Abstract

In Wireless sensor Networks (WSNs), it is an important task to periodically collect data from an area of interest for time-sensitive applications. The Wireless sensor network (WSN) is a type of the wireless ad-hoc networks. It consisting of a large number of sensors is effective for gathering data in a variety of environments. The sensed data must be gathered and transmitted
to a base station for further processing to meet the end-user queries. Since the sensors operate on battery of limited power, it is a great challenging aim to design an energy efficient routing protocol, which can minimize the delay while offering high-energy efficiency and long span of network lifetime. In this paper, we first completely analyzes the basic distributed clustering routing protocol LEACH (Low Energy Adaptive Clustering Hierarchy), which is a homogeneous system then proposed a new routing protocol and data aggregation method in Leach-heterogeneous system which the sensor nodes form the cluster and the cluster-head elected based on the residual energy of the individual node calculation with re-clustering scheme is adopted in each cluster of the WSNs. In the Leach-Heterogeneous system the energy efficiency is increased near to 40% than Leach-Homogeneous system and lifetime of the networks also increased. Simulation results using MATLAB are shows that the proposed Leach-heterogeneous system significantly reduces energy consumption and increase the total lifetime of the wireless sensor network compared to the homogeneous LEACH protocol.

Reference

- Mehdi Saeidmanesh,Mojtaba hajimohammadi, and Ali Movaghar, Energy and Distance Based Clustering: An Energy Efficient Clustering Method for WSNs, World Academy of science, Engineering and Technology 55 2009

Index Terms
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