## ABSTRACT

SC-FDMA (Single Carrier - Frequency Division Multiple Access) technology is multiple access technique which the data transmitted in serial way. It is used for uplink transmission in LTE system because it has lower PAPR compared to OFDMA which is used for downlink transmission. It is as a result from transmitting using single carrier in serial way.

But that is not enough to guarantee low PAPR. Another condition required is that the radio resources allocated to certain *user* must be adjacent in frequency. Thus we need allocation technique to achieve the condition with *scheduling* algorithm. There are two *scheduling* algorithm: non channel aware (independent with channel, e.g: Round Robin) and channel aware (channel dependent, e.g: FME, RME, MADE, STB).

In this final project a simulation to analyze STB, MADE, and RR existing algorithms performance has been done. The simulation output are spectral efficiency and *fairness*. The spectral efficiency of STB algorithm has gain 13,8% over MADE and 8,4% over Round Robin. The highest achievable data rate found in MADE, with gain 77,7% over STB and 1,2% over Round Robin. The highest *fairness* found in STB and Round Robin, with range 0,99 – 1. STB has better fairness because as long as the number of resources ≥ number of users it guarantees no outage user (all users get resource slot).



Keyword : SC-FDMA, MADE , Search-Tree Based Algorithm, *Resource Chunk* (RC)