

ABSTRACT

User voice and data telecommunications services have become the main thing in communication of humans. Lecture building is where the most common use of the mobility telecommunications services, which means we need a cellular network design, especially in an indoor area. Therefore this study conducted at the lecture building which are in building A and B Telkom University. To be able to support the needs of the traffic in the building which consists of three floors in each building, in a densest condition the require of mobile data is high in order to support the lecture, even the reception signal in the area influenced by several things like the shape of the building and the wall that blocks that can be reduce the reception quality of the signal to the user. Therefore we need a femtocell-based LTE network design for the indoor area.

LTE planning is done based on the calculation of the coverage and calculation based on capacity, to get the number of FAP (Femtocell Access Point) is required for each building. FAP amount obtained in the calculation of coverage is 3 FAP for each building, while in capacity is 6 FAP for each building.

In this final project result, in the number of LTE network cell in Building A and B Telkom University respectively FAP much as 6 units per building is divided into 2 pieces FAP on each floor with a value of -62.53 dBm RSL presents standard KPI is above -90 dBm , as well as the value of SINR to the 1st floor of 50.49 dB, 52.14 dB 2nd floor, 3rd floor of 52 dB, but when implemented on the 3rd floor of his SINR value becomes 11.81 dB where the value of the standard KPIs that are good for up to 5 dB SINR

Keywords: Signal level, SINR, throughput, Femtocell, RPS