ABSTRACT

Wireless sensor network is a wireless network that consists of a lot of sensor nodes scattered in a particular area (sensor field). Each sensor node has the ability to collect data and communicate with other sensor nodes WSN. Advances in WSN technology related to the fact that approximately 98% of the processor is not located within a PC / laptop, but in military applications, health, remote control, chip robotics, communications equipment, and industrial machines that have been integrated with sensor.With technology of WSN, we can monitor and control temperature, humidity, light conditions, noise levels, the movement of an object and so on.

From several problems in WSN implementation, the main problem is energy consumption.This is caused by the power supply to the sensor nodes supplied only by the battery for its operations, which have limited energy reserves. If one node dies, it will change the network performance in terms of routing and topology. On the other hand, problems will arise if we need to conserve energy or repeated as often as possible because it will increase the cost and time and disrupt the network performance. Therefore, LEACH routing protocols used as a solution to improve energy efficiency by clustering methods.

This final project will be analyzed QoS of LEACH algorithm (Low-Energy Adaptive Clustering Hierarchy) to the Direct algorithm in wireless sensor networks. Mechanism of LEACH proven to save energy because only the cluster head that can transmit data to the Access Point, while the sensor nodes send data to each cluster-head enough. So that, consumption of energy reduced that optimize the network lifetime.Analysis QoS of Leach algorithm include the throughput and Direct paket retransmisi using tools Network Simulator2.

Keywords: wireless sensor network, Leach, Direct Transmission