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.