ABSTRACT

Nowadays, indoor network has played an important role in fulfiling the signal limitation and capacity of outdoor BTS. The technology which is used in the indoor network (conventional BTS) still has obstacles, such as long implementation time, complex design process with its calculation of RF design and the need of a house BTS (shelter) for placing indoor BTS and other components as transmition, rectifier, battery, and ect causes high costs for rent a space inside building.

Nano BTS technology arise to solve those problems. It is a new equipment which is connected through CATS LAN (UTP cable) with power over Ethernet. So, it combines the goodness of IP and GSM in flexibility, speed, cost efficiency, and tenacity. Furthermore, it is smaller and better performance than previous one.

This final project will studied a GSM network planning for indoor communication using nano BTS, a comparison of implementation cost between conventional BTS and Nano BTS and a design of computation application to get planning process easier.

From result which is obtained we get that by using nano BTS value of Rx Level, Rx Quality, and SQI still fulfill criterion of Telkomsel as operator. Beside that happened efficiency equal to 83% if using nano BTS compared to conventional BTS. So that, nano BTS can be used as alternative at development early network of indoor