

## ABSTRACT

Nowadays a lot of things can happen in the world of telecommunications because of its rapid technology developments, as well as in the network for a moving vehicle. Technology has evolved so the entire network is based on ip, hence a network that can do communication between vehicles in the streets is produced. The network was made in order to be able to avoid and reduce the number of accidents which usually still happen. The performance of a network is strongly influenced by the shape of the network topology. In VANET, topology is a vehicles mobility model that make up the network of VANET. The vehicle requires a certain transmission range to be able to communicate with each other.

On this final assignment will be discussed regarding the effect of transmission range considering the difference of speed and node density on a VANET specification network in highway scenarios. The routing protocol used in this study is AODV.

Design of a simulation system is divided into two subsystems which are subsystem mobility and network subsystems. The design of the subsystem mobility is done by using ONE Simulator software. While the network subsystem design using the Network Simulator 2 (NS2) software. The density and speed of the node is formed in such a way so as to describe a model of mobility that close to the exact condition in reality. In the end, the performance of the VANET network will be observed. Performance is evaluated with end to end delay, throughput, and packet delivery ratio.

It can be concluded that the changes on the transmission range will affect the performance of AODV routing protocol. The higher the transmission range used, the QoS will have a tendency to improve. Node density also affect the performance of AODV routing protocol. It also can be seen that the value of the QoS parameters on the network at higher nodes speed is worse compared to QoS parameter value on network at lower nodes speed.

Key words : VANET,AODV,Transmission Range, Speed, Node density,QoS