

## ABSTRACT

*Air Force Hospital Dr. Salamun is one of the areas located in Cidadap District, Bandung City. From a field perspective, the area of the Air Force Hospital Dr. Salamun is area potential market which is surrounded by the establishment of health polytechnics, lodging places, and also public housing so that optimization needs to be done in terms of capacity planning. From the results of the drive test that has been carried out, the area of the Air Force Hospital Dr. Salamun has poor network quality for operator X. It can also be seen from the results speedtest that have been carried out in the area of the Air Force Hospital Dr. Salamun which is still lacking is 4.51 Mbps for download and 18.0 Mbps for upload.*

*In this final project, LTE network planning is carried out using the method Carrier Aggregation to improve the LTE network in the area around the Air Force Hospital Dr. Salamun. Where the planning is carried out at a frequency of 1800 MHz and 2100 MHz and the planning scenarios used are Carrier Aggregation Deployment Scenario 2 (CADS 2) and Carrier Aggregation Deployment Scenario 5 (CADS 5). Planning simulation was carried out using Fork Atoll 3.3.0 Software. Planning LTE-Advanced are analyzed SINR,RSRP,and throughput.*

*The results of this simulation is the final project planning with an increase in the value of the parameter RSRP which is an average of -68.84 dBm, SINR that is an average of 10.08 dB, downlink throughput that is on average 28 519 kbps and uplink throughput with an average of 48,868 kbps.*

**keywords:** *carrier aggregation, LTE, capacity planning*