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Data Management Planning within the EOSC CZ - Czech National Data Infrastructure for Research Data

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The rapid expansion of data availability is reshaping research methodologies across various disciplines. This surge, characterized by its Velocity, Variety, and Volume, is driven not only by experimental data but also by the digital footprints of our daily activities. This presentation will focus on the implications of this data explosion, with a particular emphasis on the European Open Science Cloud (EOSC) and its Czech National implementation (EOSC CZ) via the Czech National Data Infrastructure.

EOSC CZ is a pivotal initiative aimed at integrating Czech research data management practices with the broader European Open Science Cloud framework. This initiative supports the principles of Open Science by providing a robust infrastructure for managing research data, ensuring that data is accessible, interoperable, and reusable. The Czech National Data Infrastructure complements this by offering a comprehensive platform for data storage, management, and sharing, tailored to meet the needs of the Czech research community[1].

Effective data management strategies are crucial for ensuring that data remains accessible, usable, and secure throughout its lifecycle. The Czech National Data Infrastructure plays a critical role in this context by providing a unified platform for data management that aligns with the FAIR Data Principles—ensuring that data is Findable, Accessible, Interoperable, and Reusable[2].

Discussions will cover best practices using machine actionable Data Management plan tool Data Stewardship Wizard. This presentation will focus on the automated generation and provisioning of metadata for Data Management Planning and Repositories of National Repository platform as part of Czech National Data Infrastructure. Automation in metadata creation is not only a solution to this challenge but also a necessity for adhering to the FAIR Data Principles. We will explore automated metadata generation techniques, the integration of metadata into searchable catalogues and Data Management Plan tool, and the role of metadata in enhancing data discoverability and usability by enhancing semantic interoperability of all the infrastructure. These advancements are particularly vital for machine-driven applications, such as AI training, where the quality and accessibility of data directly impact the outcomes[3].

In summary, this presentation at ISGC 2025 aims to address the multifaceted challenges posed by the rapid growth of data. By fostering discussions on advanced data processing models, effective data management practices, and automated metadata generation, we seek to equip researchers with the tools and knowledge necessary to navigate the complexities of big research data. Participants will gain insights into cutting-edge techniques and strategies that can transform data into valuable assets, driving innovation and discovery in the digital age. The integration of EOSC CZ and the Czech National Data Infrastructure into this framework underscores the importance of collaborative efforts in advancing open science and data stewardship in Europe[4].

References
[1] www.eosc.cz/en
[2] www.eosc.eu
[3] www.eosc.cz/en
[4] /msmt.gov.cz/vyzkum-a-vyvoj-2/eosc-obecne

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