

Metadata Hub – One for All

Volker Hartmann (KIT), Benedikt Heinrichs (RWTH Aachen)

The Metadata Hub provides a generic service for accessing metadata repositories. It acts as a proxy for various kinds of metadata repositories and can be accessed with uniform tools without the researchers having to deal with the complex details of different user interfaces.

Status

In the domain of research data management, there are a variety of repositories that offer metadata management services to researchers. As these are neither standardized nor interoperable, this causes challenges to researchers, who want to share data with others.

Method

Our work aims to build one proxy between all these metadata repositories and the scientists, the Metadata Hub. It's accessible via the Turntable API¹⁾, which defines a generic interface for metadata repositories.

Turntable API

The Turntable API is based on DOIP²⁾ and provides a basic set of methods:

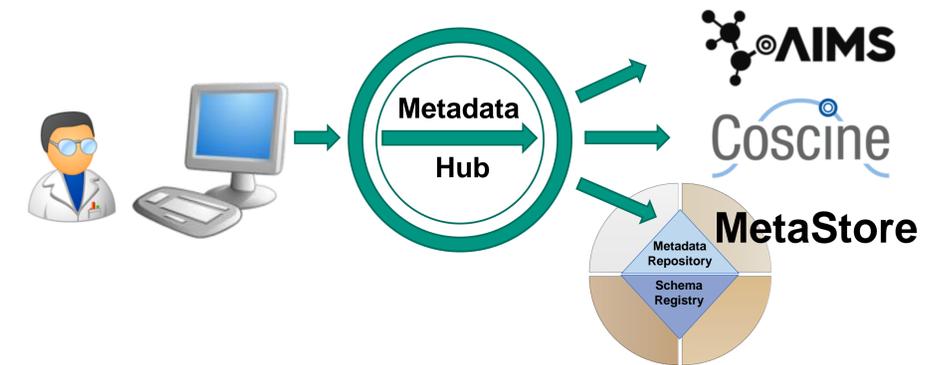
- CRUD for schema document/application profile/metadata document
 - Validation of metadata document against schema document/application profile
- These methods should be supported by all metadata repositories.

To validate metadata documents, a definition of the document structure has to be available. For JSON/XML, there is JSON/XML Schema for this purpose. In case of JSON-LD, JSON Schema is not sufficient. Therefore, so-called application profiles are used, which are defined by using Shapes Constraint Language (SHACL).

Links

- | | |
|------------------|---|
| 1) Turntable API | https://nfdi4ing.pages.rwth-aachen.de/s-3/s-3-3/turntable-interface/ |
| 2) DOIP | https://www.dona.net/specs-software-documents |
| 3) Metadata Hub | https://git.rwth-aachen.de/nfdi4ing/s-3/s-3-3/metadatabus |
| 4) Coscine | https://coscine.de |
| 5) MetaStore | https://github.com/kit-data-manager/metastore2 |

Architecture



Implementation

The Metadata Hub Framework³⁾ provides a tool for registering multiple mappings for different repositories.

Currently, Metadata Hub implements two mappings

1. Coscine⁴⁾
2. MetaStore⁵⁾

to show the feasibility of this approach. This is a useful test because both repositories support completely different types of documents. The mappings itself are defined as XML documents. They map the Turntable API to a REST interface, which is available for most repositories.

In future, another metadata repository (AIMS) will be integrated into the Metadata Hub.

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Contact:

volker.hartmann@kit.edu, heinrichs@itc.rwth-aachen.de