ABSTRACT

Wireless sensor network consists of a number of nodes, computer and the ability to communicate in wireless. There are so many routing power management and data deployment protocol that had been designed. Efficiency of energy consumption is the most priority in developing a wireless sensor network. One of the developing mechanisms is a duty cycle.

In *WSN* there are several problems in simulation, for example the performances. Performance will be good if QoS in the network has a good value. A good value of QoS can be detected from a high throughput and also low delay and low retransmission.

This last project is analyzing the using of *T-MAC*, *MAC protocol* with a low power in wireless sensor network. *T-MAC* is one of the solutions in developing the existing MAC protocol which were used in the previous system of wireless sensor network. T-MAc performance for wireless sensor network has advantages and disadvantages. Advantages for T-MAC are energy consumption for T-MAC is efficient than MAC 802.11. Beside that using a lot of number of nodes will increase the throughput value. While for the relationship between duty cycle and energy consumption is the lower of duty cycle value, the lower of energy consumption. Disadvantages for T-MAC are amount of latency values that occured, because there are sleep and listen conditions. The disadvantages of using a lot of number of nodes is average delivery ratio become lower, because the channel that had been used is fix but users increase so the packet that been received is lower.

Keywords : WSN, T-MAC, MAC Protocol