ABSTRACT

Pasar Baru Bandung is a shopping center that heavily crowded with visitors, as a public place that has a large capacity, heavily crowded visitors and lack of signal coverage in the building area resulting in low telecommunications signal connections. Therefore it is necessary to do network optimization planning in the building, especially on the 6th floor of the food court which has constraints of the lack of quality and performance of cellular signal services so that users can still be served with good signal quality.

In this final project, an indoor network optimization planning is carried out on the 6th floor of the Foodcourt Pasar Baru building Bandung on the performance of the 4G LTE network. This optimization planning method is carried out to determine the number of antennas needed based on user capacity in the 6th floor building by calculating based on capacity planning. The number of antennas obtained from the calculation results will be simulated in the RPS (Radiowave Propagation Simulator) software. The parameters reviewed in this simulation are RSSI (Received Signal Strength Indicator) and SIR (Signal Interference Ratio) parameters using XL Axiata 4G LTE 1800 Mhz operator.

The results of the 4G LTE indoor network optimization planning on the 6th floor of Foodcourt Pasar Baru building Bandung obtained the number of antennas based on capacity planning calculations that is equal to 7 antennas, at first the existing antennas only had 3 antennas, then there was an addition of 4 new antennas to meet the traffic user capacity requirements on the 6th floor of the building, as well as on the simulation results for the RSSI parameter value of -46.99 dBm and for the SIR parameter value obtained from the simulation results that is equal to 28.39 dB. The results obtained from this plan have reached the KPI (Key Performance Indicator) parameter reference standard used by XL Axiata operators.

***Keywords** : 4G LTE, Capacity Planning, Radiowave Propagation Simulator, Key Performance Indicator, Pasar Baru Bandung Building*