ABSTRACT

Vehicular Ad-Hoc Network (VANET) is a development of the Mobile Ad-Hoc Network (MANET) which allows Inter Vehicle Communication (IVC) and or Roadside-to-Vehicle (RVC) communication. VANET basic characteristics, namely high node mobility causing rapid changes in network topology. This is because VANET network topology changes frequently, finding and maintaining routes are the most important thing in VANET. So it need to choose a routing protocol that is considered suitable and efficient so the data transmission can run optimally.

Regarding the node or vehicle that will be represented using City Car. Some things that can be discussed, namely the difference in communication issues relevant to the Vehicle-to-Vehicle (V2V), and analyzes the existing technological solutions in order to overcome the problem of transport safety. Routing protocols greatly affect the network performance and is used to facing challenges related dynamic network topology.

In this final project will analyze several Topology-based routing protocol that its performance is best used on a VANET network that is DSR and AODV that use conditions around Buah Batu and Soekarno-Hatta intersection (Urban). From the simulation results using NS-2 showed that in urban environments, routing protocol DSR is better than AODV. Routing protocol DSR has better performance value on parameters packet delivery ratio, average throughput, routing overhead, normalized routing load, and end to end delay with average value 80.44%;82.01%, 431.61 kbps;436.63 kbps, 0.96;0.82, 1.06;0.96, and 3.45 ms;3.51 ms, whereas on AODV has the average 77.84%;79.87%, 419.64 kbps;421.22 kbps, 1.48;1.16, 1.86;1.56, and 3.56 ms;3.62 ms. It shows that routing protocol DSR is more efficient when used on City Car with urban environmental conditions.

Keywords: VANET, NS-2, DSR, AODV, City Car.