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## Integrated and automated data management at European XFEL empowered by myMdC metadata catalogue

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As data volumes and complexity continue to rise at European XFEL, the need for integrated, sustainable metadata solutions continues to be critical. We introduce myMdC - a centralized metadata catalogue available at <https://in.xfel.eu/metadata> \* - and highlight its key role in supporting the facility's data management strategy. In operation since the first day of user experiments in 2017, myMdC ensures real-time injection, documentation and cataloging of all acquired datasets, forming the backbone of data and metadata operations at European XFEL. Its deep integration with facility services enables immediate dataset tracking from the moment data is acquired, supporting automation across inventory, access control during embargo periods, metadata preservation, and FAIR \*\* data workflows.

Functioning as a central hub, myMdC orchestrates communication between both facility external and internal, enabling consistent, scalable, and efficient management of scientific data. Its real-time capabilities also support seamless data and metadata registration, linking, DOI \*\*\* publication, and validation - enhancing discoverability, traceability, and long-term accessibility of datasets.

By consolidating metadata management into a unified platform, myMdC empowers European XFEL to maintain scalable, transparent, and future-proof data practices - ensuring that its scientific output remains robust and interoperable within the global research community.

### Footnotes

- <https://in.xfel.eu/metadata> **FAIR: Findable, Accessible, Interoperable, Reusable**\* DOI: Digital Object Identifier

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