ABSTRACT:

Video communication VANETs has many applications, such as emergency video transmission or inter-vehicle entertainment. However, delivering video to high mobile vehicles faces challenges such as packet loss due to intermittent connectivity and channel variations. Thus, designing a reliable approach for video streaming over such harsh scenarios is needed. Hence, we propose a reliable approach based on random practical network coding and source coding. This approach integrates the benefits of network coding with Multiple Description Coding to achieve robust streaming over VANET. Furthermore, we propose a redundancy controller based on fuzzy inference system to adjust the amount of redundant packets based on vehicular traffic density and SNR of the channel. Simulation shows the proposed approach achieves better protection against packet loss, application layer throughput and video quality. © 2011 IFIP International Federation for Information Processing.