

## ABSTRACT

SDH (Synchronous Digital Hierarchy) technology represented multiplex hierarchy which pursuant to transmission synchronize and wired many in fiber optic network and also microwave. SDH which use fiber optic can improve network mainstay by totally ably owned reinforcement system so that can give better service. Besides can become reliable transmission media, SDH technology at fiber optic have insufficiency so that will influence to its performance.

In this final project will be analyzed about fiber optic communications system performance with technology of SDH applied at link Bandung-Purwakarta configuration which have repeat because limitation of peripheral had by PT.TELKOM. Network reconfiguration of Link Bandung-Padalarang-Purwakarta with repeater become Bandung-Purwakarta without repeater can conducted with not degrade the network performance. Parameter perceived is power budget [power link budget (-29,999 dBm), rise time budget (0,164 ns)], BER analyze [bit error rate ( $10^{-11}$ )]capacities and availability by doing comparison between result of calculation and measurement.