ABSTRACT

Pasekan village, Ambarawa, Semarang Regency is one of the villages that have poor network quality. It is known from the results of the 4G LTE network drivetest showing that several areas in Pasekan Village are dominated by poor indicators. To improve the quality of the 4G LTE (*Long Term Evolution*) *network so that communication activities in pasekan goes well, optimization is carried out with the Antenna Physical Tuning method by adjusting re-azimuth, tilting and antenna height and increasing Tx power. The simulation process is carried out using the Atoll software. The parameters measured in this study were Reference Signal Received Power (RSRP) and Signal Interference to Noise Ratio (SINR). Before to the optimization of RSRP -100 dBm of 25.009% and the percentage value of SINR 0 dB of 73.38% after optimization using the physical tuning method by changing the azimuth angle for the UNR009 site to 90 for sector 1 of 120 for sector 2, and 290 for sector 3 and for the UNR101 site the azimuth was changed to 20 for sector 1,130 for sector 2 and 220 for sector 3, changed the antenna height to 71 meters, increased the power tx to 51 dBm, and the mechanical tilt at the UNR009 site was 6°,8°, and 0°, and UNR101 the mechanical tilt value becomes 8°,3°,0° . The percentage value of RSRP -100 dBm becomes 50.693%, which means an increase of 25.684% and the percentage value of SINR 0 dB after optimization becomes 79.963%, which means an increase of 6.583%.*

Keywords : 4G LTE, Drivetest, Physical Tuning, RSRP, SINR, Pasekan