

## **ABSTRACT**

This study aims to optimize the 4G network (LTE) in the Tanjakan Mauk Area of the South Tangerang region by analyzing the KPI parameters on the network. The research focused on improving the quality and power of the signal level for users to be better and in accordance with KPI standards, because of the need for good signal quality. In practice, many things cause the quality of the signal to deteriorate, one of which is Bad coverage between cells which causes the coverage area to be not optimal, resulting in reduced customer service. Bad coverage conditions can occur due to tilt antennas, too much transmit power to a cell, improper antenna direction, settings for six overshoot and main cell and cell neighbor settings that cover the area.

In this study, LTE network quality was measured using the drive test method. This measurement is done using GENEX Probe software. The area reviewed in this study is in the Mauk Climbing area. To analyze the results of this drive test using the GENEX Assistant VR300R014, then for simulations using Atoll in conducting optimization planning simulation.

Performance in existing conditions has increased after the optimization process has been carried out. From the initial percentage of 71.8% RSRP distribution value increased to 92.77% for the threshold value at -100 dBm, for RSRQ values with RSRQ threshold above -15 dB 85% had changed previously 66.23% to 96.05% for the threshold value, while the SINR value also increases from 91.45% increasing to 94.93% with the KPI target specified is a minimum 90% SINR parameter above 0 dB. Based on the parameters reviewed in this study can meet the KPI target, indicating that the optimization process carried out successfully overcomes the Bad Coverage problem experienced in this final project case study.

**Keywords :** *LTE, Bad Coverage, Drive Test, RSRP, SINR, RSRQ*