

ABSTRACT

Ad Hoc network is a wireless network consisting of mobile nodes that are dynamic and spontaneous, and can be applied anywhere without the use of existing infrastructure backbone. Mobile nodes which are always on the move can access information in real time when a mobile node is associated with another. Vehicular Ad hoc Network (VANET) is a subset of the concept of a Mobile Ad-Hoc Networks (MANET) as an enabling communication technology of Inter Vehicle Communication (IVC) and or Roadside-to-Vehicle Communication (RVC). VANET has the characteristics of the network topology may change rapidly due to the highly dynamic movement of nodes. Under these conditions, synchronization between nodes is needed quickly so that nodes can be interconnected in a short time.

This final project examines the performance of a Wi-Fi Direct for inter-vehicle synchronization process. The process of research carried out by simulation using Network Simulator and other supporting softwares. The simulation used an 802.11 standarization, AODV routing protocol, and TCP transport layer protocol.

The simulation results indicate that the wifi direct have pretty good relative performance in all test parameters. End-to-end delay generated in the range of 1.50452 to 8.4526 ms with packet loss below 0.1%. Thus, direct wifi can support the process of synchronization between nodes quickly.

Keywords : ad hoc network, vanet, manet, ivc, rvc, wifi direct, 802.11, aodv, tcp, average end to end delay, packet loss ratio