ABSTRACT

Internet services with realtime Broadband Wireless Access technology such as free calls, instant messages, social media, video calls and so on are common. However, the weak signal usage level or receiving power level are lacking in the maximum use of services. Tamansari Parama is an office building from PT WIKA which also serves for other company offices. Employees and guests at the venue complained about the poor signal quality because the structure of the building dampened the signal from the outdoor site. Picocell network planning in Tamansari Parama building. Lack of signal strength in a place can be overcome by capacity planning and planning of appropriate coverage such as using a picocell antenna.

The purpose of this study was to plan an indoor LTE network in the Tamansari Parama building. By doing coverage coverage and capacity that can produce the appropriate number of picocells. To find out which is better on signal propagation used the COST-231 Multiwall propagation model. The design will be carried out at 1800MHz frequency, by planning and simulating using RPS 5.4 software. The parameters used in cell planning analysis in the Tamansari Parama building, are reviewed from the References to Power Receipt Signals (RSRP) and Signal to Interference Ratio (SIR).

The Planning Results obtained RSRP values for the ground floor which were equal to -74,67 dBm, 1st and mezzanine floors amounting to -73,12 dBm, 2nd to 5th floors of -73,70 dBm, and 6th to 16th floors which were – 70,91 dBm. For SIR values on the ground floor are 8,9 dB, 1st floor and mezzanine is 10,88 dB, floors 2 to 5 are 38.96 dB, and floors 6 to 16 are 12.70 dB. The simulation results have been obtained by KPI (Key Performance Indicators).

Keywords: *LTE, Coverage Planning, Capacity Planning, RSRP, SIR, RPS 5.4.*