and 85 Observers

A strong memberbase

ESFRI RI Working Group

Evolving Collaboration

1. Coordinated contribution to MAR 2025 – 2027 consultation
2. Ongoing discussion 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

Steering Coordination to Leverage the Ecosystem
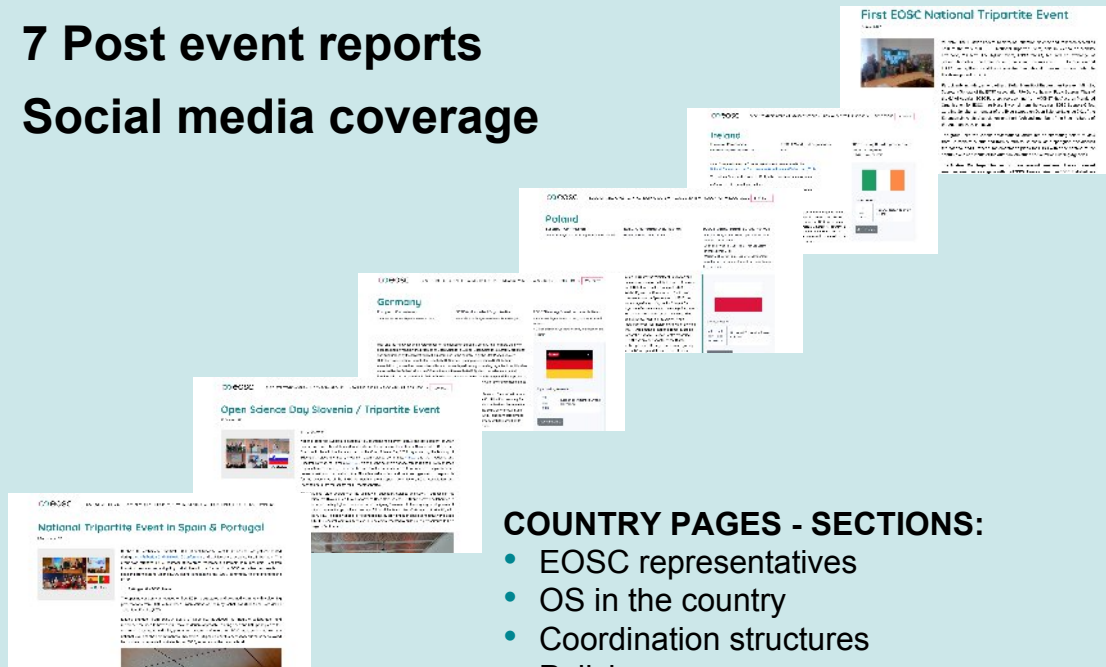
Stakeholder Engagement

National Tripartite Events

- **24 countries targeted in NTE**
- **2101 participants in National and NTE**
- **+ 35 preparatory meetings**
- **31 country pages**
- **15 Articles**
- **7 Post event reports**
- **Social media coverage**

COUNTRY PAGES - SECTIONS:
- EOSC representatives
- OS in the country
- Coordination structures
- Policies
- Practices & Use Cases

2022

1293 Participants

177 Speakers & moderators

16 Countries targeted

March – June 5th 2023

808 Participants

8 Countries targeted

TRIPARTITE EVENTS (June - September 2023)

SRIA and MAR

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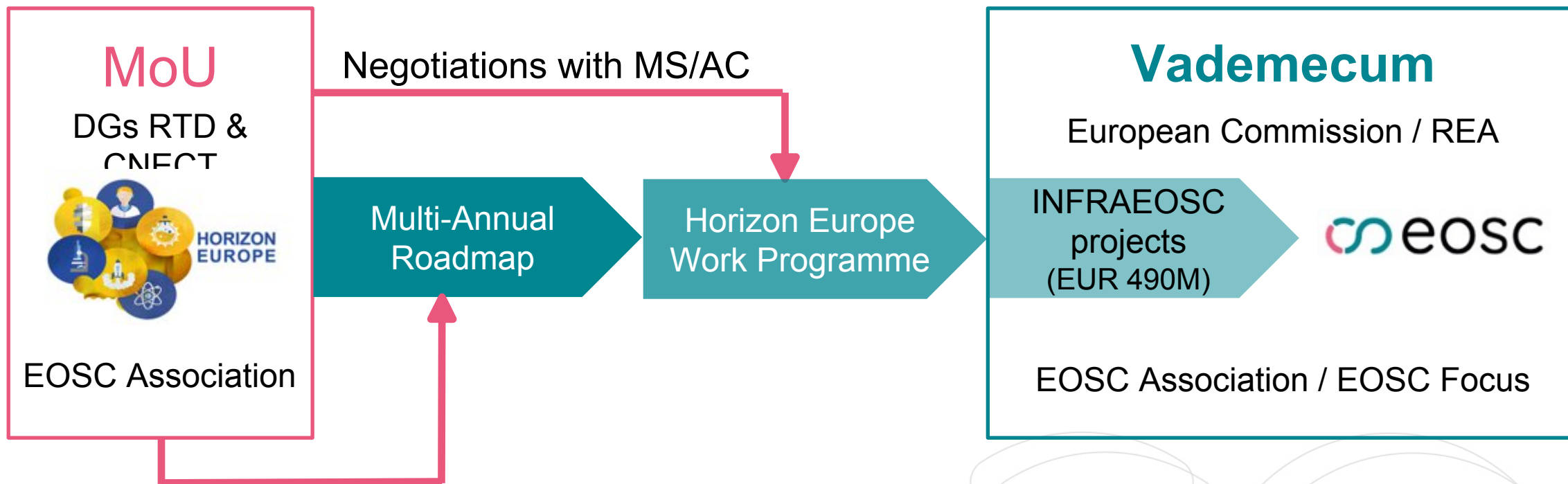
Multi-annual roadmap sets priority activities and outcomes grouped by three implementation levels – European, National, Institutional

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**

Delivering EOSC – the Process

The critical role of the INFRAEOSC Projects

MoU

DGs RTD & CNECT

HORIZON EUROPE

EOSC Association

Negotiations with MS/AC

Multi-Annual Roadmap

Horizon Europe Work Programme

Community Consultation

Vademecum

European Commission / REA

INFRAEOSC projects (EUR 490M)

eosc

EOSC Association / EOSC Focus

Present action: MAR 2025 - 2027

Tasks for EOSC Association to see to:

- Outreach to stakeholders
- Manage the 'EOSC' trademark(s)
- Monitor additional activities and KPI
- Contribute to Horizon Europe ERA Actions

- Further develop and govern the EOSC EU node
- Manage the AAI
- Manage PID policies
- Manage an Interoperabilty Framework
- Manage the compliance framework

EOSC 'helicopter view'
Slide from M. Schouppe (EC)

Task 1: Deploying and operating the EOSC EU node
(Core, Exchange, FAIR Data Federation)

Task 2: Maintaining and updating the EOSC EU node and
expanding the EOSC federation
(with elements that are close to the 'market')

Task 3: Enabling a 'web of FAIR data and services' for
science

Task 4: Develop, prototype and test new elements
supporting the evolution of the EOSC Core and
Exchange and the tools enabling the federation
(elements that can be made ready for the 'market')

Task 5: Enabling Open Science policies and the uptake of
Open Science practices

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

EOSC on a global stage

- **EOSC Association works with other regional initiatives towards common goals for Open Science, driving global convergence on standards in support of the implementation of an open science commons**
- **EOSC Association has involvement in GORC, GOSC and OSCER**
- **Service providers from third countries will be able to participate in EOSC, if they adhere to the EOSC Rules of Participation and applicable legislation**
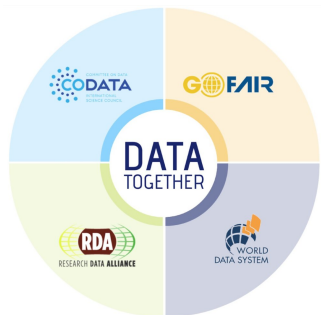
EOSC vision in a nutshell

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

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

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

Getting ahead of the curve and advancing to the next level, means:

- Take advantage of ongoing EU and national policy making
- Understand the evolving objectives of the funders of this transition
- Realise that FAIR is the most important requirement;
- Educate staff and 'train the trainer';
- Create 'Data/Digital Competence Centres';
- Connect to other relevant initiatives at domain-specific levels as well as on the national level
- Join this powerful movement to make Open Science the new normal