Assessment and Performance Measurement of Semantic Service Discovery Methods on Mobile Platforms

Abstract

Discovery of the most appropriate services meeting with the requirements of mobile device users is one of the crucial aims of service-oriented software systems. Although geographical closeness to the mobile user represents one of the important criteria on the determination of the services, such closeness is no more sufficient due to the diversity seen on both the requirements of the users and types of the services. Especially, improper assessment of service capability and quality causes those services to be inappropriate for the user needs despite of their geographical closeness. Research on the use of the Semantic Web and related technologies to cope with this problem recently became popular. If both the capabilities of the services and the requirements of the users can be modeled and defined according to some ontologies, matchmaking of the service capabilities and user requirements becomes more efficient and hence the suitable services will be discovered easily. Vast major of the work in the related research field covers noteworthy contributions for the semantic discovery in question. However, the performance of the proposed approaches especially on the real mobile platforms is an open issue. In order to fill this gap, performance measurement of the semantic discovery of the services, registered in various ontologies with different sizes, has been carried out in this project. Services of some eating places (e.g. cafes and restaurants), distributed over an area, are considered as the semantic services in the study. Discovery of these places according to both their geographical and semantic closeness to the mobile users has been tested inside a real implemented system.

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