

## ***ABSTRACT***

*Vehicle Ad-hoc Network (VANET) is a technology that can be utilized to support driving safety. VANET makes it possible for vehicles to communicate with other vehicles as Vehicle to Vehicle (V2V) communication or network infrastructure along the road as Vehicle to Infrastructure (V2I) communication type. VANET has characteristics where each node is able to communicate even if the nodes move at high speeds. Therefore, the right type of routing protocol is needed. This final task aims to analyze the performance of two types of topology-based routing protocols namely the proactive Fisheye State Routing (FSR) routing protocol and the reactive Dynamic Source Routing (DSR) routing protocol with the V2V and V2I communication models. Testing performed using the scenario of changes number of nodes, the scenario of speed changes, and the scenario of packet size variations. Throughput and End-to-end delay are used as comparison parameters.*

*The results obtained from this study are DSR better than FSR in V2V and V2I communication. The average throughput generated by FSR for V2V communication is 30,212 kbps, while the DSR is 80,667 kbps. Then for V2I communication, the average throughput generated by FSR is 51,904 kbps, while in the DSR is 84,733 kbps. Next, for end-to-end delay parameter, on FSR, the average end-to-end delay generated for V2V communication is 189,57 ms, while in the DSR is 151,867 ms. Then on V2I communication, the average end-to-end delay is generated by FSR is 204,242 ms, while on the DSR is 150,377 ms.*

***Keywords:*** *VANET, Routing protocol, FSR, DSR, V2V, V2I.*