

## ABSTRACT

*As population increases and data access requests continue to increase, it will certainly affect the capacity of network systems, for example on cellular networks. When the capacity of the system is no longer able to handle increasing user traffic, it will result in a surge in traffic or traffic overload that adversely affects the quality of the system itself. According to Cisco Systems, by 2021 data traffic needs will reach 49 times higher than in 2010. It will also be predicted to increase until several years ahead.*

*In order to keep traffic loads stable and network capacity performances increase, mobile operators can divert their data service over Wi-Fi networks that can be called offload / data offload techniques provided by operators in public places. Offload traffic / offload data is a technique that utilizes other technology networks to send data to mobile users. The latest IEEE 802.11n standard is a mobility note that is standard High Mobility by using channels in bandwidth 20 to 40 MHz in 2.4 to 5 GHz bands (5,850-5,925 GHz). This is half the bandwidth, or twice the transmission time for certain data symbols, such as those used in 802.11a. This allows the receiver to better address the characteristics of the radio channel in the vehicle communication environment, such as the signal echoes that are reflected from other cars or homes.*

*In this final project will perform offload traffic performance research for data service on LTE network to WLAN 802.11n. The completion step by analyzing offload traffic performance for multimedia services on LTE network with WLAN 802.11n from simulation result based on scenario that has been made using Network Simulator (NS) -3. The analysis is done by observing the parameters of Quality of Service. From the simulation result, we can conclude that network performance after offloading is better before offload process, based on throughput and SNR for each scenario. But in scenario with increasing number of node and scenario based on increasing the speed of each node shows that the offload based on throughput value have better result than using SNR threshold as comparison.*

**Keyword: LTE, WLAN 802.11n, Offloading Data Traffic, Multimedia, QoS**