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Towards the implementation of a new European XFEL scientific data policy –challenges and chances.

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As data volumes at European XFEL continue to grow rapidly, the need for sustainable storage, access, and preservation has become increasingly critical. In response, and despite operating within an established data management environment, the facility has introduced a new scientific data policy to address rising demands and align with evolving international best practices. The policy emphasizes long-term sustainability and adherence to the FAIR principles (Findable, Accessible, Interoperable, Reusable), promoting enhanced transparency, sharing, and reuse of research data. To support this, several key updates have been implemented. Data Management Plans (DMPs) are now mandatory from the project planning stage onward, guiding researchers in defining data workflows and lifecycle strategies. Data reduction techniques have been adopted to optimize storage without sacrificing scientific value. The storage infrastructure now features a tiered model, combining high-performance systems for short-term needs with cost-efficient long-term archival. Metadata tools have been upgraded to improve discoverability and access controls have been refined to support secure, collaborative research. These developments build on European XFEL's strong foundation—spanning infrastructure, policy, and expertise—ensuring scalable, efficient data management in line with global standards.

Footnotes

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