

## **ABSTRACT**

*LTE is a rapidly growing technology, especially in big cities like Bandung, but in its development, LTE network has not fully evenly to every area especially area of district which has tourist area like Regency of West Bandung. Based on the survey results, in the area of West Bandung regency there are some areas that have not been covered by LTE network in addition there is a problem spot blank ( $RSRP > -120$  dBm) with poor signal quality ( $SINR > -20$  dB) and the slow throughput in some districts.*

*In addressing the problems that occur in the area of West Bandung regency planning extension coverage area on the LTE network using two scenarios. The first scenario is the expansion of coverage area using LTE (FDD) at 1800 MHz frequency and second scenario using LTE-A (Carrier Aggregation) combined with SFR at frequency 1800 - 850 MHz. In planning of coverage area expansion in area of West Bandung regency analysis and simulation using software of Atoll 3.3.*

*In this Final Project, there is an increase of coverage area in West Bandung regency area after expansion of coverage area is 143,136 km<sup>2</sup> with acquisition of quality fulfilling KPI standard value. The result of simulation planning of expansion of coverage area using LTE (FDD) obtained by total of 35 site with RSRP parameter value is -74,75 dBm, SINR is 23,96 dB, throughput is 18,971 Mbps and user connected is 98,7% . While the simulation result of coverage coverage planning using LTE-A (Carrier Aggregation) combined with SFR obtained total site as much as 31 sites with RSRP parameter value is -68,54 dBm, SINR is 26,72 dB, throughput is 31,236 Mbps and user connected is 98.8%.*

**Keyword** : LTE, LTE-A Carrier Aggregation, SFR, RSRP, SINR, Throughput, User Connected, KPI.