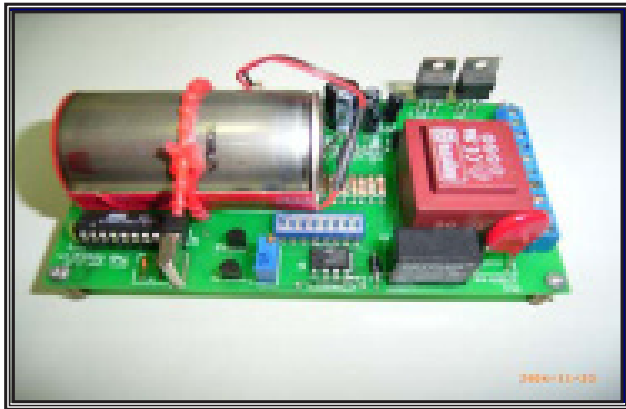




## R&D Fund Project

### The Development Of Second Generation Of Earth Fault Indicator (EFI) For 11kV Underground Distribution Network



EFI Second Version Prototype



EFI Current Flow Indicator

#### Project Overview

Traditionally, the design of the distribution network has always been less critical in the area of fault location. Relay and protection devices have always been placed at critical area e.g. PMU, PPU and SSU. However, the reliability of the system has been of great concern and there is a need to reduce the outage time when interruption occurs. Thus, there is a need to identify the faulty section of the distribution cable network as soon as interruption occurs. This would result in quicker restoration of supply. An EFI is installed at various sections of the network for this purpose. This project is focused on producing the second generation EFI with additional features as required by the end user.

#### Deliverables

- A new version of EFI that has the capability of displaying the current flow in the 11kV cable.
- The EFI consists of three main components; the current transformer, controller and indicator.
- For a single EFI unit, there are two CTs used, one for unbalance current detection and another one is for load current detection.
- The controller unit of the EFI processes the signal and detects the occurrence of earth fault. The indicator unit is an LED based indicator that will flash when the fault is detected.

#### Benefits

By having EFI installed at the TNB Distribution network, down time caused by earth fault will be minimized. Besides, the new EFI is able to display the lead current.