ABSTRACT

Transmission Control Protocol (TCP) depend on pacet loss when

indicate there is a congestion on the network and then run a congestion control

algorithm when it happen. The problem appear when this protocol implemented in

Mobile Ad Hoc Network (MANET). Due to mobility owned by manet, end-to-end

connectivity is hard to be established. Moreover, the performance of routing

protocol is very important to keep the path between the communicating hosts.

TCP has an algorithm to achieve the conditions that maximize the utilization

of network resources, such as: slow start, congestion avoidance, fast retransmit, and

fast recovery algorithm. Adaptation of the TCP algorithm needs to be done to

improve the performance of TCP in wireless networks, especially Manet which has

high mobility. One kind of information that can determine a quality in wireless

network is Signal to Noise Ratio (SNR). SNR can be used to indicate how good a

communication channel is.

From the result of this research, we obtain that TCP Newreno modified using

SNR outperformed original TCP Newreno in both scenario static and non-static

mobility. In a static scenario with a change of channel errors and 25 meters distance,

TCP Newreno modified has an overall Throughput rate of 567,842 Kbps where

original TCP Newreno has a Throughput of 564,170 Kbps. In a moving scenario, it

show a better result that tested for channel error chanes with the number of nodes

30, TCP Newreno modified has a better result of 13,355% than the average

Throughput obtained by original TCP Newreno. In another scenario with a change

of channel error and a speed of 6 meters/second, it was found that TCP Newreno

modified outperformed original TCP Newreno by 27,765%.

Keywords: TCP, MANET, SNR