

Impact of Two Realistic Mobility Models for Vehicular Safety Applications

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VANETs are composed of a number of vehicles moving on city roads, able to interconnect with one another without a fixed infrastructure. Improvisation of a new vehicular communication system should entitle a node to travel safely with high speed mobility while maintaining seamless interconnectivity. To evaluate the impact of mobility models such as IDM-IM and IDM-LC on VANETs routing protocol, VanetMobiSim is introduced to design a realistic vehicular mobility model for an urban scenario of Dhaka city. We also include a safety feature such as periodic broadcast (PBC) agent in an urban scenario along with Nakagami propagation model and IEEE 802.11p MAC protocol which can able to deliver better performance on VANETs. The periodic broadcast (PBC) agent is employed to transmit messages between vehicles in case of emergency or collision avoidance for vehicular safety communication. We have accurately implemented our simulation using VanetMobiSim and NS2. The experimental results suggest several issues such as Packet Delivery Ratio (PDR), drop, delay, jitter, throughput, Normalized Routing Load (NRL), route cost and mean hop are required to be considered before preparing a realistic safety application of VANET. A robust routing protocol is required for VANETs.