An Implementation of Agent-Based Ontology Alignment[1]

Maxim Davidovsky[1], Vadim Ermolayev[2], and Vyacheslav Tolok[3],

[1]Zaporozhye National University, Center of Information Technologies,
Zhukovskogo st. 66, 69600 Zaporozhye, Ukraine
[2]Zaporozhye National University, Department of Information Technologies,
Zhukovskogo st. 66, 69600 Zaporozhye, Ukraine
[3]Zaporozhye National University, Department of Mathematical Modelling,
Zhukovskogo st. 66, 69600 Zaporozhye, Ukraine
m.davidovsky@gmail.com, vadim@ermolayev.com,
vyacheslav-tolok@yandex.ru

Abstract. Various knowledge-based information systems contain distinct knowledge representations reflecting different domains of interest and different viewpoints across domains of discourse. For efficient use of knowledge-based systems it is necessary to know semantic relations or alignment between different knowledge representations. One of the promising approaches is the use of intelligent software agents where agents communicate in order to align respective knowledge representations. The paper presents an approach for ontology alignment based on implementation of meaning negotiation between intelligent agents. In the approach, negotiation leads in iterative way. On each step agents compare ontological contexts and use propositional substitutions in order to reduce semantic distance between the contexts. The focus of the paper is the implementation of agents' negotiation strategy.

Keywords. Ontology, ontology alignment, intelligent agent, meaning negotiation, implementation.

Key Terms. KnowledgeRepresentation, MultiAgentSystem, Collaboration

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