

Abstract

Vehicle to vehicle (V2V) communication is a communication that provides high-security and convenience for driver and passenger. Its implementation is for network known as Vehicular Ad Hoc Network (VANET). VANET plays role for data interchange and or route discovery. The density and speed of node will impact the network performance. Node position of corresponding or neighboring node is then known to adapt to the highly dynamic topology.

This final project aims to analyze the performance of two position-based routing protocols: Greedy Perimeter Stateless Routing (GPSR) and Border-Node Based Most Forward within Radius Routing Protocol (B-MFR) for VANET for highway environment have intersections. The simulation of both routing algorithm is done using NS2 with density and speed of node scenario.

The performance evaluation is measured through metrics such as: throughput, packet delivery ratio, packet loss rate, routing overhead and convergence time. From the simulation and analysis result show that B-MFR gives better performance for higher mobility and higher speed of node. For 50 nodes, obtained that packet delivery ratio value of B-MFR is 96,45 % while packet delivery ratio of GPSR is 71,62 %. Meanwhile, node's speed scenario 30 nodes and speed of 24 m/s, obtained that packet delivery ratio value of B-MFR is 76,46 % while packet delivery ratio of GPSR is 74,60 %.

Keyword : VANet, Routing Protocol based position, GPSR, B-MFR, V2V, packet delivery ratio.