ABSTARCT

Broadband access service is a service that can provide information such as voice, data, and video (Tripleplay) with high speed and wide bandwidth simultaneously.

One of the existing broadband technologies are DSL (Digital Subscriber Line). DSL technology is used by fixed telephone service providers (fixed carrier) to optimize the use of copper or fiber that already exist, resulting in cost efficiencies and devices. DSL technologies are used including the ADSL (Asymmetric Digital Subscriber Line) that can communicate simultaneously, and have a reliable connection. But the ADSL technology has shortcomings and limitations, especially in the quality of cable is the cable used considering exiting the cable that was installed long ago, so it can affect the quality of QoS (Quality of Service). The condition can be overcome by synergy between ADSL technology with the WiMAX (World Wide Interoperability For Microwafe Access).

Based on the simulation and analysis found in general that the service tripleplay still have good quality if you use WiMAX synergistically with ADSL This can be seen in scenario 1 for video services have a value of 96.92961 ms delay, jitter 0.001758265 ms, throughput 151512 bytes / sec, and packet loss 6.34%, for voice service has a value of 146.256288 ms delay, jitter 0.75115 ms, throughput is 243.2930556 bytes / sec, and packet loss 1.03%, and for data services has a throughput of 24.50405556 bytes / sec, and object response time 26.42245105 sec, while in scenario 2 for video services have a value of 100.219103 ms delay, jitter 0.024205980 ms, throughput 152716.8 bytes / sec, and packet loss 5.97% , for voice service has a value of 133.643344 ms delay, jitter 0.412214 ms, throughput is 149.575 bytes / sec, and packet loss 39.35%, and for data services has a throughput of 38.88066667 bytes / sec, and object response time 23.02731041 sec, and in scenario 3 for video services have a value of 99.495467 ms delay, jitter 0.001013950 ms, throughput 88502.4 bytes / sec, and 45.29% packet loss, for voice service has a value of 144.396652 ms delay, jitter 0.794821000 ms, throughput is 149.1166667 bytes / sec, and 38.59 % packet loss, and throughput for data services has 15.94508333 bytes / sec, and object response time 34.6572372 sec.

Key Word: ADSL, QoS, Synergistic, WiMAX (IEEE 802.16d)