ABSTRACT

The design of a Fiber to the Home (FTTH) access network in the Pariaman City area using Gigabit Passive Optical Network (GPON) technology is a project that aims to improve internet connectivity in the city. In this design, a needs analysis is carried out and the selection of the appropriate technology to provide high-speed internet access to households and businesses in Pariaman City. This study uses a literature review to understand the basic concepts of FTTH and the GPON technology to be used. Next, a needs analysis is carried out to determine the number of households and businesses to be connected, as well as the required bandwidth requirements. The network design includes determining the optimal optical route, the location of an efficient network control center, the type and number of GPON devices needed, as well as network deployment to cover the entire Pariaman City area. GPON device configuration and network testing are carried out to ensure security and good network performance. FTTH network implementation involves the installation of optical fiber and network devices, as well as routine maintenance and network management to maintain optimal performance. This design is expected to provide significant benefits for the people of Pariaman City, including high-speed internet access, superior service quality, support for heavy applications, economic growth, and improved quality of life. The implementation of the FTTH network using GPON technology also encourages technological advances and digital transformation in Pariaman City.

Keywords*: Fiber to the Home (FTTH), Gigabit Passive Optical Network (GPON), internet connectivity, high speed, network design.*