Embedded Benchmarking and Expert Authoring for Ontology Mapping and Alignment Generation

Daniel Sonntag
German Research Center for Artificial Intelligence, Saarbrücken, Germany
daniel.sonntag@dfki.de

Introduction
We propose an extendable evaluation method for exploring ontology matching performances. The tests are embedded into a semantic search architecture and allow to build tests with new datasets, new alignment input, or new individual matching algorithm as expert authoring environment. Expert users are involved by generating test cases, supervising initial alignments and parameters to the matching process and by combining matchers into global matching methods.

Features
- Interactive ontology matching and alignment generation by user-friendly and editable HTML test cases;
- Ontology mapping for domain-specific applications;
- State-of-the-art ontology mapping research should includes the development of scalable methods by combining methods; and
- tools for supporting users to tackle the interoperability problem between distributed knowledge sources.

Convenient editors for iterative, semi-automatic mapping.

Evaluation Procedure
You can use input from, e.g., visual ontology matching tools to create test tables.

The expert user is involved in the specification of the test cases and provides suggestions on mappings. This makes the process of creating and validating mappings interactive and personalised to experts or expert groups.

Supervise intermediate results, interpret incremental precision, recall, and F-measure values, and sequentially combine matchers (which also may require input alignments).

The second matching phase benefits from pre-compiling the first alignment. Users can add comments; a summary is generated.

Conclusion
We described a tool for ontology mapping and alignment generation. In this way, we increase the transparency and usability of an incremental ontology matching process. The method should be particularly useful in cases where, in response to industry requirements, a collection of reference test sets is not available.

Enabling Technologies
Publicly available testing and matching software can be used.

References