

## **ABSTRACT**

*The development of technology of growing year to year, as well as increasing communication needs, from voice service, data, and video. On every service needed a better quality in accessing those services. As well as the necessary reliable network capable of providing a good performasi. By replacing the current copper telecommunications network with optical fiber telecommunication network are expected to improve the quality of services. By doing the planning network Fiber To The Home (FTTH) are expected to make a solution to replace the copper network to fiber optic networks. Klaten district current for the North have yet to use the network for services and FTTH in Klaten district North still use one service i.e. telephone service, has not used the video and data services. To be able to use the video and data service, then it does planning network FTTH in Klaten district north. On network planning Effort for the area north of FTTH is doing a survey to obtain data such as the type of home, in occupied or not, Subscribe to telkom or not, and those in the home address. To be able to know which scenario fits in the area, then on the design of network planning FTTH made with 3 scenario one stage 1: 32, two stage 1: 2/1: 16 and 1: 4/1: 8, as well as made link budget for distance, intermediate, nearest and farthest from the Optical Distribution Frame (ODF)-Optical Network Termination "approach (ONT), as well as created the Bill Of Quantity (BOQ). Comparison of the network can be inferred by looking at the average attenuation resulting in scenario 1: 32 the average yield of 22: 32 dB attenuation, in 1: 16 2/1: generate an average of 22.47 dB attenuation, and in scenario 1: 4/1: 8 produces an average of 22.28 dB attenuation, then on the area the effort North is more suitable to use scenario 1: 4/1: 8 for damping resulting in smaller i.e. a 22.28 dB compared to scenario 1: 32 and 1: 2/1: 16 of the third scenario and there is no maximum limit exceeded attenuation tolerance i.e. by 28 dB.*

*Keywords: Fiber to the home, Optical Network Termination, Optical Distribution Frame, Bill Of Quantity, link budget.*