ABSTRACT

MANET is a wireless multihop network that consists of mobile nodes that are dynamic. The precise and quick protocol using is totally required for sending data packets in MANET. Ad Hoc On Demand Distance Vector (AODV) and Dynamic Source Routing (DSR) are types of reactive routing protocol in MANET that are frequently used but have a differences in routing methods.This research connects a simulation to determine their performances using a software simulator OPNET Modeler 14.5. The value of both the comparison protocol results are used as a reference for routing protocol which is the best for being applied. The observed performance parameters are latency, throughput, jitter and packet loss based on the value of TIPHON standard. The used service are FTP (low) in the amaount of 1000 byte, FTP (high) in the amaount of 50000 byte and video conferencing in the amaount of 30 frame/sec.From the simulation results, founded a graphs form of the average value of the simulation performance for 5 times. The results from the simulations that have been done show that the more data size we send, the worse value of network performance we get. Latency performance on AODV routing with video conferencing is better than DSR routing with the difference value in the amount of 492 ms. For the throughput parameter, AODV routing in video conferencing services is better than DSR routing with the difference value in the amount of 88737,144 bps. For the jitter parameter of voice service to support video conferencing service, routing AODV is better than DSR routing difference value with the difference value in the amount of 1.3 ms. For the packet loss, the DSR routing on video conferencing services is better than AODV routing with the difference value in the amount 3,351%. From all the gained simulations, concluded that AODV routing is better than DSR routing seen from the performance of latency, throughput, and jittter, while the DSR routing is better than AODV is seen from the value of the performance of packet loss.

Keywords: MANET, DSR, AODV, Reactive routing protocol, OPNET Modeler 14.5.