**Shaping a modern approach to open data from Diamond Light Source**

A collaboration between Diamond Light Source and the University of Oxford funds a PhD project aimed at understanding the technical, social and policy implications of adopting the FAIR (Findable, Accessible, Interoperable, Reusable) Principles, and evaluating the effects of its implementation on synchrotron data. The work focuses on the early stage of the science life cycle, when the scientists submit their experiment proposals to the facility, to ensure FAIRness is embedded in the process at design stage.

To start, we will use Machine Learning techniques to extract metadata from experiment proposals and link the metadata to ontologies; the semantic annotation is essential to make the information machine-actionable, a fundamental goal for FAIR. For the next step, we will investigate how this could trigger a cascading effect and improve the FAIRness of other stages in the science life cycle. Lastly, we will evaluate the impact of the proposed process improvements, looking at cost-benefit for the organisation.

The project is designed to leverage on the activities of existing communities and projects, and is also guided by a Stakeholder Group with representatives from Diamond, other facilities, and European infrastructure projects.