

INTISARI

Di Indonesia, khususnya di D.I. Yogyakarta jaringan 4G belum menjangkau di salah satu tempat wisata di Yogyakarta yaitu Taman Breksi, yang berada di bagian utara kota Yogyakarta. Penelitian ini bertujuan untuk meningkatkan performansi dan memberikan solusi yang terbaik mengenai masalah performansi jaringan 4G LTE di wilayah Breksi Yogyakarta. Penelitian ini akan melakukan optimasi jaringan 4G dengan studi kasus di area sekitar Tebing Breksi dan di area sekitar lokasi Combat Breksi. Optimasi dilakukan dengan menganalisa kualitas sinyal RSRP dan SINR dari sisi *Idle Mode* dan *Dedicated Mode* yang didapat dari *drive test*. Optimalisasi yang dilakukan menggunakan 3 metode yaitu *mechanical tilting*, *electrical tilting* dan azimuth.

Kualitas RSRP dan SINR baik dari sisi pengukuran *Idle Mode* dan *Dedicated Mode* mengalami penurunan dan peningkatan setelah optimalisasi. Kualitas RSRP *Idle Mode* belum optimal karena hanya sebesar 71.19% nilai yang lebih besar dari -100 dBm, sedangkan KPI Telkomsel untuk kualitas RSRP sebesar 90% > -100 dBm. Tetapi kualitas RSRP *Dedicated Mode* sudah memenuhi standar KPI Telkomsel yaitu sebesar 90% > (-100) dBm. Kualitas SINR *Idle Mode* jaringan LTE Telkomsel belum sesuai dengan standar KPI karena hanya sebesar 32.35% berada di atas 20 dB dan kualitas SINR *Dedicated Mode* juga belum optimal karena nilai hasil dari *drive test* hanya sebesar 46.64% ≥ 0 dB dan belum memenuhi standar KPI Telkomsel untuk SINR yaitu 90% > 0 dB.

Kata kunci:

Optimalisasi Jaringan, *Drive Test*, 4G LTE, *Tilting*

ABSTRACT

In Indonesia especially in Yogyakarta, 4G networking system has not reach yet in one of destination tourist in Yogyakarta which named is Breksi Park, which is its located in northern Yogyakarta city. The purpose of this study is to improve the performance and give the best solution about 4G networking performance issue in Breksi Yogyakarta. This study is going to do an optimization 4G networking with case study around in Breksi Park and Combat Breksi. Optimization is done by analyzed RSRP and SINR signal quality from *Idle Mode* side and *Dedicated Mode* side which is got from *drive test*. Optimization using 3 methods, are: *mechanical tilting*, *electrical tilting*, and azimuth.

There was decrease and increase RSRP and SINR quality from both mode after doing an optimization. RSRP *Idle Mode* quality was not optimal yet because there was only 71.19% value that is more than -100 dBm. But RSRP *Dedicated Mode* quality was optimal yet which is there was 90% value that is more than -100 dBm. SINR *Idle Mode* quality Telkomsel's LTE was not optimal yet because there was only 32.35% value that is more than 20 dB and SINR *Dedicated Mode* quality also was not optimal yet because there was only 46.64 value that is more than 0 dB.

Keywords:

Networking Optimization, *Drive Test*, 4G LTE, *Tilting*