ABSTRACT

In this era of globalization, technology growing rapidly in all aspects of life, including transportation. One of the latest technology i.e., Vehicular Ad Hoc networks (VANET). VANET is key to the Intelligent Transportation System (ITS) or smart transportation systems, where vehicle can communicate with the others to exchange information and to know the road conditions in real time. VANET is an ad-hoc who have no fixed infrastructure and network topology that rapidly changing. This results in network security VANET become vulnerable to various attacks both from within and outside the network.

In this final assignment had been done analysis of AODV routing protocol comparison without the attacks, with the onslaught of black hole and jelly fish and with the algorithm of Intrusion Detection System with the number of nodes change scenarios as much as 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 nodes and change speed of 70, 80, 90, 100, 110, and 120 km/h. This research is simulated using Network Simulator 2 to model network and ONE Simulator to model node mobility. Analysis based on QoS parameters which is packet delivery ratio, throughput, and end to end delay.

The results of the simulation showed that changing the number of nodes and node velocity affects the performance in the network. On the number of nodes scenario with attacks, the average value of PDR decreased by 48.03%, throughput decreased by 50.23% and delay decreased by 80.18% for black hole and increased by 47.87% for jellyfish attack. Whereas, in the node velocity scenario, the average value of PDR decreased by 58,515%, throughput decreased by 60.34% and delay decreased by 13.81% for black hole attack and increased by 123.91 % for jellyfish attack.

Keywords: *VANET, AODV, black hole attack, jelly fish attack, intrusion detection system.*