

ABSTRACT

On the highway is often found congestion on traffic, one of which is caused by the increasing volume of vehicles. Therefore the vehicle requires information on the surrounding traffic environment for comfort and safety driving. For faster information then required communication technology between vehicles. VANET is a data communications technology for dynamically moving vehicles and the use of ad hoc wireless based information. VANET's main goal is to help vehicles communicate with each other in a particular environment.

In this final project, analyze the average end to end delay of A-STAR routing protocol in VANET (Vehicular Ad Hoc Network) communication. Simulation using Network Simulator NS-2 and mobility generator is Simulation of Urban Mobility (SUMO). The simulation is based on scenario change of node number and node velocity on Jalan Dipatiukur Bandung and its surroundings. The performance metrics used are the average end to end delay to determine the value of the data packet delivery. From knowing the test results are adjusted to the characteristics of the A-STAR routing protocol on the road Dipatiukur Bandung and surrounding areas.

The results of the simulation show that the average end to end delay on the change in the number of vehicles has decreased the delay from 896.3054 ms - 84.45774 ms at the speed of 5 m / s and 886,441 ms - 86.2262 at the speed of 10 m / s. This also occurs in the average end to end delay at changes in vehicle speed. At speeds the number of nodes 330 has an average increase of end-to-end delay at speeds of 15 m / s - 20 m / s with 314,9164 ms - 315,7208 ms, as well as the number of nodes 830 at 15 - 20 m / s with 150.3886 ms - 151.2584 ms. But in the number of nodes 1330 did not happen so significant increase, due to the concentration of vehicles at the intersection.

Keyword: VANET, A-STAR, SUMO, NS-2, Average end to end delay