Abstract

Mobile network service use is growing, especially after the Covid-19 pandemic. To improve the quality of mobile network services, 5G comes as a network service ecosystem with low latency, which is 1ms, or about 10 times lower than 4G, making 5G able to provide more efficient access, especially in real-time network utilization. Maximum speed can be obtained by sharing limited bandwidth. The limited amount of available bandwidth causes the need for a Packet Scheduler, which aims to improve the efficiency and fairness of bandwidth usage. This research uses two *packet schedulers* comparing the *Proportional Fair algorithm* and the *Max-Throughput algorithm* using test scenarios for changes in the number of users and user speed. The metric output value analyzes resource limits such as frequency, power, speed, and time in each scenario to allocate resources so that their use remains efficient with a *Quality of Service* that remains stable and maintained. In simulation testing using the 5G-air-simulator, the average value obtained in the *delay* is 1,394 ms, *throughput* is 0,636, and *fairness index* is 0,967.

Keywords: *Packet Scheduler, Proportional Fair, Max-Throughput*, *Quality of Service,* 5g Air-Simulator.