ABSTRACT

LTE Advanced technology is the 4th generation (4G), which provides the latest features to achieve high *data rate* . The *data rate* for LTE Advanced are expected to reach 1 Gbps for the downlink and 300 Mbps for the uplink . One feature is a factor increasing the *data rate* is the engineering Carrier Aggregation . However, to achieve maximum performasi the LTE network may be hampered by the problem of interference . The most dominating Interferesi is inter -cell interference is to use the same frequency at the neighbor cells that can result in reduced *data rate* at *cell edge* .

To achieve optimal network performance , perform the method of frequency reuse as interference management and enhanced features that carrier aggregation resulting *data rate* can be increased . Frequency reuse schemes used are Fractional Frequency Reuse is dividing the cell into two regions, the *cell edge* and *cell center* using different transmit power . While the application of carrier aggregation scheme used is carrier aggregation 3 deployment scenario by using two different frequency bands , each of which has a different beam patterns the direction in which the antenna direction deliberately shifted to increase the *data rate* and *throughput* at the *cell edge*

The parameters analyzed are the number of sites , RSRP , CINR , and the percentage of users connected by a Monte Carlo simulation on Atoll Software V.3.2 . To design without the CA , the number of sites with the condition without FFR and FFR scheme is 413 sites. The average RSRP for FFR scheme is -72.04 dBm , and CINR by 21 dB . While for the design of the CA , requires a number of sites 217. The average RSRP reached -73.46 dBm , and CINR at 2:03 dBm . The design of the scheme for the CA and FFR generate an average RSRP same CA scheme , and CINR 2.03 dB .

Keyword : LTE *Advanced*, FFR, *CADS3*