

ABSTRACT

Optical fiber is one of the transmission media that is able to provide large bandwidth therefore customers prefer optical fiber to meet their internet needs. PT Telkom as the provider of telecommunications services begins to change their access network infrastructure which originally used copper cables and semi-fiber optics to be full optical fiber. The process of migration from semi fiber optic access network to full fiber can be done in several ways, including using Mini OLT technology.

The migration process using Mini OLT technology is conducted so that the infrastructure of the Multi Service Access Node (MSAN) access network that is semi-optical fiber can be converted into full optical fiber. Mini OLT technology can also provide efficiency in the migration process because it can utilize the infrastructure of the previous MSAN access network. In this design of Mini OLT, backup optical fiber is used for MSAN technology which is located in the MSAN cabinet. Besides being Mini OLT storing places later, the MSAN cabinet is also used as a place to replace the functions of ODC so there is no need to build a new ODC. The network topology will then be forwarded with distribution cables, ODP, drop cables and ONTs such as FTTH technology in general.

Based on the analysis that has been done, the Mini OLT design has reached the feasibility standard such as the power link budget value does not exceed the minimum limit of -25dB, the rise time budget does not exceed the minimum limit of 70% NRZ and the bit error rate does not exceed 10^{-9} . In addition, comparative analysis between Mini OLT and FTTH without Mini OLT shows that the Mini OLT design is rather superior in the parameters of the feasibility of the power link budget, rise time budget and bit error rate, and superior in BoQ.

Keywords: *Multi Service Access Node (MSAN), Google Earth, Optisystem, GE Smallworld.*