Report on T-Rex Exchange

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Summary

Participant: Marc Ehrig
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Host: INRIA, Grenoble, France
Start date: April 25, 2005
End date: May 27, 2005
Topic: (i) Ontology Alignment Tools, (ii) Evaluation measures for Ontology Alignment, (iii) Preparation of Integrating Ontologies Workshop

Goal of the exchange

Both INRIA and the University of Karlsruhe are leading in the research field of ontology alignment. The cooperation was to be intensified by exchanging details on the alignment methods and tools. Further the evaluation of alignments is a pressing topic which also was to be addressed, especially discussing possible measures. A strong and lasting link between the two institutions shall be established.

Topics/Achievements of the exchange

Topic 1: Ontology Alignment Tools
During the stay detailed presentations of the methods and demonstrations of the tools have been provided from both sides. From Karlsruhe side this was the Framework for Ontology Alignment and Mapping. From Grenoble side this was the Ontology Alignment API. Petko Valchev (University of Montreal), who was also involved in the development of the API, was also able to join. Discussions on similarity propagation through the structure helped both parties gain a deeper understanding of possible approaches. Tightly related to this is the question whether the total similarity converges in the end, thus providing a concise recommendation of aligned entities. An open topic is the question on what is the best way to compare two sets of entities, with only the similarities of individual pairs being given. Approaches using averaging or maximizing considerations were discussed. In the end, one can say that all involved parties understood very well what the strengths of, weaknesses of, opportunities of, and threats to the different alignment methods are.

Topic 2: Evaluation Measures for Ontology Alignment
Following the discussion of last year's workshop on ontology evaluation (EON04 at ISWC04) the second main goal of the exchange was to think about new (better) measures to evaluate ontology alignment. Current measures like precision and recall only count 100% correct alignments. An alignment linking e.g. one concept to a corresponding super-concept is counted as wrong. As a result of long discussions in Grenoble, we came up with an evaluation approach with "relaxed" precision and recall. In essence instead of calculating the set

theoretic overlap, we present an overlap based on the similarity of found and correct alignments. Different sub-approaches (Symmetric Proximity, Relaxed Recall and Precision, and Correction Effort) were created. With this kind of overlap also closely related alignments are given a positive weight for the overall evaluation. From this cooperation effort we expect to generate a position paper and use it in the upcoming workshop on integrating ontologies (see topic 3).

Topic 3: Preparation of Integrating Ontologies Workshop

During the stay we received the notification that the workshop Integrating Ontologies at K-Cap 05 has been accepted. Three of the organizers are directly involved in Knowledge Web. The workshop consists of three main parts: research papers, tool demonstrations, and the ontology alignment evaluation initiative. The organizational tasks arising included setting up the program committee, which was achieved with very interesting people. Further the call for papers were written and distributed. Finally we discussed the ontology alignment evaluation initiative, a kind of contest to compare different ontology alignment approaches. So far the interest in the workshop has been high. Submissions are due next month. The workshop itself will take place in October.