

ABSTRACT

Wireless Sensor Network (WSN) is a wireless network infrastructure that uses sensor nodes to monitor any physical activity or environmental conditions that can be implemented on all sorts of fields. Characteristics of the wireless sensor network is the energy limitations of a sensor node, in order to save energy consumption proper use of protocols is one way to save energy consumption.

In this Final Project will discuss the comparison of protocol Sensor-MAC (S-MAC) and Berkeley-MAC (B-MAC). Sensor-MAC (S-MAC) and Berkeley-MAC are protocols that can make the node change into sleep state to make energy savings. Comparison of MAC Sensor (S-MAC) and Berkeley-MAC (B-MAC) protocols to be simulated in three different scenarios. Energy Consumption is the main focus of this analysis. The modeling and simulation of Wireless Sensor Network (WSN) network scenario is done by using an Open Source Network Simulator version 2.35.

The results obtained from simulations using Network Simulator version 2.35 Berkeley-MAC (B-MAC) save more energy consumption than MAC-Sensor (S-MAC). The energy saving of Berkeley-MAC (B-MAC) reaches 0.94% for the number of nodes are eighteen. Berkeley-MAC (B-MAC) has a greater throughput value than Sensor-MAC (S-MAC) at each node with a difference of 6.5 Kbps. The Sensor-MAC (S-MAC) latency greater than Berkeley-MAC (B-MAC), which is about 2.63 seconds and the Berkeley-MAC (B-MAC) lifetime is longer than Sensor-MAC (S-MAC) with efficiency energy of 48.94% at duration simulation 1000 second.

Key Word: Wireless Sensor Network (WSN), Sensor MAC (S-MAC), Berkeley-MAC.