

ABSTRACT

As data traffic and capacity have increased to drive demand for faster internet access, the Third Generation Partnership Project (3GPP) has released the Carrier Aggregation (CA) feature on Long Term Evolution - Advanced (LTE-A) technology. This CA feature can combine two or more carriers with a maximum bandwidth of 20 Mhz carriers both in the same or different frequency band. This CA system, makes each user can be scheduled on several carriers varies. Different frequencies for each carrier make fading and coverage different for each carrier. Fairness in resource block allocation cannot be achieved with the original proportional fair scheduling algorithm (PF), because the PF scheduling algorithm assumes that all users can be scheduled on all carriers. User Grouping - Proportional Fair scheduling algorithm is done by grouping users in accordance with the number of carriers that can be given to that user by adding distance comparisons in the resource block allocation process. The parameters observed in this study are average user throughput and fairness. The simulation results show that the UG-PF scheduling algorithm has a better level of system fairness with a value of 51,99% while the PF scheduling algorithm is 32,63%. On the average user side the better PF scheduling algorithm with a throughput value reaches 430 Kbps while the UG-PF scheduling algorithm only reaches 152 Kbps.

Keywords: *LTE-Advanced, User Grouping-Proportional Fair, Carrier Aggregation .*