ABSTRACT

Along with the increasing demand for data access continues to increase, will certainly affect the capacity of network systems, for example on mobile networks. When the capacity of the system is no longer able to handle increasing user traffic, it will result in a spike in traffic that adversely affects the quality of the system itself. According to Cisco Systems, by 2020 data traffic needs will reach 53% times higher than in 2015. 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 also be called traffic offload techniques provided by operators in public places. Traffic offload is a technique that utilizes other technology networks to send data to mobile users. The latest IEEE standard is 802.11ah which is Wi-Fi 900 MHz which is more ideal for wireless data transmission with low power consumption and can provide data rate more than 100 kbps with reach reach 1 km.

In this final project perform performance of offload traffic for data service on LTE network to WLAN 802.11ah. The completion step by analyzing the performance of offload traffic for data service on LTE network with WLAN 802.11ah from simulation result based on scenario that have been made by using Network Simulator-3.23. The analysis results can be concluded that the existence of offload scheme to WLAN 802.11ah can improve network performance compared to condition without offload scheme. The performance obtained based on changes in the number of users, the average throughput value of 130.5654809 Kbps; average value of delay that is equal to 253,608261 ms; the average value of jitter is 52.3877313 ms; average value of PDR that is equal to 73,24771%.

Keywords: *LTE, WLAN 802.11ah, Traffic Offload, Data*