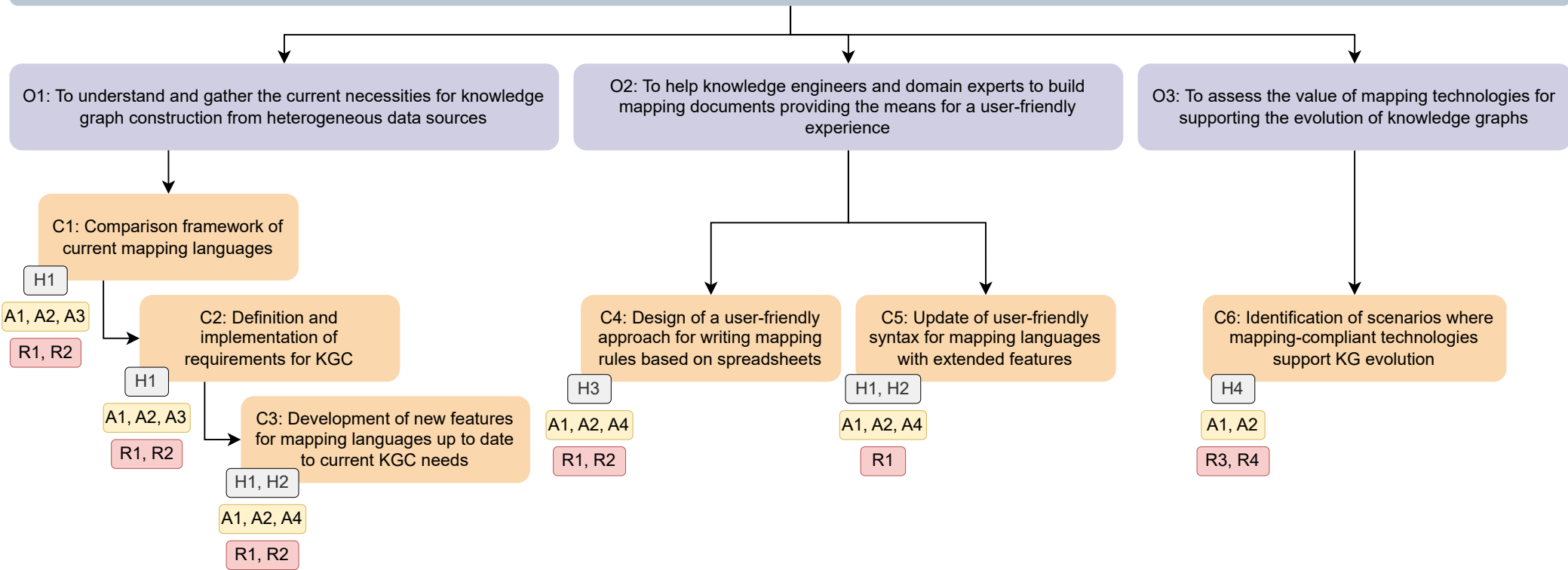


Thesis objective: To improve the mapping languages regarding expressiveness, usage and adoption to comply with the current evolving needs in knowledge graph construction.



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 requirements for KG construction.

A4: The schema of knowledge graphs (ontology) used for creating mapping documents is available online, and implemented in OWL or RDF(S).

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 include in current mapping languages 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 KG construction are considered up to the beginning of 2023.

R2: The point of reference for the RML specification is the release on 2014.

R3: The evaluation of the value of mappings in KG evolution considers only schema changes, not data changes.

R4: Changes considered in KG evolution are a result of the schema changes for switching among reification approaches for RDF graphs.