

ABSTRACT

Femto is the development of base stations in cellular networks using low power levels and has a smaller coverage than macro. Femto is the perfect solution to enhance coverage and capacity on the network, especially in indoor areas.

This final project discusses about the use of frequency scheduling method (scheduling frequency) to overcome interference on LTE Femtocell network. This method is actually based on cognitive radio technology. Analysis using this method will be done in two placement scenarios femtocells. The first scenario is by placement of dynamic random frequency femtocells in urban areas. The second scenario is by placement of dynamic scheduling frequency femtocell base in urban areas. In addition, there are also scenarios based on the macro network density and bandwidth variations.

Frequency scheduling method is simulated with Matlab 2010a simulator for determining SINR (signal to interference ratio) and throughput. The simulation results showed that the frequency scheduling scenarios with the method of using the maximum bandwidth (20 MHz) for the LTE Femtocell and Femtocell location on the edge cell has a performance with SINR value past the threshold to guarantee the BER 10^{-6} using the highest modulation order, ie 64 QAM. This is due to such conditions interference with CCI (co-channel interference) are perceived Femto are at their lowest level.

Key words: *Femtocell, OFDM, Interference, SINR, throughput, frequency allocation*