

Towards More Findable Energy Research Software by Introducing a Metadata-based Registry

Energy Research Software (ERS)

Software for the scientific discovery process to understand/analyze/improve/design energy systems like:

- scripts/programs to visualize/analyze/generate (artificial) data from energy (sub-)components/laboratories/real world
- software representations
 - of particular energy (sub-)components
 - of energy systems
 - of transition paths
- energy-specific software libraries/packages

Research Questions

RQ1 Which metadata elements are required for classification and description of ERS and which existing metadata schemas are suitable for reuse?

RQ2 Which existing domain-specific ontologies can be used as a value vocabulary?

RQ3 How can different information, e.g., keywords or already used software, be used to improve the search results when looking for ERS?

Artifacts I

Ontology-based metadata schema

- Improve FAIRness
- Follow best practice in metadata schema creation

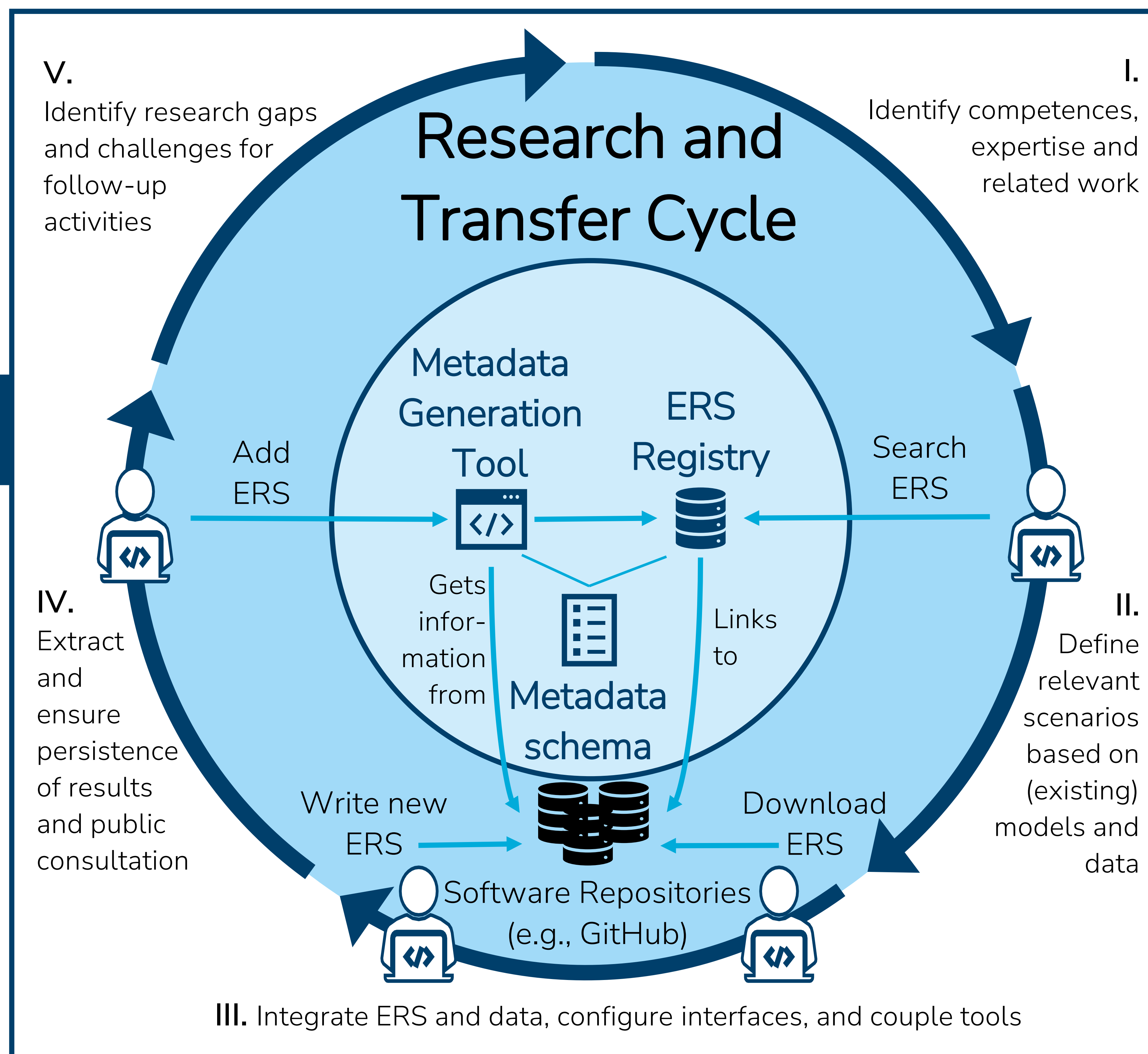
ERS Registry (repository for metadata)

- Include good search functionality
- Give information on linkability of software

Artifacts II

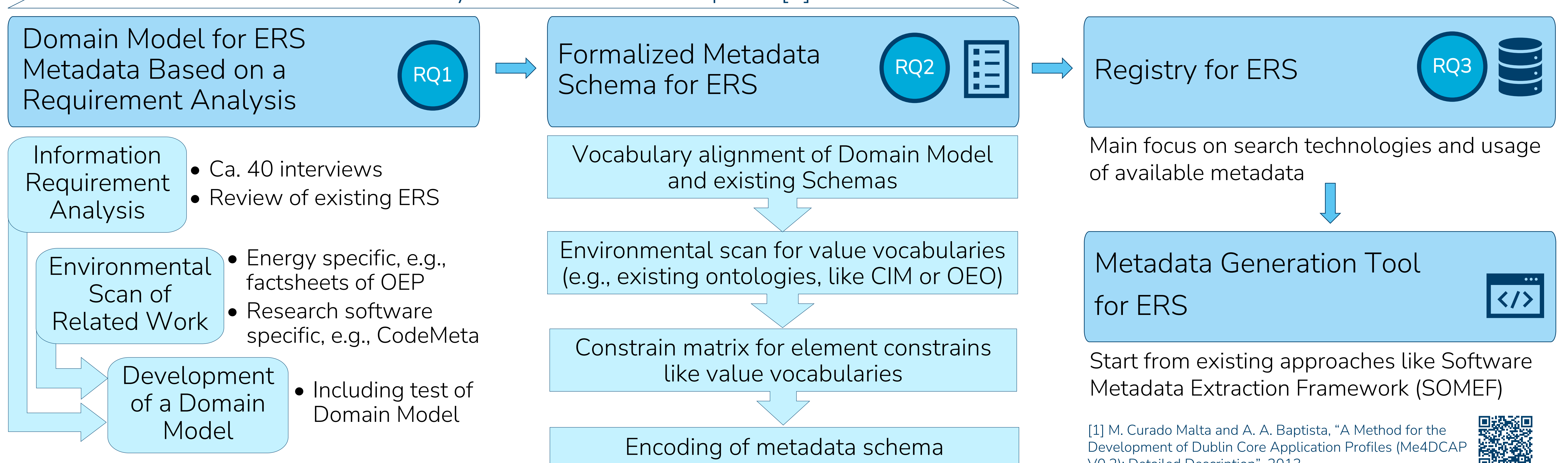
Metadata Generation Tool

- Usable for all researchers in the energy domain without further knowledge
- Automatically collects metadata from GitLab, Google Scholar, etc.
- Supports the use of value vocabularies (existing ontologies)



Approach

Based on Me4MAP by Curado Malta and Baptista [1]



[1] M. Curado Malta and A. A. Baptista, "A Method for the Development of Dublin Core Application Profiles (Me4DCAP V0.2): Detailed Description", 2013