

Abstract

The needs to access telecommunications services through wireless is increasing these days, so the network technology was evolving rapidly. The advantages of wireless networks located on their flexibility and mobility so that wireless networks are becoming cheaper and easier to use than wired networks. This need is supported by the development of wireless technology called ZigBee (IEEE 802.15.4). ZigBee is a protocol on the network that specializes in wireless sensor devices. Generally, a single ZigBee network has coordinator called sink. Sink is in charge of initializing the network, manage and control the sensors to communicate with each other. This makes the sink has a very important role in a ZigBee network. But sometimes that sink is not performing their function properly, so we should find a new sink to replace it.

Researchers try to solve existing problems by applying the steps of determining a parent on MT-EO algorithm to determine a node to be selected into the new sink. The algorithm's processing time to determine the new sink become the parameters to be analyzed. The analysis is also conducted on Successful association rate, orphaning rate, orphaning recovery rate and delay orphaning. Besides, the simulation to illustrate the process of determining a new sink also be the background of this research.

Key Words : Zigbee, MT-EO Algorithm, multi sink tree, sink, Wireless personal area network, low rate.