

ABSTRACT

Smartphone users are growing very rapidly. Indirectly, this will lead to an increase in internet users. The number of radio waves that can be used to transfer data based on available bandwidth. Based on that, a higher frequency spectrum is required to accommodate data usage. The Millimeter wave (mmwave) is a wave that acts at a frequency range of 30-300 GHz. With this frequency, making Millimeter wave as the central technology in 5G system because of its potential to achieve the big throughput required by the future. However, not all users need the same throughput, but what is required is the conformity of delay control and the fairness index for each user while maintaining the limit of throughput. In order to overcome this, it takes a packet scheduler that will divide the resource block in transmission to the user which aims to improve the efficiency of bandwidth usage and improve the fairness index. This research will compare Quality of Service between Proportional fair and Round robin scheduler algorithms simulated using Network simulator 3 software. The scenarios simulate on this research are node density and node speed . Based on the results, for the scenario of increasing density and user speed, round robin has better delay and throughput values on voice services. While for video services, the proportional fair algorithm has better delay and throughput. The delay value obtained from the two algorithms meets the ITU-T standard. For the fairness index value, the round robin algorithm has a better value than the proportional fair for voice and video services. There is no significant impact in performance for node speed changes, this indicates that mmWave can overcome high user speeds on its network.

Keyword : Millimeter Wave, Scheduler, Round robin, Proportional fair, 5G, Network simulator 3