

## ABSTRACT

Jakarta MRT (Mass Rapid Trans) is a fast transportation system that uses electric rail trains in Jakarta. LTE (Long Term Evolution) network users have difficulty accessing internet services (browsing, chatting, streaming, video calling and other packet data services) MRT compilation is moving on the upper lane (ASEAN - Lebak Bulus). The results of the signal quality assessment that has been carried out obtained RSRP (Reference Signal Reference Power) values along the land line (ASEAN - Lebak Bulus) Jakarta MRT which are still below the KPI standard (Main Performance Indicators) with an average of -99.73 dBm is included in the poor category.

In this Final Project, improvements are made to the quality of LTE networks based on area coverage by improving physical programming, power configuration and transfer sectors for areas that are not yet covered by signals and simulations using Atoll software. In the LTE network simulation will determine the location of the existing ENodeB which is devoted to the upper lane (ASEAN-Lebak Bulus) in the Jakarta MRT. After analyzing the area, three bad points were obtained, namely the first bad point between Blok M - Blok A station, the bad point between Haji nawi - Cipete raya station and the third bad point between Cipete raya - Fatmawati station.

After simulating the atoll the results of the analysis of low RSRP values (low RSRP) obtained the lowest average RSRP value in the existing network is -99.85 dBm (bad) the increase in acquisition value to -88.2 dBm (average). The results of the low SINR value analysis (low SINR) obtained the lowest average SINR value in the existing network was 2.31 dB (bad) increasing the highest gain to 10.82 dB (average) after being tested. The results of the analysis of low throughput (low throughput) the lowest average throughput value on the existing network is 484.34 kbps. Then the simulation results obtained are in accordance with Telkomsel KPI operator standards.

**Kata Kunci:** *Drive test, Coverage area, LTE, MRT, Jakarta, Atoll*