

inst.dlr: a semantic instrument database for scientific large-scale facilities

In the data-intensive engineering and natural sciences, the precise and ontologically most comprehensive description of data through metadata is indispensable. Over the entire data life cycle, it is only complete and reliable metadata that ensure comprehensive use and re-use.

In practice, however, the gap between fundamental considerations of data management and the challenge with incomplete descriptions of often changing experiments and plants becomes apparent. The challenge and extra work of recording parameters and properties manually, often retrospectively in analogue or digital notes, where they become untraceable or incomprehensible at the latest when the employees leave.

The present project therefore starts exactly at the immediate beginning of data genesis - the measuring instrument, sensor, detector and the associated device. Even before the electronic laboratory notebook, it should help researchers to ensure that as much as possible, as reliably as possible, is already pre-recorded and pre-entered within the ELN.

inst.dlr is both a source and a repository for metadata of an instrument and its semantic dependencies and construction. It aims to support researchers in searching, selecting and documenting individual instruments, and thus in responding to specific system setups.

The three-year project will use pilot facilities to explore the challenges of data exchange, data protection and interoperability in particular. Concepts, tools, workflows and integrated advice and training will be developed for researchers and put to use.

Another focus will be on the reuse of the data provided in *inst.dlr* through applications in technology marketing, investment management and research transfer.

Please assign your poster to one of the following keywords.

Tools

Please assign yourself (presenting author) to one of the stakeholders.

Data Infrastructure Provider

Please specify "other" (stakeholder)

In addition please add keywords.

PIDINST, instrument ontology, research transfer

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