

ABSTRACT

The rapid technology development gives an impact on increasing the demand and services demand needed by users. IEEE 802.11ad is a standard wireless LAN (WLAN) network which operates on a frequency of 60 GHz bands with a wide channel which makes it possible to transmit data efficiently at multi-gigabit speeds per second. Through modification of the access mechanism at the MAC layer, it is expected that it can be used to improve service quality or QoS to the value of throughput, delay, and packet loss. Delivery of data transfers up to 7 Gbit/s can provide a solution for sending data that requires large throughput such as moving from local file transfer to HD video transfer, using multimedia tools and transferring data between devices.

The use of the Fast Session Transfer and Relay Operation mechanism is expected to provide solutions to problems that happens to 802.11ad networks, in which for the case of this research, there were two problems namely interference caused by obstacles and link failure in the 802.11ad network environment. On this simulation, produces some QoS values with Fast Session Transfer and Relay Operation Mechanism.

On Fast Session Transfer mechanism, this simulation decreases throughput values from 315 Mbits/s to 53 Mbits/s, increases delay values from 0,00046s to 0.00324s, and decreases packet loss values from 0,81% to 0.01%. On Relay Operation mechanism, this simulation increases throughput values from 260 Mbits/s to 698 Mbits/s, decreases delay values from 0.000058s to 0.000024s and increase produces packet loss values as 1,2% from 0,01%.

Key Words: IEEE 802.11ad, Fast Session Transfer, Relay Operation, Beamforming, Quality of Services