**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

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