ABSTRACT

Male dormitory building number 5 of Telkom University located in Telkom University area, Telecommunication street Bandung Technoplex, Terusan Buah Batu, Kabupaten Bandung has poor signal quality. The value of Reference Signal Receive Power (RSRP) at Men's dormitory buildings on the 1st floor is -107.19 dBm which means the result is bad. This is because the construction of buildings that contained many thick walls and high buildings cause signal reception by mobile users in the area of the building becomes bad.

Based on these constraints, it is necessary to plan Indoor Building Coverage (IBC) on Long Term Evolution (LTE) network, to improve the performance of cellular network in the building. Walk test is done first to know the quality of the network in the building. In the planning of the coverage required calculation using indoor propagation model is COST 231-Multiwall propagation model and simulated using Radiowave Propagation Simulator (RPS) software.

Through the calculation of coverage and capacity obtained the number of antennas required are 4 antennas. Based on the results of this planning simulation obtained the value of RSSI each floor of -36,67 dBm, -37,16 dBm, -36,97 dBm, -36,46 dBm. Then from the simulation result got the average value of RSRP each floor each equal to -67,46 dBm, -67,95 dBm, -66,76 dBm, -67,25 dBm. SIR value obtained from the entire floor or one building that is 5.51 dBm. By comparing these results then this plan meets the standards of smartfren operators.

Keywords : IBC, LTE, Capacity, Coverage, RPS