

ABSTRACT

Now a days when datas communication been done indoors, the speed will decrease. Therefor, we need a system than can be used indoor to overcome the problems. And femtocell is the answer. In the making of femtocell calculation of power link budget take an important part, so that the result is optimum and efficient calculation of link budget is the calculation of loss and gain in a system with a parameters that fits the system.

The simulation in the research is using RPS (*Radiowave Propagation Simulation*) software with indoor propagation model. COST 231 Multiwall propagation model is fit to use in the inishing of the research because it count in the wall's loss so that the result of the calculation close to a real condition. With link budget calculation we get maximum four femtocells that needed to covered B building in every floor.

Using the calculation of link budget there are 9 FAP that needed to cover B building in IT Telkom. And from the simulation we get where FAP should be placed covering almost all the area with a good signal quality, that is approximately -70 dBm. But these things causing the variaty of SIR value, from 0dB to 40dB so there's a lot of interference happens. When FAP centralized only in one point, then only the areas near to FAP that received a good signal approximately -70dBm, but the value of SIR decreasing down until 0dB that causing a lot of interference.

Keyword: femtocell, link budget, COST 231 multiwall, indoor