ABSTRACT

Named Data Networking (NDN) represents a content-centric computer network architecture that has proven particularly suitable for vehicular ad hoc networks (VANETs) given the high mobility on vehicles. The self-learning forwarding strategy enables path adaptation, thereby obviating the need for explicit routing instructions, which is essential for supporting the dynamic nature of wireless environments. However, the movement of nodes may result in negative acknowledgments (NACKs) being misdirected, which may lead to increased data packet travel time anda lot of data transmitted. To address this issue, this paper proposes modifications to the self-learning forwarding strategy. These include the elimination of negative acknowledgment (NACK) packets in self-learning and the introduction of an upper limit on the number of NACK packets in self-learning. This thesis presents a comparative analysis of the default self-learning and modified self-learning methods in scenarios with varying numbers of nodes and CS sizes. The proposed scheme demonstrates a reduction in round trip time and an increase in throughput in comparison to the default self-learning mechanism. Moreover, an enhancement in the cache hit ratio was observed.

Keywords *:named data network, vehicular network, forwarding strategy, self learning, Negative Acknowledgments (NACKs)*