

## ABSTRACT

The requirement of information services will enter the 21<sup>st</sup> century, it will progressively increasing with level and kind of service of the desired by customer which complex progressively. Specially at link Medan – Banda Aceh which still be served by microwave estimated will not able to accomodate the amount of requirement that progressively increasing in the years to come. In consequence these problems will be overcome by developing fibre optic link that will connecting both of the city and the cities between them.

This Final Project is trying to make a network planning of fiber optic communication system among both cities. The configuraton of network will use *point to point* topology .G-655 (*Non Zero Dispersion Shifted Fiber*) *single mode* Fibre optic will be used with wavelength operate is 1550 nm at NRZ format modulation. At transmitter Laser Diode (LD) is used as source of optic and at receiver for fotodetector will use Avalanche Photodiode (APD).. This network planning use 3 regenerator/664SX which is combined with EDFA booster. This Network does not require special peripheral for compensation dispersi.