

## **ABSTRACT**

The use of high-speed network technology such as Fiber to the Home (FTTH) has become very important in meeting the demands for reliable and fast connectivity in a residential environment. This Final Project aims to analyze and design an FTTH network in Jati Uwung 3 Housing neighborhood using OptiSystem simulation software.

The main objective of this research is to design and analyze an FTTH network that can meet the needs of residential residents. The research methodology includes several steps, including a field survey to understand user needs, analysis of those needs, and network modeling using OptiSystem software. Thus, this research aims to produce an optimal network design that is in accordance with the conditions and demands that exist in the Jati Uwung 3 Housing neighborhood.

**Keywords:** Optical Fiber, FTTH