FAIR, CARE, TRUST Pathways:
● Principles
● Adoption, Implementation, and Deployment

SEMANTICS, ONTOLOGY & STANDARDISATION
THIS PATHWAY IS ABOUT...
Standardisation of metadata profiles, semantics and ontologies for maximising interoperability.

RELEVANT RDA GROUPS

- Agrisemantics WG
- Blockchain Applications in Health WG
- Brokering Framework Working Group
- Complex Citations Working Group
- Chemistry Research Data IG
- Data Granularity WG
- Data policy standardisation and implementation IG
- Data Repository Attributes WG
- DMP Common Standards WG
- FAIRsharing Registry: Connecting data policies, standards and databases RDA WG
- FAIR for Machine Learning (FAIR4ML) IG
- Health Data Interest Group
- InteroperAble Descriptions of Observable Property Terminology WG (I-ADOPT WG)
- Metadata IG
- Metadata Standards Catalog WG
- National PID Strategies Interest Group
- National PID Strategies WG
- Open Science Graphs for FAIR Data IG
- Preserving Scientific Annotation WG
- RDA/CODATA Materials Data, Infrastructure & Interoperability IG
- Research Data Management in Engineering IG
- Research Metadata Schemas WG
- Sensitive Data Interest Group
- Social Dynamics of Data Interoperability IG
- Vocabulary Services IG
- Wheat Data Interoperability WG

🌟 See all RDA groups

RELEVANT OUTPUTS & RECOMMENDATIONS

- 10 Things for Curating Reproducible and FAIR Research
- 39 Hints to Facilitate the Use of Semantics for Data on Agriculture and Nutrition
- A Fresh Look at FAIR for Research Software
- A Survey on Adoption Guidelines for the FAIR4RS Principles
- FAIR Data Maturity Model specification and guidelines
- FAIR Data Maturity Model specification and guidelines - draft
- FAIR Principles for Research Software (FAIR4RS Principles)
- Health Research Performing Organisations (HRPOs) FAIR Guidelines

View the Plenary programme
This pathway is about...

Standardisation of metadata profiles, semantics and ontologies for maximising interoperability.

**Relevant Outputs & Recommendations cont.**

- Member survey on bridging the gap between funders and communities - perspectives on benefits and challenges of FAIR assessments V2.0
- Metadata Standards Directory Working Group Recommendations
- Persistent identifiers Consolidated assertions
- PID Information Types (PIT) WG Recommendations
- Results of an Analysis of Existing FAIR Assessment Tools
- RDA National PID Strategies Guide and Checklist
- Summary of Virtual Layer Recommendations
- The FAIR4RS Team Working Together to Make Research Software FAIR
- The FAIRsharing Registry and Recommendations Interlinking Standards, Databases and Data Policies
- Top 10 FAIR Data & Software Things
- Wheat Data Interoperability Recommendations

See all recommendations & outputs
Semantics, ontology and standardisation
About: Standardisation of metadata profiles, semantics and ontologies for maximising interoperability.
10 sessions: 3 BoFs, 4 IGs, 2 WGs, 1 Joint

With Summary/Takeaways (7 sessions)

BO1: IG Metadata IG: Structuring Semantic Information with Respect to Conventional Metadata (Syntactic) Structures

BO1: WG Data Repository Attributes WG: Recommended Descriptive Attributes for Data Repositories

BO2: IG Vocabulary Services IG: Building Collaborative Bridges: Fostering Collaborations within RDA

Report in other pathways

BO1: IG Software Source Code IG: Mastering the Art of Research Software Metadata and Metrics (Software)
BO3: WG Complex Citations Working Group: Complex Citations: Next steps towards a Demonstration Prototype (Data Lifecycle)
BO3: Joint session: IG Research Data Management in Engineering IG, IG RDA/CODATA Materials Data, Infrastructure & Interoperability IG: Engineering Terminology and Schema for LIMS (Discipline)
BO4: IG FAIR for Machine Learning (FAIR4ML) IG: Building towards FAIR for Machine Learning (FAIR, CARE, TRUST)

Without Summary/Takeaways (3 sessions)

BO3: BoF - FAIRification of Genomic Tracks: data-driven life science through granular discovery of biological sequence annotations with uniform metadata
BO4: BoF - Let’s talk about FAIR mappings! Towards common practices for sharing mappings and crosswalks
BO6: BoF - Describing Chemical, Physical and Biological samples digitally: Seeking harmonization
Semantics, ontology and standardisation (Session Summary)

About: Standardisation of metadata profiles, semantics and ontologies for maximising interoperability.

BO1: IG Metadata IG: Structuring Semantic Information with Respect to Conventional Metadata (Syntactic) Structures

BO1: WG Data Repository Attributes WG: Recommended Descriptive Attributes for Data Repositories

The session explored the motivation for structuring metadata using standardized and formal syntax and semantics and approaches for doing so.

- Despite advances in the automatic parsing of free text, it is always better to have well-curated, rich metadata with well-defined syntax and semantics.
- Using formal vocabulary terms instead of free text vastly improves the reasoning that can be done with metadata and helps to eliminate errors.
- MIG needs your help in finalizing the Metadata Elements Set.

- The final draft of the Common Descriptive Attributes for Research Data Repositories will be submitted in the next weeks for community review as a recommendation.
- The comparison exercise performed by three members revealed improvements they would like to make on their data repositories.
- Instead of submitting examples as a supporting output for publication, the group may use the wiki to share examples that can be updated.
Semantics, ontology and standardisation (Session Summary)
About: Standardisation of metadata profiles, semantics and ontologies for maximising interoperability.

BO2: IG Vocabulary Services IG: Building Collaborative Bridges: Fostering Collaborations within RDA

This session featured presentations from IGs and potential IGs whose work intersects with VSSIG. Presentations/discussion centered around how the outputs and issues we are working on (i-ADOPT, multilingual semantics, metadata elements) are interconnected and how to communicate with each other going forward to build upon each other’s work.

- IGs and WGs who are working on metadata/semantics/vocabularies need to stay in contact to work together and not silo our efforts
- Multilingual semantic efforts are crucial
- Interoperability is the biggest problem facing semantic artefacts
Common themes

- Metadata/semantics/vocabularies: Interoperability, interpretability, multilingual
  - Importance of multilingual semantic efforts and address challenges such as interoperability in semantic artifacts
- A solution to deal with dynamic/expandable content (e.g. use case, examples, learning materials)
- Well-curated metadata with defined syntax and semantics for reasoning and error reduction;