ABSTRACT

Nowadays, people's need for information and communication is very important. Most people already use smartphones that use the Long Term Evolution (LTE) network. This makes cellular telecommunications service providers have to meet the needs with good service quality. However, Voice over Internet Protocol (VoIP) communication on toll roads sometimes experiences reconnecting due to unstable networks. This causes the inconvenience of users in communicating on the Serpong Toll Road to the Pamulang Toll Gate. Therefore, network optimization is still needed to get a stable network.

Measurements are carried out using the Drive Test method which is carried out on the Serpong toll road to the Pamulang toll gate. A drive test is carried out to get the value of several parameters needed in accordance with the Key Performance Indicator (KPI) standard, such as Reference Signal Received Power (RSRP), throughput, and also Signal to Interference Noise Ratio (SINR). Repairs on the Serpong toll road to the Pamulang toll gate are divided into 3 Bad Spots, each Bad Spot consists of 4 sites and each site has 3 transmitters. repairs are carried out using three methods, namely physical tuning, power configuration, and the combination of physical tuning with power cxonfiguration. Repairs will be made using Atoll software.

From this study, it was concluded that the merging method has the best improvement compared to other scenarios. The final result obtained from all bad spots using the method has increased the parameter value. For bad spot 1 the RSRP value becomes -86.76 dBm, SINR becomes 16.07 dB, throughput becomes 88,692 Kbps. For bad spot 2 the RSRP value becomes -88.11 dBm, becomes 16.00 dB, throughput becomes 89,010 Kbps. For bad spot 3 the RSRP value becomes -90.8 dBm, SINR -0.75 becomes 16.01 dB, throughput becomes 88,385 Kbps.

Key Words: Long Term Evolution, Voice Internet Protocol, Drive test, KPI, RSPR, SINR, Throughput