Modification of round robin and best cqi scheduling method for 3gpp lte downlink

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Abstrak

In the case of downlink LTE, scheduler is an important element which assigns RB allocation for different users in a cell. RB is the smallest element which can be assigned by scheduler. This work proposes a new scheduler algorithm by considering the tradeoff balance between throughput and fairness among users. The proposed scheduler combines the benefit from the Best CQI and Round Robin Scheduler. The first time slot applies a Round Robin algorithm in the basis of a continuity in user sequence at the entire sub frames. The second time slot applies the Best CQI algorithm with a fairness enhancement. At 15dB SNR, the throughput of each scheduler is 61.2Mbps for Best CQI scheduler, 32.3Mbps for Round Robin scheduler, and 48Mbps for the proposed scheduler. Based on Jain’s Fairness Index, the proposed scheduler has a fairness index of 0.97. For 20 users at 5MHz bandwidth, the average queuing delay gives the value of 5ms for Round Robin scheduler, 29.38ms for Best CQI scheduler, and 0.94ms for the proposed scheduler.