

## ABSTRACT

Performance known to be a parameter as a stepping-quality mobile network that is always faced by engineers. One such interference. Various methods have been invented to overcome such as neighbor planning and frequency reuse. Along the changing times and technologies in the creation of the new scheme, namely fractional frequency reuse frequency reuse (FFR) and soft frequency reuse. The differences between them are the bandwidth allocation and scheme used. FFR is a method of cell division into primary cell and secondary cell. By using the same bandwidth in all major cell, FFR is considered as an efficient method to overcome the inter-cell interference (ICIC).

Long Term Evolution (LTE), a project of the 3rd Generation Partnership Project (3GPP) is the early development of the FFR scheme. This final project analyze the influence of parameter  $C/(I+N)$  and throughput in the FFR scheme and neighbor planning for LTE network performance. Operator case studies conducted in the analysis of LTE network planning at 1800MHz frequency in Bandung using Fractional Frequency Reuse.

This final project resulted comparison in performance of non-LTE network and FFR FFR. Need 41 the number of sites LTE for the next five years increased if neighbor planning applied up to 0.9 dB and the possibility of dropped calls (rejected connection) is reduced to 1.8%. While the application of FFR scheme can improve the  $C/(I+N)$  up to 11 dB, increasing the throughput up to 9919.96 kbps, and reduced rejected the connection up to 17.2%. Scenario III with a smaller bandwidth of the cell edge is the best in the FFR scheme, with  $C/(I+N)$  of 2.66 dB less than the second scenario, but can achieve a much greater throughput 37827.02 kbps.

Keywords: LTE, FFR, XL-Axis,  $C/(I + N)$ , Throughput,Bandwidth.