ABSTRACT

To improve the quality of its performance, mobile operators take steps by adding a number of base station to solve with user densityin in some areas.The optimum positioning of Base Transceiver Station (BTS) is a very important role in the planning and development of infrastructure for cellular mobile communication network. The optimal determination of base station can be achived with the data that support mainly spatial data.

Many factors affect the planning of BTS, which is one factor in the fading problem. Planning and placement at the BTS in Bandung area is needed to maintain the quality of received signal costumers, to avoid the blank spot areas and ease of service in determining the location. In that problems above can be overcome with a LMDS (Local Multipoint Distribution Service) system, which is a system approach to wireless technology to provide broadband services based point to multipoint technology with operating frequencies between 27 GHz to 31 GHz. In this final project do analysis of planning and placement positioning BTS with LMDS (Local Multipoint Distribution Service) system.

Results of BTS planning with LMDS system showed that the number of base station required as many as 13 sites, while the result of planning BTS without LMDS system required 19 sites. The radius of each BTS on LMDS planning an average of about 2.25 km, from that parameter value pathloss of 133 dB until 134 dB which pathloss allowed by system is 135 dB. On the other hand RSL designs produced -69.679 dBm for which -85.709 dBM of RSL minimum system. This value indicates that the requirements are met RSLminimum $\geq$ RSLdesigns. RSL value engineering is strongly influenced by the cell radius, which more farther the cell radius so the smaller the value of RSL designs. From the minimum RSL value then fading margins obtained 11.291 dB from LMDS system.