

ABSTRACT

Vehicular Ad hoc Network (VANET) is a derivative of Mobile Ad Hoc Network (MANET) technology in which the vehicle acts as a node on the network. VANET is needed in communication passed because it will provide the security and convenience of road users. VANET's challenge is a constantly changing topology in finding and retaining routes. Therefore it requires the optimal routing protocol to determine the route of communication in sending data. That causes the need to test multiple routing protocols to address these challenges.

Therefore, this final task study analyzes the performance comparison of routing protocol Greedy Parameter Stateless Routing (GPSR) and Distance Routing Effect Algorithm for Mobility (DREAM) using Network Simulator-2. From this research is expected to get an answer to the problem that is in VANET is a constantly changing topology in finding and maintaining the route. Both routing protocols are included in the position based routing protocol category but have different data delivery mechanisms. The tests use four different scenarios: the node count change scenario, the packet interval change scenario, the node speed change scenario, and the packet change in the package size. The parameters used for analyzing are parameters of throughput and end-to-end delay.

The results of this research show that DREAM protocol routing is better to apply to VANET. Because if there is a second delay making the message does not mean, for that VANET should guarantee the availability requirement. In four test scenarios, the routing protocol DREAM lower its end-to-end delay value but the GPSR routing protocol has a higher throughput value. The average value of end-to-end delay routing protocol of GPSR and DREAM in order is 91,621 MS and 322,122 Ms. Furthermore, the average throughput value generated by the GPSR and DREAM routing protocols in order is 459,197 Kbps and 82,392 Kbps.

Keywords: VANET, Routing protocol, DREAM, GPSR