

ABSTRACT

Salem Sub-District is one of the sub-districts that feels the effects of the uneven distribution of 4G LTE network technology in Indonesia. Salem District has the most blank spots among other sub-districts in Brebes district. There are a total of 21 villages in Salem sub-district, 12 of which are blank spots. The 12 villages are: Capar Village, Winduasri Village, Gunung Jaya Village, Tembongraja Village, Gunung Tajem Village, Windusakti Village, Kadumanis Village, Gandoang Village, Citanding Village, Gunung Larang Village, Gunung Sugih Village and Wanoja Village. This is due to the geographical location of the Salem sub-district which is a mountainous area and is surrounded by surrounding hills and most of the Salem sub-district is forest and other open land. In addition, network planning, especially 4G LTE in the Salem sub-district, has not been maximized, so there are many blank spots. This study aims to analyze the 4G LTE network in Salem sub-district using the drive test method based on the parameters to be studied, namely: RSRP, RSRQ, RSSI, SINR, throughput. The optimization process carried out is the use of the Cost 231 Hata propagation model, by changing the mechanical tilt value from 0 degrees to -4 degrees (mechanical uptilt) and changing the mechanical azimuth at the Indrajaya, Pasir Panjang and Salem sites. There was an increase in the coverage area of the parameters RSRP, RSSI, SINR and throughput after the optimization process. RSRP from 198.318 km² to 276.082 km² or an increase of 50.49% with an average RSRP value of -124.83 dBm, RSSI from 80.823 km² to 127.56 km² or an increase of 30.35% with an average RSSI value of -81.04 dBm, SINR (dl) and throughput (dl) from 89.47 km² to 147.908 km² or an increase of 38% with an average SINR value (dl) of 4.05 dB and an average throughput value (dl) of 9,390.46 kbps, SINR (ul) and throughput (ul) from 117,585 km² to 178,872 km² or an increase of 39.16% with an average SINR value (ul) of 9.15 dB and an average throughput value (ul) of 1,453.51 kbps.

Keyword: Blank Spot, Drive Test, Atoll, Cost 231 Hata.