Recommendation

Recommendation to ...

Summary

Description

Status:

Motivation for this Recommendation:

(shortened from below)

Recommendation

(shortened from below)

(Format: Wer! macht was! wo! wann! unter welchen Voraussetzungen!)

Binding Convention:

	mandatory	conditional	optional
Helmholtz FAIR Principle			

Precondition for Implementation:

Related Recommendations

Parent:

Dependent:

Other: none

Contributors

(Names of contributors to this recommendation Mark one author as lead, e.g. Emanuel Söding (lead)

* Please keep the lead author informed about any changes you applied in this wiki.)

Content

1. Explanation of the Background and Benefits of the Recommendation

(About, History and structure, Current Use of …, Motivation)

2. Possible alternative solutions

3. Consideration of the advantages and disadvantages of implementing the recommendation

(quality of content, limitations, interoperability, sustainability: expected future dissemination / technical availability / funding)

4. The recommendation and possible consequences for implementation

Data stewards, archivists, and tool developers—including those responsible for systems used at various stages of the data lifecycle, such as data acquisition, processing, documentation, and storage—should ensure that metadata is captured in a structured and standardized manner, using harmonized metadata schemas aligned with community standards. This includes platforms such as electronic lab notebooks, archiving tools, sensor registries, and other software environments that support data generation, transformation, or submission. Metadata must be consistently annotated with well-governed controlled vocabularies to guarantee semantic clarity, interoperability, and long-term reusability across diverse data infrastructures. Providing clear documentation of the vocabularies and semantic resources in use, alongside transparent, user-friendly annotation workflows, supports consistent metadata quality and facilitates semantic integration.

Developers of data portals, knowledge graphs, and discovery tools should incorporate these controlled vocabularies and ontologies into their software environments. This enhances machine-readability, promotes semantic consistency across systems, and enables users to efficiently search, filter, and combine data from multiple sources.

To enable seamless semantic annotation from the start, data producers need to be supported through targeted training and awareness initiatives that emphasize the use of community-endorsed vocabularies, structured metadata practices, and annotation best practices. Transparent user guidance and easily accessible documentation of recommended semantic resources are essential to ensure metadata quality and simplify the semantic linkage of data throughout its lifecycle.

5. Naming of communities that have already implemented the recommendation

6. Documentation of the test to validate correct implementation

7. Examples of Instances

8. Further Information

(References, Relevant Community Recommendations, etc.)

9. History of this document