Abstrack

At this time technological developments are increasingly advanced. The WBAN sensor node has undergone developments that can be effective in remote patient monitoring. Health monitoring applications are sensitive to data packet delays. Biomedical sensor nodes produce electromagnetic radiation that can cause damage to sensitive organs in humans. To protect body tissue damage requires a Temperature Based Routing routing protocol to minimize temperature and also minimize delays during data transmission, namely WETRP routing and HPR routing.

The results of the simulation analysis are that the WBAN scenario with 12 nodes is the most optimal if you want the best results with low packet loss rates on HPR, namely 0.61% and 0.79%. The average packet loss rate for HPR routing is 5.901% and WETRP routing is 6.077 %, this can affect network performance, the average PDR value for HPR routing is 94.08% and WETRP 94%, the average value of HPR throughput is 86.65 Kbps and WETRP 86.52 Kbps and the average RO ratio of HPR is 16.853% and WETRP is 8.43%. For QoS parameters, the performance of both WETRP and HPR routing protocols is almost the same.

If you want to use a network with low temperature and delay, HPR is suitable because the average delay of HPR is 0.198 ms compared to WETRP of 0.236 ms, so data can be sent in real time and the average HPR temperature is 36.52℃ and WETRP 38.49℃ about 2℃ higher than the HPR. Low temperature that is affected by the HPR routing algorithm based on the lowest hop temperature and the nearest neighbor node. While the WETRP routing value can provide 50% lower RO savings than HPR routing due to bandwidth savings so that it can increase network effectiveness for remote patient monitoring based on the same weight between temperature, residual energy and LDE.

Keywords: Wireless Body Area Network, Temperature Based Routing, WETRP, HPR.