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Present and future of DAPHNE4NFDI activities at HZDR

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Within DAPHNE4NFDI TA1, HZDR is developing tools for metadata capture with the aim to facilitate automatic processing of that metadata in the data management chain at HZDR. These tools (ShotSheet, SimulationLogger) are currently in testing at productive environments (TRL 7). Although the tools were developed for use cases at HZDR, they are also designed to be used elsewhere, e.g. at other partners of DAPHNE4NFDI. Therefore, the applications will be enhanced in terms of configurability and prepared for a first software publication.
Within DAPHNE4NFDI TA2, SciCat has been included into the data management chain at HZDR (currently on TRL 6) in order to provide means to expose scientific metadata to external search portals like the PANOSC data portal. So far, the data and software publication repository system of HZDR (RODARE, TRL 9) was connected to external portals within the EOSC like B2FIND or EUDAT, mainly employing bibliographic metadata for findability. SciCat enables now to also search with scientific metadata like experiment classification terms (e.g. PANET ontology) and many more. Metadata entries in SciCat can originate from the above-mentioned sources of DAPHNE4NFDI TA1 as well as from the ELN system at HZDR (MediaWiki, TRL 9). The transfer from ELN is on TRL 7, the transfer from the developed apps on TRL 2.
All these implementations and cross-connections are prototypes in order to demonstrate on actual data the functioning and to learn best practice before widening the scope for all scientific fields represented at HZDR. For the future of DAPHNE4NFDI, we plan to implement metadata standards (schemas) at the start of the data management chain. If standards exist, they should shape the metadata entry into the according form and determine data transfer and curation pipelines into the metadata repositories. A particular concern of ours is to make the underlying metadata standard in catalogues such as SciCat visible and, in particular, filterable in the future. Increasing the visibility of metadata standards in the repositories will promote the use of these standards and help to develop them further. Here we can utilize former and other projects like HELIPORT, HELPMI, NAPMIX or Semantic-X-Lab. HELIPORT allows to keep control of involved resources in an experiment, but also schemas, metadata catalogs, toolchains etc. HELPMI and NAPMIX started to define a metadata standard in the field where the metadata capturing tools have been developed, and these metadata standard drafts should be developed further. Semantic-X-Lab is a current project to extract metadata from various portals and related systems to create a comprehensive knowledge graph to reveal connections that were not previously obvious.

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