

ABSTRACT

In mobile communication systems the most common problems is the limited cell capacity due to intercell interference especially users who are on the edge of the cell. To overcome this the frequency planning with the use of reuse frequency can be applied, using the frequency reuse 1, frequency reuse 3, fractional frequency reuse and soft frequency reuse. With this scheme can effectively increase the user capacity to reduce intercell interference, use control power can also be dynamic because it adjust the allocation of different power usage.

Based on problem, this final project is done by designing long term evolution (LTE) network analysis at Bontang city on East Borneo province, using interference management in this research use frequency reuse 1, fractional frequency reuse and soft frequency reuse. The main objective of this interference management is to maximize the coverage area and maximize the capacity of the capacity to be taken into account.

The results obtained from this final project are the average $C / (I + N)$ of each area using the SFR method of 3.24 dB, FR1 6.04 dB and FFR 3.28 dB, the throughput value of the SFR method is 13,580,05 kbps compared to FR1 14,864.87 kbps and FFR 13,782.96 kbps, and the average value of the SFR signal signal level -79.74 dBm, FR1 -78.87 dBm and FFR -81.28 dBm, from the BLER value the resulting three schemes have an equivalent value of 0.3. From the requirement of the number of sites SFR requires only 22 site schemes FFR 29 site and FR1 25 site, the number of users failing to access the worst network using FR1 25,8%, and the smallest customer fail access accessing the scheme using FFR value 6,6% whereas SFR has a better value than FR1 is about 11.4%. From the analysis result, it is found that SFR method has enough. coverage value which only need 22 site and the failure of user access network is only 11,4%.

Keywords : LTE, Frequency reuse 1, fractional frequency reuse, soft frequency reuse, cell edge