



Streamlining the creation of data models and underlying FAIR data infrastructure by leveraging ontologies and automatic generation techniques

Chapter 2 - Project Title:

The project focused on streamlining the creation of data models and FAIR data infrastructure by leveraging ontologies and automated generation techniques. This approach enhances consistency and interoperability within data management.

Chapter 3 - Research Team:

A multidisciplinary team from Wageningen Economic Research collaborated on developing data models and infrastructure. Their expertise spanned data storage, software development, ontology development, and data management.

Chapter 4 - Technical Briefing:

Technical advancements included the integration of iRODS for secure data storage and the automation of data models via Adagio. Workflows were optimized through integrations with tools like CDP and Qualtrics, despite limitations such as the absence of Yoda and reliance on manual ontology alignment.

3 Research Team

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John Doornbos, Lead developer, data management, interoperability

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Chapter 4.4 - Deviations from the Original Proposal:

Adjustments to align data models with the COMFOCUS ontology resulted in improvements. However, the lack of automated ontology links requires manual processes. Data models now include fields to store URIs, facilitating future use and enhancing interoperability.

Chapter 4.5 - Evaluation of Selected Software:

iRODS proved effective in providing secure, scalable data storage and facilitating FAIR workflows. However, the absence of Yoda restricted functionality, such as advanced metadata search capabilities.

Chapter 4.6 - Desired Improvements and Current Limitations:

Automating data mapping and improving user interfaces are crucial for streamlining processes. Enhancing the traceability of concepts and enabling automatic synchronization between tools are essential developments to ensure consistency and reduce manual effort.

Chapter 4.7 - Planned Technical Developments:

Future plans prioritize full integration of CDP into Adagio and expanding ontology capabilities for multi-domain data. These improvements aim to make data models more robust and adaptable to diverse research contexts.

Chapter 5 - Key Project Outcomes:

The project largely met its objectives, such as improved access to data infrastructure and scientific value. Ontology application and interdisciplinary collaboration at WUR were enhanced, though financial sustainability remains a key consideration.

Chapter 6 - Reflections:

Challenges included technical complexity and organizational integration. Recommended improvements focus on standardizing workflows and addressing interoperability issues to embed results more effectively.

Chapter 7 - Recommendations:

WUR is advised to invest in further integration of data solutions, prioritize automation, and expand ontologies. These actions will support future-proof data management and scientific collaboration

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