ABSTRACT

Long Term Evolution is a cellular telecommunications infrastructure technology as 4G LTE technology. This technology is already present in many cities and regions in Indonesia, including in the city of Jakarta. LTE has two types of technology, FDD (Frequency Division Duplex) and TDD (Time Division Duplex). This study discusses the analysis of measurement and optimization of the quality of the Smartfren *provider network with a frequency of 850 MHz on the FDD network and 2300 MHz on the TDD network. The measurement of the performance of 4G LTE technology is carried out by means of a Drive Test using the Single Site Verification (SSV) method by measure the RSRP, SINR, and Downlink Throughput parameters. The purpose of this research is to improve the quality of service performance of the 4G LTE network provider* PT.Smartfren Telecom Tbk *in the* Ciledug *area. Based on the result of the research, the three parameters measured showed that the FDD network obtained the achieved RSRP (100%) with an average value of -81.71 dBm after optimization to (100%) with an average value of -78.79 dBm, SINR (91.36%) with an average value of 11.83 dB to (93.75%) with an average value of 12.85 dB, and Throughput (100%) with an average value of 16.79 Mbps to (100%) with an average value of 22.23 Mbps. On the TDD network, the achieved RSRP (100%) with an average value of -86.17 dBm after optimization to (99.16%) with an average value of -86.88 dBm, SINR (83.96%) with an average value of 9.46 dB to (93.39%) with an average value of 11.7 dB, and Throughput (98.91%) with an average value of 22.32 Mbps to (99.81%) with an average value of 14.14 Mbps. For the entire parameter values of RSRP, SINR, and Downlink Throughput on the FDD an TDD network have reached and met the KPI standard values of* PT.Smatfren.

***Keywords** : 4G LTE, FDD (Frequency Division Duplex), TDD (Time Division Duplex), Drive Test, RSRP, SINR, dan Downlink Throughput.*