# ABSTRACT

The development of communication technologies increasingly go forward in recent years. The NGN technology began offering multimedia services using IMS. IMS is the core network architecture that has a fixed multimedia services and convergence of wireline and wireless IP-based. . The needs of voice and data services that have qualities that meet the standard is very desired by the user. The design for the implementation of IMS network is done by making a server with applications OpenIMSCore.

In this final, the comparison has been investigated using the server network OpenIMSCore on two network topologies. The design is made by using wireless for IPv6 and wired LAN for IPv4. The results that the wireless network using IPv6 is better than a wired LAN using IPv4. The data obtained showed QoS obtained on IPv6 wireless network has a better QoS level than the IPv4 network. QoS parameters that tested, ie delay, jitter, packet loss on traffic 10 Mbps and 20 Mbps.

Comparison of QoS parameters between the two networks for the delay that was found in network traffic that uses IPv6 with 10 Mbps, 20 Mbps, 30 Mbps at 19.482 ms, 31.54 ms, 31.605 ms while on the network with the IPv4 of 26.55 ms, 29.13 ms and 34.16 ms. Jitter obtained for networks with IPv6 at 1.17 ms, 2.51 ms, and 3.79 ms and the IPv4 network 6.1 ms, 7.88 ms, 24.08 ms. For an IPv4 network, packet loss obtained at 13.23%, 18.55%, 22.87% and the IPv6 packet loss obtained by 3.23%, 6.6%, 8.26%. The result of MOS in both network was found that the best MOS obtained on an IPv6 network with the value of MOS 74.87 which appropriate with ITU-T standard and stated quite well while in IPv4 obtained the value of MOS is 53.91 that otherwise is not good / poor quality.

From the test result data can be concluded that the IMS network with OpenIMSCore is better used via a wireless network with IPv6 addresses.



Keyword : *IMS, OpenIMSCore, IPv6, IPv4, QoS, wireless, wired LAN, NGN, jitter, delay, packet loss, MOS*