

ABSTRACT

Population growth in Ampel District, Boyolali Regency based on the latest population census data is quite significant. This significant increase in population indirectly has an impact on the quality of the 900 MHz LTE network belonging to the operator Telkomsel, which has decreased due to increasingly dense traffic from customers. The expansion of population settlements that exceeds the coverage area of a site is also one of the causes of the decline in signal quality received by communication network subscribers. The Badran site, which is located in Badran Hamlet, Ampel District, Boyolali Regency, which is the object of this Final Project, experienced a similar problem. From the results of the last test drive, the LTE network condition (Long Term Evolution) at Badran Site experienced a bad quality issue. Therefore, in this final project, five optimization simulation scenarios were carried out using the add sector method and physical tuning through Atoll software. From the scenario with the best results obtained an average (Signal to Noise and Interference Ratio) SINR of 12.38 dB with a value of 0 dB has a percentage of 100% and an average (Reference Signal Received Power) RSRP of -89.45 dBm with the value of -100 dB is 93.9%. The results of this optimization have met the standard (Key Performance Indicator) of Telkomsel operator KPI.

Keywords : *LTE, Coverage, Optimization, Add Sector, RSRP, SINR*