

Abstract

One of the Ad hoc network on the vehicle better known as Vehicular Ad hoc Networks (VANET) . Characteristics of VANET i.e network topology may change rapidly and can't be predicted . Therefore, it needs proper routing protocols so that each vehicle can communicate with each other . However, the usage of routing protocols based on the topology of VANET routing protocol commonly found, which is less appropriate for selection of routing protocol because the topology in VANET often change quickly .

Selection of the appropriate routing protocol to improve communication performance is a major problem in VANET. Routing protocol used is GyTAR and GVGRID, both algorithms are tested its performance based on test parameters throughput, packet delivery ratio, convergence time, and routing overhead in urban environments precisely on Jalan Asia Afrika, Bandung. This simulation using SUMO 0.12.3 for mobility simulation and NS 2.33 for traffic simulation.

The analysis which has been done produced an average of data from each test scenario. On the change in the number of nodes in urban simulation environment scenario, GVGRID has an average value 83.22% of packet delivery ratio, routing overhead 27.9668, 0.0166574333 s of convergence time and 105.72 kbps of average throughput while GyTAR has an average value 72.34% of packet delivery ratio, routing overhead 49,3420, 0.00311534333 s of convergence time and average throughput of 92.59 kbps. In the changing scenario of node speed, GVGRID has an average value 86.763% of packet delivery ratio, routing overhead 29.381, 0.0177406 s of convergence time and average throughput of 110.223 kbps while GyTAR has an average value 73.803% of packet delivery ratio, routing overhead 50,1203, 0.085389 s of convergence time and average throughput of 94.473 kbps.

Keywords : VANET, GyTAR, GVGrid, SUMO, *urban*, *Throughput*, *Convergence Time*, *Packet Delivery Ratio*, , *dan Routing Overhead*.