

ABSTRACT

Femtocell is a development of the architectural concept of base stations in cellular networks using low power levels and has smaller coverage compared with macro. Femtocell is the right solution to increase the coverage and capacity on the network especially in indoor areas. Femtocell uses IP networks as the backhaul architecture.

On the other Hand, WiFi allows us to access internet wirelessly with relatively expensive equipment. Designed for high speed wireless networks for indoors. One commonly used application using WiFi networks such HotSpot. Femtocell and Wi-Fi has many similarities to the network infrastructure. This raises the curiosity what are the similarities and differences between Femtocell and WiFi. In this final simulation is run with the scenario that has been designed that is increasing the number of users and traffic (voice and data).

Final project aims to provide a comparison between LTE Femtocell with WiFi 802.11.g in this study will be conducted in a comparative analysis of aspects (QoS) Quality of Service. Parameters measured are delay, jitter, packet loss, and throughput to see how the performance of each technology. Final design of the simulation is using Network Simulator 2 (NS2).

From the simulation results can be seen that for the scenario of the number of users, the delay generated by LTE Femtocell lower than WiFi 802.11.g Throughput generated by LTE Femtocell only at user 2 to 8 users on voice services alone while the rest WiFi 802.11.g more superior. In the scenario composition prioritize WiFi 802.11.g users to transmit video services for up to succeed at a higher priority user. While on LTE Femtocell service voice over data and video services.

Keywords: *Femtocell*, LTE, *WiFi*, 802.11.g, Network Simulator 2, QoS