

ABSTRACT

4G LTE Communication Technology is here as a solution to improve data communication. 4G LTE technology has the standards set by 3GPP in release 8. These standards include: a maximum downlink data speed of up to 100 Mbps when the user is moving fast and 1 Gbps when idle. In LTE-A technology in the 4G technology network system, data speeds are three times higher than the existing technology standards. In Indonesia, the use of LTE networks has not been evenly distributed, therefore this research was conducted to see the performance of the LTE-A network in the city of Bandung, especially Jl. Asia Africa, by comparing the two frequencies, namely at a frequency of 1805 Mhz and at a frequency of 2330 Mhz. The network planning method is carried out by calculating based on coverage planning with the Extended data propagation model, after obtaining the design model then a simulation is carried out using the Forsk Atoll 3.3.2 software. From the planning results based on coverage planning, the results obtained at a frequency of 1805 Mhz for uplink and downlink throughput values of 6,327 Kbps and 18,120 Kbps, SINR uplink and downlink of 16.53 dB and 11.51 dB and RSRP of meanwhile for -72.56 dBm, while for the 2330 Mhz frequency, the uplink and downlink throughput values were 19,020 Kbps and 54,365 Kbps, the uplink and downlink SINR were 17.77 dB and 20.37 dB and an RSRP of -47.18 dBm. Comparison of the parameter values obtained from the use of frequency 1805 and frequency 2330, based on the reconfiguration of the site, a better frequency is obtained, namely the frequency of 2330 Mhz because the results of the 2330 Mhz frequency simulation parameters get good results compared to 1805 Mhz. In terms of frequency coverage, 1805 Mhz is better because the greater the frequency, the lambda value or the shorter the wavelength, which causes a small coverage area.

Keywords: Advanced LTE, Throughput, Signal Interference to Noise Ratio (SINR), Reference Signal Received Power (RSRP).