Abstract

Femtocell is a small base station that can significantly increase the coverage and capacity of indoor users, and can increase the coverage of Long Term Evolution (LTE) in areas that were previously not feasible, as long as broadband is available. More and more cellular users, the volume of traffic will increase, so a scheduling mechanism is needed that has the ability to handle real-time packages. Femtocell LTE is a solution to improve cellular network performance, because femtocells have qualities same as Wireless LAN. This study uses two scheduling algorithms, namely Exponential Proportional Fair (EXP/PF) and Exponential Rule (EXP Rule) that can guarantee Quality of Service (QoS) in the form of delay, throughput, packet loss ratio, and fairness index by analyzing its performance using LTE - Sim. In testing users up to 35 users, EXP / PF algorithm and Exp Rules provide good performance for delay, which is below 0.05 ms. And based on the average of all values, Exp Rules provide the best performance for real-time services compared to EXP / PF.

Keywords: Femtocell LTE, QoS, Scheduling Algorithms, EXP/PF, Exp Rule.