



---

## **Fault Detection System for Underground Telecommunication Cables Facilitated with Website, Map, Mobile Application and SMS Alerts Systems**

H.P.N. Nayanamali\*, W.T.J. Soysa, M.P.U. Isuranga

*Department of Engineering Technology, Faculty of Technology, University of Ruhuna, Kamburupitiya, Matara, Sri Lanka*

\*Corresponding author: *nishadi\_2016024@fot.ruh.ac.lk*

### **ABSTRACT**

In telecommunication maintenance process can be defined as one of the main processes. At large scale for telecommunication most of the service providers were using underground cabling basically. Through this study, mainly trying to focuses on to detect the exact fault location in underground copper cables which are used for telecommunication transmission frequently can be seen in urban areas. However, it is very difficult task to find out the exact faulty location while maintenance process of underground cables. Today, service providers are using some equipment which are very expensive as well as more manpower to recover them at first time. Other than that, it was a difficult task to identify both open and short circuit faults. A system which is integrated with fault location detector with the help of the Ohm's law detection the voltage behaviour. To achieve the main intension of this study, a SMS which is derived through the GSM module and a web page and the mobile application will be updated through the firebase which is done within the time period of less than one minute that can be mentioned as the huge advantages achieved from the usages of the firebase database instance. Through this system, all the responsible individuals of the maintenance team will be informed when there is a fault occurred in an underground cable by sending an SMS (Short Message Service) to the technician as well as updating of the web page and mobile applications showing faulty location through a Google map which will be a great assistance for the maintenance teams.

**Keywords:** *Detection, Fault, Handhole, Ohm's law, Underground cable.*