

ABSTRACT

Telkom University student number increases every year which led to the needs of the ever increasing traffic and the use of data-based services is increasing every year. UMTS (3G) still has not been able to provide optimum service to the increase in traffic which is always increasing. Therefore, service providers are also required to meet the needs of customers in Telkom University were classified areas dense traffic data. Standardization body 3GPP introduced 4th generation Long Term Evolution (LTE) in order to cope with increased demand the need for communications services.

However, in planning the necessary LTE scheme can either frequency spectrum efficiency and optimize the quality of the signal at the cell edge by using techniques Soft Frequency Reuse. Soft Frequency Reuse can use the frequency spectrum efficiently are high but the interference at cell edge is small. Soft Frequency Reuse (SFR) applying a scheme of two cells, namely cell center and cell edge by using different transmit power so that it can overcome the problems will be less than optimal network at cell edge.

In this final project, the planning LTE network 1800 MHz FDD case study conducted in the region of Telkom University Soft Frequency Reuse scheme. Planning coverage on the territory of Telkom University designed a micro cell networks with a radius of 1.5 km and capacity values obtained cell center and cell edge 72.04 Mbps 36 Mbps thus obtained 1 site for planning at Telkom University. This planning dianalisis by comparing the planning SFR with non-SFR (Frequency Reuse 1).Some parameters were analyzed using SFR scheme can increase the coverage signal power level as far as 2 meter , quality 0.01 throughput 713 Kbps, and the value of $C / (I + N)$ 0.81 dB.

Keywords: Long Term Evolution (LTE), cell edge, cell center, micro cell, coverage, capacity, soft frequency reuse (SFR), Frequency Reuse 1 (FR1), throughput, $C / (I + N)$, quality, power level signal