FAST HANODFF SCHEME FOR VEHICULAR AD-HOC NETWORK (VANET)

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FAST HANDOFF SCHEME FOR VEHICULAR AD-HOC NETWORK (VANET)

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A project report submitted in partial fulfilment of the requirements for the award of the degree of Master of Engineering (Electrical - Electronics and Telecommunication)

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Dedicated to my beloved Parents, Brothers and Sisters.
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Abubakarr
ABSTRACT

Recent advances in wireless technologies and dedicated short-range communications technologies have made inter vehicular communications (V2V) and vehicle-to-Infrastructure communications (V2I) possible. Wireless communication is of great importance for safety and entertainment purposes in vehicular networks. Fast handoff is needed for these delay sensitive application. However, the high mobility of vehicles can result in frequent handoffs, which may cause significant packet loss, and low throughput. In this project work, we proposed a seamless handoff scheme for IEEE802.11b in vehicular scenario (Fast Handoff Scheme). The whole process is divided in to two parts; firstly, a threshold point to trigger the scanning process for new access point is define as -75dBm. Secondly, the number of scan channels is reduce to three channels. The scanning process which account for about 90% of handoff delay was significantly reduce by limiting the number of scan channels. The simulation results reveal that the proposed handoff scheme provides better handoff process under vehicular environment by significantly improving handoff latency by 9%, minimizes packet loss by 58%, and increases throughput by 12% using an algorithm that introduces less scanning time.
ABSTRAK