

## ABSTRACT

Optical Fiber is a transmission medium to large capacity. Along with the economical price and the cost of deploying the network goes down, the optical fiber is increasingly becoming a major alternative media data transmission of telecommunications data providers. Because the increasingly wide spread use, the need for a monitoring system capable of detecting cut and bending optical fiber cable.

The final project was made systems approach easy and inexpensive way to detect cut wires and bending the optical fiber-based Borland Delphi 7.0. In principle optical fiber to Ethernet media converter is to convert the optical cable into the transmission media data packets IP. Once converted into ordinary data cable, optical fiber can be passed protocol TCP/IP. With the add IP device and server ping to IP device can detect if the cable cut/bending by measuring the activity of replay data of ping. If the software on the server detects 'Replay time out' or high ping time then automatically stops the application program and sends a warning message to the engineer. 'Replay time out' is an indication of optical fiber cable cut and a high ping time is bending the cable detection.

After the end of the project is done, cut detection applications and bending optical fiber is able to perform its functions properly, it can be seen when the test applications in PT XL Axiata, obtained optical fiber end conditions, when the application detects cut then the program will stop the application will automatically send warning message to the engineer.

Key words: Optical fiber, Borland Delphi 7.0, sms, *ethernet media converter*