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Full Length Research Paper

Learning automata based multicast routing algorithm for wireless mobile ad-hoc networks

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Abstract

A wireless mobile ad-hoc network is a set of wireless mobile nodes that forms a temporary network with the capability of reconfiguration. Nodes in these networks can move freely and without dependence on any fixed connecting infrastructure. Due to their independence from a fixed structure as well as their easy reconfiguration, these networks have various applications in everyday life. Multicasting plays an important role in many applications of mobile ad-hoc networks. It can significantly improve the performance of these networks. This paper offers a distributed algorithm based on learning automata using the definition of Steiner connected dominating set problem for multicast routing in wireless mobile ad-hoc networks. Proposed algorithm is compared with existing leading ones and simulation results indicate that the proposed multicast routing algorithm works better in terms of packet delivery ratio and end to end delay.

Key words: Steiner connected dominating set, multicast routing, learning automa, mobile ad hoc networks.