ABSTRACT

Basically, DPG is a digital pair gain which is implemented by PT Telkom at access network called by Fastlink system. Fastlink consists of modules used for the solving of network problems. This system can handle many services, includes interactive services like telephone, ISDN, 64 Kbit/s data and 2 Mbit/s services, or modern broadband services like CATV.

The implementation of DPG achieves optimum gain by using transmission medium optical fiber as a primary cable. In other words, this system is called by network reduction technology – cable using. Therefore, this final project analyzes fiber-copper access network by implementation of DPG at STO Turangga.

The performance analysis parameter includes optical-copper network and DPG itself. Measurement parameter will be compared to the PT Telkom standard specification. Theoretical computation analysis is also included in this final project.

The result of this final project shows the good quality of this access network. Optical fiber measurement parameter is attenuation $\leq$ 0.38 dB, BER $\leq 10^{-9}$ and *margin* 37-37dB which has fulfilled the link power and rise time budget analysis. While the electrical copper measurement is isolation resistance > 5000 MΩ/Km, loop resistance < 130 Ω/Km, attenuation < 6 dB/Km, and BER $3.10^{-8} - 1.10^{-7}$. The troubles happened at DPG is much more caused by the modules troubles at DPG itself – not by the condition of the network, where for each trouble there has been a repairing mechanism. So, it can be concluded that DPG has worked successfully and the fiber copper access network at STO Turangga has a good quality performance.