

## ABSTRACT

*The application of Long Term Evolution (LTE) technology in Indonesia is still being developed. However, the frequency spectrum limitation become one of the factors obstruct the LTE service growth. To solve this problem, 3GPP releases LTE-Advanced technology, supported by Carrier Aggregation feature, which made it possible to obtain high throughput values with the use of efficient frequency spectrum.*

*At this project will be carried out the LTE-Advanced network planning using inter-band carrier aggregation using bandwidth of 10 MHz in 1800 MHz bands and a bandwidth of 10 Mhz in 2100 MHz in Karawang city to increase the network capacity and to get maximum performance. At this project also will do the comparison between LTE non carrier aggregation using bandwidth 10 MHz in 1800 bands. The simulation use Atoll 3.2.1 and see the RSRP, SINR and throughput parameters.*

*The ouput of this project based the simulation on Atol 3.3 for LTE-Advanced with inter-band carrier aggregatiion method acquired RSRP -86,11 dBm, SINR 16,72 dB, and throughput 27.526 kbps.*

**Keywords :** *LTE-Advanced, Carrier Aggregation, data rate, capacity*