

A classification of semantic conflicts in heterogeneous Web services at message level

ABSTRACT

Since the last decade, semantic conflicts have been considered as a critical problem in establishing seamless message exchange between Web services. To provide the essential step for solving this problem, semantic conflicts have to be defined and classified properly. Most of the existing classifications that attempt to classify semantic conflicts lack completeness and accuracy. Therefore, this paper aims at proposing a new complete and accurate semantic conflicts classification, whose purposes are identifying and classifying all potential conflicts that may arise in heterogeneous Web services at the message level. This classification has three main classes based on the cause of conflicts, which are representation class, interpretation class, and structure class. Furthermore, the implementation of the classification starts with proposing three objective design criteria and ends with evaluating the classification against the proposed criteria. Three real scenarios from different domains are used to evaluate the proposed classification. The evaluation result shows that the proposed classification is the most complete and accurate when compared with other classifications.

Keyword: Conflicts classification; Semantic conflicts; Web services