

## ABSTRACT

Toll Padaleunyi is a toll road connecting Padalarang-Cileunyi which has a length of 40.7 Km with a solid enough traffic density. In the year 2016 period of January-September showed density reached 45,320,456 vehicles. The Padaleunyi toll area is an area already covered by LTE technology. LTE technology is a fourth generation mobile technology that is an advanced evolution of the standard mobile communications systems defined by 3GPP (Third Generation Partnership Project) Release 8 capable of performing IP-based services. But in reality Padaleunyi toll area there are still areas that have not covered LTE technology. So to improve network performance so as to have good quality and high work results, we can make measurements by measuring the quality of LTE networks in the region Padaleunyi toll.

In this Final Project, LTE network quality measurement has been done by using drive test method. This measurement is done using Tems and Atoll. The case study area in this Final Project is Padaleunyi toll road area that has been done before with customers using Telkomsel operator. In this research used optimization scenario that is by physical tuning antenna.

Based on the calculation and simulation, RSRP parameters, SINR, and Throughput values in bad coverage, bad quality, and low throughput are also occurred. At the location of kilometer 149-150 for RSRP changed from  $-123,56 \text{ dBm}$  to  $-102 \text{ dBm} \leq \text{RSRP} < -92 \text{ dBm}$ , for SINR of  $-1 \text{ dB}$  changed to  $3 \text{ dB} \leq \text{SINR} < 10 \text{ dB}$  and throughput from  $45 \text{ kbps}$  changed to  $324 \text{ Kbps} \leq \text{Throughput} < 1.500 \text{ Kbps}$ . While at the 152-153 location the RSRP changed from  $-120.56 \text{ dBm}$  to  $102 \text{ dBm} \leq \text{RSRP} < -92 \text{ dBm}$ , for SINR of  $-0,65 \text{ dB}$  changed to  $3 \text{ dB} \leq \text{SINR} < 10 \text{ dB}$  and the throughput of  $47 \text{ kbps}$  changed to  $324 \text{ Kbps} \leq \text{Throughput} < 1.500 \text{ Kbps}$ . The parameters have met KPI target of LTE network of telkomsel operator in Padaleunyi toll road area.

Keywords: LTE Optimization, Drive Test, Atoll, Tems, Key Performance Indicator