

ABSTRACT

Human needs for data information with high data rate transfer and can be accessed anywhere is important for all users who use cellular communication technology services. What's more, speed is needed to provide important information, also the system that can cover a whole area that need to get covered. When an area has been covered, it will get a good and stable internet access like what Permata Cibubur Hospital needs.

The purpose of this final task is to design a system with coverage area, capacity planning, and number of required cell that needed to planning an indoor network system on Permata Cibubur Hospital using picocell. Where Picocell itself is a base station with small coverage area and is used in office buildings or hospital, so it will be maximum use. Picocell designing using simulation software RPS (Radio Propagation Simulator) for coverage and using COST 231 Multiwall.

This access network planning consist of 4 scenario based on how many antenna used, each scenario got 2 different antenna placement. Based on counting and simulation, result of RSL scenario 1 is -45.58 dBm, scenario 2a is -35.8 dBm, scenario 2b is -38.2 dBm, scenario 3a is -32.1 dBm, and scenario 3b is -32.2 dBm.

Key words : *Cellular network, Picocell, Coverage planning, Capacity planning, RSL, SIR.*