

## ABSTRACT

*Telecommunications network capacity demand lately has increased especially in the field of mobile. Kawasan Segitiga Emas DKI Jakarta was chosen because it is a commercial district that has high mobility as well as being the Centre of business activity. Kawasan Segitiga Emas Jakarta include such major roads Thamrin, Sudirman, Gatot Subroto Street, Rasuna Said, and Mas Mansyur. There are at least 3 major points of the Center commercial buildings like the SCBD (45 hectares), Mega Kuningan (54 hectares), and Kuningan Persada (17 hectares). Because of the high activity in the area, then going on a surge in traffic. In order to request traffic can be fulfilled then required the presence of the addition of network capacity.*

*From the background above, one of the solutions that can be made is implements Carrier Aggregation. Carrier Aggregation has some type, one of them is Carrier Aggregation Deployment Scenario 4 (CADS). Carrier Aggregation scenarios used are CADS 4 where in this scenario eNode B which will be designed to have a smaller power and placed in an area that has high traffic.*

*The parameters analyzed in this thesis is the number of sites, RSRP, Throughput, and the percentage of users connected by a Monte Carlo simulation on Atoll Software V.3.2. To design a macrocell without CA, the number of sites is as much as 14. As for microcells with CA only requires 2 site. On average RSRP to the design without CA is -83.54. To the design with CA average RSRP reached -84.63 dBm. The value of the CINR on designing without CA 14:54 dB and with CA 13.83 dB. For throughput and user connected to the CA reaches 73.669 Mbps of throughput and 52.5% for the connected user. whereas for the design without CA 59 Mbps Throughput values and values connected user as much as 44.1%*

**Keywords: LTE Advanced, CADS 4**