ABSTRACT

Along with the development of cellular communication system technology and the increase of multi-storey buildings in big cities such as office buildings, hospitals, and shopping centers or malls which every day have a large number of visitors so the provider must ensure that the quality of the network provided is good. Based on the results of the drivetest and walktest obtained previously, the quality of the LTE network received by users in the Pasar Baru shopping center cannot be well received because the power from the eNodeB has considerable attenuation from the walls of the building being passed.

In this final project, IBC (*Indoor Building Coverage*) is planned to improve the quality of the LTE networks in Pasar Baru building Bandung. In this plan, what is done is to conduct a walktest to find out the network conditions in Pasar Baru building, to make comparisons between capacity planning and coverage planning calculations that aim to obtain the number of PAP to be used, and carry out simulation planning using optic and RPS (*Radio Propagation Simulator*) and using ROF (*Radio Over Fiber*) technology.

From the results of this plan, after making a comparisons between capacity planning and coverage planning, 23 PAP needed to installed in Pasar Baru building. Then the simulation result for the basement floor until 7th floor it has produced RSL which is in accordance with XL operator KPI standards which is above 90% where the lowest percentage is 94,18% and the highest percentage is 100%. Likewise with the value of SIR where the lowest percentage is 90,96% and the highest percentage is 99,2%. And for the results of the simulation of the optics get BER results almost zero, and the PLB results worth -17,5 dBm.

Keywords: walktest, LTE, optisystem, Capacity Planning, Reach Planning.