Knowledge-driven Interactions With Services Across Ad Hoc Networks

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ABSTRACT

Service oriented computing, with its aim of unhindered interoperability, is an appropriate paradigm for ad hoc networks, which are characterized by physical mobility of heterogenous hosts and by the absence of standardized application level protocols. The decoupled nature of computing in ad hoc networks can result in disconnections at inopportune times during the client-service interaction process. We introduce the notion of a priori selection of services to reduce the likelihood of disconnection during service usage. A client may specify the times when it requires certain services. A knowledge base of the physical motion profiles of various service providers is used to select instances of a service that are co-located with the client at the required time and least likely to disconnect. A system for constructing the knowledge base is presented in this paper, along with the implementation details and the algorithm used to determine the service usage pattern.