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FAIR and reproducible data management and analysis with openBIS

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Research data management (RDM) in line with the FAIR (Findable, Accessible, Interoperable and Reusable) data principles is increasingly becoming an important aspect of good scientific practice. In experimental disciplines, FAIR RDM is challenging because every step of the research process needs to be accurately documented, and data needs to be securely stored, backed up, and annotated with sufficient metadata to ensure reusability and reproducibility. The use of an integrated Electronic Lab Notebook (ELN) and Laboratory Information Management System (LIMS), with data management capabilities, can help researchers to achieve this goal. In close collaboration with scientists, the Scientific IT Services (SIS) of ETH Zürich have developed and operated such an integrated solution, openBIS, for more than 10 years. As part of the EGI-ACE project, SIS offers the openRDM.eu service since 2021. openRDM.eu supports European research groups with installation, on-boarding and use of openBIS.
Recently, SIS has been collaborating with scientists from experimental labs at ETH Zürich to enable analysis of their research data managed with openBIS in a reproducible, scalable and collaborative way. To this end, we have developed a platform that provides a connection between openBIS and established open-source tools such as Git for code management, Binder for reproducible computing environments, JupyterLab for interactive computational notebooks, Kubernetes for scalability.
This presentation will provide an overview of the openBIS software as well as the openRDM.eu service, followed by a demonstration of how data stored with openBIS can be processed and analysed in a FAIR-compliant and reproducible way.

Any relevant links

https://openbis.ch/
https://openrdm.eu/

Topic

Data Spaces

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