ABSTRACT

Improving LTE network performance is the key in long-distance communication to increase user satisfaction in both urban and rural areas. The LTE network in the Banyurasa area, Tasikmalaya experienced a cross feeder due to an error in the feeder cable installation on the Base Transceiver Station (BTS) antenna. This cross feeder causes the Physical Cell Identity (PCI) to not match what was planned. The method used to determine the signal quality and network performance in an area is to measure and retrieve data using a drive test. This study uses quantitative research methods using data from the measurement results, then the measurement results compare them with the calculation results. The results of the study are described in the form of graphs using Matlab in order to facilitate the withdrawal of the analysis results from the research conducted. Calculations Using the Okumura Hata Model by considering environmental categories. One of the data retrieval techniques on the 4G network is using the Single Site Verification (SSV) method on the drive test so that the quality and performance of the analysis is known using the GENEX Assistant software by taking into account several parameters such as Reference Signal Receive Power (RSRP), Reference Signal Receive Quality (RSRQ) and PCI. These parameters will be compared between the theoretical Key Performance Indicator (KPI's) with the results of existing parameters in the Banyurasa area, Tasikmalaya with a distance from a point of 50 meters to 1300 meters, the values obtained before optimization are -92.67 dBm for RSRP and -13.11 dB for RSRQ with the results of PCI serving experiencing a cross feeder. Optimization is done by replacing the feeder cable in sector 1 PCI 162 and sector 3 PCI 164. After optimization, the RSRP values are -94.66 and -13.90 dB for RSRQ by serving normal PCI with normal performance.

Keywords : *Cross Feeder, LTE, RSRP, RSRQ, Okumura Hatta*