Abstract

Wireless sensor network is generally used to monitor physical or environmental conditions and cooperatively send their sensed data to the sink or base station. Every node in sensor network consist of three subsystems, first sensing subsystem which sense environment, second processing (computing) subsystem which perform local computation on sensed data and third communication subsystem which is responsible for forwarding processed data to its neighbors. All the sensors send their sensed data to a sink node time to time depending on the application. After collecting the processed data the sink forwards it to some server through high speed network. Therefore, data collection by the sink is an important issue in wireless sensor network. There are two broad categories of data collection: static sink based and mobile sink based. In static sink based networks (SWSN), sink is fixed in a particular position. All sensors send their sensed data through multi-hop forwarding. The disadvantage of static sink network is the neighboring nodes of the sink exhaust their energy relatively faster than other nodes. Hence the network becomes disconnected. To overcome this problem some time mobile sink is used to collect the sensed data. There are different schemes using mobile sink to collect the sensed data. In this project we have proposed a mobile sink based data gathering protocol using genetic algorithm. Among the sensors few sensors are selected as cluster heads which are responsible to collect the sensed data from its neighbors. The mobile sink node move through the cluster heads to collect the overall sensed data. The cluster heads are chosen such that the every sensor node has at least one neighboring cluster head. As well as the length of the cycle formed by the cluster heads is minimized.