Abstract

Wireless Sensor Network (WSN) is a wireless network of thousands of inexpensive miniature devices capable of computation, communication and sensing. Nodes in the WSN have restrictions of memory, storage, processing and energy. Sensors nodes in WSN are used to measure the environmental parameters like temperature, pressure, humidity, sound, vibration etc. WSNs are assumed to be energy restrained because sensor nodes operate with small capacity or may be placed such that replacement of its energy source is not possible. Due to these limitations several routing protocols have been proposed to utilize sensor’s energy to prolong the life time of deployed WSN.

An effective routing protocol is desirable which is able to manage communication among energy restrained sensor nodes and able to provide load in uniform way such that difference between
An Energy Efficient Clustering Approach based on K-means ++ Algorithm with Leach Protocol for WSN

life times of nodes is not very large.

In this paper, K-means++ with Adaptive leach based routing algorithm has been implemented. The proposed methodology is used to find life time of sensor nodes in terms of rounds in network. Sensor nodes drops to zero energy ignored for next round of CH (Cluster Head) election in network. Adaptive LEACH is used to improve the hop-count of transmitted data in the transmission phase of cluster head nodes to the BS (Base Station) so as to keep the balance of energy consumption and prolong the survival time of network. Proposed routing protocol outperforms the LEACH-CKMEANS, CH-LEACH algorithms with improved Average Throughput, improved number of transmitted data packets and improved Network lifetime

References


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