

ABSTRACT

Getting a high data transfer rate is a major goal in the development of mobile communication technology today. Expanding *coverage* and improving the quality of the signal, a central focus for service providers to gain customer satisfaction for services rendered. Expanding the network to the *indoor* area, means *planning* and network, network *planning* is done on a regular *indoor* public places frequented every day, one of them being college campus or building. Building FIT (Faculty of Applied Sciences) Telkom University, became one of the targets to be done *indoor* network *planning*, so that the user inside the building will still get the service/good access or to gain experience of the performance of the technology that exists today.

In this Final Project, conducted *indoor* network *planning* LTE (Long Term Evolution) in the FIT building Telkom University. LTE technology is a technology of the latest generation of today that offer better service than previous technology. Network *planning* methods are performed to obtain the number of sites or FAP (Femtocell Access Point), was undertaken with the calculation of the *coverage planning* and *capacity planning*. To obtain precision in both the *indoor* signal propagation loss calculation area, used modeling the propagation of Cost-231 Multiwall. Total site obtained from *planning*, to test its performance in simulation software RPS (Radiowave Propagation Simulator). The parameters were evaluated from the results of the simulation are RSL (Received Signal Level) and SIR (Signal to Interference Ratio).

The results of *indoor* LTE network *planning* at the University of Telkom FIT building in this Final Project RSL values obtained for the floor 1,2,3 and direct simulation for the entire floor each is -50.29 dBm, -51.47 dBm, -46.68 dBm and -46.37 dBm. For SIR values obtained from the simulation results on the floor 1,2,3 and simulation throughout each floor is 20.30 dB, 20.73 dB, 30.96 dB and 10.87 dB. From the simulation results obtained, *planning indoor* LTE network in compliance with the KPI (Key Performance Indicator) LTE *indoor planning* used by one of the telecommunications industry.

Keyword : LTE, *Coverage planning*, *Capacity Planning*, RSL, SIR