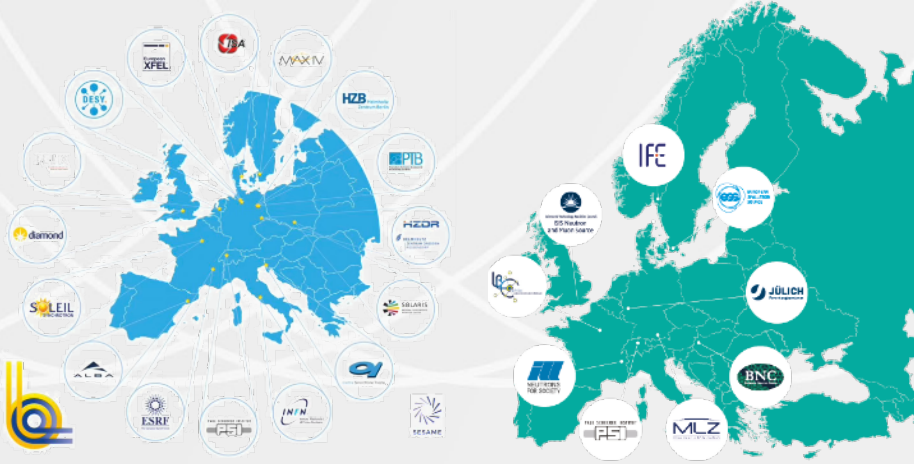
EOSC Node | PaNOSC

Physical Sciences & Engineering



From Petabytes to Practice:

How PaNOSC Enables AI-Ready Communities in the EOSC Federation

15 October 2026

Oliver Knodel (HZDR) on behalf of the **PaNOSC Community**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 823852

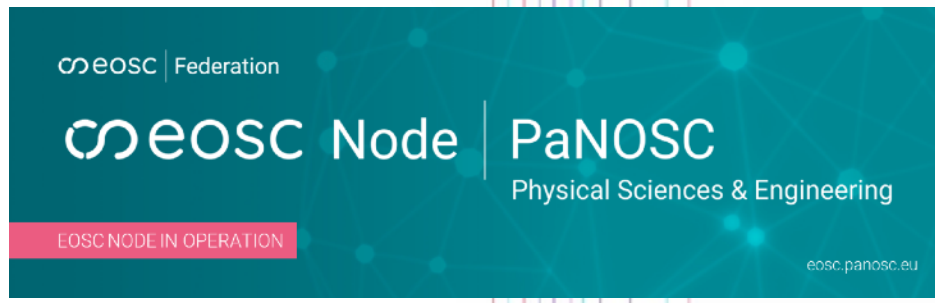
Data Volume as the Defining Challenge

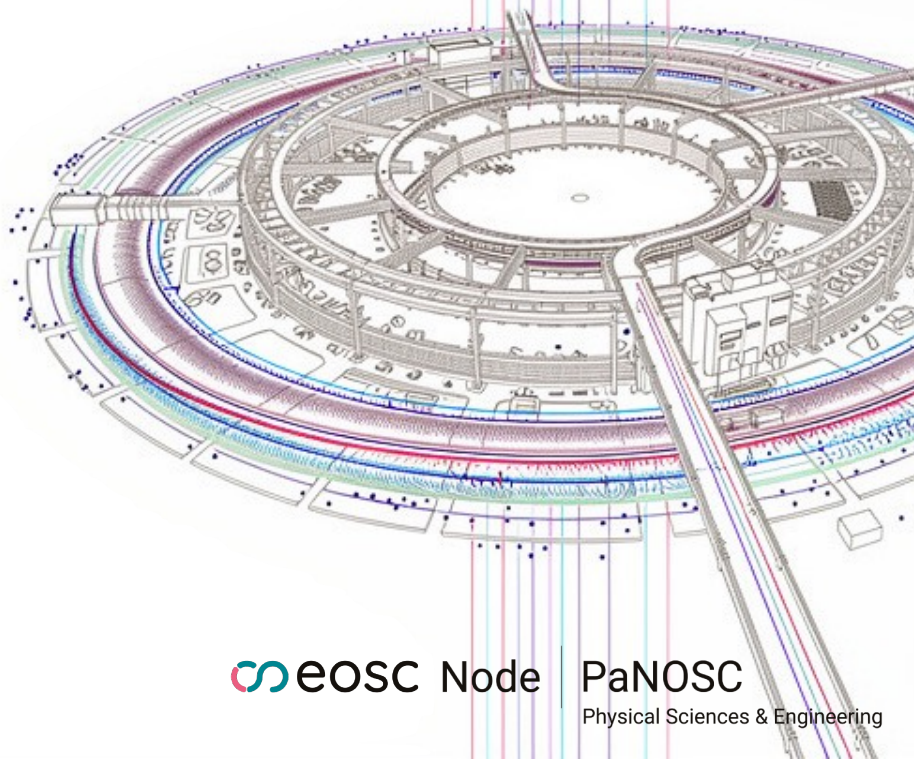
PaNOSC: The thematic EOSC Node for the Photon and Neutron (PaN) community

- Petabytes of raw experimental data generated per facility and year
- AI-based methods have become a prerequisite for scalable data analysis
- The limiting factor is not compute capacity, but the ability to exploit the data

The PaNOSC EOSC Node founding members:

ESRF The European Synchrotron · DESY. · HZDR Helmholtz Zentrum Dresden Rossendorf · PSI · ess European Spallation Source · MAX IV · ALBA · Elettra Sincrotrone Trieste · ill Neutrons for Society · European XFEL · SOLEIL Synchrotron





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Services Provided by the PaNOSC Node

Curated Data, Co-Located Analysis and Trusted Access in One Environment

Data

- Federated data catalogues and Open Data Portal
- Curated FAIR datasets prepared for AI use

Compute & Analysis

- VISA remote analysis environments
- Analysis notebooks co-located with the data

Trust

- Umbrella ID AAI via MyAccessID (GÉANT)
- 19 onboarded services: TRL7, GDPR compliance, sustainability by design



Capacity Building at the Core

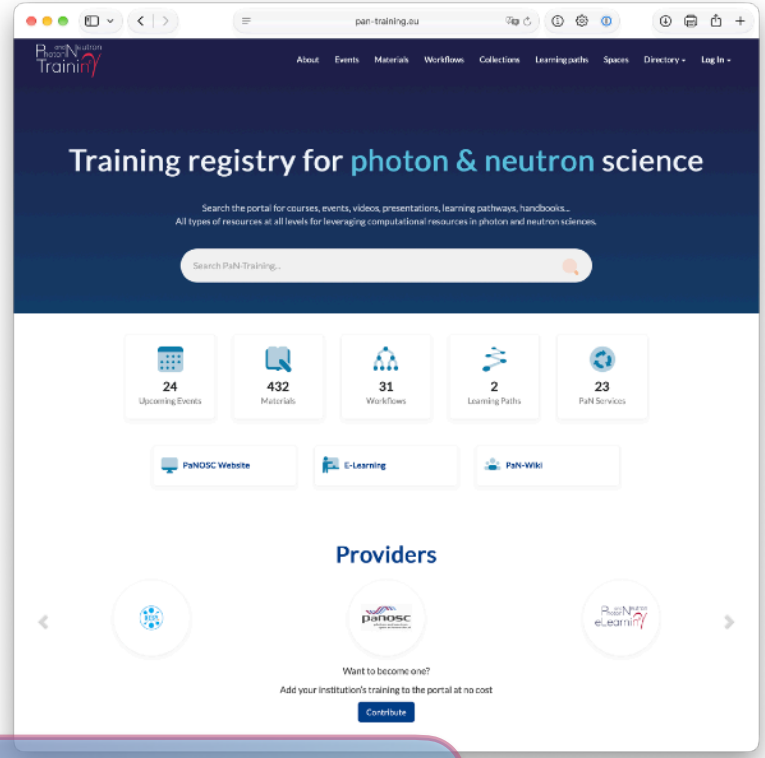
From Access to Competence: How the Node Trains Its Community

Training embedded in the research ecosystem

- PaN-Training catalogue (TeSSHub), providing events, materials and curated learning paths
- PaN-Space: Data, analysis and training in a single environment
- Remote analysis training on VISA

Co-designed across the community

- 11 facilities, shared policies, shared AAI, shared training platform
- Resources developed by one facility are available to all



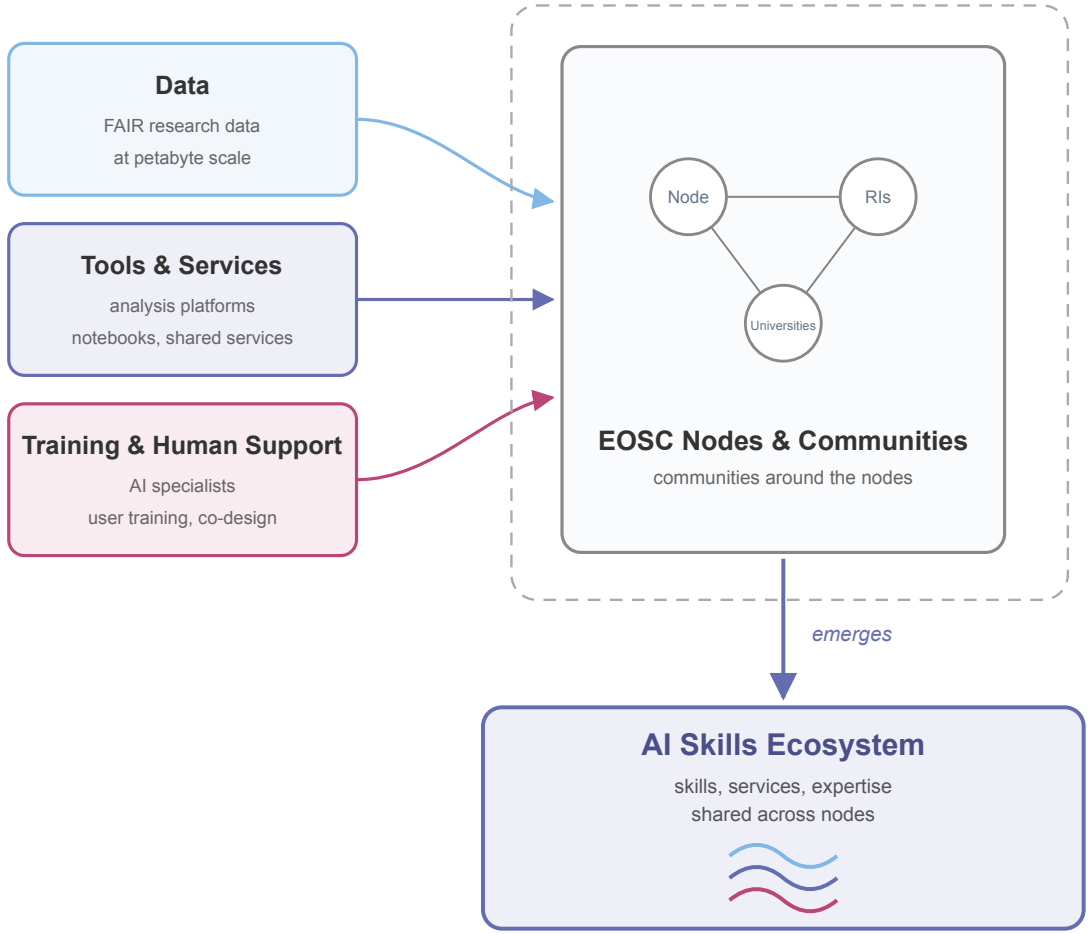
The node lowers the barrier to AI adoption not by adding compute capacity, but by providing curated data, documented workflows and trained communities.

Towards an EOSC AI Skills Ecosystem

What PaNOSC demonstrates – and what still requires sustainability

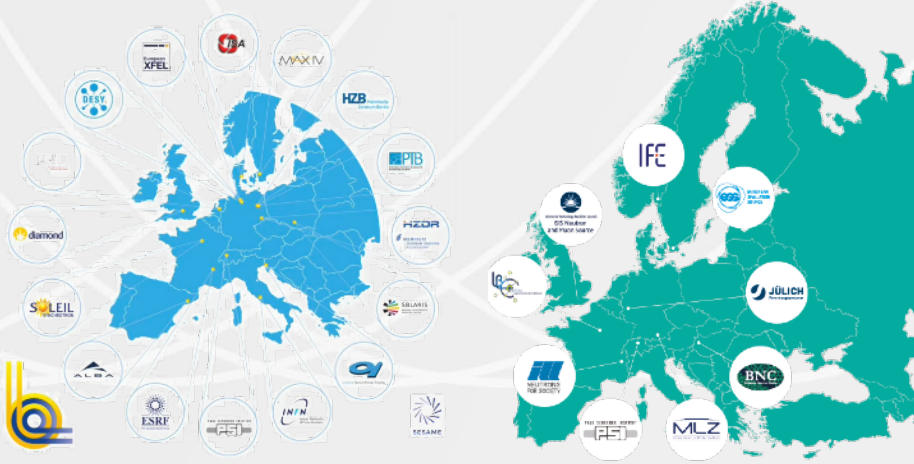
- AI skills ecosystems do not emerge centrally: They emerge in **EOSC Nodes** and **communities** that bring data, tools and training together
- PaNOSC provides an operational **proof of concept…**
- …and similar initiatives are emerging at other nodes, projects, communities, research infrastructures and universities within the EOSC Federation

How can domain-specific training across nodes be funded and curated in a way that outlasts individual project cycles?

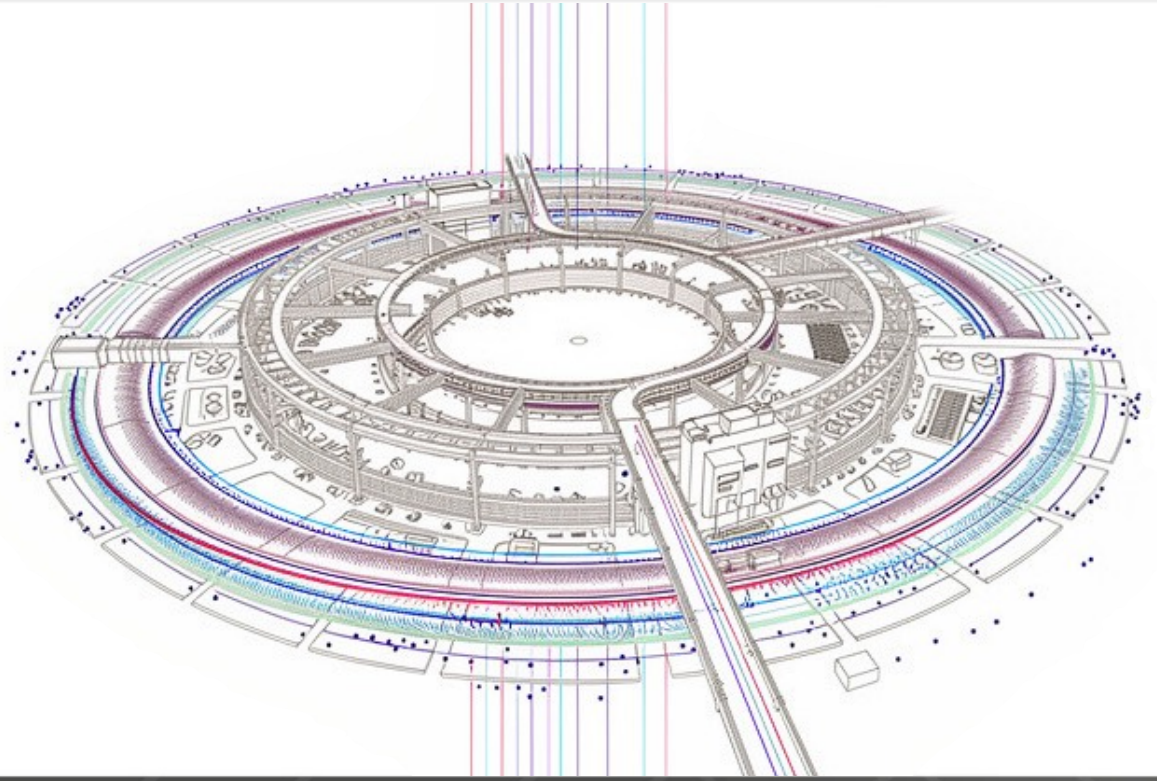


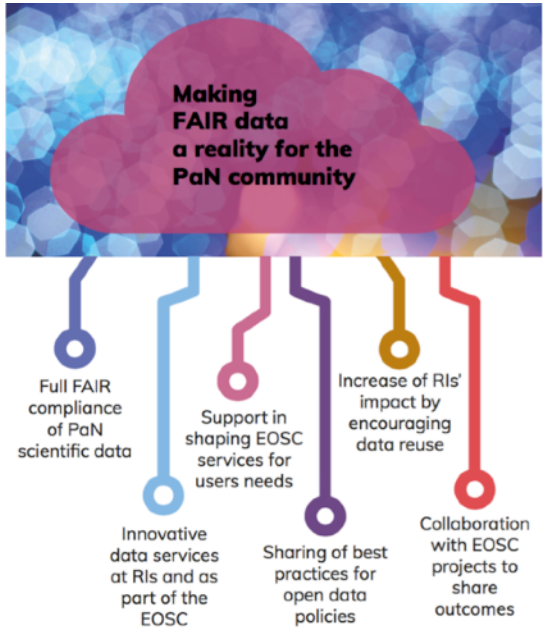
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