Abstract

Minimization of energy consumption is a critical design requirement for most wireless sensor networks (WSNs) applications. WSNs are composed of small, energy constrained sensor nodes. The random deployment of sensor nodes in many applications requires unattended operation. The primary goal of WSNs is how to collect sensed information in energy efficient way since the energy is limited. The network lifetime is extended by hierarchical network clustering. In these networks, the sensor field is partitioned into small regions called clusters. Some of the nodes in the network become cluster head (CH), which aggregates the data collected from their member nodes, and transmit it to the base station using multi-hop communication. Numerous clustering protocols have been proposed in the literature to minimize the energy consumption among the sensor nodes. In this paper, an energy efficient clustering protocol for WSNs with a primary goal of increasing the lifetime of the network is proposed. The protocol named as sector based multi-hop clustering (SBMC), which uses the
concept of leveling, sectoring and multi-hop clustering. Dissemination of data from CH to base station is done in such a way that the energy loss in discovering a route is decreased to minimum. The additional computation for the leveling and sectoring are carried out in base station just at the beginning of the network setup. Therefore, the goal of energy efficiency without additional energy consumption of the distributed nodes after network setup process in proposed SBMC protocol is achieved.

References

- W. B. Heinzelman, A. P. Chandrakasan, H. Balakrishnan, "Application specific


**Index Terms**

Computer Science Wireless

**Keywords**