

ABSTRACT

The Soekarno-Hatta Airport Railink, which is located in Tangerang City, is a train line that unites the train station to Soekarno-Hatta Airport. Most visitors use smartphones with Long Term Evolution (LTE) technology and use this technology to perform services such as chatting, browsing, streaming, and checking flight departure schedules. LTE on the Soekarno-Hatta Airport Railink train, especially on the railink train line from the Soekarno-Hatta airport train station to the Bataceper Station, is not optimal so that efforts are needed to improve the LTE network. One way to increase a network is by making improvements to the service coverage (coverage).

For this final project, starting to improve the quality of the LTE network based on the coverage area by using two improvement scenarios, namely physical tuning and power configuration to areas with signal shortages. In this LTE network simulation, the parameters analyzed are Reference Signal Received Power (RSRP), Signal to Noise Ratio (SINR), and throughput at two bad spots located around the railink train line from Soekarno-Hatta airport train station to the station. Bataceper.

Key Performance Indicator (KPI) is a quality limit of performance parameters and is used as a reference in this study. The results of research that have been carried out through a process of improvement through simulation have increased, such as the average RSRP value has increased from -116.98 dBm to -94.65 where the KPI target for the RSRP value is -95 dBm. The SINR and throughput values also increased where the respective values were 4.04 dB to 29.52 dB and 15.163 Mbps to 35.214 Mbps with KPI targets for SINR and throughput of 13 dB and 12 Mbps. All the parameters reviewed have reached the KPI target so that this research can overcome the weak coverage problem in the railink train line from Soekarno-Hatta airport train station to Bataceper Station.

Keywords: Airport Train, LTE, Coverage, RSRP, Throughput, SINR, KPI