ABSTRACT

The development of information and communication technology is moving very fast, both wired or wireless technology. One type of wireless network that is growing is VANET (Vehicular Ad-hoc Network). VANET is the development of MANET (Mobile Ad-hoc Network), but with a high mobility rate. VANET allows the vehicles on the road can communicate directly with other vehicles while moving and without using fixed infrastructure.

VANET is expected to increase the level of driving safety and reduce the number of driving accidents. However, VANET has the characteristics of the network where the network nodes are moving very quickly. Therefore, it takes the appropriate routing protocol for various conditions so that the network can be used optimally.

This final project aims to analyze the performance of two protocols based on topology: Ad-hoc On-demand Distance Vector (AODV) and Fisheye State Routing (FSR) on VANET with a case study scenario highway. Both of these protocols are simulated using Network Simulator 2 (NS-2) with the speed and density node scenario. Both of these protocols are compared and evaluated from the parameters of packet delivery ratio, throughput, end-to-end delay, and routing overhead.

From this final project obtained the result that both protocol have their own advantages. AODV leads in packet delivery ratio and throughput parameters with an average of 92.53% and 7 kbps, while FSR 37.08% and 2.99 kbps. While FSR leads in end-to-end delay and routing overhead parameters with an average value of 253.48 ms and 33.89, while AODV 475.62 ms and 91.15.

Keywords: VANET, AODV, FSR, NS-2, ONESim