

## **Assumptions**

- A1: Mapping languages provide human readable documentation available online.
- A2: Mapping languages are declarative and follow W3C standards.
- A3: Features characteristic of procedural languages are not considered as requirements for knowledge graph construction.
- A4: The schema of knowledge graphs (ontology) used for creating mapping documents is available online, and implemented in OWL or RDF(S).
- A5: Mapping rules can be translated into different languages with information preservation.

## **Hypotheses**

- H1: Current mapping languages do not cover the entire extension of features required to construct knowledge graphs from heterogeneous data sources.
- H2: It is possible to update current mapping languages with new features that address the evolving needs in construction of knowledge graphs.
- H3: Writing the mapping rules in spreadsheet environments can improve the user experience for practitioners of different backgrounds for writing mappings reducing errors
- H4: Mapping-compliant technologies can bring benefits in the evolution of knowledge graphs within their life cycle, not only in their construction.

## Restrictions

- R1: Requirements for knowledge graph construction are considered up to the beginning of 2023.
- R2: The reference for the RML specification in the mapping language analysis is the release on 2014.
- R3: Features characteristic of procedural languages cannot be modelled in an ontology.
- R4: The implementations proposed not include all modules of the RML release on 2023.
- R5: The evaluation on knowledge graph evolution considers only changes in the schema, not changes in the data.
- R6: Schema changes considered in knowledge graph evolution are a result of switching among reification approaches for RDF graphs.