

ABSTRACT

In the LTE technology supports two radio access modes for communicating between the uplink and downlink are Frequency Division Duplex (FDD) and Time Division Duplex (TDD). In the FDD mode, uplink and downlink communications are distinguished by the use of different access frequency. While in the TDD mode communications uplink and downlink its differentiated by time (timeslot) are different. Among them, TDD has the advantages of high spectrum efficiency and flexibility of use of the canal, will support the development of communication technology especially LTE is increasingly coming to be more and more users.

With increasing users of LTE services, it will always be required to provide maximum performance. However, it could be hampered by interference, especially in adjacent cells commonly called Inter-Cell Interference (ICI) that can reduce throughput at the cell edge. Frequency Reuse is a solution to overcome these problems. frequency method used is Soft Frequency Reuse (SFR) that divides the two areas of the spectrum cell into cell center and cell edge where the allocation of spectrum each cell area can be flexibly used if one cell area is not being used. This means being able to provide more efficiency in the use of the frequency spectrum.

The parameter values referenced in this study are the Carrier to Interference Noise Ratio (CINR) of 22.9 dB with mean CINR $98.8\% \pm 6$ dB, Reference Signal Receive Power (RSRP) of $98\% \geq -100$ dBm, Reference Signal Receive Power (RSRQ) Of -74.8 dB with a mean RSRQ of $99\% \geq -15$ dB and the resulting throughput of 35.04 Mbps which has exceeded the LTE KPI standard. The expected output of this study is how much influence is given by the use of SFR to TDD LTE technology especially how effective and efficient the use of the spectrum has been allocated while still obtaining maximum throughput.

Keywords: LTE, LTE-TDD, Frequency Reuse, SFR, Throughput, CINR