



OSCARS

Open Science Clusters' Action
for Research & Society

Funded Project

Findable Big Data from Various Material Characterisation Techniques

Presenter: Sandor Brockhauser, Humboldt-Universität zu Berlin, <https://orcid.org/0000-0002-9700-4803>

Implemented by



FAIR Data Infrastructure
for Physics, Chemistry,
Materials Science,
and Astronomy e.V.



HZB Helmholtz
Zentrum Berlin



Funded by
the European Union

FAIRness of Experimental Data

- Findability and Interoperability needs commonly accepted ontology
 - PaNET aims to cover experiment techniques
 - NeXus provides details of experiment data
 - ESRF-ET is to connect experiment data to techniques
 - Data repositories should offer searchability according to these ontologies
 - Data driven science and AI tools need such platforms
-

Main goals

- interoperability of experimental data via connecting ontologies:
PaNET - NeXus - ESRF-ET
 - integrating ontologies to EOSC services and RDM platforms:
NOMAD, PANOSC, ESRF_DATA, HZB_DATA
 - Scientific use case:
AI driven spectroscopy analysis
-

Progress Report after 5 months

- ESRF-ET
 - more than 20 techniques implemented
 - concepts for differentiating the techniques
 - PaNET
 - can incorporate the new concepts from ESRF-ET
 - Dataset Individuals
 - created manually or templated
 - scripts or Beamline ontologies could help to capture beamline specific information and connect datasets to ESRF-ET and PaNET
 - Note that Beamline ontologies are inherently time-dependent
-

Next Steps

- ESRF-ET
 - cover 30-50 techniques
 - PaNET
 - a proposal mechanism for regular updates and extensions
 - Dataset Individuals
 - example individuals for each technique
 - NeXus Ontology
 - connect Application Definitions to PaNET
 - connect Base Classes to Beamline ontologies
 - Data Portals to support PaNET: (ESRF, HZB, NOMAD)
-