

ABSTRACT

Wireless Sensor Network (WSN) is a network consisting of sensor node spreading in a certain area with different function according to the sensor node installation purpose and location.

A part from the WSN capability in presenting interaction between human being and environment, WSN still has several problems in its implementation. One of them lies in the sensor node's performance relating to the number of sensor nodes and area width in which it is installed. The higher number of sensor nodes is involved and the wider the scope area wanted will, of course, affect the WSN's performance. WSN's performance is determined by QoS in the network with parameter throughput, delay and package retransmission.

This final project analyze QoS of a WSN using Concentric-Cluster PEGASIS (Power Efficient Gathering in Sensor Information System) algorithm constituting further development of PEGASIS algorithm. Concentric-Cluster PEGASIS (C-PEGASIS) algorithm is algorithm capable of distributing a number of sensor nodes into several levels concentrically and then in each level the head node will be determined that in turn will do transmission to the base station. From the simulation, we can conclude that Concentric-Cluster PEGASIS algorithm can answer every problem of WSN performance relating to the large number of sensor node in the wide scope area.

The study found that the simulated network using Concentric-Cluster PEGASIS algorithm have a better network performance than a network that uses a PEGASIS algorithm for scenarios that have been determined, so that the Concentric-Cluster PEGASIS algorithm able to answer problems that associated with a large number of sensor node and wide coverage area.

Keywords : wireless sensor network, Concentric-Cluster PEGASIS, QoS.