ABSTRACT

To increase the quality of data transfer rate to its subscribers, the operator extends coverage as one of the solutions. Coverage expansion efforts undertaken by operators other than *the outdoor* is *indoor*. In the telecommunications world *indoor* expansion of coverage, known as *Indoor Building Coverage* (IBC).

IBC planning is usually done on public vital structures that are strategic and frequently visited by cellular data customers from telecommunication network service providers, one such place is the airport. The domestic side terminal building, first floor and second floor of the Husein Sastranegara airport Bandung, West Java, have become the target of IBC planning LTE, in order the user of mobile seluler still get good 4G LTE access and services while inside the airport terminal building .

IBC LTE network planning methods were conducted to determine the number of sites or *Femtocell Access Point* (FAP) is performed by calculating from the planning side coverage *(coverage planning)* and planning capacity *(capacity planning).* In order for the calculation of signal propagation *loss* in *the indoor* area of the terminal building can be obtained by proper / accurate use *Multiwall* -231 *Cost* propagation model. Total Site (FAP) obtained from the planning, to test its performance using simulation software *Radiowave Propagation Simulator* (RPS). Parameters evaluated from the results of the simulation using the RPS is the *Signal Interference Ratio* (SIR) and *Received Signal Level* (RSL).

The results of IBC LTE network planning at the Husein Sastranegara Airport building on this final project is obtained, to meet the needs of the coverage side and the optimal capacity required by 4 FAP. Through RSL simulation values for 1st floor, 2nd floor and simulation for combined all floors, -51.74 dBm, -56.45 dBm and -46.72. For SIR values obtained from the simulation results on floors 1 and 2, as well as simulations for combined all floors, 30.02 dB, 19.42 dB and 14.03 dB. From the simulation results obtained, *the indoor* LTE network planning has met the standart *operator* KPI *(Key Performance Indicator) indoor* LTE *planning.*

Keywords: LTE, SIR, RSL, *Coverage Planning, Capacity Planning*