

ABSTRACT

The need for an increase in the value of the data rate requires the development of LTE to LTE Advanced. This is because LTE is considered unable to meet the needs of current users. However, there are limitations to the bandwidth caused by the fragmentation of the available frequency spectrum, which causes the implementation of LTE Advanced to be constrained. In fact, one method that can be used to increase the value of the data rate is to use wider bandwidth.

Carrier aggregation (CA) method is one solution that can be used to increase bandwidth. Through the carrier aggregation method, different frequencies with a small bandwidth can be aggregated. In this planning, the time division duplex (TDD) method is also used. The TDD method has the advantage of handling data-based services, the majority of which are Non-Guarantee Bit Rate (N-GBR). This service does not require a minimum bit rate to work and perform frequency efficiency.

The result of the simulations is with carrier aggregation the mean of throughput value is increasing 194.29%, mean of RSRP value decreasing -2.89 dBm, and mean of CINR value is decreasing 0.9 dB when compared without carrier aggregation.

Key Words: *Carrier Aggregation, LTE Advanced, TD-LTE*