

ABSTRACT

VANET as a specialized network is used in a vehicle environment with a high level of vehicle mobility which results in rapid location changes and is prone to experiencing unstable network connections. To overcome this, a network architecture that can be flexible and adaptive to the speed of vehicle mobility is needed.

Named Data Networking (NDN) and VANET are innovative technologies to meet the needs of the future internet. The NDN network paradigm can improve content access and delivery with the availability of content providers spread across the network that can support data retrieval and mobility support. Forwarding in NDN generally requires a routing protocol. However, such an approach may incur extra maintenance, configuration, and complexity in its deployment. To avoid running a routing protocol, the network can learn routes by itself after broadcasting interest packets based on successful data packet retrieval routes, by using a self-learning forwarding algorithm.

The test results show that the self-learning developed for VANET provides an average RTT value for a total of 30 nodes on self-learning-vent has a difference of 47.74% greater than self-learning and 2.63% smaller than multicast-vanet. At a node count of 60, the self-learning-vanet has a difference of 37.6% smaller than self-learning and 37.32% smaller than the multicast-vanet. Then when the number of nodes is 90 self learning-vanet has a difference of 0.09% smaller than self-learning and 10.72% smaller than multicast-vanet. As well as for the number of nodes 120 self-learning-vanet has a difference of 0.016% greater than self-learning and 3.37% smaller than multicast-vanet, it can be concluded that self-learning and self-learning-vanet forwarding strategies have an average RTT value smaller than multicast-vanet. This happens because the RTT time is influenced by the number of packets stored in the cache. So that the more data packets stored in the cache, the smaller the retrieval time value. As for the Throughput and Cache Hit Ratio parameters in the self-learning developed for VANET, the difference is not too far from that of the self-learning developed for VANET. has a difference that is not too far from the original self-learning.

Keywords: VANET, NDN, Forwarding Strategy, Self-learning Forwarding