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

PL EOSC tripartite event

24 October 2022

Pantelis Tziveloglou
Open Science, DG R&I,
European Commission

Science in transition

Image by Nick Youngson CC BY-SA 3.0 Alpha Stock Images

The **Open Science** paradigm affects the whole research cycle and all its stakeholders.

It involves using digital technologies to un(b)lock information flows in scientific system.

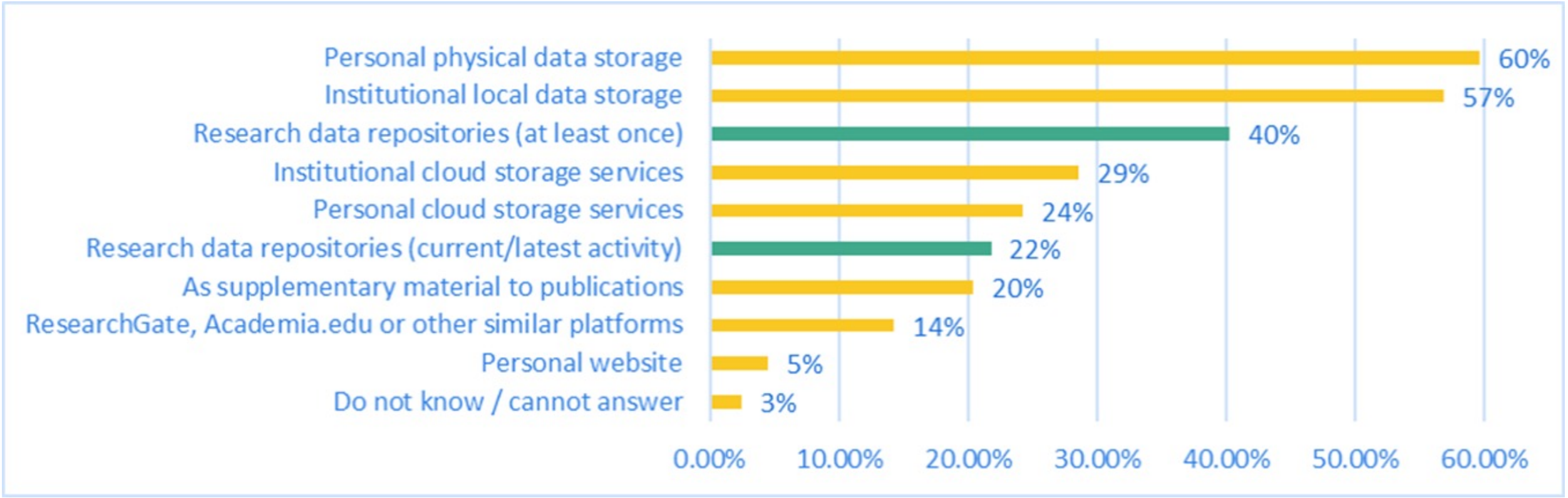
It implies sharing knowledge and tools

- as **early** as possible in the research process,
- as **openly** as possible,
- as "**FAIRly**" as possible

within and **between disciplines,** and **society** at large.

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**.



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=10,914.

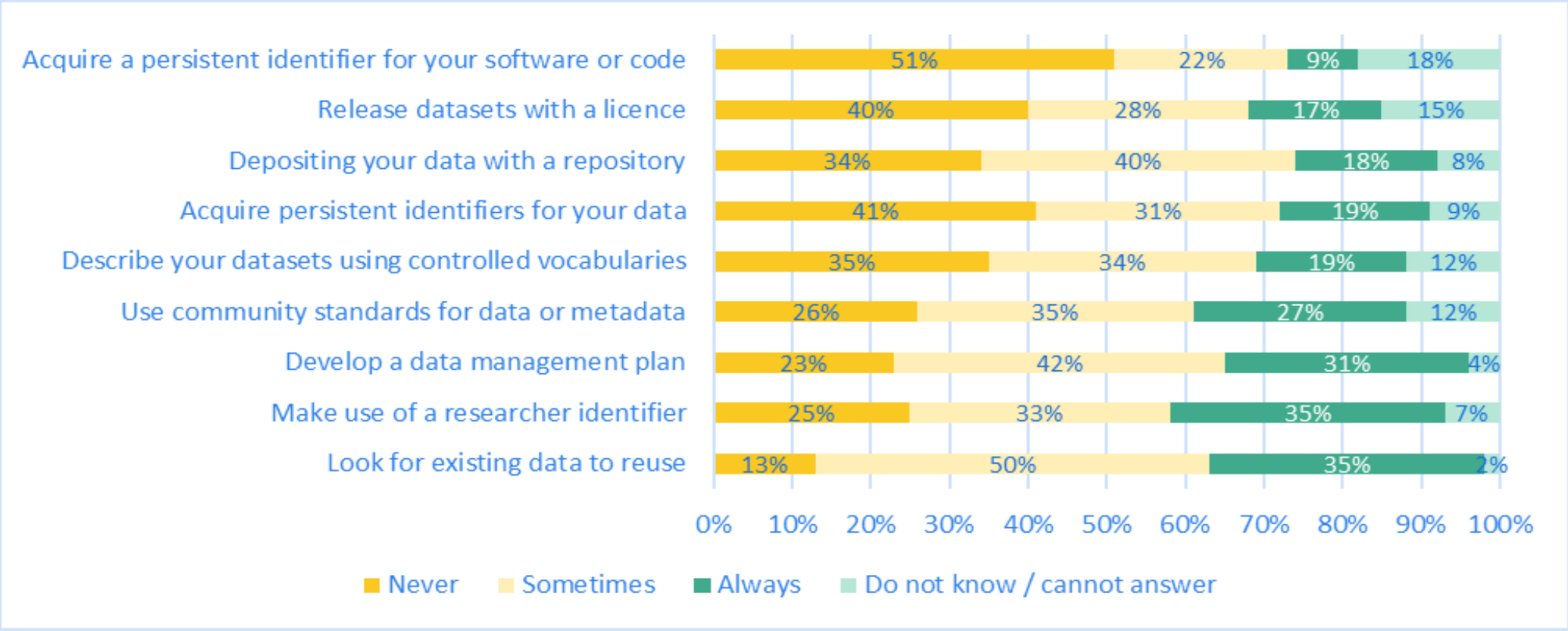
Awareness of FAIR

- 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

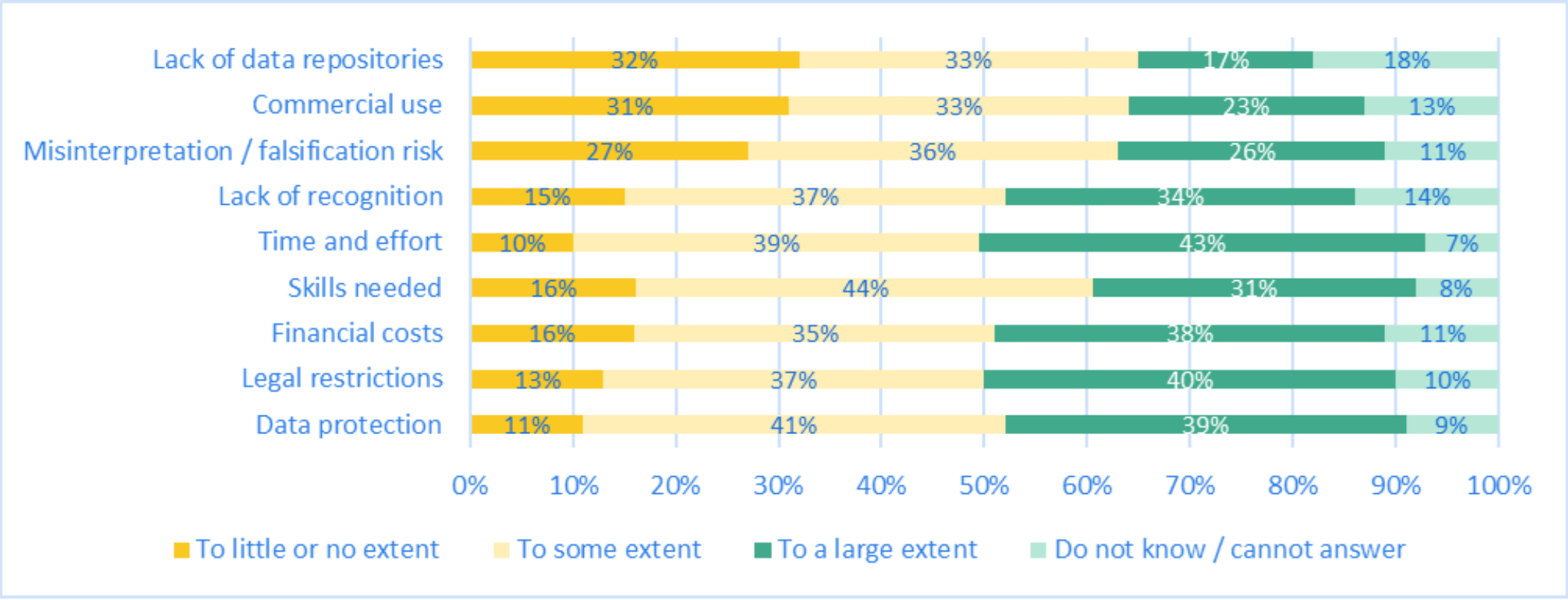
- Around **3/4s** develop **DMPs** but other FAIR-aligned practices are less common.
- Allocating PIDs to data or software/code are the least common practices.



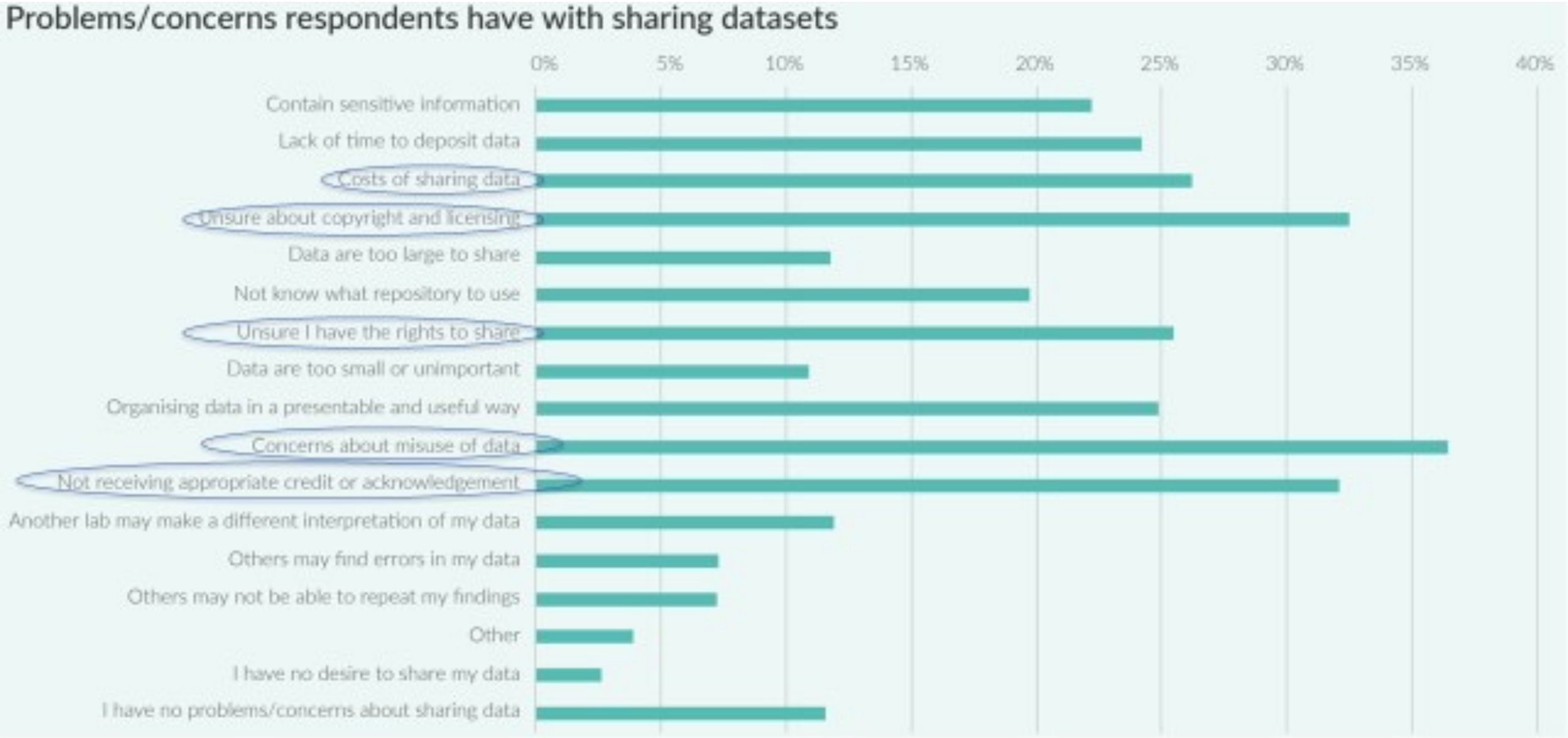
Source: European Research data landscape study 2022 commissioned by the European Commission
Elaboration by the study performers based on unweighted researchers' survey data. N=10,868-10,889, depending on option

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



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).



Source: Digital Science and Figshare Report: The State of Open Data 2019

Open Science: a Political Priority of the Union

2016 Council Conclusions on the '**Transition Towards an Open Science System**'

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

2020 EC Communication on the '**New ERA**'

2021 Council Recommendation on a '**Pact for R&I in Europe**'

2021 Council Conclusions on the '**Future Governance of the ERA**' including the '**ERA Policy Agenda'**

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

European Commission

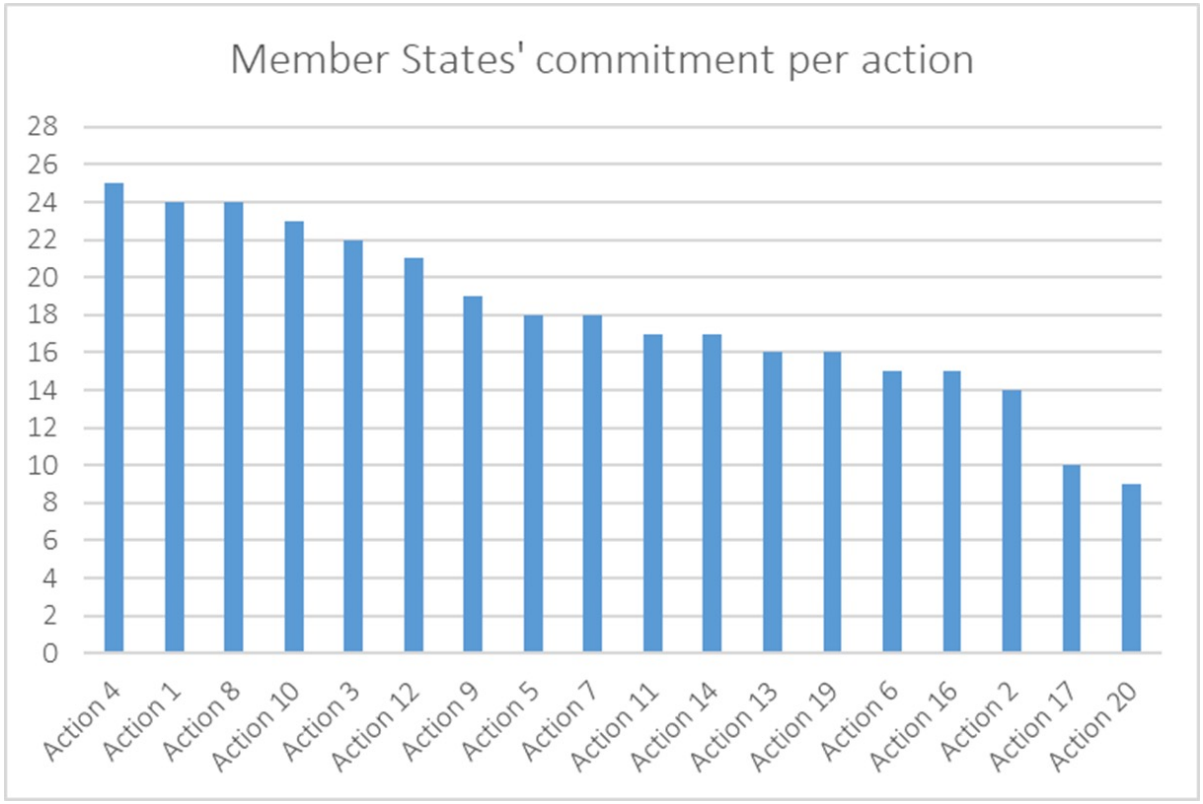
Open Science & EOSC in the ERA Policy Agenda ‘22-’24

ERA priority area:

“*Deepening a truly functioning internal market for knowledge*”

ERA 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***”



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**

Gradual implementation based on mutual **alignment at European, national and institutional levels**

EOSC Tripartite governance: Steered by the EC, the Member States & Associated Countries and the EOSC Association representing the voice of the community

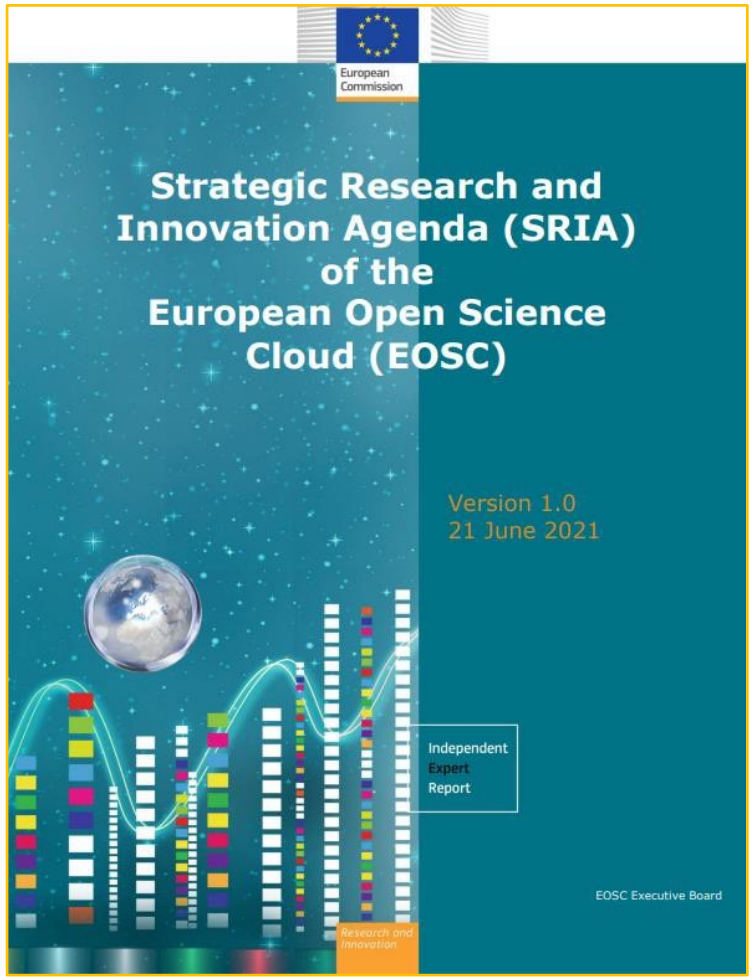
EOSC European Partnership: Pooling resources through Horizon Europe grants & procurement plus in-kind additional activities by the members of the EOSC Association

Emerging issues: **operational consolidation** of the EOSC federation and **sustainability models**

Courtesy of the EOSC Association.

European Commission

EOSC Strategic R&I Agenda and roadmap



2021-2022: Functional federation of infrastructures

2023-2024: Expansion to support/serve full cycle of workflows for scientists

2025-2027: Expansion to wider public/private sectors

continuous: Web of FAIR data & services for science

3 implementation levels:

- European (Horizon Europe)
- National / regional (additional activities)
- Institutional (additional activities)

EOSC tripartite collaboration
a level playing field for EOSC implementation & coordination

Consensus in 2021 to accelerate implementation of

- the deployment of a viable EOSC platform for use by the research communities;
  👉 *EOSC procurement (upcoming)*

- the deployment of a single joint capacity to monitor the uptake of open science and respective contributions to the EOSC;
  👉 *EOSC Observatory (ongoing)*

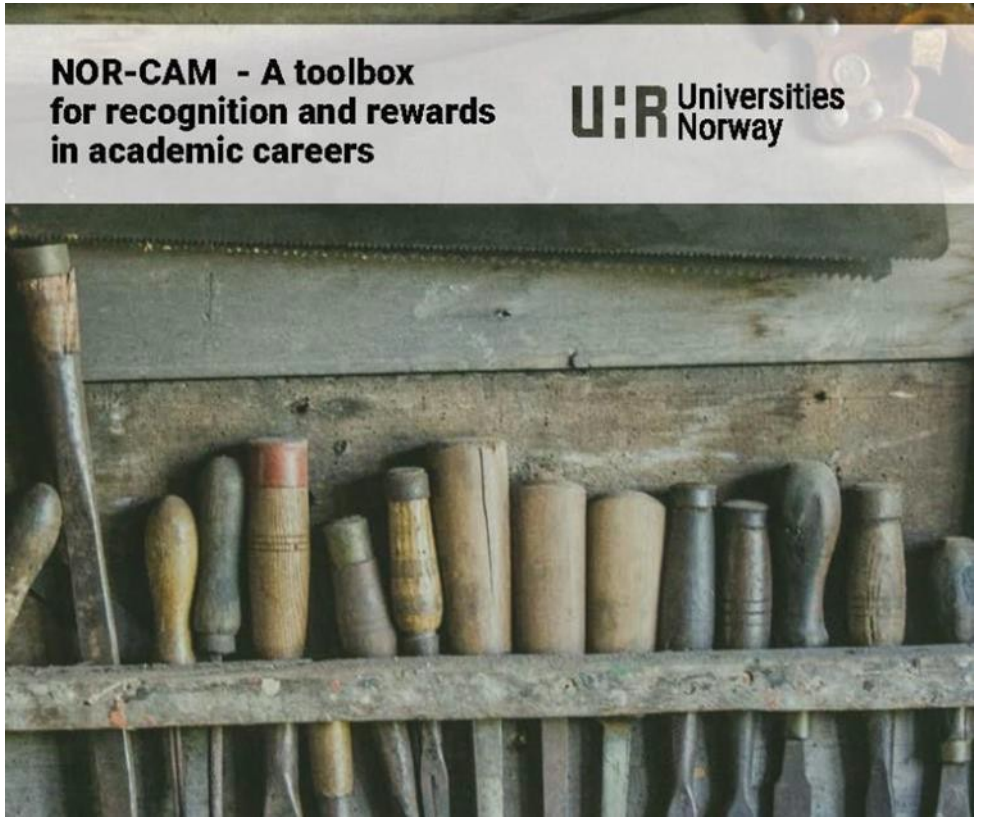
- alignment of policies, investments, and practices at European, national/regional, and institutional levels to foster synergies and leverage effects of the conducted actions.
  👉 *EOSC tripartite catalogue (under development)*

European Commission

EOSC catalogue (under development)

A working group appointed by Universities Norway (UHR) was mandated to recommend **guiding principles for the assessment and evaluation of research(ers) in the light of the transition to Open Science.**

The ambition has been to develop a guide that adopts three core principles for assessment: more transparency, greater breadth, and comprehensive assessments as opposed to one-sided use of indicators.



https://www.uhr.no/en/news-from-uhr/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

EOSC catalogue (under development)

Open-science.it is the Italian portal dedicated to Open Science, Open Access to research outputs and many related topics. The portal hosts general information, **training material**, events, news and updates of national and international relevance, introductory material and resources related to specific problems, as well as analysis and advanced information. It is addressed to the Italian speaking community, contents are only available in Italian for now.

https://open-science.it/fr/english

EOSC catalogue (under development)

The project '**Disciplinary Open Research Data Repositories**' aims to enhance access to academic resources by making them available in open research data repositories, as well as to improve the quality of shared data and metadata and to facilitate their better use. This is possible by developing three repositories: a general-purpose repository and two domain-specific repositories for social data and crystallographic data.

RepOD
Repository for Open Data

repod.icm.edu.pl

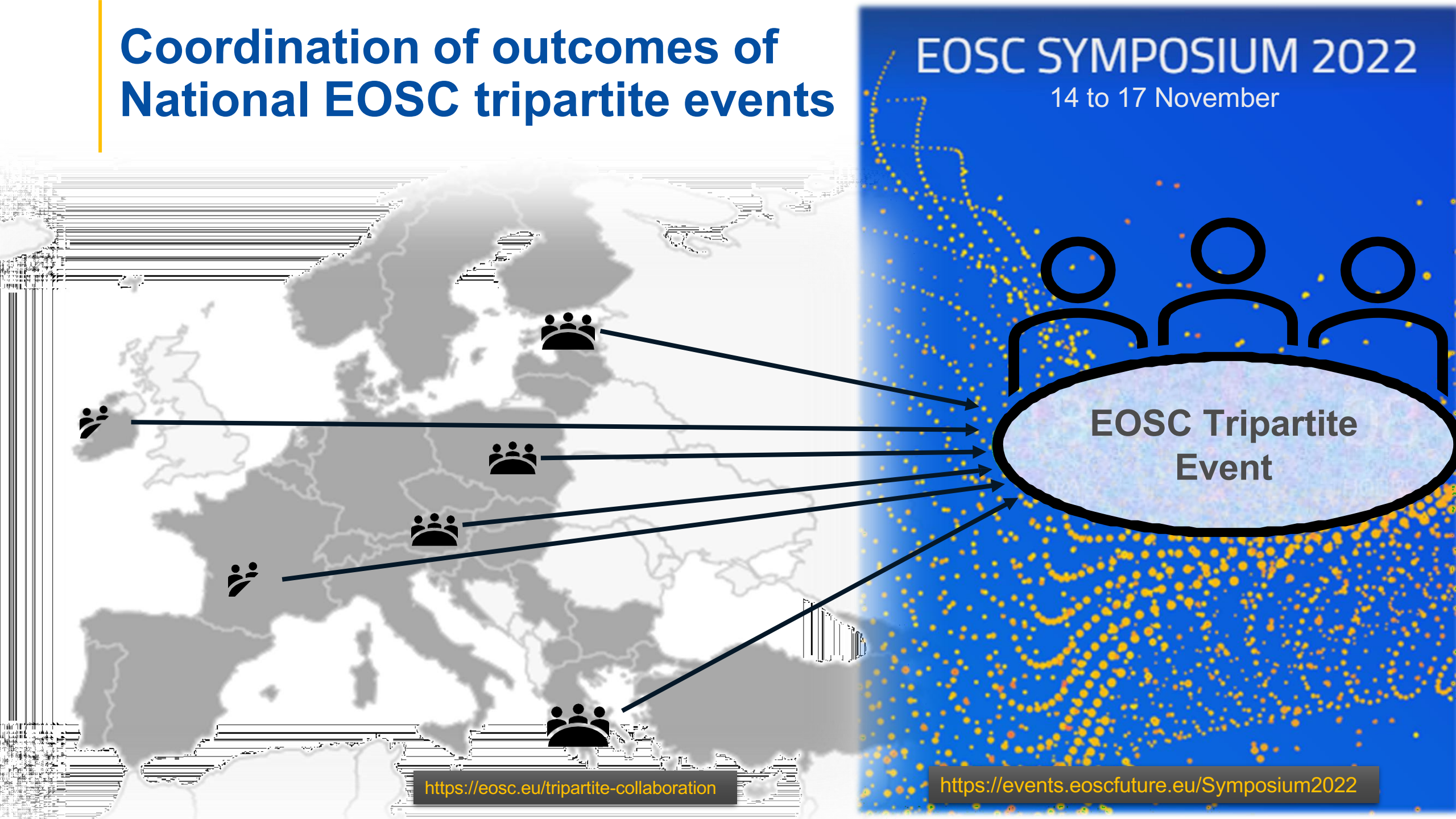
RDS
Social Data Repository

rds.icm.edu.pl

MX-RDR
Macromolecular Xtallography
Raw Data Repository

mxrdr.icm.edu.pll

Coordination of outcomes of National EOSC tripartite events



Thank you

European Commission

1. Deploy Open Science principles & identify best practices

Motivation: Open Science (OS) practices and skills become the ‘new normal’.

The action includes the following types of activities:

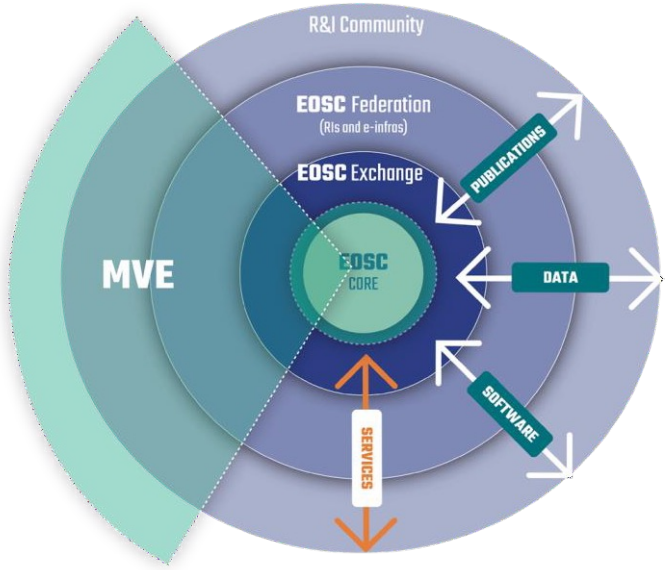
- Mainstream OS across national research funding programmes;
- Co-develop a catalogue of Open Science best practices across the Member States and Associated Countries;
- Intensify EOSC outreach and engagement including through national EOSC tripartite events;
- Establish a critical mass of data scientists, data stewards and general FAIR data-literacy in Europe;
- Provide services, tools and data on the usage, quality and impact of research outputs and on the uptake of open science practices.

With support of the EOSC tripartite governance

involving the EC and the MS/AC involved in the EOSC Steering Board and the EOSC Association involved in the EOSC European co-programmed Partnership

2. Deploy the EOSC platform, federate data infrastructures in Europe and improve interoperability of research data

Motivation: Provide all European researchers with seamless access to a rich portfolio of FAIR data and services in all relevant domains (from data handling to computing, processing, analysis and storing).

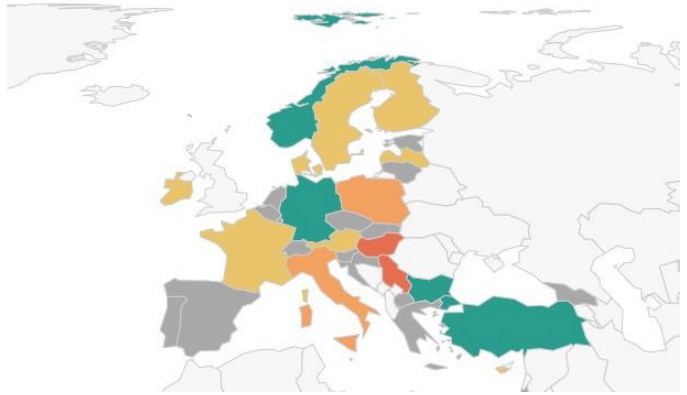


The action includes the following types of activities:

- Procure the 'EU node' of the EOSC federation with functionalities available 24/7;
- Increase the connection of national/regional research infrastructures to the EOSC federation;
- Develop community frameworks for interoperability of research data and quality control of EOSC resources;
- Develop sustainability options over the long-term to evolve the platform and advance the Web of FAIR research data

3. Establishment a monitoring capacity to support MS/AC and other EOSC stakeholders in tracking EOSC contributions

Motivation: Assess trends over time of the uptake of Open science practices across Europe. Elaborate or adjust policies



Four layers of data to support EOSC/Open Science monitoring in Europe:

1. EOSC-readiness by the member states and associated countries (national policies and investments to the EOSC via surveys co-defined with MS and AC);
2. Progress of the EOSC European Partnership along on its Key Performance Indicators;
3. In-kind contributions by the EOSC Association and its members to the EOSC partnership;
4. Other Open Science practices, policies, infrastructures, data and services in Europe

European Research Data Landscape study 2022

- Objectives:
  - To collect data on data **production** and **consumption** by scientific disciplines and relevant sub-disciplines
  - To collect and analyse information on **data deposition practices**, data typology and volume
  - To collect data on the level of maturity with respect to **FAIR data** implementation
  - To assess responsiveness and readiness of research data repositories in terms of implementation of FAIR principles
- Scope:
  - All fields of science; geographically covering EU **Member States**, H2020 **Associated Countries**, and **UK**
  - Survey of **researchers**: 15066 responses
  - Survey of **research data repositories**: 316 responses
  - Desk research; case studies; FAIRness assessment