ABSTRACT

Telkom uses technology CWDM (Coarse Wavelength Division Multiplexing) on Fiber To The Home (FTTH) technology which is a multiplexer which serves as an increasing number of service channels. In this final analysis CWDM technology by using Fiber To The Home on STO-Cijaura region until each ODC (Optical Distribution Cabinet).

In this research conducted an analysis based on calculations and simulations . Then analyzed based on predefined parameters such as SNR (Signal to Noise Ratio) , BER (Bit Error Rate) which meets the standard FTTH network with Telkom , Link Power Budget to be met on the network then Rise Time Budget on STO - Cijaura network up to each ODC .

Analysis of calculation and simulation analysis shows that the STO - distance optical networks Cijaura have a good performance . Link calculation results with PRX power budget of -25.296 dBm for the downstream direction and PRX was -26.069 dBm for the upstream direction . While the analysis of the simulation results obtained PRX value of -21.986 dBm to -21.57 dBm and the downstream direction for the upstream direction . Results link power budget remained above the level of receiver sensitivity is -27 dBm . The calculation result is Rise Time Budget for downstream and upstream directions in optical network furthest resulted in a total time of 0.2519 ns , the time is below the value of the NRZ encoding time 0.28 ns . The results of the calculation system of 37.596 dB SNR and BER worth of 6.57 x 10-15 . The results of the simulation analysis show after the optimized value of 21.708 dB SNR and BER worth 7.21 x 10-10 , so it can be concluded almost no dispersion in performance technology CWDM (Coarse Wavelength Division Multiplexing) optical networks STO - Cijaura .

Key Word : *Coarse Wavelength Division Multiplexing* (CWDM), *Fiber To The Home* (FTTH), *Link Power Budget*, *Rise Time Budget*, Bit Error Rate (BER).