



**EUROPEAN OPEN
SCIENCE CLOUD**

EOSC State of the play

2nd December 2019

JAN HRUŠÁK

EOSC - European Open Science Cloud

A vision for a federated, globally accessible, multidisciplinary environment.

- 2015 - the EC set three goals for research and innovation policy within European Union: **Open Innovation, Open Science and Open to the World => the idea of EOSC took shape**
- virtual environment for all researchers **to store, manage, analyse and re-use data for research, innovation and educational purposes**
- one of five broad policy action lines of the European open science agenda endorsed also by **the Digital Single Market strategy**
- EC welcomed **the federated model** for the EOSC
- Staged approach to setting governance:
 - 1) 1st phase > 2020 - **development of the EOSC primarily by MS and EC**
 - 2) 2nd phase < 2020 the preparation and further **development of the EOSC, largely stakeholder-driven with MS/EC keeping a high level oversight role**

EOSC related projects

- 33 projects funded by the **EU Framework Programme for Research and Innovation (Horizon 2020)**
- support to **the first phase of EOSC implementation** by means of projects funded by the EU Framework Programme for Research and Innovation (Horizon 2020)
- the importance of **coordinating the various ongoing and future projects** funded by the EU Framework Programmes on EOSC is needed including transnational initiatives that are adhering their activities to EOSC
- The start of the second phase of EOSC implementation is dependent on an **evaluation by the EU and the MS of the first phase** and without prejudice to the Multiannual Financial Framework after 2020.





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EOSC Working Group Landscape

2nd December 2019

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Preparation of the EOSC implementation

FROM VISION.....

- EOSC will provide **1.7m EU researchers an environment** with free, open services for data storage, management, analysis and re-use across disciplines.
- EOSC will joint existing and emerging **horizontal and thematic data infrastructures**
- EOSC will **add value** (scale, data-driven science, interdisciplinarity, faster innovation) and leverage past infrastructure investment.



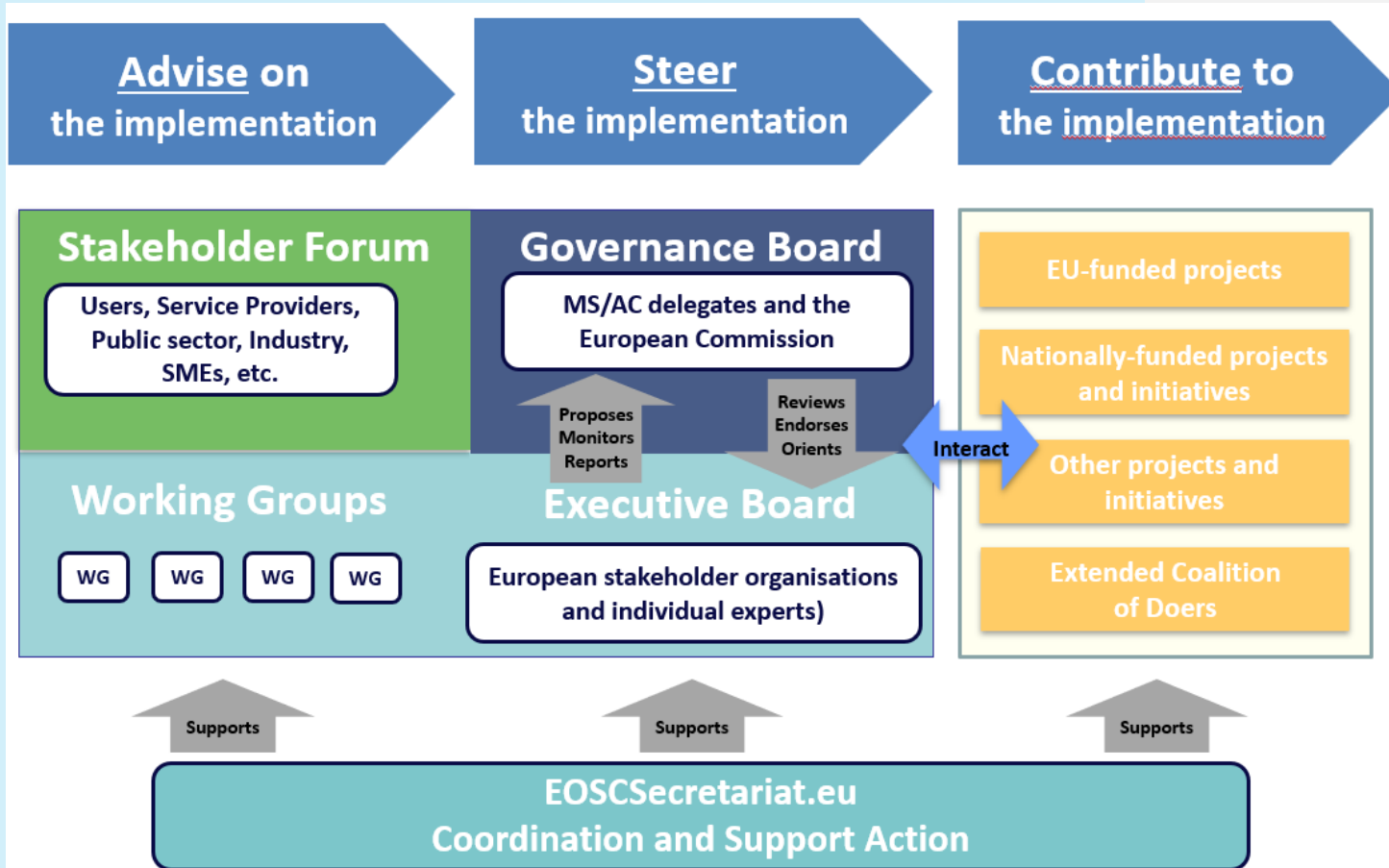
TO ACTION

Single online platform where all European researchers will be able to:

- **Find, access and re-use data** produced by other scientists
- **Deposit, analyse and share data** they have been paid to produce
- Until 2020, the EOSC will build on **existing investments**
- The Commission provides **top-up money to set up** and organise the federation and to start creating common European resources.

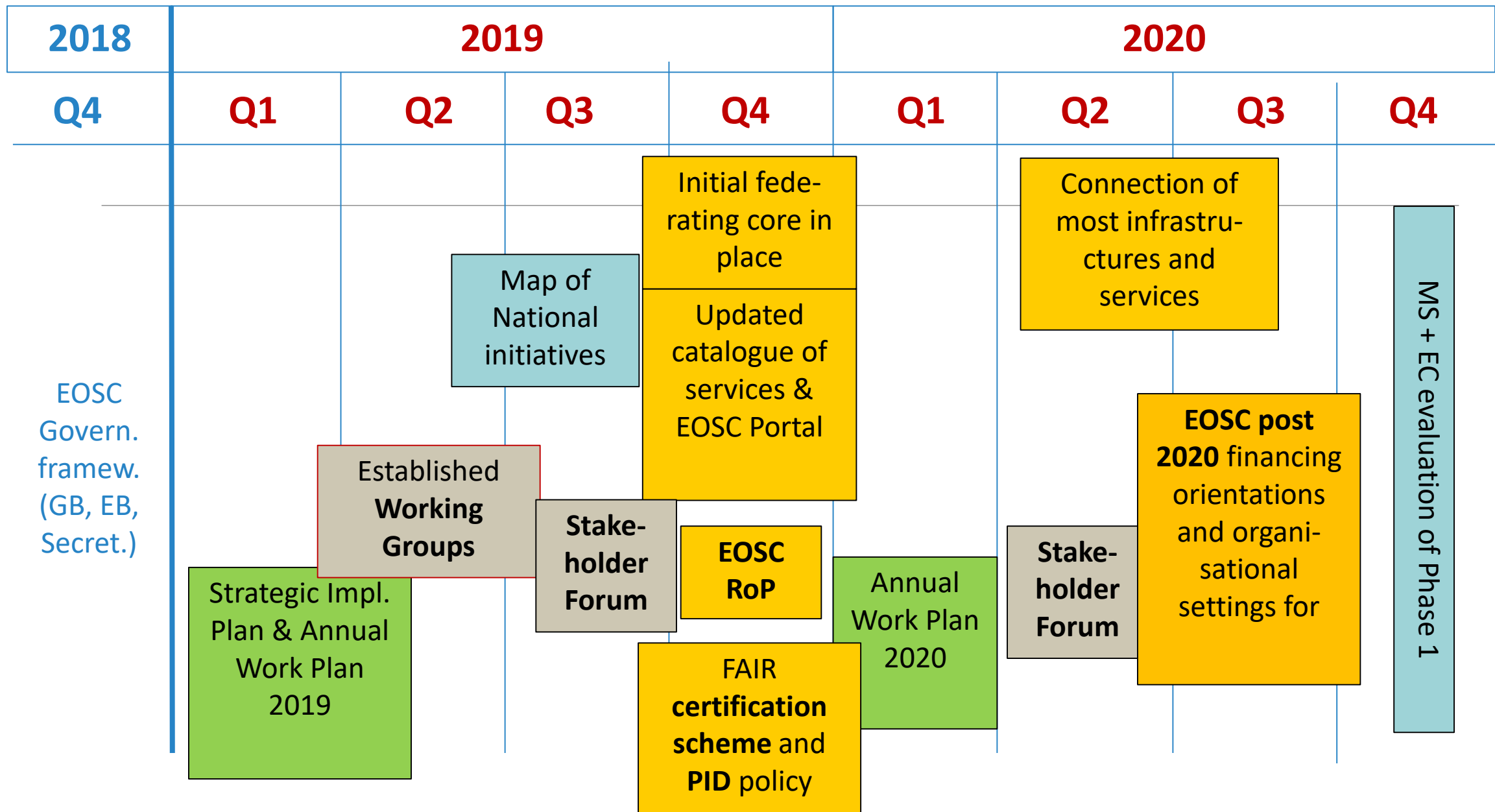
Basic documents

Implementation Roadmap for EOSC



Brussels, 14.3.2018
SWD(2018) 83 final

COMMISSION STAFF WORKING DOCUMENT
Implementation Roadmap for the European Open Science Cloud



Modus operandi

Stakeholder Engagement:

Researchers & Research Support

Research & Academia
Organisations

Policy makers & Funding bodies
(incl. EC)

National & EU e-
/digital/infrastructures

National & EU funded projects &
initiatives

Industry and third sector

EOSC governance

- Strategic guidelines of the EOSC Exec & Gov Boards
- Outcomes of the WGs



- Feedback on WGs' outcomes
- Feedback on Governance topics
- Existing & future EOSC Assets
- Requirements

EOSC stakeholders
("Stakeholders
Forum")

Systematic dialogue via a contact point per addressed stakeholders group (through "Ambassadors" and ongoing online consultations)

Executive Board

- Karel Luyben & Cathrin Stover as Co-Chairs
- 8 representatives of stakeholder groups
- 3 independent experts



EUROPEAN OPEN SCIENCE CLOUD



CHAIR
Karel Luyben,
CESAER



VICE CHAIR
Cathrin Stöver,
GÉANT



Ronald Dekker,
CESSDA ERIC



Rupert Lück
EMBL



John Womersley
European Spallation
Source ERIC



Natalia Manola,
OPENAIRE



Juan Bicarregui,
Research Data
Alliance



Stephan Kuster,
Science Europe



Sarah Jones,
Individual Expert



Jean-François
Abramatic,
Individual Expert



Jan Hrusak,
Individual Expert

Executive Board

The 6 lines of action of the EOSC model

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 WGs

EOSCRoP
Executive Board Working Group

Juan Bicarregui



Designing the Rules of Participation that shall define the **rights, obligations governing EOSC transactions between EOSC users, providers and operators.**

EOSCLandscape
Executive Board Working Group

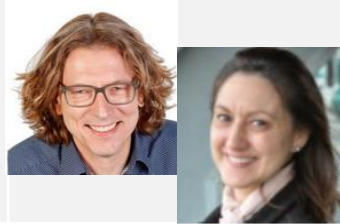
Jan Hrušák



Mapping of the existing research infrastructures in Europe which are candidates to be part of the EOSC federation

EOSCSustainability
Executive Board Working Group

Rupert Lueck, Lidia Borrell-Damián



Providing a **set of strategic, legal and financing recommendations** supporting the implementation of an operational, scalable and sustainable EOSC federation after 2020

EOSCArchitecture
Executive Board Working Group

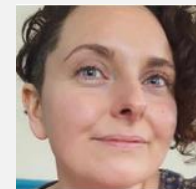
Jean-Francois Abramatic



Proposing the **technical arrangements** required to enable and sustain an evolving EOSC federation of systems. It may include standards, APIs and protocols that will facilitate interoperable digital services by diverse providers.

EOSCFAIR
Executive Board Working Group

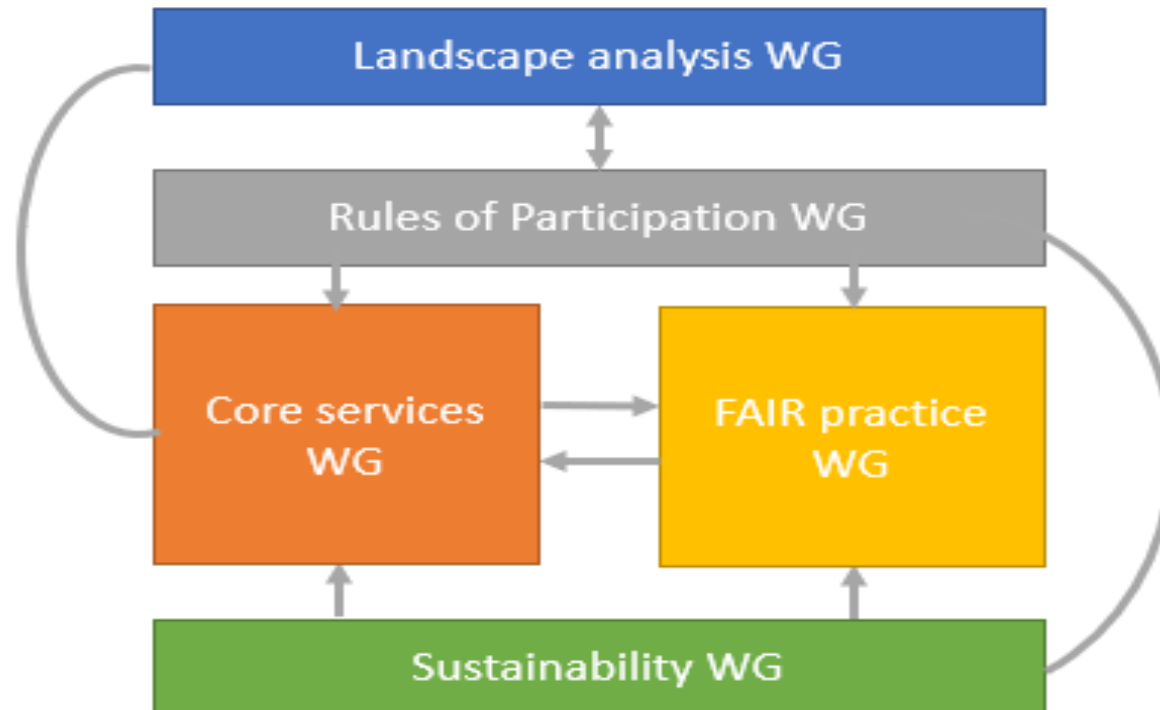
Sarah Jones



Providing **recommendations on the implementation FAIR**, including corresponding requirements for EOSC services, in order to foster cross-disciplinary interoperability.

Working Groups

EOSC Working Groups



Reason for Landscaping

Council conclusions of the Council of the European Union on Open data-intensive and networked research (adopted on 29/05/2018)

- EC and MS should explore **the creation of a map of national research data infrastructures and initiatives** in MS which could be federated, in order to ensure that current structures, competences, functions, and initiatives regarding research data management are duly taken into account
- supports the two-stage approach for the EOSC governance that enables **all Member States and the Commission to steer and oversee the initial development of the EOSC in the first phase**. In the second phase the EOSC governance should become mainly stakeholder-driven, while maintaining a higher-level steering role for all Member States and the Commission.

WG Landscape

- 25 members
- + 4 WGs coordinators
- + contact points
 - 3 - EC
 - 2 - EOSC Secretariat
- WG rapporteur



Working group

Mission of the WG

Progressive EOSC convergence and alignment of structures and initiatives in Europe incl. national RIs and e-infrastructures, national open science policies, ESFRI RIs, cluster projects, thematic initiatives and clouds, EOSC-relevant H2020 projects, international WGs.

Tasks	
1.	Deliver the mapping of EOSC-relevant national infrastructures
2.	Take stock of federation constraints and opportunities at the various architectural levels , arising from national and regional structures and initiatives
3.	Propose mechanisms and best practices that will facilitate convergence and alignment between European, national and regional structures and initiatives
4.	Conduct an analysis of the Member State's level of preparedness

Work plan



Task	Outcome	Input
Q3 2019 initial mapping of EOSC-relevant infrastructures (MS, AC, other)	1 st draft for EB reading	“older” projects Inputs WG members
Q4 2019 final infrastructure mapping (EOSC-5b projects, external)	2nd draft for join meeting of EB and GB (12/2019)	INFRAEOSC-5B projects (Q2-Q3/2019) *
Q1 2020 Stock of constraints and opportunities of various architectures	3rd draft	GB, validation WS 1 *
Q2 2020 National policies, initiatives and good practice examples	4th draft	GB, validation WS 2*
Q3 2020 Analysis of the MS’s EOSC readiness, Funding models and resources, political support and strategic planning	Final La	

Landscape analysis outline

1st draft of the LA

2nd draft of the LA

3rd draft of the LA



**Introduction
Background**



**Inventory -
stocktaking and
synthesis from
existing documents**

A) EOSC related
infrastructures with
reference framework

B) policies + legislation



**Mechanisms,
modus operandi,
trends and
developments**

A) operations of
infrastructures
B) policies evolvement



**Analysis and
generalization, good
practice examples,
preparedness of MS**

in collaboration with the
other WGs and the
projects (external
subcontractor)



**+ country sheets in
Annex**

Information sources



- **Country sheets (MS, AC, WG)**
 - Current policy on open and FAIR science
 - Current e-infrastructure landscape
- **EOSC related projects**
- **Feedback from EB, EG**
- **Validation Workshop**

5b cluster EOSC projects

Abbreviation	Project name	Mission
NI4OS-Europe	National Initiatives for Open Science in Europe	To be a core contributor to the EOSC service portfolio, commit to EOSC governance and ensure inclusiveness on the European level.
ExPaNDS	European Open Science CLOUD Photon and Neutron Data Service	Enable EOSC services and provide coherent FAIR data services to the scientific users of PaN sources
EOSC Synergy	Expanding Capacities & Building Capabilities	EOSC-synergy will expand the Capacity and Capabilities of EOSC by leveraging the experience, effort and resources of national publicly-funded digital infrastructures in a coherent way, therefore acting also as an incentive for national resource providers.
EOSC Pilar	-	Coordination and Harmonisation of National and Thematic Initiatives to support EOSC
EOSC Nordic	-	Support coordination, harmonization and alignment of Nordic and Baltic national policies and practices related to the provision of horizontal research data services with EOSC

**Thank you for
your
attention.**



FAIR principles

An essential part of EOSC architecture

- a set of guiding principles in order **to make data findable, accessible, interoperable and reusable**
- provide **guidance for scientific data management**
- **relevant to all stakeholders** in the current digital ecosystem
- directly address data producers and data publishers **to promote maximum use of research data**
- major funding bodies promote FAIR data to **maximise the integrity and impact of their research investment**

