

Recommendation S0

# Recommendation for implementing harmonized semantic concepts in data infrastructures and products

## Description

Status:

## Motivation for this Recommendation:

[shortened from below]

## Recommendation

Data infrastructures should ensure the annotation of the large majority of metadata using standardized terms within metadata systems — such as data repositories, sensor registries, electronic lab notebooks, or other platforms that manage or reference data, including descriptions of files stored outside formal repositories — at the time of metadata creation or management, by applying terms from established and, where applicable, FAIR-compliant controlled vocabularies (e.g., ontologies, taxonomies, or standardized terminologies) to promote semantic consistency, clarity, and interoperability.

## Binding Convention:

|                          | mandatory | conditional | optional |
|--------------------------|-----------|-------------|----------|
| Helmholtz FAIR Principle |           |             |          |

## Precondition for Implementation:

## Related Recommendations

Parent:

Dependent:

Other: none

# Contributors

Names of contributors to this recommendation

## 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

Data infrastructures should ensure the annotation of the large majority of metadata using standardized terms within metadata systems — such as data repositories, sensor registries, electronic lab notebooks, or other platforms that manage or reference data, including descriptions of files stored outside formal repositories — at the time of metadata creation or management, by applying terms from established and, where applicable, FAIR-compliant controlled vocabularies (e.g., ontologies, taxonomies, or standardized terminologies) to promote semantic consistency, clarity, and interoperability.

### 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

## 9. History of this document

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