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# Connecting Metadata, Data, and Software Repositories in a Generic Data Management Lifecycle for Photon Science

The connection between metadata, data, and software and the integration in an overall lifecycle is crucial for effective data management in research. The generic data management lifecycle, developed at HZDR, bridges these critical components, ensuring seamless data discovery, accessibility, and reproducibility. The approach emphasises the planning of experiments, the role of metadata, data storage, as well as software versioning, and the final publication of digital research artefacts, which enables comprehensive traceability from data creation to long-term archiving. By aligning these elements in a unified procedure, we recommend a uniform lifecycle that can be adapted to different research areas, with a particular focus on photon science and community services such as SciCat that improve data integrity and promote collaborative research.

## Speed talk:

I am unwilling/unable to present a speed talk

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