

ABSTRACT

Wireless Body Area Network (WBAN) is a wireless network with the use of sensors for the human body. Unlike the Wireless Sensor Network (WSN) which has wider usage. WBAN can be applied to healthcare monitoring. But currently, WBAN is still under development and has problems with energy efficiency. Therefore, a routing protocol is needed that can minimize this problem. Cluster based routing is one of the routing protocols that has been implemented in WSN to minimize energy problems while still calculating performance. In this Final Project uses the Castalia simulator on the OMNeT ++ platform.

Cluster based routing that has been implemented in WBAN is Anybody. While at WSN, Low Energy Adaptive Clustering Hierarchy (LEACH) is a popular routing protocol used. The selection of Cluster Heads (CH) on Anybody is based on the density of each node, while in LEACH, CH is chosen randomly and alternately each round. With these differences, Anybody and LEACH are cluster-based routing algorithms used in this project.

From the WBAN simulation results using Castalia, Anybody routing and LEACH can be implemented, with the number of hops not more than 2 hops. Anybody routing overhead is smaller than LEACH. Packet Delivery Ratio (PDR) Anybody is 14% greater than LEACH. So that throughput and packet loss are also better. However, LEACH is nearly 55% more efficient in energy consumption and 55% longer network lifetime. So, to prioritize the reliability of delivery data can use Anybody routing. If you are concerned with energy efficiency issues, you can use LEACH routing.

Keywords : WBAN, Cluster based routing protocol, Anybody, LEACH