

# The European Open Science Cloud (EOSC) Photon and Neutron Data Service ExPaNDS

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The ambition of the European HORIZON2020 project ExPaNDS (EOSC Photon and Neutron Data Services) is to enrich the European Open Science Cloud (EOSC) with data management services and to coordinate activities to enable national Photon and Neutron (PaN) Research Infrastructure (RIs) to make the majority of their data 'open' following FAIR principles (Findable, Accessible, Interoperable, Reusable) and to harmonise their efforts to make their data catalogues and data analysis services accessible through the EOSC, thereby enabling them to be shared in a uniform way.

EOSC currently provides a range of services that needs to be adapted to the ever-increasing requirements of scientific experiments held at various PaN RIs. It is essential that these services become standardised, interoperable and integrated to fully exploit the scientific opportunities at PaN RIs.

ExPaNDS therefore seeks to: Enable EOSC services and to provide coherent FAIR data services to the scientific users of PaN RIs; connect PaN RIs through a platform of data catalogues and analysis services through the EOSC for users from RIs, universities, industry etc.; gather feedback and cooperate with the EOSC governance bodies to improve the EOSC and develop standard relationships and interconnections between scientific publications, PaN scientific datasets, experimental reports, instruments and authors (via ORCID).

Concretely ExPaNDS proposes to standardise and link all the relevant PaN RI catalogues to ensure that the user community has access to both the raw data they collect, which is linked to their research session at the various national RIs, and relevant peer review articles produced as a direct result of their usage. It is paramount that ExPaNDS develops a common ontology to fully integrate all the elements of the catalogues as well as a roadmap for the back-end architecture and functionalities. ExPaNDS also proposes to develop a powerful taxonomy strategy in line with the requirement of the EOSC user community. The proposed activity will feed into the OpenAIRE infrastructure integrating and linking entities from a wide range of scholarly resources.

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