

ABSTRACT

Issues regarding resource allocation Physical Resource Block (PRB) technology Long Term Evolution (LTE) for the downlink direction is a serious problem that must be addressed . Poor allocation system will degrade performance gained particular user on the quality of the signal received (SINR , throughput) and the capacity of cells in general.

Therefore, the selection of an appropriate allocation optimization algorithm to maximize the system throughput and increases the obtained quality of service (QOS) for users .

In this thesis, simulation PRB allocation of resources to the user by using Particle Swarm Optimization algorithm as allocation optimization algorithm , the simulation results will show PRB allocation to the EU, average user throughput, average sector throughput and the throughput fairness index .

From the simulation results , it was found that the more particles are used , the better the throughput obtained and PRB allocation to the UE the better . In the PSO scheme 20 with 20 particles obtained average sector throughput of 477.98 Kbps with average values of fairness index of 0.75 . while the PSO scheme 40 the number of particles 40 have a sector average value of 542.51 Kbps throughput with an average value of fairness index 0.82. For PSO scheme 80 has a value of average sector throughput of 600.11 Kbps with average values of fairness index 0.87, while the PSO scheme sector 160 has average value of 642.30 Kbps throughput with an average value of fairness index of 0.91 . For the PSO scheme sector 320 has average value of 642.50 Kbps throughput with an average value of fairness index of 0.94, and the PSO scheme sector 640 has average value of 651.92 Kbps throughput with an average value of fairness index of 0.95.

Keywords : LTE , Particle Swarm Optimization Algorithm , Resource Allocation , QOS