

## ABSTRACT

PT Telkom, Tbk is a provider network which is currently doing a projectd fiber optic migration PT Telkom: TT.10. No: 01 / DINTEK / 30 / 2002 with the aim of regeneration HDSL network into the optical access network. This is to improve the service performance and also reduce the problem caused by the copper networks. Bandung Centrum is a strategic area for the optical network design, because of this there are many customers who use large bandwidth. Besides Centrum Bandung since 2006 has set the device transmitting However GPON not maximize the use.

GPON (Gigabit Passive Optical Network) technology is one of the optical access network. This technology has the benefits to support triple play applications, save the uses of fiber optics, has a reliable protection, and also has a bitrates up to gigabit order. This technology is applied to the appropriate area Bandung Centrum considering this area has a region that is not too wide, round about 10 km.

The feasibility testing such as link power budget and rise-time budget showed that the design has to meet both standards. Highest loss is found on customers who are in the way of RE Martadinata. Total loss which resulted in the link of 19.53 dB, loss is still under the appropriate standard GPON ITU-T G.984 as much as 28 dB and the standard issued by Telkom of 26 dB. Test results of rise-time budget is the number that are still in the design tolerance GPON network. For the downlink direction to the bitrates of 2.48 Gbps, customers farthest  $T_{total}$  yield of 0.2612 ns.  $T_{total}$  still under  $T_{sistem}$  value of 0.28 dB.

Keyword : GPON, Bandung Centrum, Rise Time Budget, Link Power Budget