ABSTRACT

Demanding of bandwidth continues to increase along with the increasing number of users, then in combining a variety of services such as data, voice, and video (triple play) needs a reliable network connection that has good Quality of Service (QoS). However, the increasing number of users cause complicated cable access network Local Area Network (LAN) that is currently used. This is the background of wireless networking technology Wireless Local Area Network (WLAN) development. Problems that occur in the access network is its limited coverage. Wireless Distribution System (WDS) is the solution to overcome the problem of limited coverage in WLAN access networks.

In this final project, triple play services will be implemented on WLAN 802.11n network using WDS and the performance of WDS on the WLAN network will be analyzed. The value of throughput, delay, jitter, and packet loss will be obtained from the analysis. Then the result of parameter analysis will be compared with the results from implementation of triple play services on WLAN 802.11n using UTP cable as its backbone.

The measurement results show that the overall performance of triple play services on the network without WDS is better than on the network using WDS. For throughput parameter, the difference in value of QoS is 32 Bps, for interarrival delay parameter is 0.10568 ms, for end-to-delay parameter is 2.52081 ms, for jitter parameters is 6.9084 ms jitter, for packet loss parameters is 4%, and for RTT parameter is 80.38611 ms. QoS measurement results with the distance scenario still meet the standard of "good" for jitter, that is =< 50ms (ITU-T), the standard "medium" for packet loss, that is =< 15% (Tiphon), while the background traffic scenario can be said to be less well starting from the value of the variation background traffic by 40 Mbps.

Keywords : WLAN, 802.11n, triple play, QoS, WDS, coverage.