ABSTRACT

Wireless communications is growing rapidly, one of them is car to car

communication which is implemented in a Vehicular Ad-Hoc Network (VANET).

The system allows the car to communicate to exchange data both send and receive

information via radio waves. In the process of data exchange is needed

synchronization process as quickly as possible (fast synchronization).

In this final project will be designed a simulation to analysis the characteristics of

fast synchronization that work in 802.11p protocol that was developed as Wireless

Access Vehicular Environment (WAVE). The simulation environment will be

designed in urban areas and with variety of input parameter. The simulator that

will be used is NS 2.34, SUMO 0.12.3, and MOVE (map and vehicle movement

editor). To test the protocol, it must measure the QoS, that are Average end to end

delay, Packet Delivery Ratio, Throughput, dan Packet Loss Ratio to know the

performance of 802.11p.

The simulation result shows that the performance of 802.11p during the

synchronization process works well and can be applied to VANET technology. It

is proved by testing the value of average end-to-end delay does not exceed the

delay tolerance for application safety message. In this simulation, the result of

maximal average end to end delay is 15.0049 ms. While the delay tolerance for

the application of safety messages in VANET technology is 100 ms.

Keyword: car to car communication, VANET, fast synchronization, 802.11p

SIMULASI DAN ANALISIS KARAKTERISTIK FAST SYNCHRONIZATION PADA CAR TO CAR COMMUNICATION MENGGUNAKAN PROTOKOL 802.11p