ABSTRACT

Based on the need of telecommunication service that direct to the fulfillment of triple play (voice, data, and video/IPTV). Hence, Broadband access network technology platform is needed. FTTx technology is proposed to answer it. One of FTTx technology that deploy on wireline access network today is GPON, it can serve bandwidth up to 2,488 Gbps for downstream and 1,244 Gbps for upstream. Whereas, in the further, it can be improved up to 10 Gbps. As a new implementation technology, especially in Indonesia, intensive observation of performance for that application is needed.

In this Final Task field study was done in RDC Telkom Laboratorim Bandung by doing measurement and analyze performance parameter at GPON technology using Smartbits 600B as traffic generator and also to capture the data that needed for analysis. Two methods for traffic generator in GPON are used, there are without bandwidth boundary setting (up to 1 Gbps) and with bandwidth boundary. Measurement was also done by channel capacity.

From the result of measurement and calculation, it can be known that traffic loading measurement without boundry setting(with 1Gbps quota), in 100% performance can be got 0% frame loss and 1.2 Gbps throughput. At 94,95 performance can be got 0% frame loss and 966 Mbps throughput. At 80% performance can be got 0% frame loss and 1.3 Gbps throughput. For first measurement with bandwidth boundary can be got 40,9% frame loss and 29.1 Mbps throughput, and for second measurement can be got 11.59% frame loss and 701 Mbps throughput. At measurement 256 multicast channel can be got 0% frame loss and 595.5 Mbps throughput. And at the 4096 VLAN can be got 0% frame loss and 115 Mbps throughput.