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Leibniz Institute for the Social Sciences

Designing an Ontology for the Data Documentation Initiative

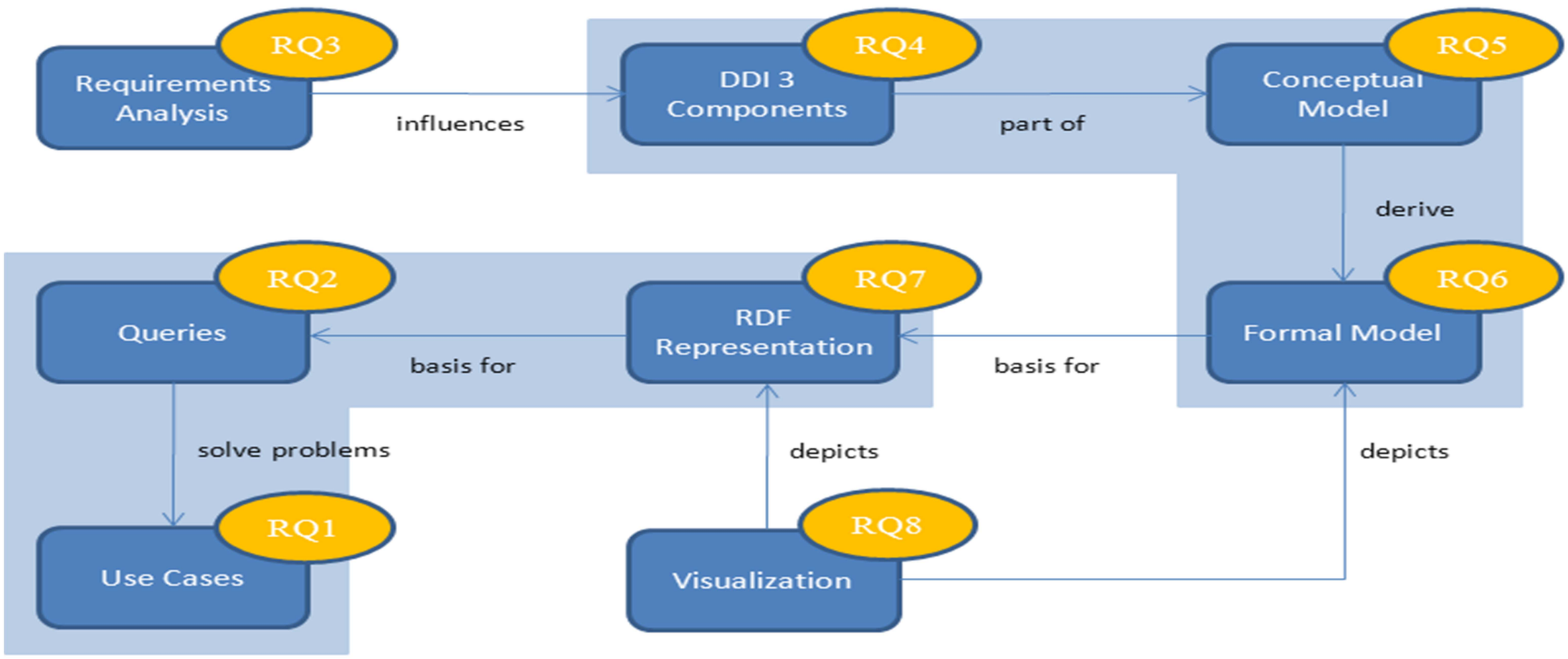
Problem

- Establish the Data Documentation Initiative (DDI) as a de facto standard for describing data from the social and behavioral sciences
- DDI should reach a broader audience

Purpose

- Publish data and metadata in form of RDF
- Link data and metadata in the web --> DDI instances participate in the LOD cloud
- Plethora of tools to interoperate with DDI instances can be used
- Identify use cases
- Build ontology of the most relevant DDI elements

Research Questions and Methodology



Use Cases

- Semantic queries
  - What kind of problems can be solved?
  - On multiple distributed and merged DDI instances
  - Using DDI domain concepts without knowledge of DDI XML Schemas‘ structures
- Publish DDI data and metadata in form of RDF
  - DDI instances can be processed by RDF tools without supporting the DDI data format
- Link DDI data and metadata with different data sources of the LOD cloud
- Ontologies are more expressive than XML Schemas
- Integration of other ontologies
  - Reasoner can use additional semantic information for deductions
- OWL queries
  - Terminological OWL queries (Global consistency, class consistency, subsumption testing, classifying the ontology, class equivalence, class disjointness)
  - Assertional OWL queries (Instance check, class extension, property check, property extension)
- Consistency check of DDI 3 data model
- Facilitation of study comparability
- Enabling study classification
- Meaning of references in the DDI data model will be formalized
- Storage of qualitative data

Thomas Bosch, Andias Wira-Alam and Brigitte Mathiak
{Thomas.Bosch, Andias.Wira-Alam, Brigitte.Mathiak}@gesis.org

GESIS - Leibniz Institute for the Social Sciences, Square B2, 1, 68159 Mannheim, Germany