ABSTRACT

The lecture building is always very crowded by students, lecturers and the campus community. The bustle of the building requires a good network connection, to support lectures for students, lecturers and to support vacancies for the campus community. Indoor network connection is not like an outdoor network connection that directly gets services from an outdoor network. Campus activities are very much done inside the building to improve the quality of the network inside the building. With the existence of an indoor network design can improve signal quality, expand the coverage area and increase traffic capacity.

Femtocell technology is the right solution to improve signal quality, expand coverage and increase traffic on the indoor because of the placement of the transmitter antenna, namely Femtocell Access Point (FAP) which is close to the user. Femtocell is a cheap solution, for users and operators to improve signal quality on the indoor. To do a Femtocell network design, calculation is done based on capacity and coverage to get the required number of FAPs on each floor. In designing the Femtocell network Radio Simulation Propagator (RPS) was used to simulate the design results.

The results of the LTE indoor network planning in the Telkom University Bandung building obtained the best simulation results seen from the LTE parameters. RSSI parameter values on floors one to four are -38.46 dBm, -36.08 dBm, -35.97 dBm, and -34.11 dBm and SINR parameter values on floors one to four are 9.10 dB, 12.00 dB , 12.16 dB, and 16.27 dB. Femtocell has little power for each FAP. The results obtained from this plan have reached the standard RF parameters used by smartfren operators.

Key Word: *Femtocell*, RSSI, SINR, FAP.