Improved TEEN Routing Protocol with Multi Hop and Multi Path in Wireless Sensor Networks

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Authors:
Nilu Kumari, D.K. Gupta, Manoj Kumar Sah

Abstract

Wireless Sensor Networks are used in monitoring environment condition, safety and medical applications. The sensor nodes are usually randomly deployed in a specific region. All these sensor nodes collect their data and send it to the base station (BS) through some routing protocol. These nodes are not rechargeable nodes to keep them alive. These nodes may serve as long as possible without any external assistance, they must follow some protocol that ensure efficient use of their power. In energy consumption of each node a routing technique plays a key role. Many of the routing protocols use clustering as their routing technique. So clustering plays a key role in prolonging the stability period and network life time. The Cluster Heads (CHs) collects data from all the nodes in their cluster, perform aggregation on that and then finally send it to the BS. Sensor nodes must use a certain routing protocol to send their data efficiently to the BS. The objective of all routing protocols is to minimize the energy consumption so that the network lifetime and particularly the stability period of the network may be enhanced. By network lifetime we mean the time duration from the start of the network till the death of the last node whereas, stability period shows the time period from the start of the network till the death
of the first node. This paper has an objective to develop an energy efficient increased lifetime threshold sensitive clustering algorithm by dynamic selection of cluster heads using multi-hops and multi-path, that leads to load balancing on different-different clusters. This results in the enhancement of cluster heads or normal nodes network lifetime and comparison of performance of the various proposed clustering protocol with TEEN. In this work we propose an energy efficient multipath routing algorithm in WSN. This protocol is designed to enhance the network life time and energy efficiency through discovering multiple paths from the source to the destination.

References


**Index Terms**

Computer Science Wireless

**Keywords**

Wireless Sensor Network, Sink Node, Cluster Head, Routing Protocol, Residual Energy,