

EOSC (European Open Science Cloud)

Karel Luyben

President of the EOSC Association

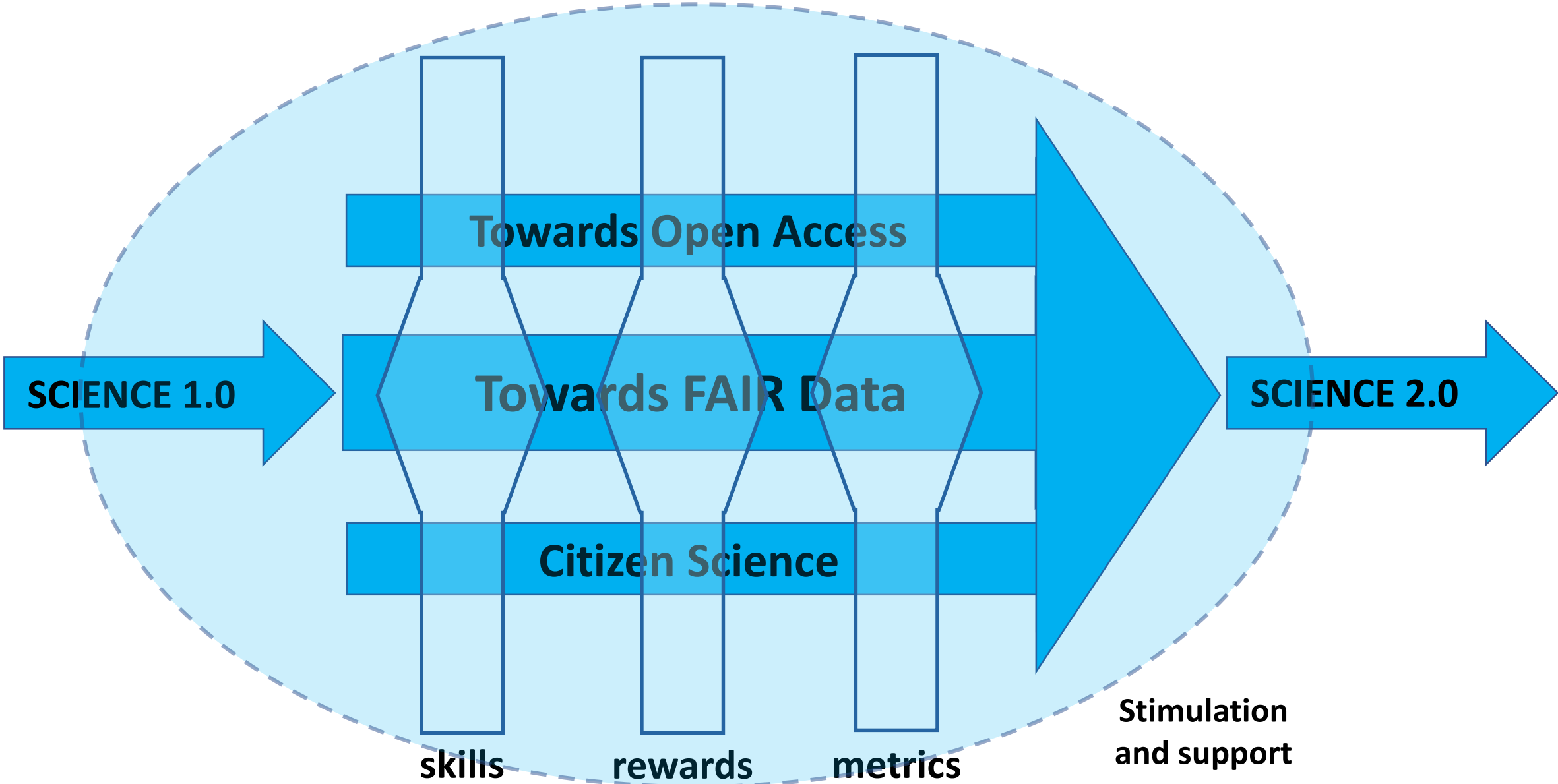
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SUHF EOSC Workshop, Sweden (online)



**EUROPEAN OPEN
SCIENCE CLOUD**

OPEN SCIENCE



SCIENCE 1.0

Towards Open Access

Towards FAIR Data

Citizen Science

SCIENCE 2.0

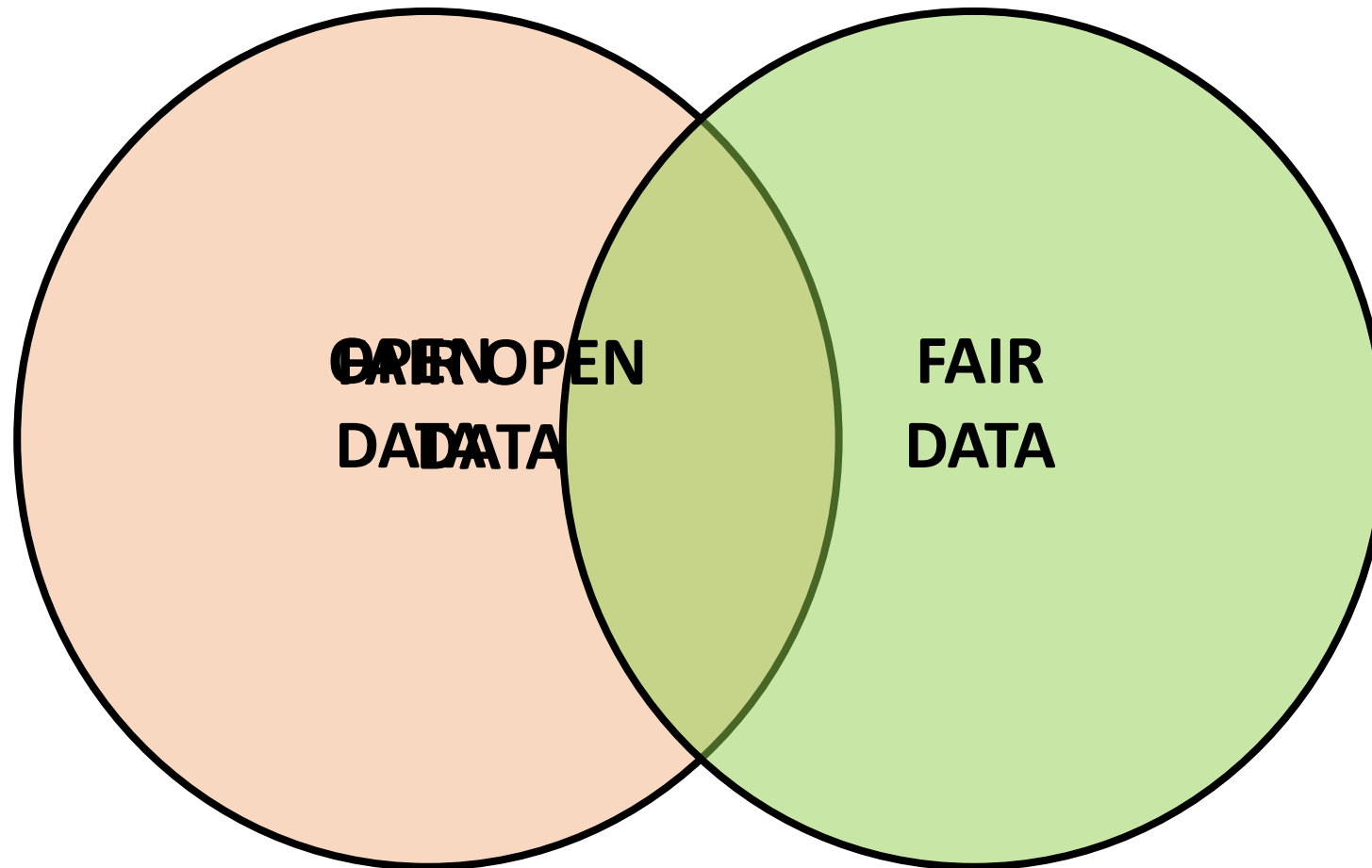
skills

rewards

metrics

**Stimulation
and support**

OPEN DATA and/or FAIR DATA

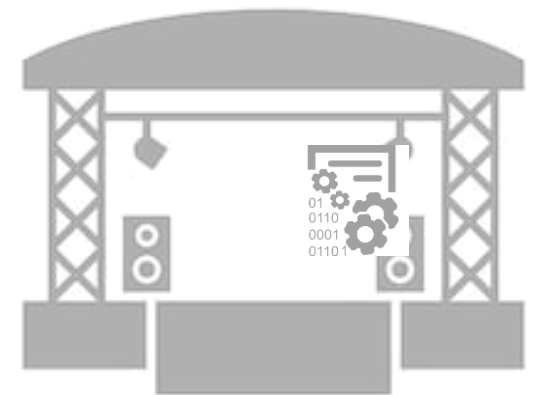


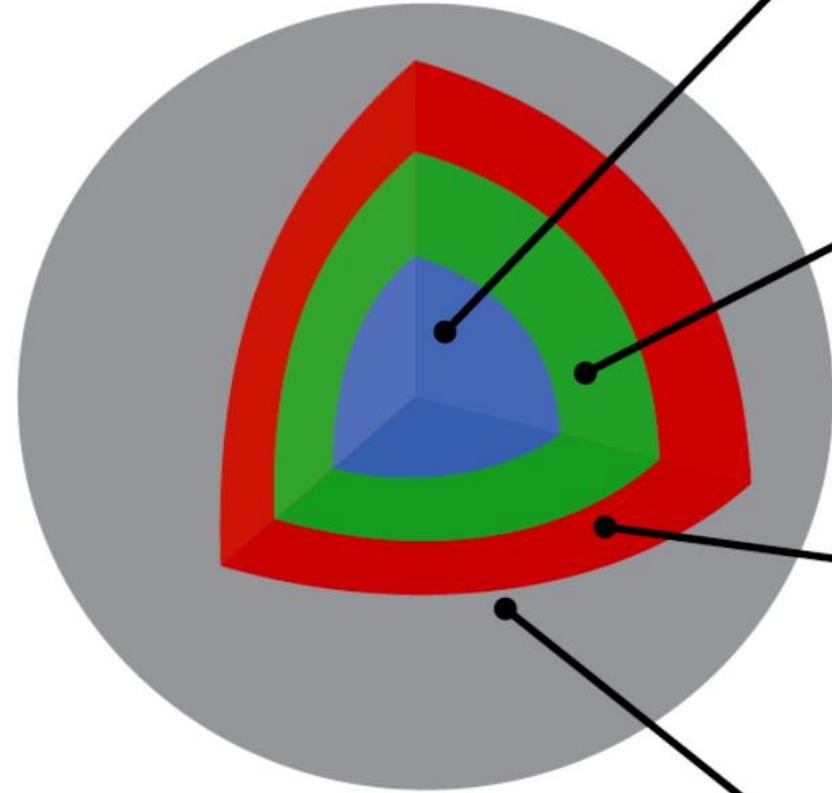
FAIR ≡
Findable
Accessible
Interoperable
Reusable

Towards “as FAIR as possible” and “as open as possible”

“A web of scientific insight”

- ❖ Web of FAIR data and related services
- ❖ Federation of relevant existing and future services
- ❖ Virtual space where science producers and consumers come together
- ❖ An open-ended range of content and services
- ❖ Quality mark « Data made in Europe »





DIGITAL OBJECT

Data, code and other research outputs

At its most basic level, data or code is a bitstream or binary sequence. For this to have meaning and to be FAIR, it needs to be represented in standard formats and be accompanied by Persistent Identifiers (PIDs), metadata and documentation. These layers of meaning enrich the object and enable reuse.

IDENTIFIERS

Persistent and unique (PIDs)

Digital Objects should be assigned a unique and persistent identifier such as a DOI or URN. This enables stable links to the object and supports citation and reuse to be tracked. Identifiers should also be applied to other related concepts such as the data authors (ORCIDs), projects (RAIDs), funders and associated research resources (RRIDs).

STANDARDS & CODE

Open, documented formats

Digital Objects should be represented in common and ideally open file formats. This enables others to reuse them as the format is in widespread use and software is available to read the files. Open and well-documented formats are easier to preserve. Data also need to be accompanied by the code use to process and analyse the data.

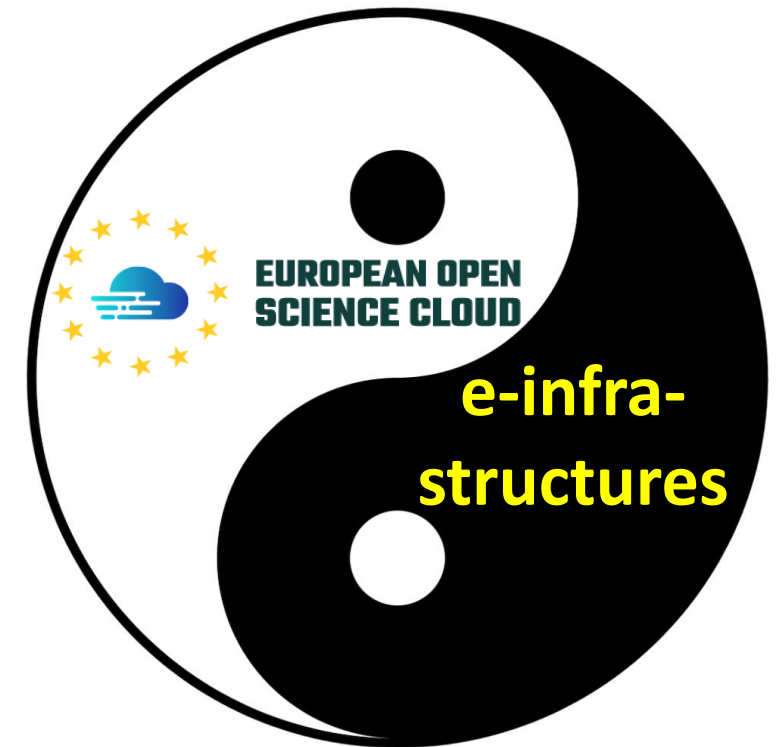
METADATA

Contextual documentation

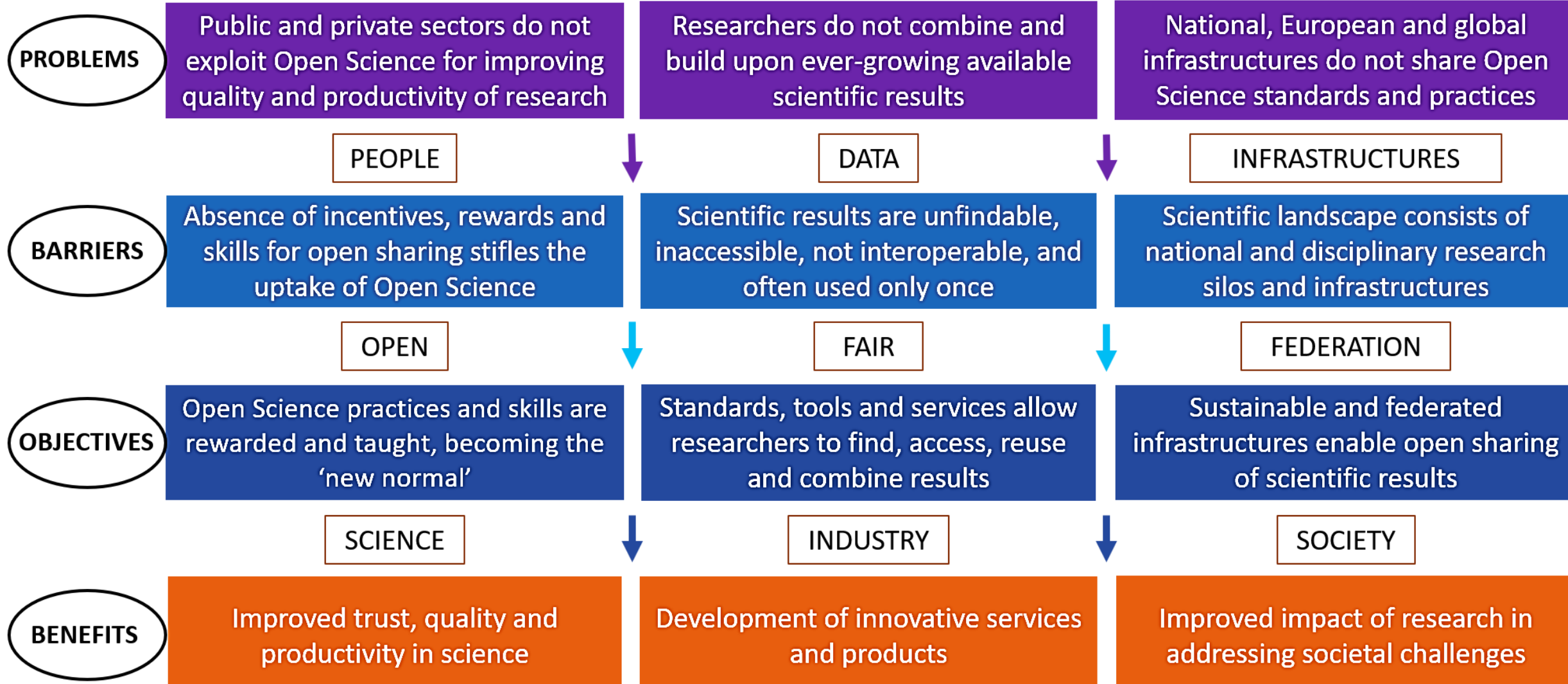
In order for Digital Objects to be assessable and reusable, they should be accompanied by sufficient metadata and documentation. Basic metadata will enable data discovery, but much richer information and provenance is required to understand how, why, when and by whom the objects were created. To enable the broadest reuse, they should be accompanied by a plurality of relevant attributes and a clear and accessible usage license.

Twinning the data- to the e-infrastructure

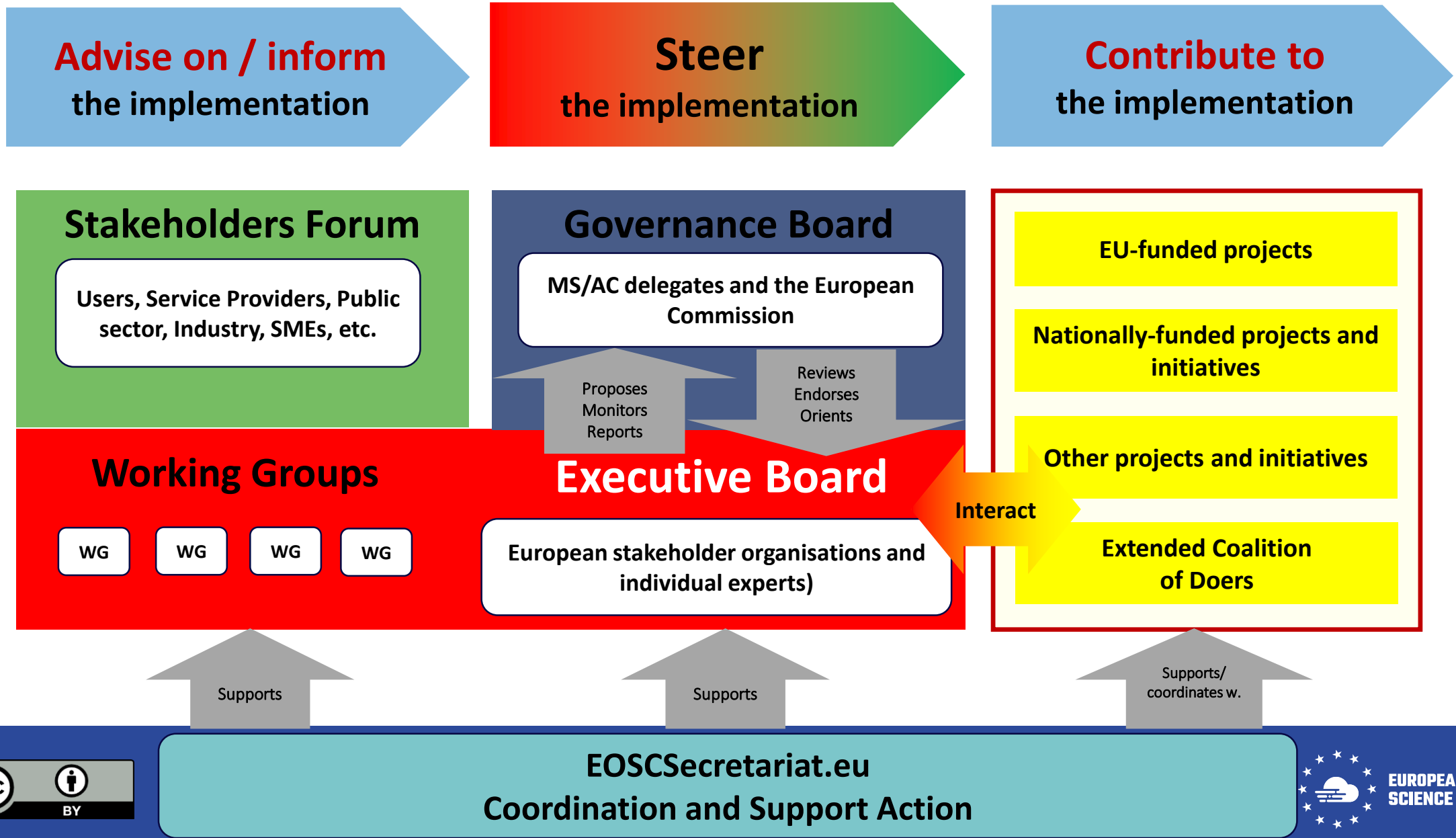
EOSC is a data-infrastructure and could be seen as a twin sister (or brother) of the European e-infrastructure organisations. The last offering the store, compute and connect services used by EOSC to offer the of servicing data and creating interoperability.



EOSC-ecosystem objectives tree



Governance of EOSC 2019-2020



EOSC Association

- Four founding members (CESAER, GEANT, GARR, CSIC)
- Was incorporated as AISBL on Wednesday 29th July 2020
- Obtained Royal Decree on Friday 11th September 2020
- First General Assembly on 17-12-2020 elected President and Board
- Research Performing; Research Funding and Service Providing organisations
- Now 142 members and 49 observers (62% - 8% - 30%)
- A European Co-programmed Partnership, between the EC and the EOSC Association, is set to begin from early 2021
- Joining the EOSC Association = Joining the EOSC Partnership!



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 closed 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 strike the right balance between machines and people in delivering the services that will serve the needs of European scientists.

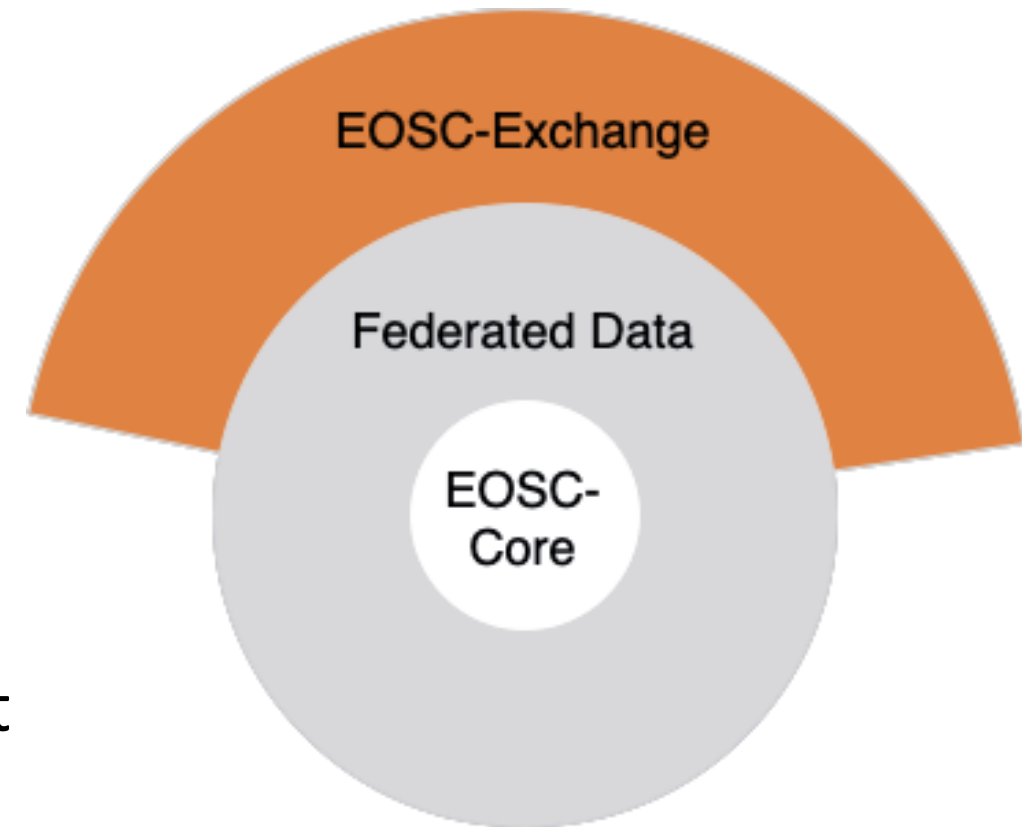
Boundary Conditions for EOSC



- **Core funding for EOSC from EU**
- **Inclusiveness of all stakeholders**
- **Core follows subsidiarity principle**
- **Providers with a shared purpose**
- **Countries have different structures**
- **Self-inclusivity as much as possible**
- **Hardware agnostic infrastructure**
- **Focus on FAIR data and related services**

First iteration-minimum viable EOSC (MVE)

- ❖ The MVE includes EOSC-Core and EOSC-Exchange which work with federated FAIR datasets
- ❖ MVE must enable the federation of existing and planned research **data** infrastructures
- ❖ Maybe federate the disciplinary cluster and regional projects as a critical first step
- ❖ Begin with simple use cases – open data not sensitive or closed



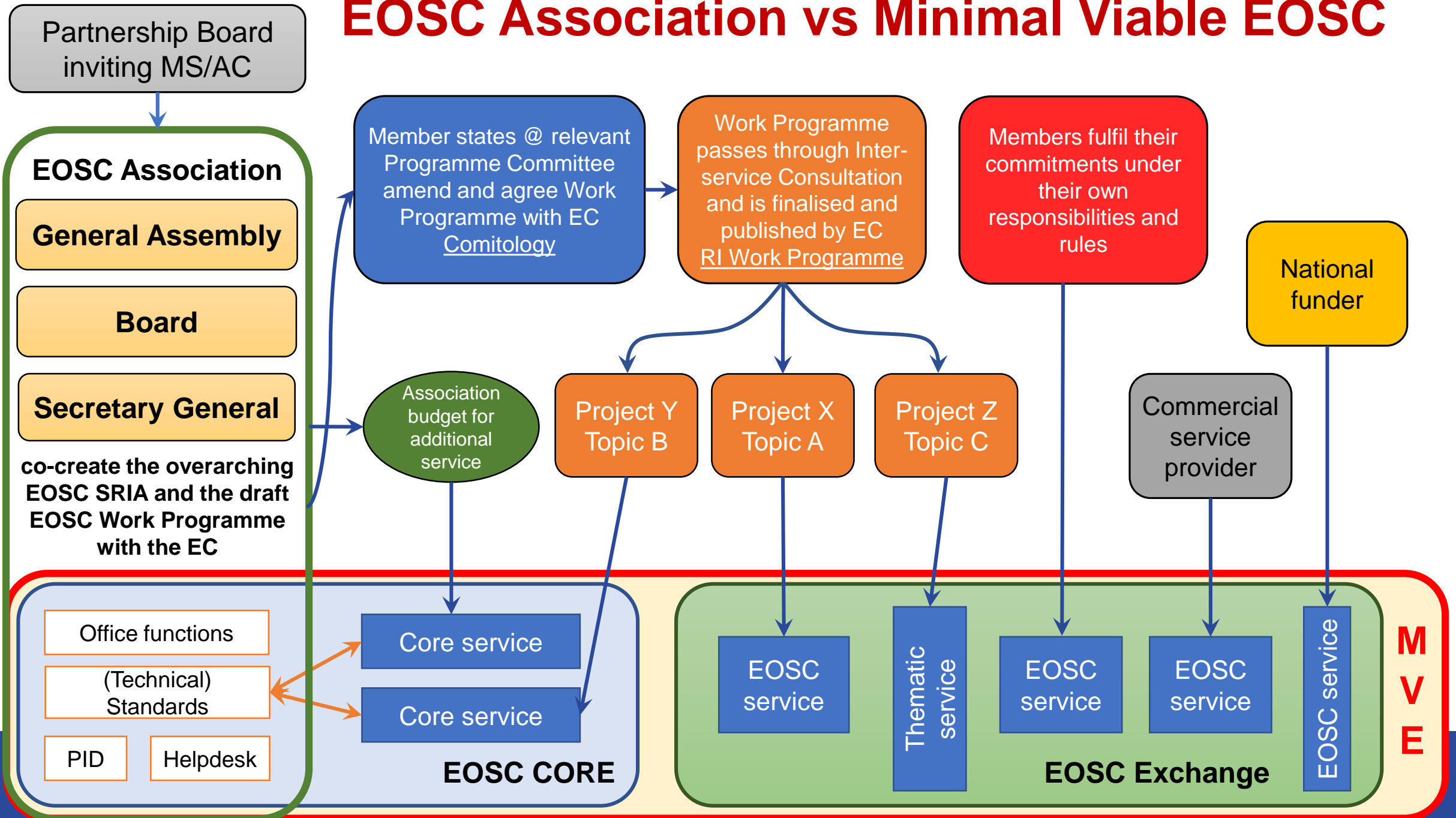
Content of the draft MoU (I)

- ❑ The MoU is established between the Partners
 - ✓ The EU represented by the Commission
 - ✓ The EOSC Association (“Partners other than the Union”), including its constituent entities (members)
- ❑ The MoU is a contractual arrangement, not legally binding
- ❑ Scope & objectives
 - ✓ Expected financial and in-kind commitments by the partners
 - ✓ KPI’s
- ❑ Governance: Partnership Board
 - ✓ Composition: Representatives appointed by the Partners other than the Union, Commission officials and Representatives of the Steering Board*
 - ✓ Rules of Procedure of the Partnership Board to be drafted based on a proposal by the Commission
- ❑ Duration: from signature date until 31.12.2030

Content of the draft MoU (II)

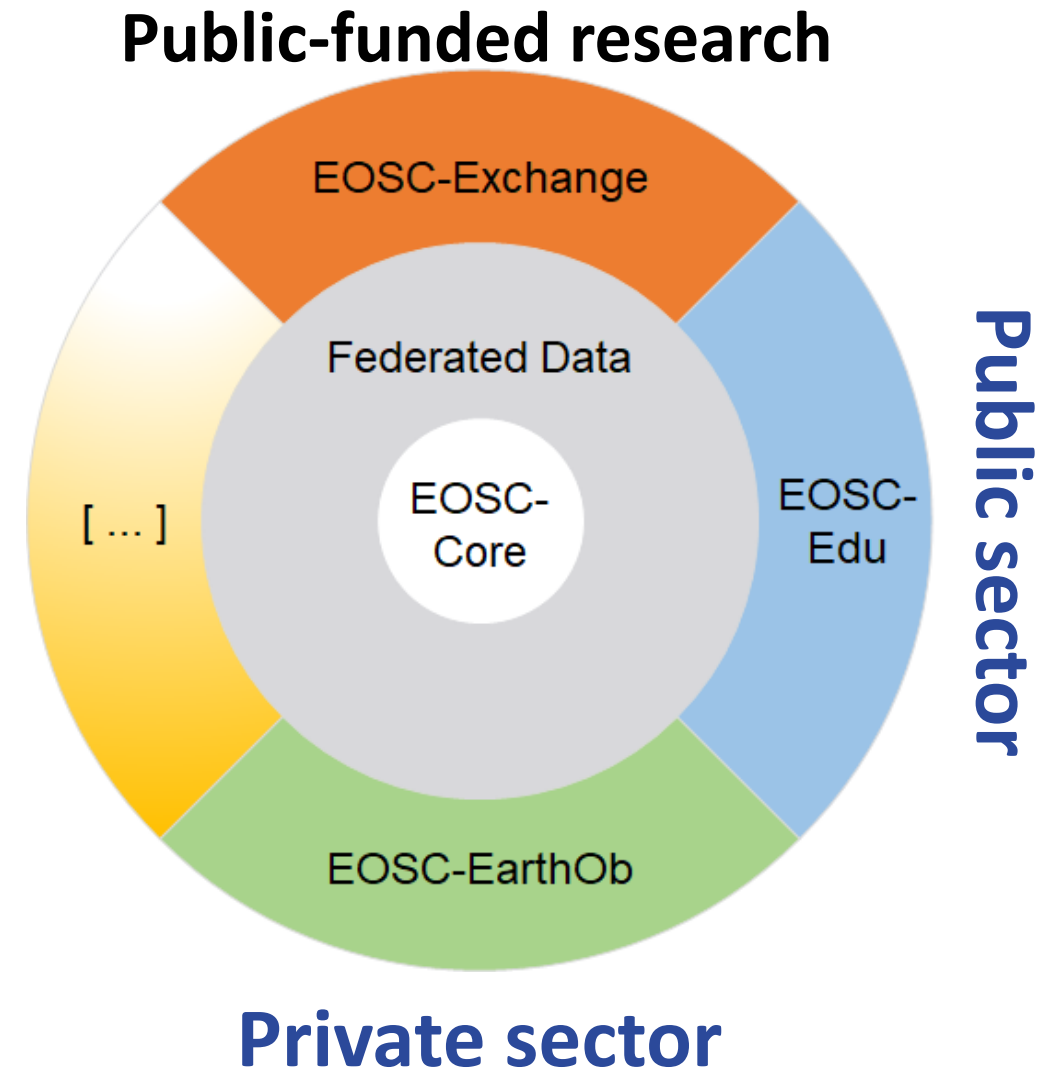
- ❑ Activities and commitments of the Commission
 - ✓ Take into account the input and advice from the Partners other than the Union when identifying & defining call topics for R&I activities to be included in the Work Programmes
 - ✓ Contribute through the Work Programmes
- ❑ Activities and commitments of the Partners other than the Union
 - ✓ Provide input and advice to the Commission
 - ✓ In-kind contributions in Horizon Europe actions
 - ✓ In-kind contributions in additional activities
 - ✓ Investments in operational activities
- ❑ Openness and Transparency, Dissemination, Coordination
- ❑ Monitoring and reporting
 - ✓ The partners will set up and implement an effective reporting and monitoring system, using
 - ✓ A list of Key Performance Indicators

EOSC Association vs Minimal Viable EOSC



Proposed second and third iterations

- ★ Extensions to serve public sector and industry
- ★ These are not completely new users as some public sector and industrial partners will already be involved in MVE
- ★ Would ideally be one 'marketplace' but differing requirements and legislation may require linked but alternately governed spaces





Let's co-create EOSC

THANK YOU



**EUROPEAN OPEN
SCIENCE CLOUD**

The Vision

Building the EOSC ecosystem collaboratively with all stakeholders through the EOSC Partnership

