

ABSTRACT

Dayeuhkolot and Margahayu is an area in Bandung that is densely populated and has an area of 20.09 km². In 2016 and 2017 the population density in the area reached 252738 people. Both areas are areas that are already covered by 4G LTE technology, but in reality for the Dayeuhkolot and Margahayu regions there are still areas that are not covered by LTE technology. So to improve better network performance, we can analyze and optimize LTE network in the area.

In this final task, the propagation model used for analysis is the Cost-231 propagation model, which is one of the models used to predict median transmission, especially in urban areas with a frequency of 1800 MHz. Optimization is based only on software, and this analysis is carried out using Gnet-Track and Atoll. The analysis is carried out through several stages, namely the collection of the number of users, the collection and analysis of traffic data, network planning based on capacity, and lastly the simulation of planning results to get a comparison between the results of the drive test and simulation.

Based on the calculation results and drive test in Dayeuhkolot appeared RSRP range value from (-200) to (-61) dBm, SINR from (-11) to (27) dB and throughput of 1 Mbps to 11 Mbps with coverage of 10.78 km², while in Margahayu range RSRP value from (-110) to (-64) dBm, SINR from (-11) to (26) dB and throughput 2 Mbps to 11 Mbps with coverage of 9.33 km². After doing optimization by changing the direction of Azimuth in the two areas appeared a better value than before, in the dayeuhkolot area got a range of RSRP values (-120) dBm to (-62) dBm , SINR (2) to (27) dB, throughput 2 Mbps to 12 Mbps , and for Margahayu RSRP (-95) to (-64) dBm , SINR (5) to (27) dB, throughput 4 Mbps to 12 Mbps. . This parameter has reached standart KPI LTE network with the operator used is Telkomsel.

Keywords: LTE, RSRP, SINR, Coverage, Throughput, Drive Test