

NIA ENWL009

Cable Health Assessment – Low Voltage

NIA Progress Report

31 July 2017



VERSION HISTORY

Version	Date	Author	Status	Comments
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REVIEW

Name	Role	Date
L Eyquem	Innovation Programme Assistant	10 July 2017
G Bryson	Innovation Engineer	10 July 2017
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APPROVAL

Name	Role	Date
Steve Cox	Engineering & Technical Director	20 July 2017

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1 PROJECT BASICS

Project title	Cable Health Assessment – Low Voltage
Project reference	NIA_ENWL009
Funding licensee(s)	Electricity North West Limited
Project start date	November 2015
Project duration	3 years
Nominated project contact(s)	Geraldine Bryson (geraldine.bryson@enwl.co.uk)

2 SCOPE

This project will develop the technology, data processing, support services, BaU operating model and CBRM based asset health modelling required allowing LV cable condition data to be included in the condition based risk model giving network operators the ability to assign health indices to its low voltage cables and associated networks.

3 OBJECTIVES

- Develop low cost technology which can be used to define the condition of the low voltage network
- Develop BAU support services to allow wide-scale deployment
- Develop the data processing and modelling necessary to allow inclusion in the CBRM framework
- Installation of hardware at a number of distribution substations (expected to be 500)
- Run a live trial of the new models and associated support services
- Produce all the necessary documentation (specs and models) to allow adoption by other network operators.

4 SUCCESS CRITERIA

- Production of hardware and backend data processing technologies
- Production of the relevant processes and models to allow LV cable condition to be included in the CBRM framework
- Development of a BaU operating model to allow wide-scale deployment
- Production of the CBRM methodology, specifications and codes of practice to permit replication.

5 PERFORMANCE COMPARED TO THE ORIGINAL PROJECT AIMS, OBJECTIVES AND SUCCESS CRITERIA

The project has been focussed on the requirements of the hardware necessary to capture the condition of the cables. Project partners, Kelvatek, have conducted testing to assess what degradation may look like and how it can be measured. This testing will help to inform what measurements are taken and also how the measurements are processed to give a condition.

Investigations are continuing into the practicalities of installing measurement equipment at different types of distribution substation to inform the design of the site hardware.

Prototype electronic circuitry has been designed, built and tested. The electronic circuitry is used to acquire, condition, process, store and communicate data for the Cable Health Assessment system.

Following laboratory and test network evaluation, system components are being revised for rollout and further trials on LV networks.

Device software has been developed to deliver basic functionality.

System software and fault detection/triggering algorithms concepts have been developed and agreed. These components shall be refined as more data becomes available from field trials on LV networks.

As the project is still in the early stages, no objectives or success criteria have yet been completed.

6 REQUIRED MODIFICATIONS TO THE PLANNED APPROACH DURING THE COURSE OF THE PROJECT

There have been no changes to the planned approach.

7 LESSONS LEARNED FOR FUTURE PROJECTS

The project is in its early stages and at this point there are no lessons learnt to share. This will change as the project progresses.

8 THE OUTCOMES OF THE PROJECT

Not applicable.

9 PLANNED IMPLEMENTATION

Not applicable.

10 OTHER COMMENTS

Not applicable.