Abstract

A Wireless Sensor Network (WSN) constructs a subset of Ad-hoc networks. Node 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 DC source 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 life times of nodes is not very large. In this paper, K-means++ based routing algorithm has been implemented, Proposed algorithm selects two nodes in each cluster, one is CH and another is Twins node. K-means++ algorithm forms cluster and calculate centroid to find cluster head. In implemented routing protocol clusters are formed according to global optimization which solves the problem of local optimization of K-means. Cluster head gathers information of its respective cluster and sends to
its base station. Twins node reduces the overhead of cluster head by sending gathered information to base station, so that energy dissipation in WSN will be in uniformed manner.

References


Index Terms

Computer Science Wireless

Keywords
Clustering in WSNs, Energy Efficiency, minimizing energy consumption, k-means++