

# **EOSC Academy - Course 2: Applying the EOSC Federation Handbook**

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for the **EOSC Academy**



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EOSC Association

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EOSC Federation Handbook

EOSC Association (Editor)

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Book Open

EOSC Federation Handbook provides an overview of the organisational and operational structure and technical characteristics of the EOSC Federation. It aims to serve as a practical guideline for organisations that are interested in making their resources available within and across the EOSC Federation. Such organisations can achieve this objective by creating and operating an "EOSC Node", and "enrolling" it as part of the EOSC Federation, and/or by "onboarding" their resources in one or more EOSC Nodes operated by other organisations.

The intended users of the Handbook include primarily facility managers, policy makers and technical staff of research performing and funding organisations, research infrastructures, providers of scientific services and other resources, and e-infrastructures.

The "end-users" of the resources accessible through the EOSC Federation, i.e. the researchers, are not directly targeted by the Handbook, but they may still find useful information about the scope and organisation of the EOSC Federation. It is important to build the EOSC Federation in the most transparent manner and with the understanding of the research community.

Files

EOSC\_Federation\_Handbook\_V2\_20260130.pdf

Version	Date
Version 2.0 10.5281/zenodo.18454649	Jan 30, 2026
Version 1.0 10.5281/zenodo.1499577	Mar 27, 2025

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External resources

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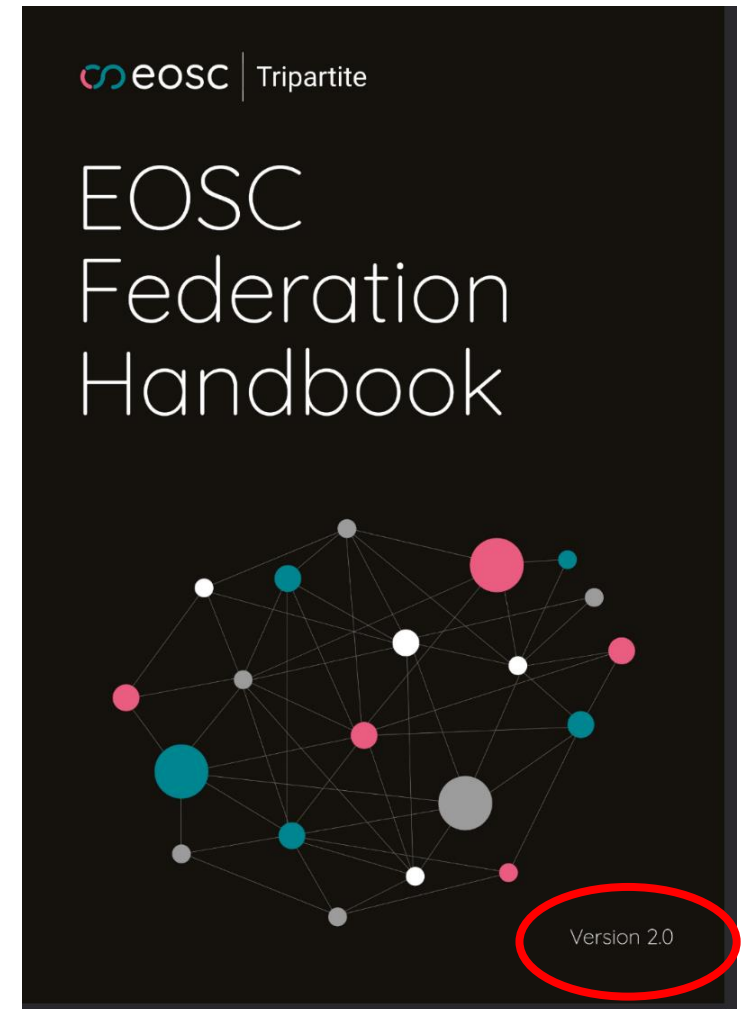
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Book

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# Module 5

## Research Resources for the EOSC Federation

*Ch 5. Research Resources – pg 48 - 55*

## → Create the Web of FAIR Data

# Policy #1 on the ERA Policy Agenda is

### ^ Enabling open science via sharing and re-use of data, including through the European Open Science Cloud (EOSC)

Open science is essential for increasing accessibility, transparency and collaboration in research. Therefore, this structural policy aims at making open science practices the 'new normal'. It seeks to create a better EU legal framework for **open sharing, seamless access and reliable re-use of research data and other digital research objects used and produced along the research life cycle.**

<https://european-research-area.ec.europa.eu/era-structural-policies-2025-2027>

- *EOSC Federation becomes fully operational*
- *Enrolment of new Nodes to the EOSC Federation*
- *EOSC Partnership phasing out strategy*
- *Proposal for new EOSC governance/financing model after 2027*
- *Expansion of EOSC Open Science Observatory to include assessment of impact of open science (implementing an open science policy intelligence platform)*
- *EOSC Open Science Observatory Annual report*
- *Finalisation of the economic study "Economic analysis of options for improving EU legislative and regulatory frameworks with impact on access and reuse of publicly funded R&I results and of publications and data for scientific purposes": March/ April 2026*

# Research Resources #1 to #6

Resource	Category	Description
<b>Research Publications</b>	Publications	Textual output of scientific research that enables to be used in new research or to verify research findings; it encompasses principally all peer reviewed publications in scientific journals, but includes other, non-peer reviewed cases such as preprints
<b>Research Data sources</b>	Sources	Sources where data can be found and retrieved, offering APIs or direct access to data searches across various query fields. Data repositories and archives, knowledge bases and scientific databases fall into this category
<b>Research Data</b>	Data	Data and associated metadata created or collected as a part of scientific research or of relevance to scientific research
<b>Research Software</b>	Software	Source code, algorithms, scripts, computational workflows, and executables that were created during the research process or for a research purpose
<b>Research Tools</b>	Software	Analytical, visualisation and other types of tools to aid in the interpretation, transformation and presentation of data. Tools may include dashboards, plotting software, data anonymization software and machine learning frameworks
<b>Research Services</b>	Services	Services that provide management, processing, and storage capabilities for research data and metadata. These may include DMPs, data cleaning, transformation, analytics, and computational power to support large-scale studies

## Research Resources #7 to #10

Resource	Category	Description
<b>Research Training</b>	Mentoring	Educational resources designed to improve data literacy, technical skills, and knowledge of best practices in all aspects relevant to the EOSC. This includes structured courses and schools, webinars, and hands-on workshops
<b>Research Interoperability guidelines</b>	Documentation	Guidelines to ensure compatibility and seamless data exchange between systems. This category includes metadata standards, data-sharing protocols, and frameworks for harmonizing metadata and data formats
<b>Research Competence Centres</b>	Mentoring	A Competence Centre (CC) is a virtual hub dedicated to fostering research excellence through training and knowledge transfer. In Open Science, CCs are community-based initiatives supported by a collaborative network of people who provide expertise, best practices and services on relevant topics and promote cross-disciplinary collaboration
<b>Research Resources and Services Discovery</b>	Discovery	Search engine for research resources and services tuned for researchers

Table 5.1: Resource Categories



# Research Resources #1 to #12

- 22 services registered so far: at <https://eosc.panosc.eu>
- Mostly **data repositories**
- But also Virtual Remote Environment (**VRE**) for **remote analysis**

## Overview of PaNOSC Node Services

Content Provider	
ESRF – European Synchrotron ...	4
Deutsches Elektronen-Synchrot...	3
Helmholtz-Zentrum Dresden-R...	3
Paul Scherrer Institute (PSI)	3
ESS – European Spallation Sou...	2
MAX IV	2
ALBA	1
Elettra	1
Institut Laue-Langevin (ILL)	1
More...	

22 results found

Search

**DESY Public Data Repository**

Opendata Portal for data at DESY.

**PETRA III Public Data Repository**

Opendata Portal for experimental data produced at PETRA III, DESY.

**SOLEIL VISA Service**

The SOLEIL VISA (Virtual Infrastructure for Scientific Analysis) service makes it simple to create compute instances on the data analysis infrastructure to \_\_\_\_\_  
(Show more)

**MAX IV Open Data Repository**

The MAX IV Open Data Repository provides access to scientific data generated at the MAX IV Laboratory. It connects datasets with rich metadata. \_\_\_\_\_  
(Show more)

**MAX IV Metadata Catalogue SciCat**

MAX IV SciCat is the metadata catalogue for managing and discovering scientific data from MAX IV Laboratory at the Lund University. It captures \_\_\_\_\_  
(Show more)

**AiiDALab Quantum ESPRESSO app**

**AiiDALab**, a Jupyter-based web platform powered by the **AiiDA** workflow management system, offers lightweight web apps for running complex and \_\_\_\_\_  
(Show more)

**Materials Cloud Archive**

Open repository for research data relevant to computational materials science.

**ESRF VISA Service**

The ESRF VISA (Virtual Infrastructure for Scientific Analysis) service makes it simple to create compute instances on the data analysis infrastructure to \_\_\_\_\_  
(Show more)

**Elettra Open Access Data Portal**

Opendata Portal for the Elettra Sincrotrone Trieste synchrotron facility (<https://www.elettra.eu/>).

**PSI Data Portal**

Find, access, and reuse public data acquired at PSI

**PaN-Finder**

The PaN-Finder is a discovery portal that helps researchers locate and access data from European photon and neutron facilities. By connecting metadata from \_\_\_\_\_  
(Show more)

**PaN-Space**

The PaNOSC User Space is an integrated online environment where researchers can access, analyze, and share data from photon and neutron \_\_\_\_\_  
(Show more)

[View your results on the PaN-Services Catalogue](#)

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# Research Resources #13 to #22

- 22 services registered so far: at <https://eosc.panosc.eu>
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MAX IV	2
ALBA	1
Elettra	1
Institut Laue-Langevin (ILL)	1
More...	
Keywords	
PaNOSC	19
PaN	18
discovery	14
data management	12
Photon and Neutron	11
Data	8
SciCat	6
login required	5
Photon science	4
More...	

22 results found Search

**ALBA synchrotron Data Portal**

Find, access, interact and reuse data acquired at ALBA

**DAPHNE Public Data Portal**

This catalogue allows users to access publicly available data and metadata from experiments and simulations provided by members of the scientific... (Show more)

**Paleontology data portal**

The Paleontology database hosts data obtained from X-ray Computed Tomography experiments at ESRF. Started in 2011, it has helped the ESRF... (Show more)

**Human Organ Atlas**

The Human Organ Atlas provides Hierarchical Phase-Contrast Tomography images of human anatomy from the micron to whole organ scale. Human... (Show more)

**ESRF data repository**

The ESRF FAIR data catalog contains all raw data and processed data (for certain techniques)

**ILL VISA Service**

VISA (Virtual Infrastructure for Scientific Analysis) makes it simple to create compute instances on the data analysis infrastructure to analyse your... (Show more)

**PaNOSC Data Portal**

The PaNOSC Data Portal provides unified access to experimental data from Europe's major photon and neutron facilities. It enables users to search... (Show more)

**HZDR Metadata Catalogue SciCat**

SciCat is HZDR's metadata catalogue for managing and discovering experimental and simulation datasets. It captures detailed metadata throughout the... (Show more)

**HZDR Data Repository RODARE**

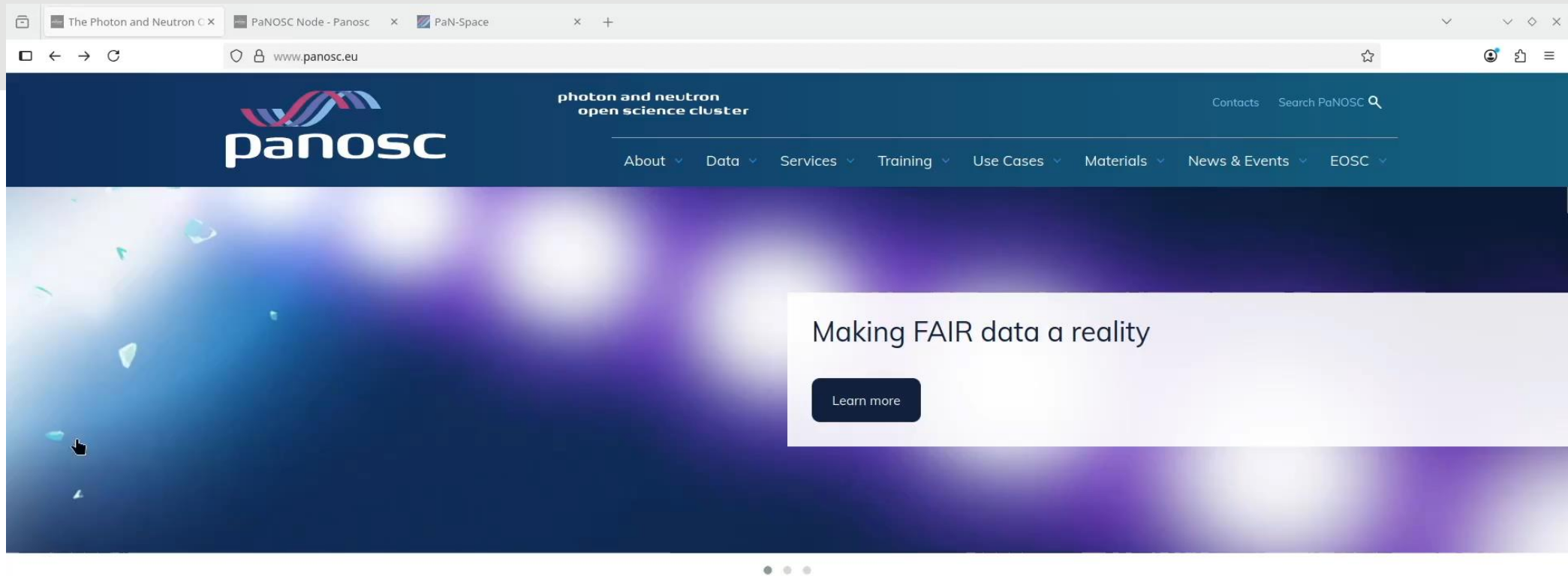
RODARE is the Helmholtz-Zentrum Dresden-Rossendorf's data repository for publishing, sharing, and preserving research data, software, and related... (Show more)

**PaN-Training**

PaN-Training.eu is the central training catalogue for the Photon and Neutron (PaN) research community, providing descriptive metadata on courses... (Show more)

[View your results on the PaN-Services Catalogue](#)

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## The Photon and Neutron Open Science Cluster (PaNOSC)

The Photon and Neutron Open Science Cluster (PaNOSC) is the Science Cluster representing Photon and Neutron European Research Infrastructures (RIs), developing and providing services for its scientific community and connecting these to the European Open Science Cloud (EOSC).

Objectives





Photo by Leeloo The First on Pexels

# Flashcards

- Question 5.1:** What is the role of a Research Data resource in the EOSC Federation and give an example?
- Question 5.2:** What is the role of Research Publications resources in the EOSC Federation ?
- Question 5.3:** What is the role of Research Software in the EOSC Federation?
- Question 5.3:** What is the role of Research Training in the EOSC Federation?

# Further Questions + Discussions on the EOSC Federation User Forum

<https://user-forum.eosc.eu/>



A screenshot of the EOSC Federation User Forum interface. The top left shows the EOSC logo and 'Federation'. A navigation menu on the left includes 'New Topic', 'Topics', 'My posts', 'My messages', 'Review', 'Admin', 'Invite', and 'More'. Below this are sections for 'CATEGORIES' (EOSC Academy, EU Projects, Federation Nodes, Federation Support, Research Communities, All categories), 'CHANNELS' (General, Staff), and 'DMS' (Brina). The main content area displays a list of forum posts. The first post is 'EOSC Academy - Online sessions - May/June 2026' by icaetano, 13d ago. The second is 'EU Node Technical Architecture Specifications' by andygotz, 14d ago. The third is 'EOSC Federation onboarding of services' by Carlo, 17d ago. The fourth is 'EOSC Node Open Source bundles' by andygotz, 19d ago. The fifth is 'OSCARS project InViMOD' by andygotz, 20d ago. The sixth is 'Code of Conduct - draft' by andygotz, 25d ago. The seventh is a pinned post 'Admin Guide: Getting Started' by system, 25d ago. The eighth is 'Welcome to the EOSC Federation User Forum!' by system, 25d ago. A search bar is located at the top right, and a 'Welcome back, andygotz!' message is at the top left of the forum area.