

Agent Based Location Management Protocol for Mobile Adhoc Networks

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Abstract : The dynamic nature of Mobile adhoc network (MANET) due to mobility and disconnection of mobile nodes, leads to various problems in predicting the movement of nodes and their location information updation, for efficient interaction among the application specific nodes. Location management is one of the main challenges to be considered for an efficient service provision to the applications of a MANET. In this paper, we propose a location management protocol, for locating the nodes of a MANET and to maintain uninterrupted high-quality service for distributed applications by intelligently anticipating the change of location of its nodes. The protocol predicts the node movement and application resource scarcity, does the replacement with the chosen nodes nearby which have less mobility and rich in resources, with the help of both static and mobile agents, and maintains the application continuity by providing required network resources. The protocol has been simulated using Java Agent Development Environment (JADE) Framework for agent generation, migration and communication. It consumes much less time (response time), gives better location accuracy, utilize less network resources, and reduce location management overhead.

Keywords : mobile agent, location management, distributed applications, mobile adhoc network

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