ABSTRACT

The use of LTE in Indonesia uses an existing network that has existed before. Seeing the development of the LTE network, it creates many new obstacles, especially in maintaining network performance which is caused by a surge in users who are increasing day by day so that the quality of the existing coverage is not optimal. In this case the operator must think of the right way how to optimize bad spots in the area. After the drive test, the RSRP value is -105 dB 96.53%, the SINR value is 3 dB 36.14% and the downlink value is 3 Mbps 26.3 where this value does not meet the standard KPI value from the XL operator for the RSRQ value in the range of 10 dBm and still does not meet the coverage, which is at least 90% above -15dBm. From XL operator data related to Radio Frequency (RF) parameter values, it was found that the parameter values were bad which resulted in poor network quality and caused bad coverage at several points.

From this problem raised the topic of Optimizing Bad Coverage on a 4G LTE (Long Term Evolution) network with the Physichal Tuning antenna method. Physical antenna tuning includes mechanical tilting (uptilt and downtilt), electrical tilting (uptilt and downtilt), changes in antenna height and re-tilt. azimuth. In this final project, a drive test was carried out to get existing site data using Genex probe 3.15 which then the results from the drive test will be compared with the results after optimization. Using GENEX assistant software with optimization values according to the standard KPI operator XL..

The results of this optimization are expected to meet the KPI standards of the XL operator, namely the RSRP is 95% >= -105 dBm, the SINR is 80% >= 3 dB and the throughput value is >= 3 Mbps..

Keywords: *LTE, physical tuning, optimation , KPI, parameter optimation.*