Abstract

Wireless sensor network is an emerging technology and is widely used for various purposes . The development of wireless sensor networks have many potential which can continue to be used in everyday life to collect information from the environment through sensors nodes. Many developed energy efficiency management for energy limitations of nodes . Because of the energy limitation of sensor nodes has the battery dependent . One to overcome this limitation by using hiearical protocol . One Hierarical protocol is LEACH (Low Energy Adaptive Cluster Hierarchy). This type of routing protocol to enable node - hop communication then form clusters and there in cluster head contained. The cluster head is responsible for receiving data from a non - cluster head node and then sent to the Base Stastion . In the selection of each cluster head node is given a random value between 0 and 1, if the value is less than the threshold , then the node will be a cluster head . Thus it can improve the network life time energy load evenly across all the nodes .

LEACH protocol is then simplified clustering in the distribution area to improve the efficiency of the energy used when a turnover occurs in the formation of clusters . Then the development so-called QLEACH (Quadrant Low Energy Adaptive Cluster Hierarchy). The results of this study showed Q LEACH is more efficient in energy usage when compared with LEACH .

Keywords: LEACH, QLEACH, Wireless Sensor Network, hierarchical protocol, energy efficient