Contribution ID: **26**   Type: **Demo**

DataPLANT - (Meta)data Annotation with Swate and Ontologies - Demo

Thursday 4 April 2024 17:04 (1 minute)

The DataPLANT consortium, a German National Research Data Infrastructure (NFDI), focuses on creating a resilient and enduring data infrastructure to support plant scientists with Research Data Management (RDM). Various tools and services are provided to assist users in this endeavour.

At the centre of DataPLANT lies the Annotated Research Context (ARC), a FAIR digital object. The ARC serves as a standardized and comprehensive method for researchers to document their experimental designs, protocols, workflows, and data in a structured format. The annotation of metadata within the ARCs is facilitated by ontologies. The DataPLANT Ontology Landscape combines the ISA standard with the semantic capabilities of the metadata annotation tool Swate [https://github.com/nfdi4plants/Swate] and the Terminology-Service [https://github.com/nfdi4plants/nfdi4plants_ontology] provided by DataPLANT. This approach addresses the challenge of harmonizing diverse data sources, enabling researchers to seamlessly collaborate, share, and analyze data while fostering reproducibility and interoperability.

The ISA (Investigation, Study, Assay) data model is a well-established standard for capturing and representing metadata. It provides a structured and extensible framework for describing the experimental design and context. Swate, an Excel Add-In, simplifies metadata annotation by relying on the ISA-Tab format in combination with ontology term search via a Terminology Service. This process not only enhances the accuracy and efficiency of metadata annotation but also ensures that metadata annotation is standardized.

With our approach, we show that standards such as ISA in combination with ontologies can be efficiently used across all life science domains for (meta)data annotation using spreadsheets.

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Session Classification: Posters, Demos and Refreshments

Track Classification: Postersession