# EOSC as part of the European Union's strategy for Open Science

HU EOSC tripartite event

23 March 2023

Pantelis Tziveloglou
Open Science Unit
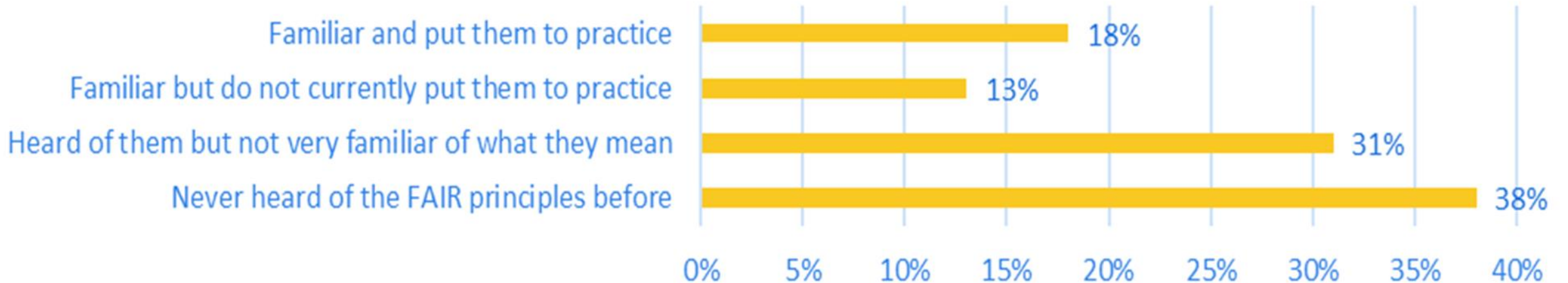*DG Research & Innovation*
European Commission

Research data depositing

- **60%** stored data in **personal** physical data storage or institutional **local** data storage.

- **40%** of researchers occasionally stored data in **research data repositories**.
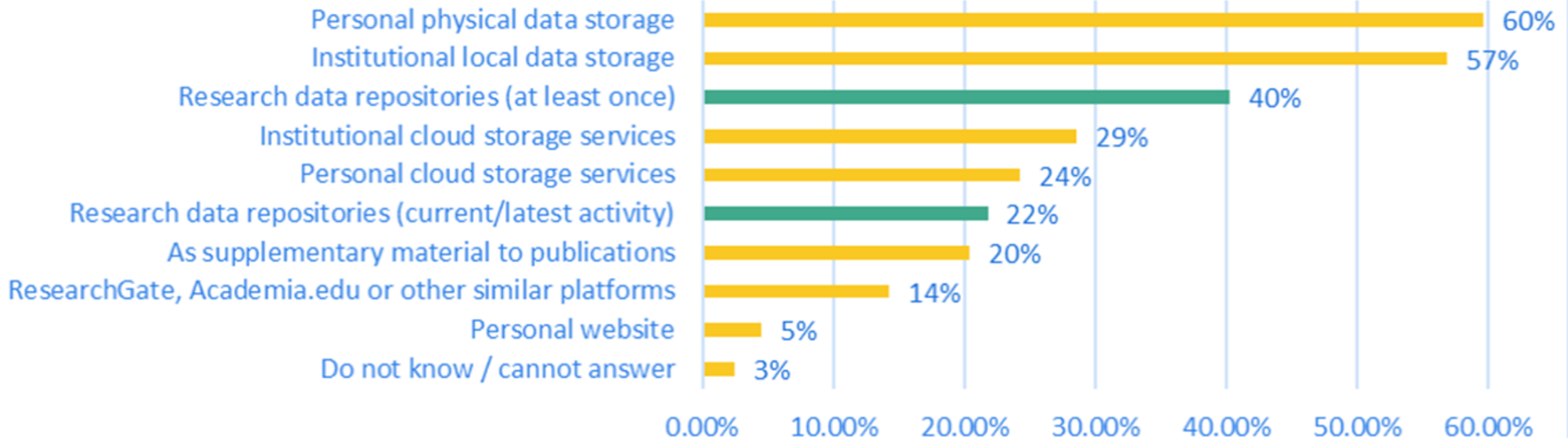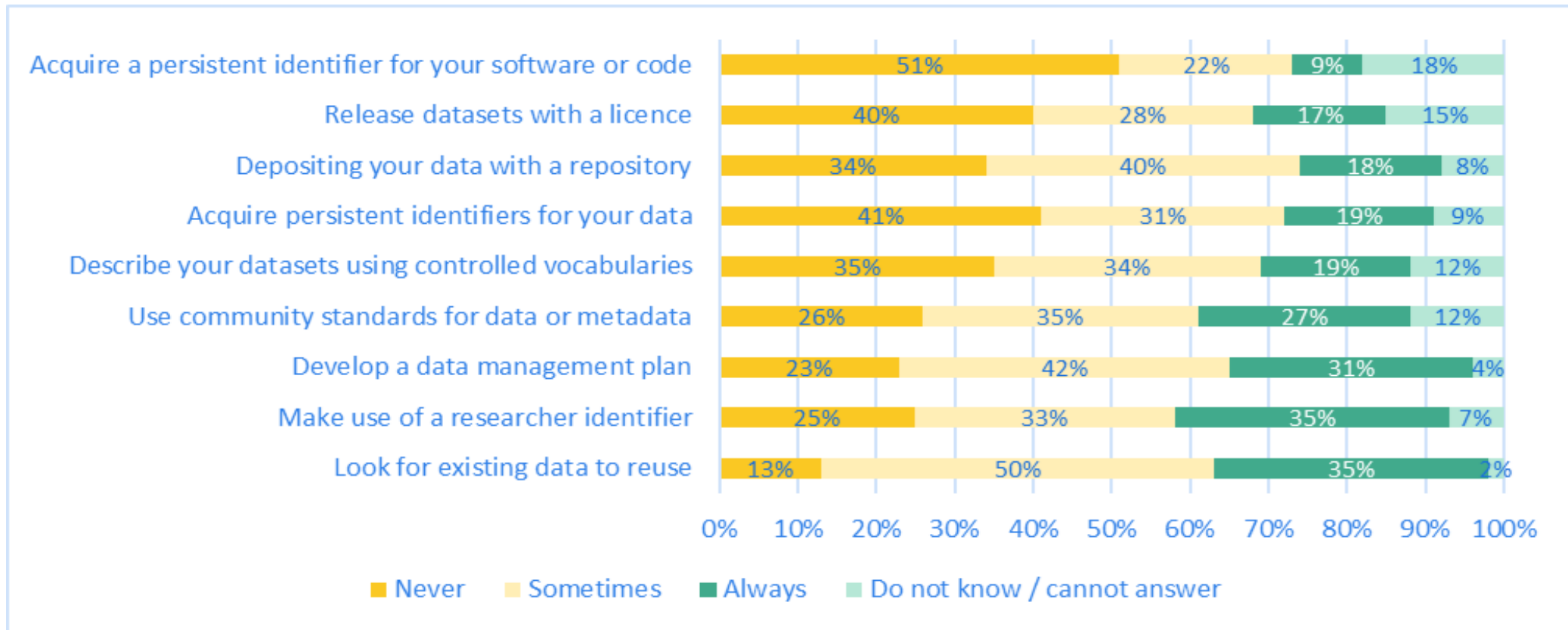
Awareness of FAIR

- More than **1/3** of the respondents have **never heard** of the FAIR principles.

Source: European Research data landscape study 2022 commissioned by the European Commission
Elaboration by the study performers based on unweighted researchers' survey data. Total N=11,849
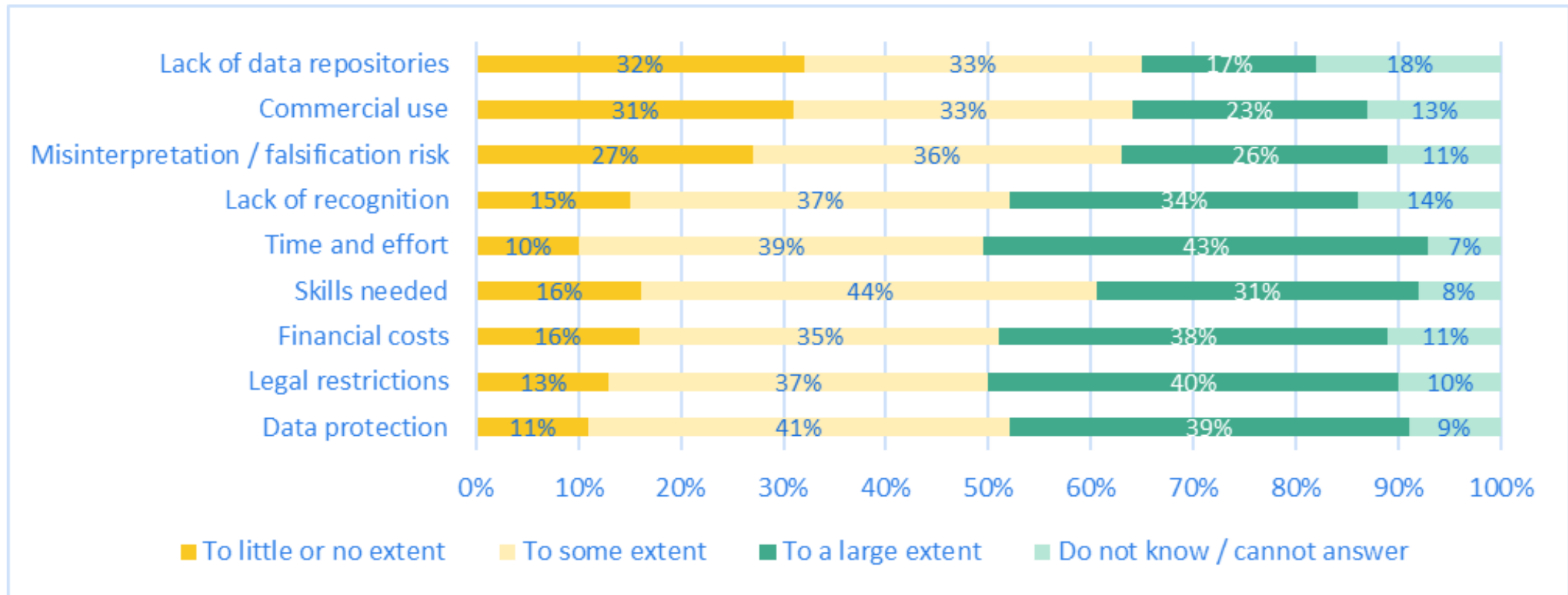
FAIR aligned practices

- Around **3/4s** develop **DMPs** but other FAIR-aligned practices are less common.

- Allocating PIDs to data or software/code are the least common practices.

Practice	Never	Sometimes	Always	Do not know / cannot answer
Acquire a persistent identifier for your software or code	51%	22%	9%	18%
Release datasets with a licence	40%	28%	17%	15%
Depositing your data with a repository	34%	40%	18%	8%
Acquire persistent identifiers for your data	41%	31%	19%	9%
Describe your datasets using controlled vocabularies	35%	34%	19%	12%
Use community standards for data or metadata	26%	35%	27%	12%
Develop a data management plan	23%	42%	31%	4%
Make use of a researcher identifier	25%	33%	35%	7%
Look for existing data to reuse	13%	50%	35%	2%

Source: European Research data landscape study 2022 commissioned by the European Commission
Elaboration by the study performers based on unweighted researchers' survey data. N=10,868-10,889, depending on option

Barriers

- **Time, effort & financial costs** required for RDM and data sharing are seen as a challenge

- **Data protection and legal restrictions** are also seen as big obstacles

- **Lack of recognition** also seen as a major barrier

	To little or no extent	To some extent	To a large extent	Do not know / cannot answer
Lack of data repositories	32%	33%	17%	18%
Commercial use	31%	33%	23%	13%
Misinterpretation / falsification risk	27%	36%	26%	11%
Lack of recognition	15%	37%	34%	14%
Time and effort	10%	39%	43%	7%
Skills needed	16%	44%	31%	8%
Financial costs	16%	35%	38%	11%
Legal restrictions	13%	37%	40%	10%
Data protection	11%	41%	39%	9%

Source: European Research data landscape study 2022 commissioned by the European Commission
Elaboration by the study performers based on unweighted researchers' survey data. N=9,898 (selected at least one option).

Open science: a political priority of the EU

2018 EC Recommendation on **Access to and Preservation of Scientific Information**

2020 EC Communication on the **New European Research Area (ERA)**

2021 Council Recommendation on a **Pact for Research & Innovation in Europe**

2021 Council Conclusions on the **Future Governance of the ERA** (& **Policy Agenda 2022-2024**)

2022 Council Conclusions on **Research Assessment and Implementation of Open Science**

2022 Council Conclusions on **Research Infrastructures**

European Commission

Open Science & EOSC in the ERA Policy Agenda '22-'24

ERA priority area:

"*Deepening a truly functioning internal market for knowledge*"

ERA Policy Agenda Action 1:

"*Enable the open sharing of knowledge and the re-use of research outputs, including through the development of the* **European Open Science Cloud**"

25 MS committed, including Hungary

Three outcomes by end of 2024:

1. Deploy Open Science principles & identify best practices

2. Deploy EOSC core components/services; infrastructure federation & interoperability

3. Establish a monitoring capacity for contributions/practices related to EOSC

Implementing EOSC: a community driven process based on alignment at European, national & institutional levels

EOSC European Partnership

Ref. Ares(2021)5649191 - 15/09/2021

EN
Annex 5

Memorandum of Understanding for the
Co-programmed European Partnership for the
European Open Science Cloud (EOSC)

The European Open Science Cloud Association, representing the partners other than the Union (its constituent entities¹), the registered offices of which are in Rue du Trône 62, 1050 Bruxelles, hereafter referred to as the "Partners other than the Union", and the European Union, represented by the European Commission, (jointly hereinafter referred to as "the Partners"),

Strategic Research and
Innovation Agenda (SRIA)
of the
European Open Science
Cloud (EOSC)

Version 1.0
21 June 2021

EOSC tripartite collaboration

European Commission	EU Member States & Assoc. Countries	EOSC Association
Representing the EU	Represented in the EOSC Steering Board	The voice of the stakeholder community

European Commission

2022 EOSC tripartite event: priorities for future work

- Position EOSC in the next ERA Policy Agenda 2025-2027

- Demonstrate EOSC added value & increase uptake
  - *EOSC procurement; INFRAEOSC projects; catalogue of best practices; monitoring; tripartite events*

- Foster high FAIR data productivity, promote FAIR data literacy and sovereignty
  - *EOSC interoperable with sectorial EU data spaces; widening to public and private sectors; EOSC RoPs; …*

- Align policies, investments, and practices from European to institutional levels
  - *Align priorities on the Multiannual Roadmap; post-2027 future, including funding models*

- Add value with EOSC to the research process itself
  - *Onboarding support; data steward curricula / sharing standards / quality frameworks; certified repositories; machine actionable licences*

- Coordinate efforts by the three EOSC parties for monitoring of EOSC and open science uptake
 - *EOSC Observatory*

current survey to be filled in by 1 April !

European Commission

EOSC: where do we plan to be by 2027?

Minimum Viable EOSC operations to serve researchers in Europe are deployed and operated

- Known basic elements being prototyped include:
  - ✓ EOSC Rules of Participation
  - ✓ EOSC Authentication and Authorization Infrastructure
  - ✓ EOSC Policy on Persistent Identifiers and its compliance framework,
  - ✓ EOSC Interoperability Frameworks
  - ✓ EOSC Common search and access engine for FAIR research objects,
  - ✓ EOSC Monitoring and accounting modules
  - ✓ EOSC Security Coordination

- EC procurement for "Managed Services for the EOSC Platform":
  to build and deploy an operational, secure, cloud-based EOSC infrastructure,
  including a federated EOSC Core platform and EOSC Exchange, offering high quality professional
  services and superior user experience, for a large number of users, with functionalities available 24/7

EOSC is progressively connected to the wider public sector and the commercial sector through various data spaces
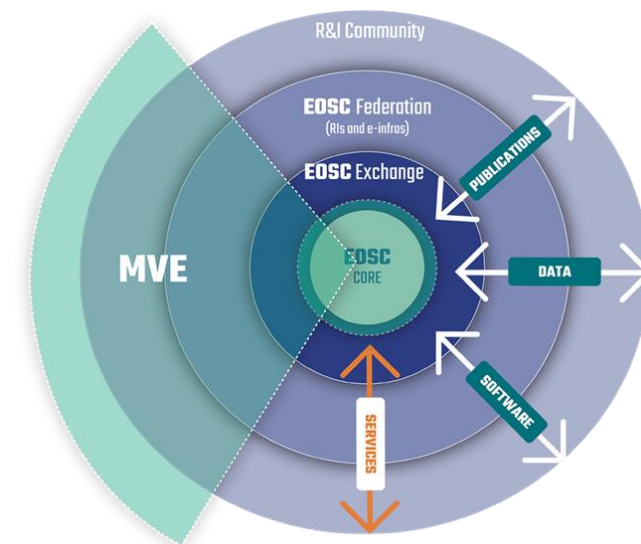
EOSC: where do we plan to be by 2027?

Open Science is increasingly becoming the 'normal' at European, national and institutional levels

- OS policies and investments are better aligned at European and national levels with demonstrated impact
- Open Science best practices, use cases and activities are catalogued and disseminated;
- A common Open Science monitoring mechanism is deployed, operated and feeds into the ERA Monitoring Mechanism; baselines and trends on investments, policies, digital research outputs, open science skills and infrastructure capacities related to EOSC are available

EOSC progressively enables a 'Web of FAIR data and services for science'

- Policies are in place which require FAIR to be implemented including through Data Management Plans; DMPs are standardized across disciplines and can link to interconnected graph of science events
- 'FAIRification' toolkits and quality description frameworks are available for further uptake by the research community
- A network of EOSC-federated, trustworthy FAIR-enabling repositories is available

Thank you

European Commission

Horizon Europe strategy: reflecting the policy

- **Open Access to scientific publications**

  - Immediate OA via repository under CC-BY; metadata under CC0

  - Information about data and tools needed to validate conclusions

  - IPR retention to comply with OA requirements

  - Reimburse only if in full OA venue

- **Research Data Management**

  - RDM in line with FAIR, mandatory Data Management Plan

  - OA via repository under CC-BY or CC0; metadata under CC0;
    exceptions to OA possible ('as open as possible, as closed as necessary')

  - Information about software and other tools needed to reuse or validate data

- **Additional OS practices** (encouraged)

  - Providing OA to research outputs beyond publications and data

  - Research output management beyond publications and data

  - Early and open sharing of research, e.g. preregistration, registered reports, preprints

  - Measures to ensure reproducibility of research outputs

  - Involving citizens and end users in co-creating R&I agendas and content

Horizon Europe strategy: reflecting the policy

- **Evaluation of the quality of open science practices under the 'excellence' and 'quality of implementation' award criteria**

- **Embedding open science practices such as FAIR data sharing and management, and interconnection to EOSC in relevant call topics across the programme**

- **Flagging of relevant call topics: 'EOSC and FAIR data' and 'societal engagement'**

- **Guidance on open science practices & reproducibility in the Horizon Europe Programme Guide**

- **Projects reporting on open science practices**

European Commission