

## ***Abstract***

*Mobile IPv6 (MIPv6) is a protocol which allows the Mobile Nodes (MN) to remain reachable in the IPv6 Internet. Packets addressed to a MN's Home Address (HA) are transparently routed to its Care-of Address (CoA) that show MN current location. But this technology is still considered less in meeting the needs of the connectivity for mobility user. With the additional protocol Fast Handover for Mobile IPv6 (FMIPv6) on MIPv6 will allow a MN to configure new CoA before MN move and connected to the next network. Sometimes, according to the conditions in the state of the road, the mobile nodes can move very quickly, another hand, those conditions occur a large number of density. With road conditions like that, whether using FMIPv6 handover method on both cases occurred. This final project will compare the effect of the amount of the MN and MN speed movement of the performance FMIPv6 in network Wireless Access Networks In Vehicular Environments (WAVE) by building a simulation created using NS-2.31 and SUMO 0.12.3 with two environments, Urban and Highway with change of velocity nodes and the number density of nodes with the observation time of 180 seconds for each scenario. Then do an analysis of the parameters of quality standards and the feasibility of service (QoS) which includes handoff latency, end to end delay, throughput and packet delivery ratio. After finishing the simulation, show that both the number of nodes and speed will affect the performance FMIPv6 MN, the more the number of nodes causes increase in value handoff latency, as well as increasing the speed will make the handoff latency greater value.*

**Keywords:** *Mobile IP, FMIPv6, WAVE, NS-2, SUMO 0.12.3*