

ABSTRACT

In the era of telecommunication, the needs and ease to get information through internet and data transmission such as voice, video, and image using online media increase every years . This is as a proof that technology of internet becomes a need for the society nowadays. In the future, the multimedia technology will be one of solution for telecommunication. The development of internet is supported by the discovery of fiber optic that is used as a media for data transmission. In the other side, GEAPON (Gigabit Ethernet PON) is a fiber optic networking based on Ethernet that possibly to use point-to-multipoint technology. GEAPON based on Ethernet, it is not like the other PON technology that work based on ATM. In additional, GEAPON also support for 1.25 Gbps data speeds.

In this final project, the analysis and design will be conducted to know the performance by considering several factors that related with FTTH (Fiber To The Home) configuration by using GEAPON technology in Royal Park Residence, Jakarta. The data of information, building, and service requirement use to provide the triple play services. The result of analysis will be illustrated by using Auto Cad and Microsoft Visio. By using the data that have been collected from the measurement, the analysis and result will be compared to IEEE 802.3ah standard.

Determining the performance level of system will be conducted using the results of comparison to IEEE 802.3ah standard. The results of analysis and design from this research can give information about the amount of power that received by customers. So, it can be concluded either the system performance level is still according to IERR 802.3ah standard or not. The tolerance value that decided by IEEE 802.3ah is 29 dB, NRZ is below 0.56 ns, and tolerance for ideal BER is 10^{-9} .

Key words : FTTH, GEAPON, Power Link Budget, Rise Time Bidget, Auto Cad