Abstract

Cluster based data gathering is one of the approaches to reduce the energy consumption in wireless sensor networks. In this dissertation, we propose query based dynamic clustering algorithm to improve the lifetime of the sensor network. The main idea of this paper, is to increase the network lifetime by clustering the nodes in dynamic basis. The nodes who satisfy the query sent by the base station that are only allowed to remain in the transmit mode and to participate in the clustering process. Remaining nodes go to the sleep mode immediately. Thus transceiver scheduling increases the network lifetime. In which relay nodes are used as routing element, it collects the aggregated information from the cluster head and transmit to the base station via other relay node in a multi-hop fashion. It balances the load of the network. It also reduces the packet loss because of data traffic. From the simulation results, we show that the proposed approach outperforms the existing protocol in terms of increased lifetime and decreased energy consumption.

**Index Terms**

Computer Science  
Wireless
Keywords

Multi-hop communication, cluster centroid, network lifetime, cluster head, relay node.