



RESEARCH ARTICLE

A New Cluster Based Broadcast Protocol for Delay Tolerant Mobile Networks

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Abstract— *Broadcast makes sensor nodes to evenly distribute messages to the whole network serving higher level operations. Some nodes switch between active and inactive states in Wireless Sensor Networks (WSNs) to reduce the energy consumption and to increase life of network. Broadcast in Low Duty-Cycle Wireless Sensor Networks is a major problem to be addressed. In this paper, the broadcast problem is revisited with active/inactive states. Efficient and scalable distributed implementation for broadcast problem is considered. Similarly Delay-Tolerant Mobile Networks (DTMNs) are considered. In DTMNs, there is lack of continuous end to end connectivity among nodes. A cluster-based broadcast protocol for DTMNs is proposed. Clusters are formed based the contact probability of nodes. An exponentially weighted moving average (EWMA) scheme is employed here for on-line updating nodal contact probability. The simulation results show that proposed protocol achieves higher delivery ratio and significantly lower overhead and end-to-end delay compared to WSNs.*

Key Terms: - *Broadcast; Reliability; Low Duty-Cycle Networks; Wireless Sensor Networks; Delay Tolerant Mobile Networks*

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