National Initiatives for Open Science in Europe

European Open Science Cloud - EOSC

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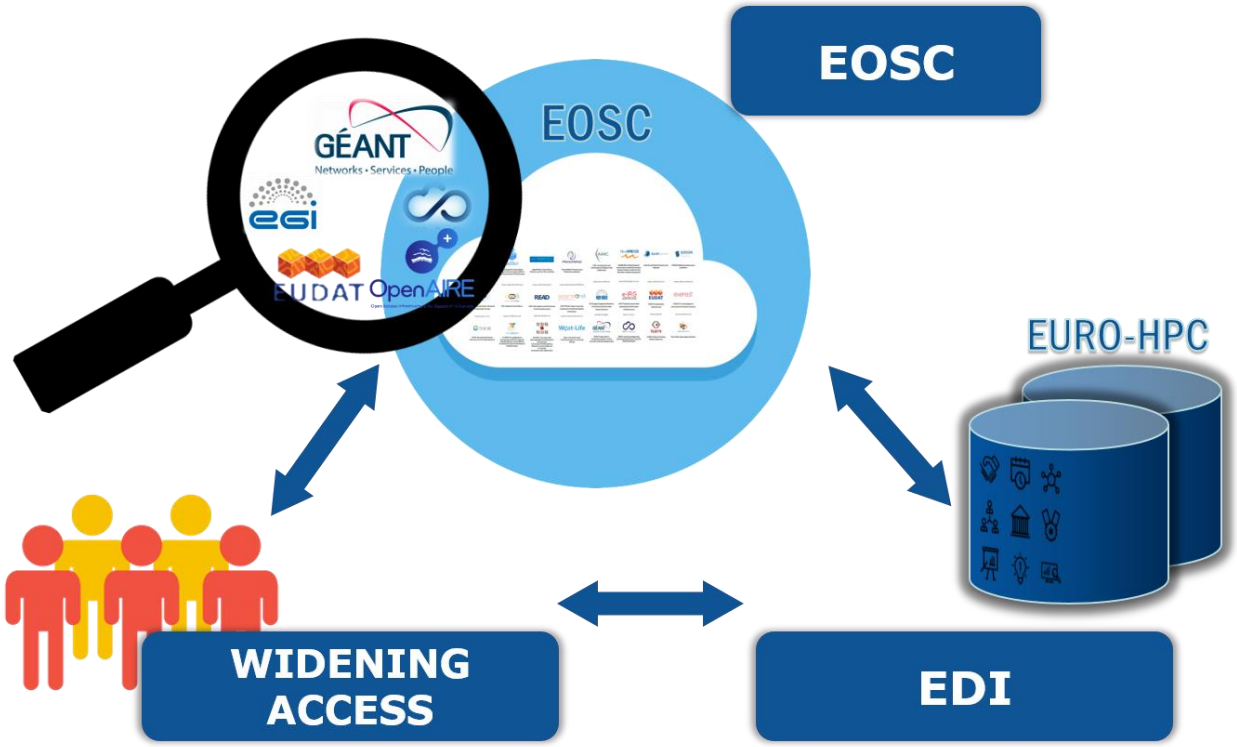
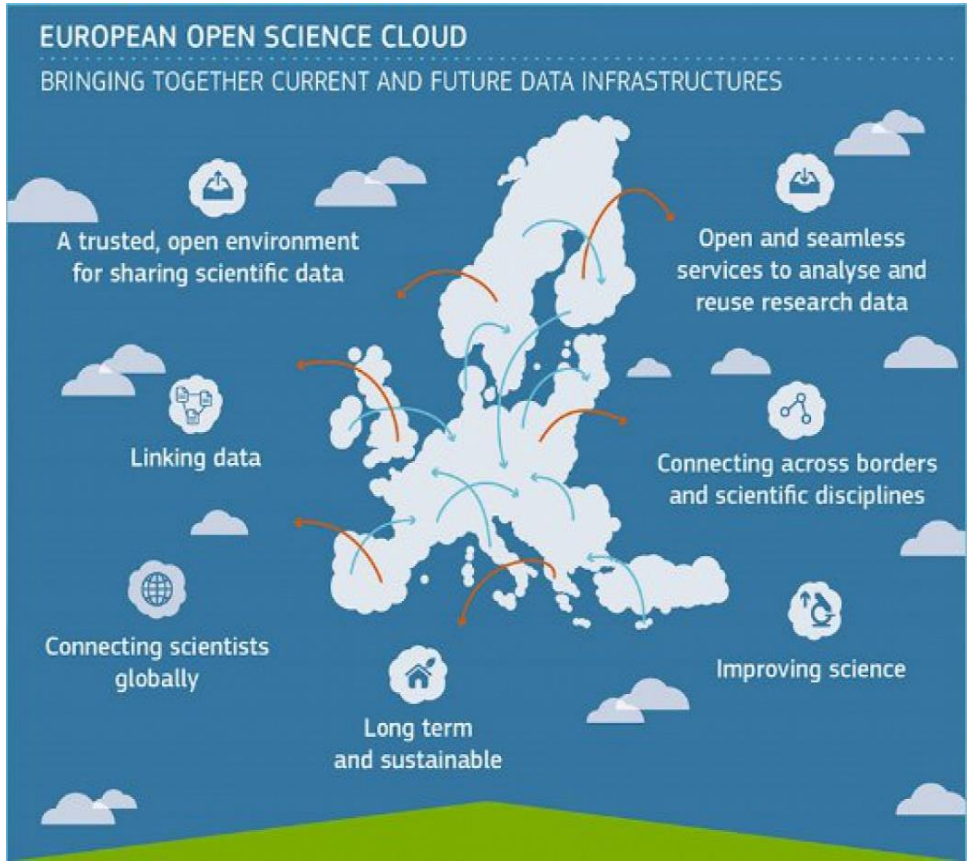
EOSC initiative

- The European Open Science Cloud (EOSC) initiative has been proposed in 2016 by the European Commission as part of the European Cloud Initiative to build a competitive data and knowledge economy in Europe.
- EOSC is one of the three pillars of “Digitizing Industry”



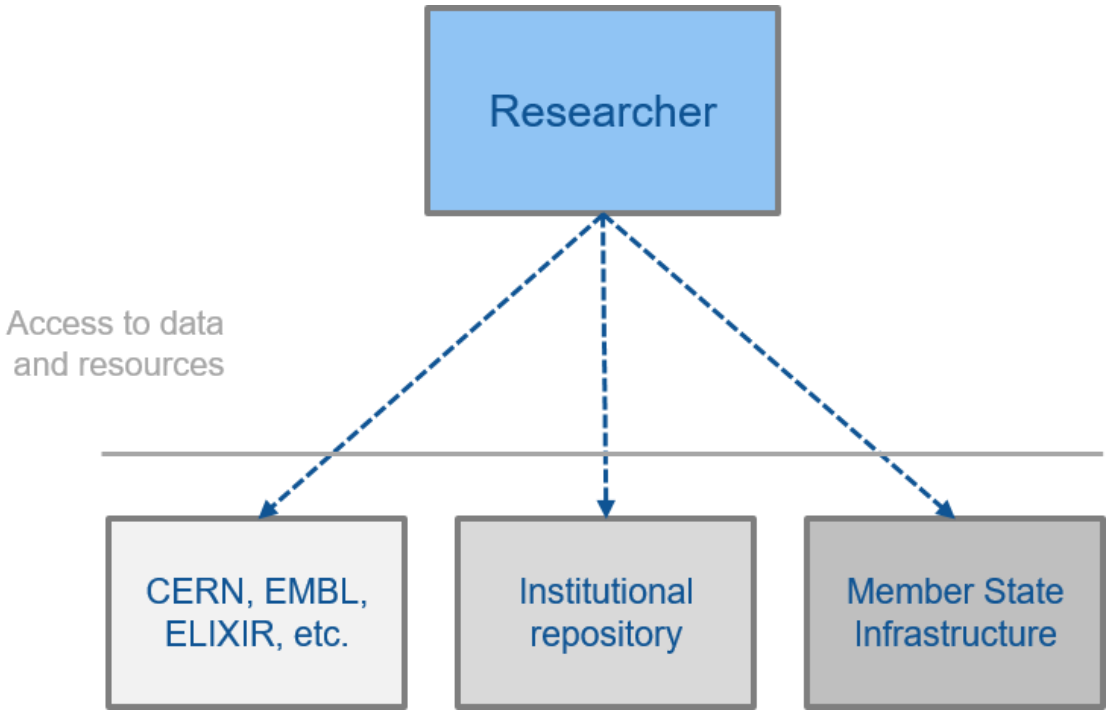
EOSC vision

- 'The EOSC aims to give Europe a global lead in scientific data infrastructures…. It will offer 1.7 million European researchers and 70 million professional in science and technology a virtual environment with free at the point of use, open and seamless services for storage, management, analysis, and reuse of research data, across borders and scientific disciplines' (COM(2016) 178final), p.6
- EOSC will join existing and emerging horizontal and thematic data infrastructures, bridging todays fragmentation and ad-hoc solutions
- *"Europe's final transition must be one from fragmented data sets to an integrated European Open Science Cloud. By 2020, we want all European researchers to be able to deposit, access and analyse European scientific data through a European Open Science Cloud.."*



Motives for EOSC initiative

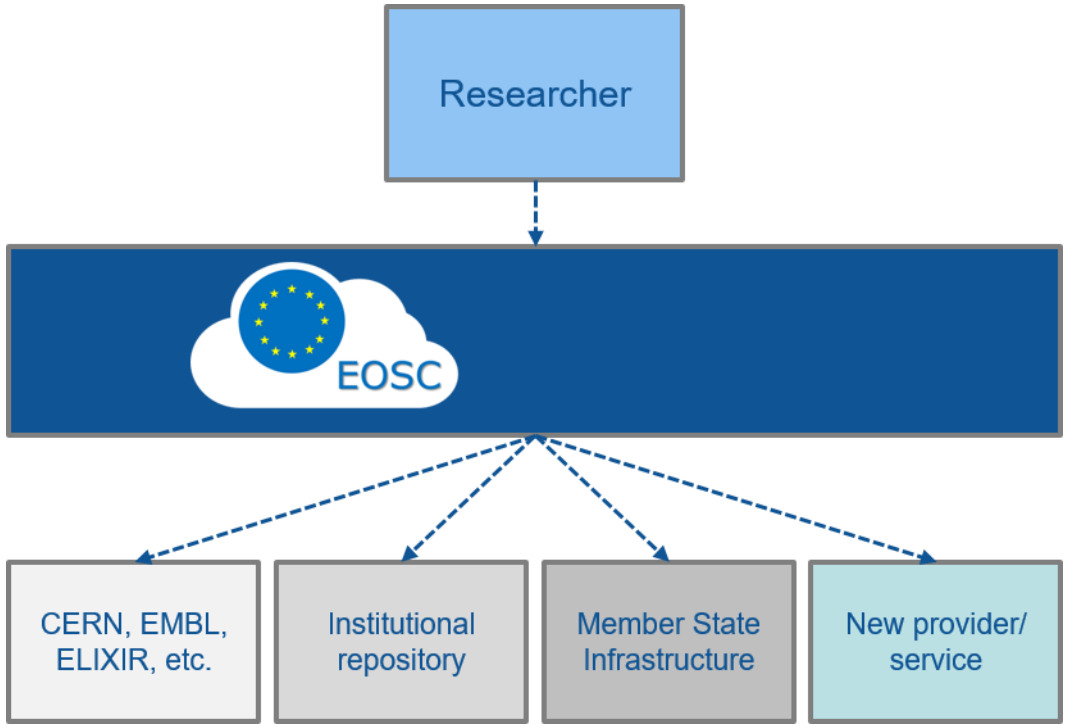
- European researchers face data fragmentation and unequal access to quality information sets



- Fragmented access (across scientific domains, countries and governance models; varying access policies)
- Limited cross-disciplinary access to data sets (i.e. interdisciplinary research)
- Non-interoperable services and data
- Closed data

EOSC

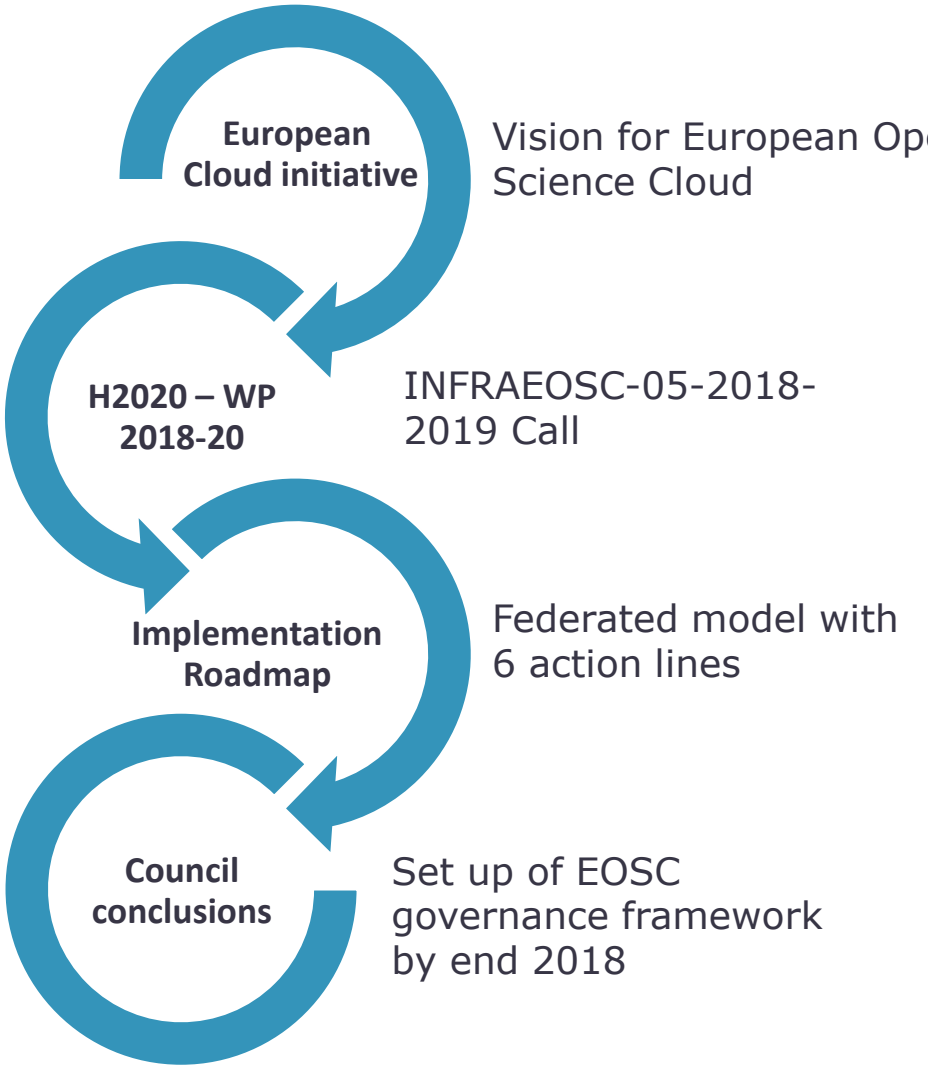
- The EOSC will allow for universal access to data and a new level playing field for EU researchers



Seamless environment enabling interdisciplinary research

- Easy access through a universal access point for ALL European researchers
- Cross-disciplinary access to data and services unleashes potential of interdisciplinary research
- Services and data are interoperable (FAIR data)
- Data funded with public money is in principle open (as open as possible, as closed as necessary)
- EOSC will help increase recognition data intensive research and data science

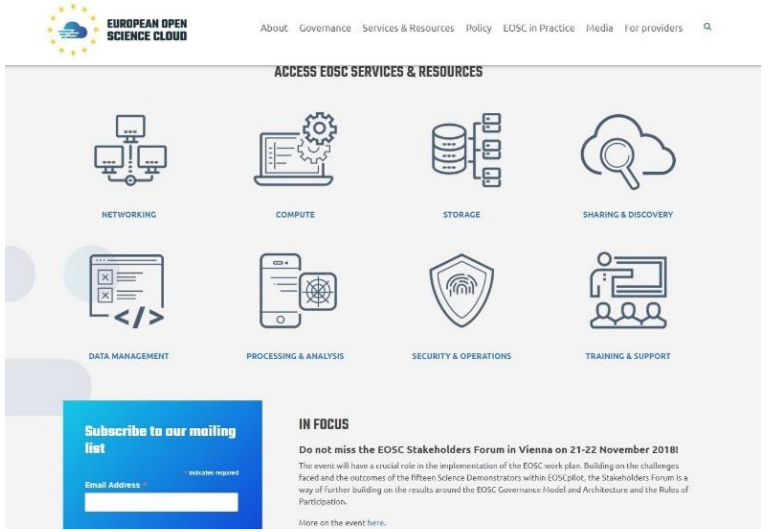
History of EOSC

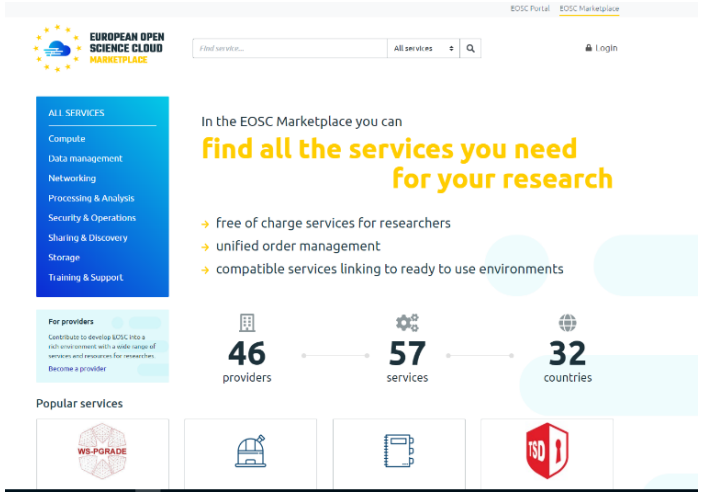


The **EOSC implementation roadmap** describes six action lines for the implementation of the European Open Science Cloud with specific examples and related milestones

a. Architecture	Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.
b. Data	FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.
c. Services	Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.
d. Access & Interface	Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.
e. Rules	Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.
f. Governance	Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.

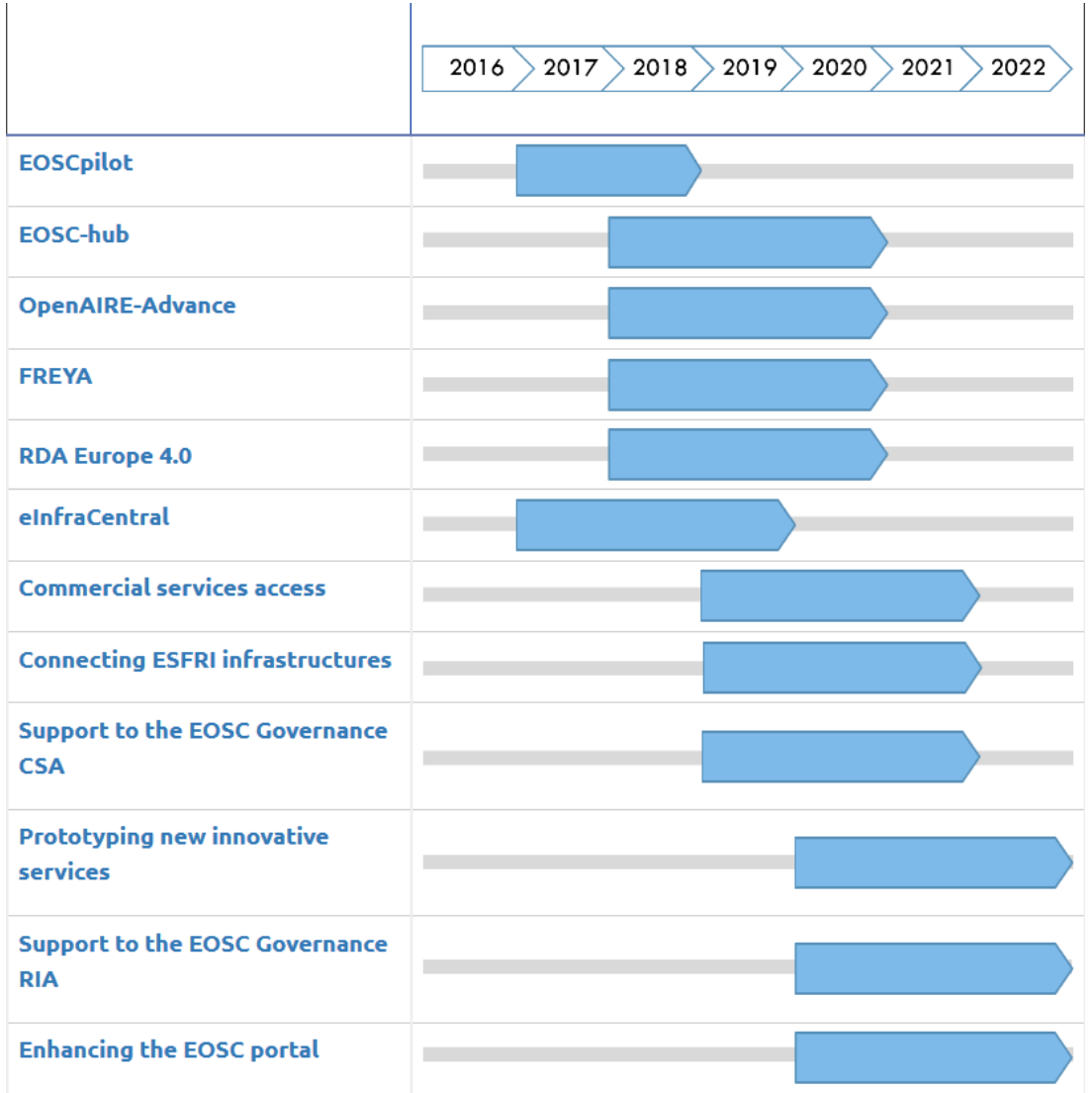
EOSC Launch: Vienna, 23/11/2018





EOSC Timeline

- The European Commission is providing financial support to implement the EOSC by means of projects under the EU Framework Programme for Research and Innovation (Horizon 2020).
- The presented table shows various ongoing and future projects that will contribute to the development of the European Open Science Cloud by 2021



EOSC financing

Phase 1, until 2020:

- the Commission will invest EUR 300 million to support the core functions of the EOSC as per milestones
- Member States would flag the national initiatives that they want to federate into the EOSC (e.g. the work of the Helmholz Data Alliance); and the resources they are willing to provide in kind
- Research funders would start making costs eligible for FAIR data only

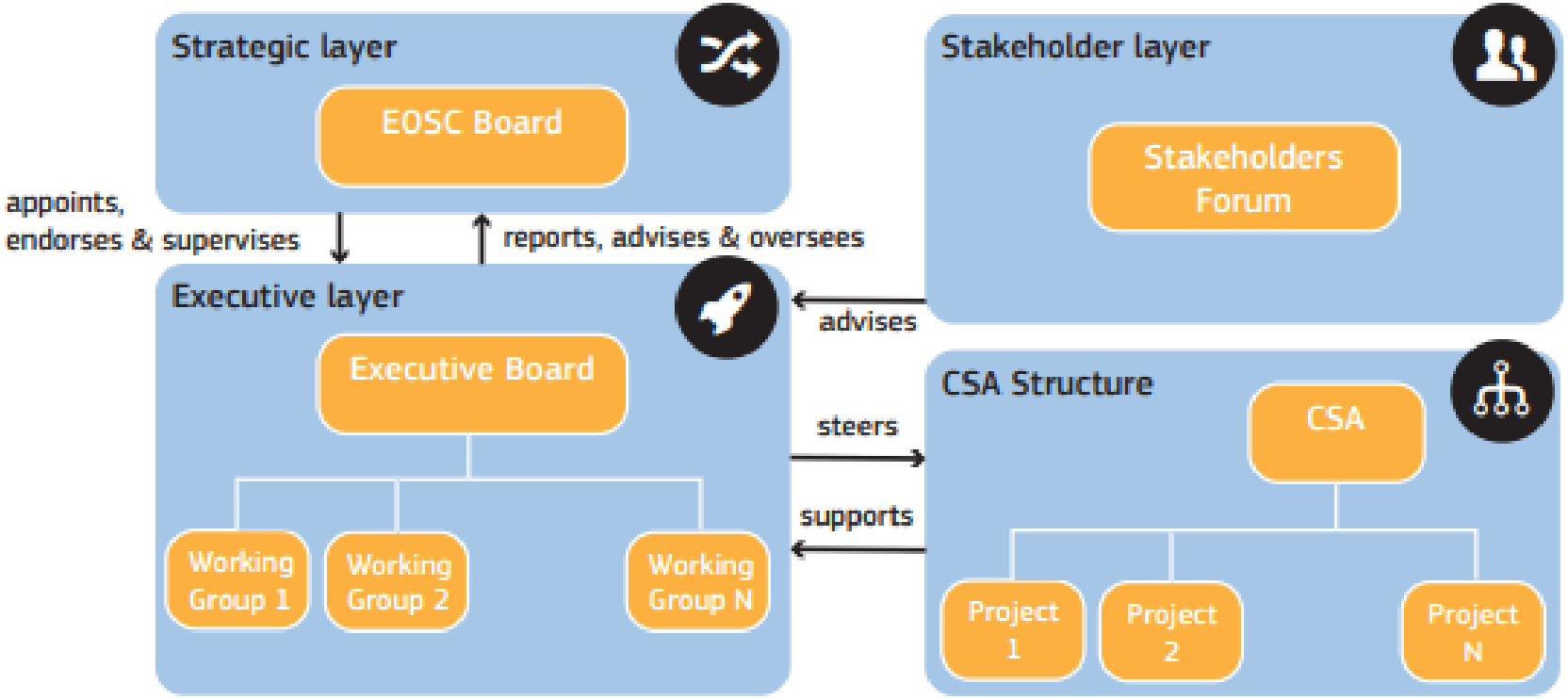
Phase 2, after 2020:

- To explore a mix of funding including possibly deposit fees from national funders
- Based on a full cost estimate for the running of the EOSC, conducted by the EOSC governance framework in Phase 1

EOSC Governance framework

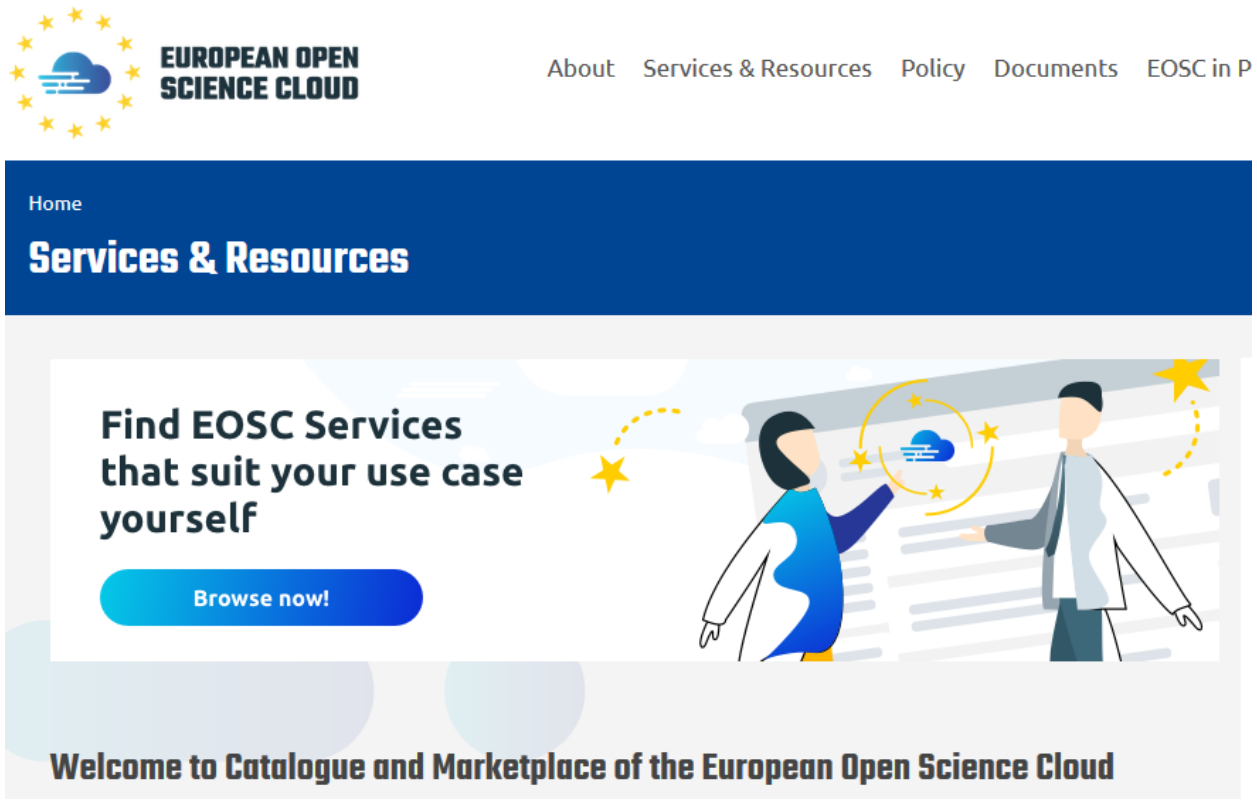
- Three layer structure

1. *Strategic Layer*
2. *Executive Layer*
3. *Stakeholder Layer*



- **Strategic Layer** in the form of an EOSC board to combine state-of-the-art expertise on scientific cloud infrastructures with the Funders and Policy Makers.
- **Executive Layer** in the form of an executive board to manage day-to-day operation of the EOSC and procurers designing and planning work-related future developments
- **Stakeholder layer** organised in the form of a stakeholders forum to provide a medium for stakeholders: Users (Consumers), Providers and Intermediaries of EOSC Resources.

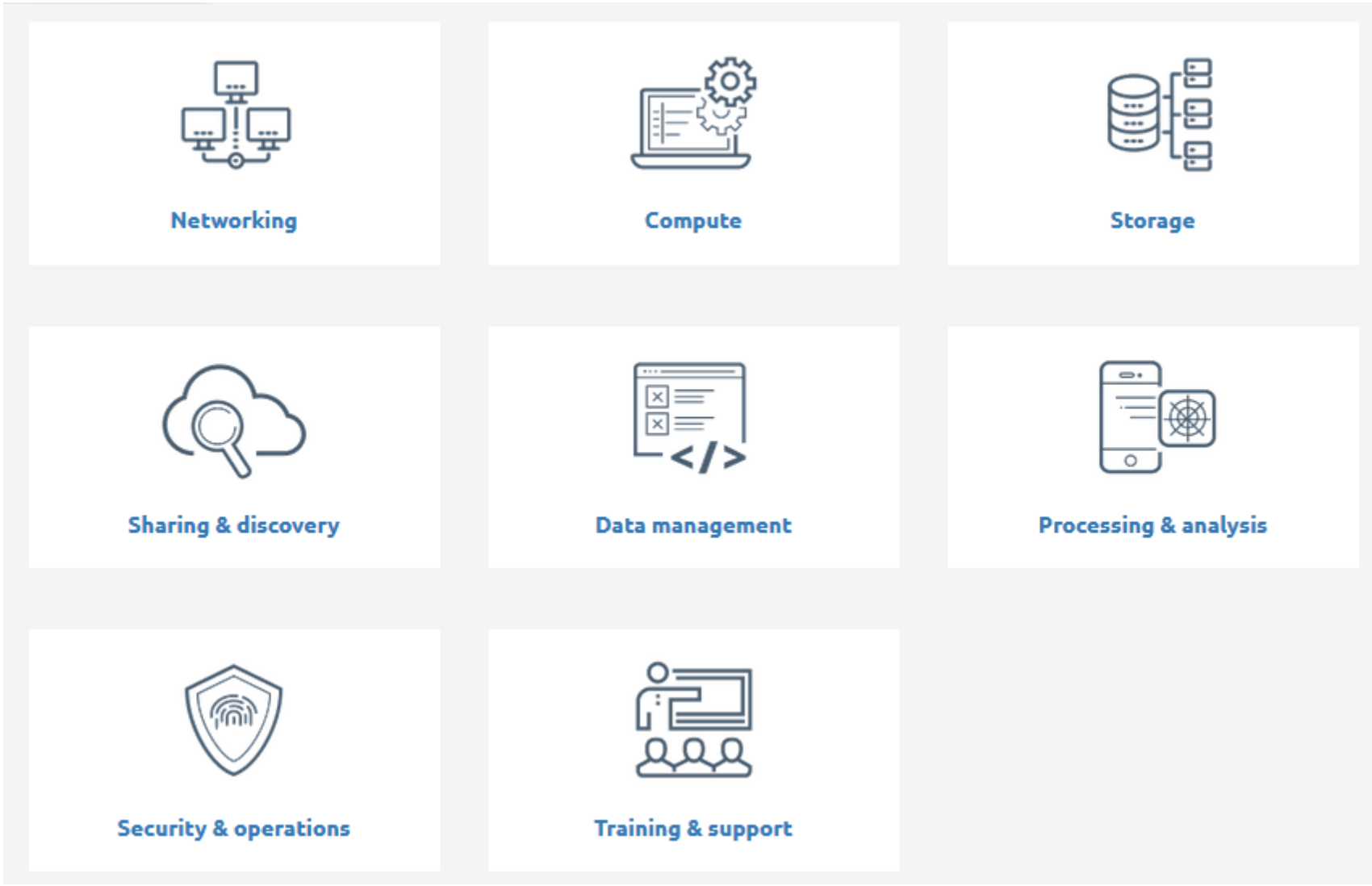
EOSC portal



- Onboarding of new users and service providers
- Technical developments of the EOSC portal
- Interaction with ESFRIs, HPC Centres of Excellence, RDA, OpenAIRE, etc.
- Collaboration with OCRE on procurement of commercial services
- Trainings for users and service providers
- Interaction with governance structure

https://www.eosc-portal.eu/

EOSC portal



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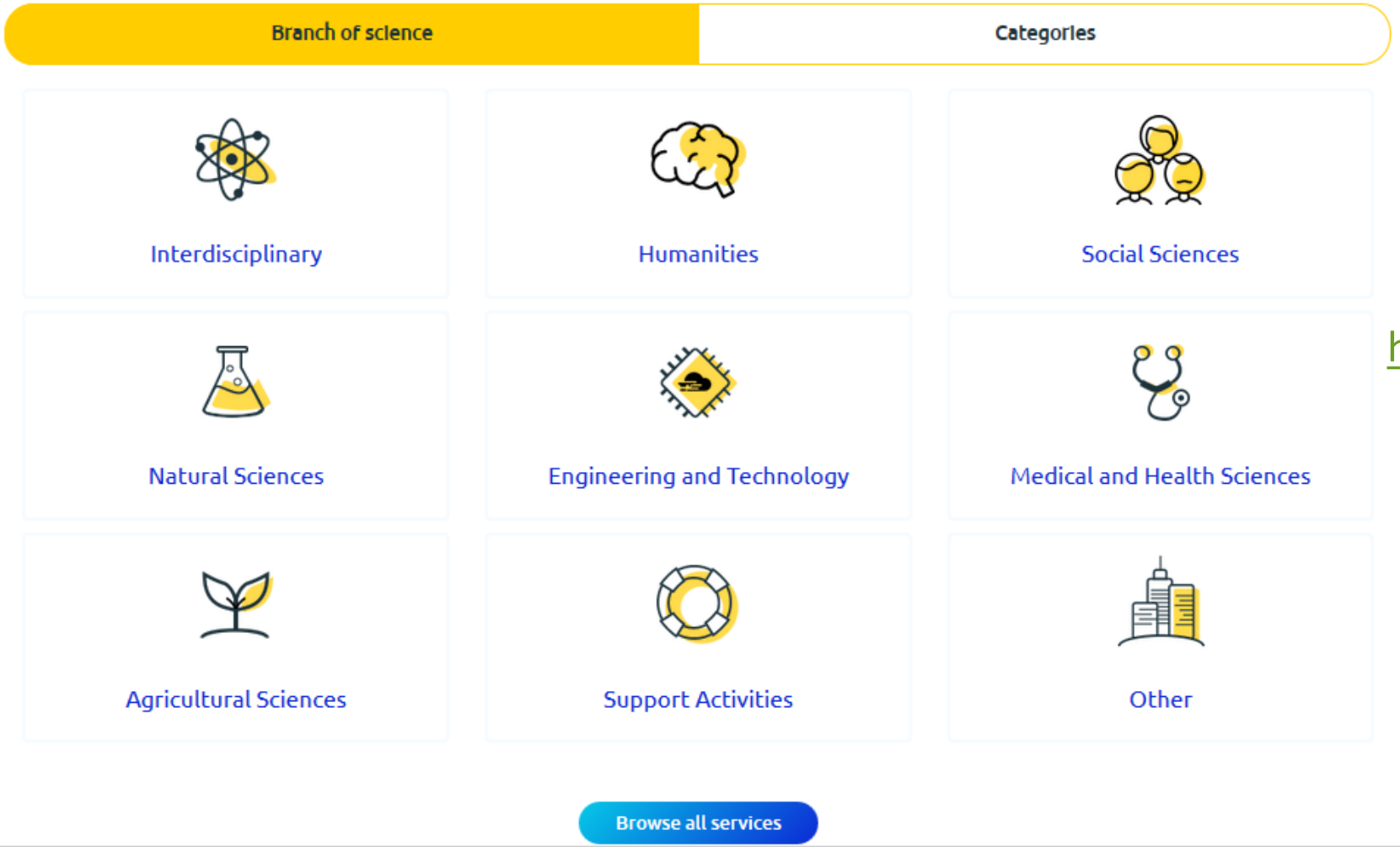
EOSC marketplace



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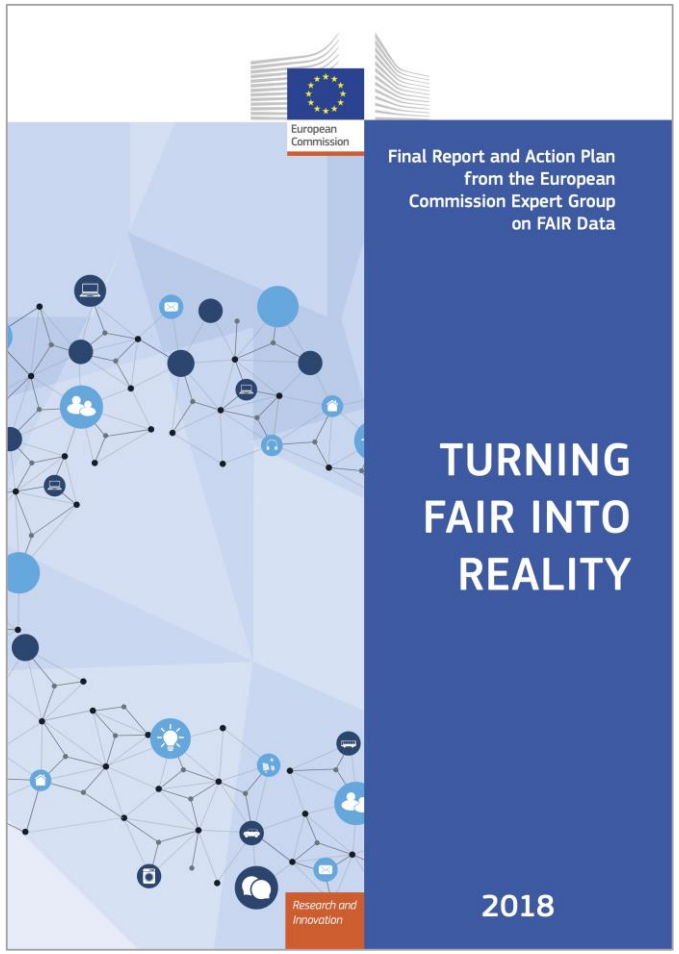
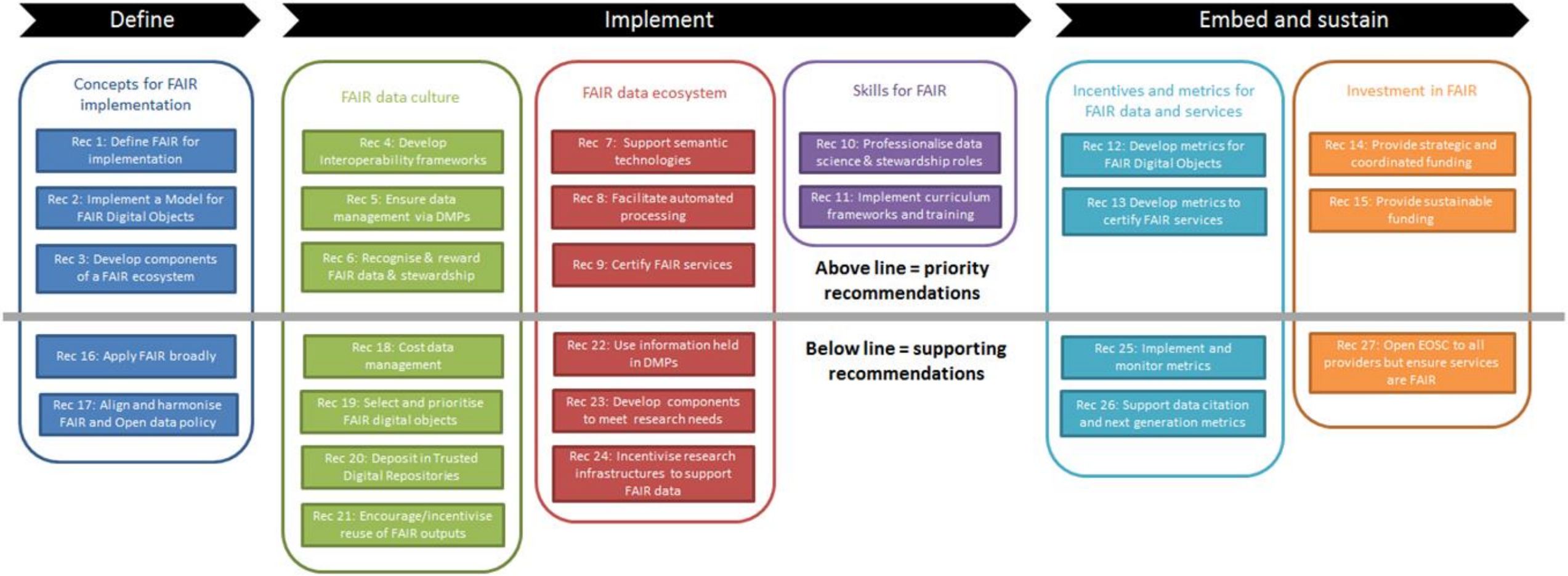
Fair Data Expert Group



Available at the EU Bookstore

- **Report and Action Plan**: Take a holistic approach to lay out what needs to be done to make FAIR a reality, **in general and for EOSC**
- Addresses the following key areas: **Concepts for FAIR, the FAIR data culture, the FAIR data ecosystem, skills, incentives and metrics, investment and sustainability.**
- **Recommendations and Actions**: 27 clear recommendations, structured by these topics, are supported by precise actions for stakeholders.

Turning FAIR into reality



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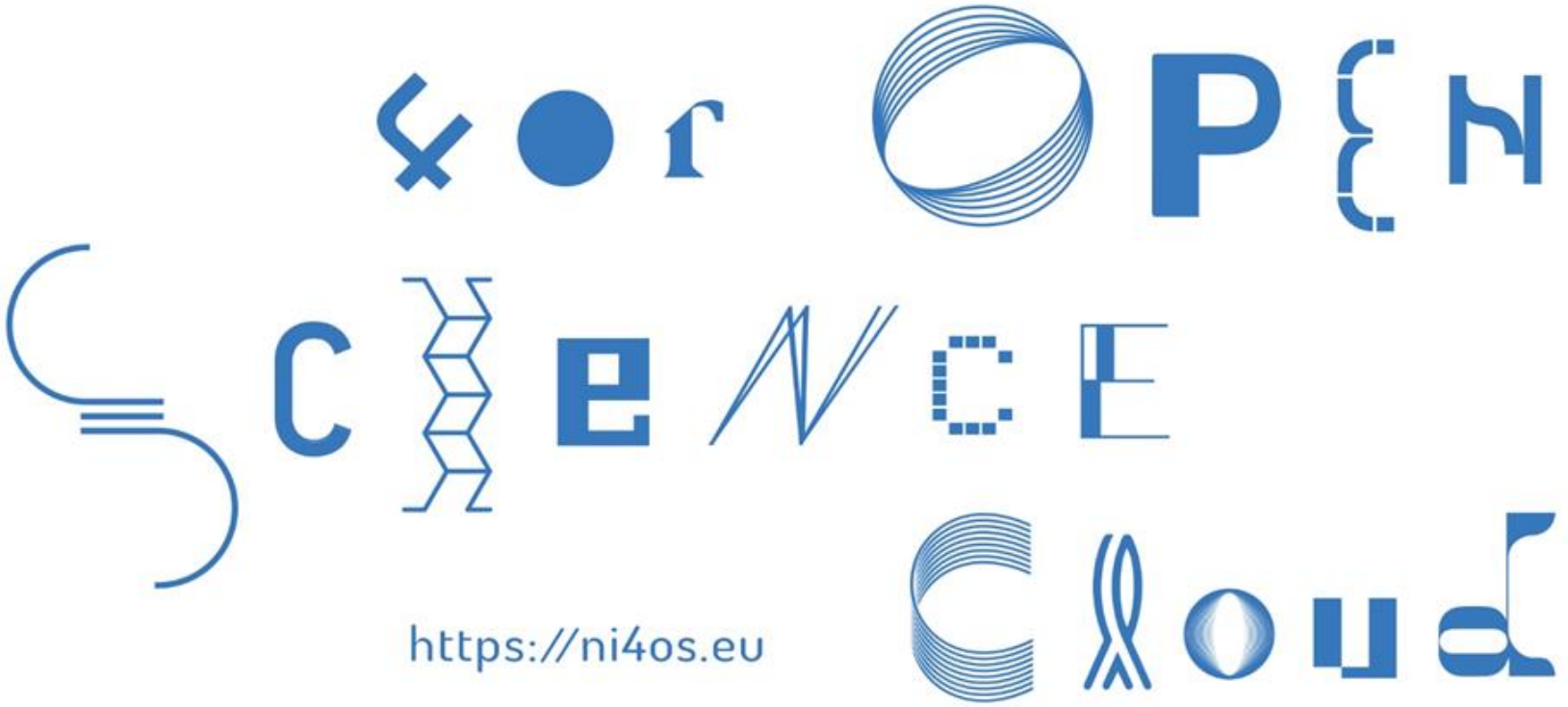

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