

**ABSTRACT:**

Vehicular networks are highly mobile wireless networks that can provide wide variety of services and applications such as public safety communications, crash avoidance, multimedia and Internet access in highways. Designing routing algorithm in vehicular network is a challenging task due to rapidly changing topology and high speed mobility of vehicles. One of the critical issues of vehicular network is frequent path disruptions caused by high speed mobility that leads to broken links which results in low throughput. This poses complex challenge in ensuring quality of service (QoS). A lot of research around the world is being conducted to define the standards for vehicular communication. In this paper, we study the effect of different duration of transmitting packet and compare different packet size on sending and received packet rate in IEEE 802.16j MMR networks using NCTUns. Meanwhile, cross-layer routing approach is proposed to overcome the challenge. The routing approach is expected to significantly improve QoS in vehicular networks.