

VANET BASED SOLUTION TO MINIMIZE CONGESTION AT THE SHORT SIDE ROADS

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Traffic congestion is a critical problem which gives a negative impact on day-to-day life. The idea of Vehicular Ad Hoc Network (VANET) has come up with a lot of solutions to overcome this traffic and road safety issues. Several solutions based on VANET were proposed to identify and control the traffic congestion in urban roads as of today by using the real-time position and speed information of individual vehicles, inter-vehicular communication and navigation controlling models. The aim of the study is to control congestion at the short side roads; the intersections between main roads using VANET. For that, with the use of Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) communication, a model to manage vehicle mobility has been proposed. In the implementation, the moving vehicles are required to equip with On-Board Unit (OBU) and the Road Side Units (RSU) which is further used to control the traffic signal also required. The model was experimented using Network Simulator 2 (NS2). The IEEE 802.11 referred to as Dedicated Short-Range Communication (DSRC) which forms the bases for the V2V and the V2I communication. In the simulation, end-to-end delay, packet delivery ratio, packet loss and throughput were taken into consideration. The results ensure efficient communication with high reliability and low delay to the drivers so they can avoid the short side roads or reduce the speed and control the congestion.

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