

## ABSTRACT

DWDM Technology is one of the new technology in Telecommunication through fiber optic. Generally, DWDM is a number of optical channel that each use different light wavelength, but all of them use the same fiber optic. That technology able to increase existing network capacity ability without any cable plantation again, and significantly able to reduce cost of additional network.

As one of the Telecommunication company in Indonesia, PT. Telkom especially in Bandung Area has implemented fiber optic technology to distribute many kind of traffic, even as data, image, or sound on trunk network. Existing Network topology is point to pint, when there is some trouble in a node, then will affect entire system performance. Otherwise, it's needed some kind innovation technology that can accomodate necessity for infomation services, with big capacity without spread out a new fiber optic.

At this final project, it's designed DWDM transport network on existing optical fiber network at Bandung multi area (case study in Kandatel Bandung ), that hopefully can substitute the optical fiber technology by point to point, then it's analyzed with related parameters from the result of that DWDM technology. Later, hopefully can save the number of core optic useness and will reduce the cost of the network.

The result of simulation and calculation, obtained dispersion limited maximum transmission (36 km) for STM-64, splicing number (41 splices), maximum attenuation (172,47 dB), maximun transmission distances (94,77 km), and the average of system rise time (40 ps).