



Structuring Semantic Information with Respect to Conventional Metadata (Syntactic) Structures

Metadata Interest Group (MIG) - RDA Plenary 21

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Breakout 1



Metadata Required for FAIR Digital Objects

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RDA IG FAIR DO Fabric, Helmholtz Metadata Collaboration Platform,
FDO Forum, NFDI4Ing, NFDI-MatWerk, and more

DFG project numbers 442146713 & 460247524



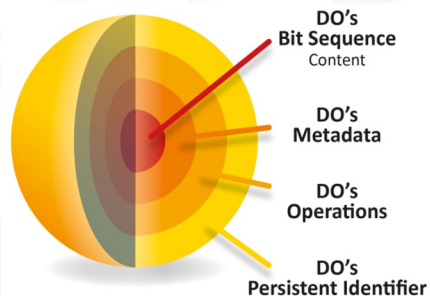
FAIR Digital Object Concept

FAIR Digital Object:

Representation of research data and other digital assets that contains all information required for FAIRness

- Data content
- Referenced and identified by a persistent ID
- Has properties described by metadata, e.g. type

- **General concept**
- **Long-lasting & sustainable**
- **Technology agnostic**
- **Interoperability and harmonization**
- **Bridges between research data repositories, disciplines, etc.**



- Seamless inclusion of legacy data
- Data has a type
- Operations can be connected to the types

How to implement ?



FAIR Digital Object: Example Implementation



The representation contains at minimum an **Identifier** and an **Information Record** with the following properties:

- Identifier: *unambiguously assigned*, e.g. a PID
- Information Record: well and *unambiguously defined structure* containing a *minimum of information* entries or links pointing to the information:
 - identifier,
 - definition of the structure of the information record, e. g. profile, type of the data,
 - link to the data, e. g. a PURL

PID Information Record

PID	PID Profile	Type	Location URL	...
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Helmholtz Kernel Information Profile

- **RDA Draft Kernel Information Profile (KIP) defines 15 basic attributes**, mostly administrative information
- **Extension of Draft KIP by contextual and relational attributes** agreed on between representatives from all research fields
- **Goal: Increase immediate (scientific) benefit** of using FAIR DOs
- **Compatible** to RDA Recommendations
- **Basis for all FAIR DOs** created within the Helmholtz Association
- **Extensible** by additional attributes if required
- **Guidance document available**, publication soon

Additional Helmholtz KIP Attributes	Comment
digitalObjectLocation-AccessProtocol	Access information for digitalObjectLocation, e.g., protocol, protocol version, and client
underEmbargoUntil	Access restrictions probably apply before
license	Extracted from digitalObjectPolicy
checksum	Renamed from ,etag' to be more specific
signature	Cryptographic signature of PID record
topic	Topic term from vocabulary for additional context
locationPreview	Optional preview for digitalObjectLocation
contact	Contact information, e.g., ORCID or ROR
hasMetadata	PID pointing to a related FDO containing metadata
isMetadataFor	Inversion for hasMetadata
wasGeneratedBy	W3C PROV-DM element to refer to tool/agent used for generating the digital object
provenanceGraph	Optional PID of full provenance graph