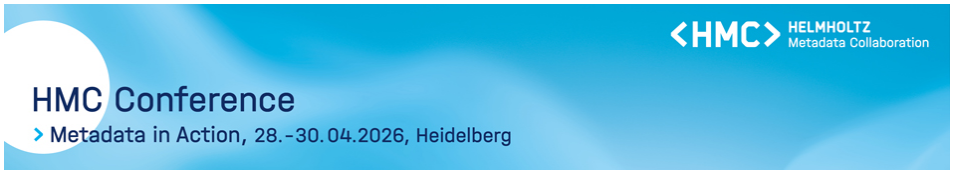

Beitrag ID: **64** Typ: **Talk**

A Collaborative Approach to Metadata Interoperability: PID4NFDI, TS4NFDI, and RSpace

This contribution presents a joint collaboration between PID4NFDI, TS4NFDI, and the electronic lab notebook provider ResearchSpace to support interoperable research workflows within the National Research Data Infrastructure (NFDI). It demonstrates how early, structured capture of high-quality metadata and persistent identifiers (PIDs) in ELNs, combined with shared reference schemas and centrally governed terminology services, can reduce redundant effort and improve metadata consistency and data lineage across the research lifecycle [1].

The presentation outlines the complementary roles of the partners. PID4NFDI coordinates PID integration and metadata alignment. TS4NFDI provides centralized terminology services via an API Gateway, ensuring consistent, machine-actionable metadata. RSpace integrates these components into everyday research workflows, enabling structured metadata and PID capture at the point of data creation.

Entity mappings curate DataCite schema alignments with schema.org and DCAT, maintained in Cocoda [2] with versioning and provenance tracking. DataCite properties and vocabularies are available via TIB Terminology Service, providing canonical, machine-actionable terms accessible through TSS widgets [3] and the API Gateway [4]. RSpace integrates these services via embedded widgets, enabling structured metadata capture at data creation and supporting export of NFDI-compliant ELN records.

Overall, the collaboration establishes a reusable, machine-actionable metadata layer based on shared terminology lookup, cross-schema mappings as a single source of truth, and clear service integration patterns. The proof of concept illustrates how PID4NFDI and TS4NFDI can work with ELN and DMP providers to enable interoperable research workflows and inform future NFDI-wide implementations.

1. El-Gebali, S. (2024). Concepts for metadata interoperability, harmonization and technical integration of PID infrastructure (1.0). Zenodo. https://doi.org/10.5281/zenodo.14506138
2. coli-conc - Cocoda. (2025). Coli-Conc.gbv.de. https://coli-conc.gbv.de/cocoda
3. Terminology Service Suite. (2025). Base4nfdi.de. https://terminology.services.base4nfdi.de/tss/comp/latest/
4. TS4NFDI Api Gateway. (2025). Base4nfdi.de. https://terminology.services.base4nfdi.de/api-gateway/swagger-ui/index.html

ONLY WORKSHOPS - Proposed interaction format

Alternative Track

ONLY WORKSHOPS - Tentative audience

ONLY WORKSHOPS - Maximum number of participants

ONLY WORKSHOPS - Special technical requirements

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Sitzung Einordnung: TALK SESSION

Track Klassifizierung: HMC Conference 2026 Track Topics: 4. Human-machine collaboration in (meta)data acquisition