

## ABSTRACT

The necessity of society needs for information such as voice or data is getting increases, so that networking with high speed data for reliable multimedia transmission and broadband scales very needed. The reliable networking that support many applications of multimedia with a large amount of bandwidth indicate how important to optimize system for increase the performance and quality of the network. Therefore, the network implementation of technology and architecture are has to be done.

In this planning, the fiber access local network uses passive splitter as the component of technology PON (Passive Optical Network) at Bandung Dago area. It took the point to multipoint network forms to effective the usage of fiber optic that have large capacities. This system is properly for the high building and high residential users and more economics if uses for deliver the broadband applications. The architecture is FTTB (Fiber To The Building) adjust the environment structure and characteristic of the users with business cooperate and bandwidth up than 1 Mbps as the target.

There is stages from this final project, studying literature of optical architecture and technology, analyzing the data, survey location, determine the amount of users and mapping, choosing the technology from technical aspect and economical, and mapping the existing network area. From demand user data that have been realized yet and needs for back-up networking, the user applicant are 18 with the amount for bandwidth are 195 Mbps. After prediction, the user applicant are 50 with total amount for bandwidth are 279 Mbps. OLT (Optical Line Terminal) have 64 interface cards with passive splitter location in RK FO, OAN, or closure for easy maintain.

From this analysis quality of service for this planning system power link budget, is still proper with -29.96 dBm, besides that the margin system is 0.34 dB so this system is proper. Rise time budget uses NRZ coding.

**Keyword : Fiber Access Local Network, FTTB, PON, Passive Splitter**