

ABSTRAK

Perkembangan teknologi telekomunikasi berkembang sangat pesat, yang didasari atas kebutuhan masyarakat yang sangat tinggi terhadap layanan untuk internet telekomunikasi khususnya layanan data internet. Terdapat dua standar teknologi *Long Term Evolution* (LTE) yang berfungsi untuk data kecepatan tinggi yaitu *Time Division Duplex* (TDD) dan *Frequency Division Duplex* (FDD). Metode pengukuran yang digunakan ini adalah drive test, penelitian ini mengangkat topik tentang pengukuran kualitas jaringan dengan perangkat swap area depok. Pengukuran jaringan tersebut menggunakan parameter-parameter, yaitu *Reference Signal Received Power* (RSRP), *Throughput* dan *Signal To Interference Noise Ratio* (SINR). Untuk menghasilkan suatu informasi berupa hasil pengukuran jaringan internet yang sesuai dengan standar KPI dari PT.Smartfren Telecom. Adanya proses perpindahan (Swap) perangkat dari antenna Nokia ke antenna ZTE yang menyebabkan perubahan kualitas sinyal. Tujuan penelitian ini adalah ingin mengetahui faktor-faktor apa saja yang mempengaruhi kualitas jaringan internet pada perangkat baru yaitu ZTE. Hasil penelitian dari ketiga parameter pada kualitas layanan jaringan 4G LTE provider PT.Smartfren di area depok menunjukkan bahwa pada antenna Nokia diperoleh nilai preDT RSRP (100%) 59.04%, Nilai SINR (3%) 46.33%, Nilai Throughput 5 Mbps 77.24%. Pada antenna ZTE diperoleh nilai Post DT RSRP (100%) 99.53%, Nilai SINR (3%) 67.04%, Nilai Throughput 5 Mbps 98.4%. untuk nilai parameter RSRP, SINR, dan Throughput pada antenna Nokia dan ZTE sudah mencapai nilai standar KPI PT.Smartfren Telecom.

Kata kunci : *Drive Test, FDD (Frequency Division Duplex), 4G LTE, RSRP, SINR dan Throughput.*

ABSTRACT

The development of telecommunications technology is growing very rapidly, which is based on the very high public need for services for internet telecommunications, especially internet data services. There are two Long Term Evolution (LTE) technology standards that work for high-speed data, namely Time Division Duplex (TDD) and Frequency Division Duplex (FDD). The measurement method used is the drive test, this research raises the topic of measuring network quality with the Depok swap area device. The network measurement uses parameters, namely Reference Signal Received Power (RSRP), Throughput and Signal To Interference Noise Ratio (SINR). To produce information in the form of internet network measurement results in accordance with KPI standards from PT. Smartfren Telecom. There is a process of switching (Swap) devices from Nokia antennas to ZTE antennas which causes changes in signal quality. The purpose of this study is to find out what factors affect the quality of the internet network on a new device, namely ZTE. The results of the three parameters on the quality of the 4G LTE network service provider PT. Smartfren in the Depok area showed that the Nokia antenna obtained the Pre DT RSRP value (100%) 59.04%, SINR value (3%) 46.33%, Throughput value 5 Mbps 77.24%. On the ZTE antenna, the Post DT RSRP value (100%) is 99.53%, the SINR value (3%) is 67.04%, the Throughput value of 5 Mbps is 98.4%. for the parameter values of RSRP, SINR, and Throughput on the Nokia and ZTE antennas, it has reached the KPI standard value of PT. Smartfren Telecom.

Keywords: Drive Test, FDD (Frequency Division Duplex), 4G LTE, RSRP, SINR and Throughput.