ABSTRACT

The development of mobile technology has now reached the fourth generation that is 4G. One of 4G technology standard, namely Long Term Evolution (LTE). LTE is a technology that supports high-speed services. In LTE, used the technique Orthogonal Frequency Multiple Access (OFDMA). OFDMA has an advantages in reducing the intersymbol interference (ISI) effect, but the resulting Inter-cell Interference (ICI) value remains high. In LTE networks, ICI can affect user performance and decrease capacity in a cell. Therefore, interference management is required to improve the performance of the user and the cell is by doing frequency reuse scheme. The reuse frequency scheme used in this research is frequency reuse 1, fractional frequency reuse and soft frequency reuse.

Parameters analyzed from this research are RSRP, SINR and throughput. In reuse 1 scenario, the average RSRP is -77,93 dBm, fractional frequency reuse equal to -77,94 dBm and soft frequency reuse equal to -78,96 dBm. Compared with scenario reuse 1 at fractional frequency reuse RSRP value increased by 0.01 dBm while in the soft frequency reuse scenario increased by 1.03 dBm. At the SINR parameter, the highest SINR value is in the fractional frequency reuse scenario of 7.09 dB while the lowest SINR is in reuse scenario 1 of 3.12 dB. In the reuse scenario, the highest throughput score of 20.173,29 Kbps, compared to the reuse scenario 1 the fractional frequency reuse throughput scenario decreased by 8.166,59 Kbps and the soft frequency reuse scenario decreased by 9.347,01 Kbps.

Key Words : LTE, Reuse 1, FFR, SFR, RSRP, SINR, Throughput