NIA Project Registration and PEA Document

Date of Submission

Apr 2015

Project Reference Number

NIA_SSEPD_0003

Project Registration

Project Title

Network Damage Reporter

Project Reference Number

NIA_SSEPD_0003

Project Licensee(s)

Scottish and Southern Electricity Networks Distribution

Project Start

April 2015

Project Duration

3 years and 3 months

Nominated Project Contact(s)

SSEN Future Networks Team

Project Budget

£553,600.00

Summary

To produce a smartphone application that is able to work on Android and Apple devices that will allow members of the public and the emergency services to report damage to the Overhead Line network.The project will be in 4 phases.

Phase 1 will involve the development of the Apple iOS application, conversion of network data to allow the application to reference the network, and the provision of a facility to collect reports.Phase 2 will expand the ability of the server to handle multiple reports, and provide feedback to the reporting device.

Phases 1 and 2 have been carried out under the IFI scheme. This project will move the project to completion through phases 3 and 4.

Phase 3 will use the lessons learned in phase 1 and 2 to develop the application for the Android operating system.Phase 4 will see the release of both versions of the applications to the related application store, and the collection of live data. This will then allow for the evaluation of the responses from the public, and the levels of take up of the app.

Third Party Collaborators

NCC Group

Energy Innovation Centre

Open Grid Systems

Nominated Contact Email Address(es)

fnp.pmo@sse.com

Problem Being Solved

Damage to the Overhead Network can lead to significant numbers of customers being off supply. The quicker that the damage is reported to the operators control room, then the quicker repair teams can be sent to carry out repairs. Customers can feel disregarded once they have reported a fault, as it becomes difficult to manage the level of call backs needed during a storm event, and they do not receive updates in a timely manner, leading to a lack of customer engagement.

Method(s)

By providing customers and emergency services with an easy to use smartphone application, faults can be reported in to an Operators control room in a timelier manner, and provide dispatching staff with accurate location, and details of the type of fault.

The smartphone application will be able to use the inbuilt facilities of Apple and Android smartphones to take and send geotagged photos of damaged areas of the network, and allow the sender to decide if they want to be kept informed of progress of repairs or not.

Scope

To produce a smartphone application that is able to work on Android and Apple devices that will allow members of the public and the emergency services to report damage to the Overhead Line network.
The project will be in 4 phases.

Phase 1 will involve the development of the Apple iOS application, conversion of network data to allow the application to reference the network, and the provision of a facility to collect reports.
Phase 2 will expand the ability of the server to handle multiple reports, and provide feedback to the reporting device.

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Phase 3 will use the lessons learned in phase 1 and 2 to develop the application for the Android operating system.
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Objective(s)

1. To determine the viability of using a smartphone application to allow network damage to be reported quickly to a DNO service centre
2. To evaluate the level of interest in the general public in using such a smartphone application, and in receiving updates on the progress of the resolution.
3. To determine the utility of collating the received photos and location data into a single user interface for viewing by the Distribution Network Operators (DNOs) fault recording and dispatch staff.
4. To assess the efficacy of automatically matching known equipment locations with sent data to allow the fastest response by repair staff.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

Develop new procedures and processes to make use of the data submitted by users, such that the fault report submitted is integrated into the company fault management system.
Develop a publicity strategy to publicise the availability of the app.
Evaluate the benefit from the utility in fault reporting using smartphones.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

The scale of the project is considered appropriate to the scale of the potential benefits.
The project initial stage will be carefully managed to allow the build up of capability to accept and review damage reports. The latter

stage will prove the ability of the server to manage the likely level of damage reports during a storm event.

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL9 Operations

Geographical Area

This project will take place within the Scottish Hydro Electric Power Distribution licence area in Scotland, and the Southern Electric Power Distribution licence area in England.

Revenue Allowed for the RIIO Settlement

At this stage no saving on expenditure can be expected during project implementation.

Indicative Total NIA Project Expenditure

Total NIA expenditure will be £553,600 of which 90% is allowable NIA expenditure (£498,240)

Project Eligibility Assessment Part 1

There are slightly differing requirements for RIIO-1 and RIIO-2 NIA projects. This is noted in each case, with the requirement numbers listed for both where they differ (shown as RIIO-2 / RIIO-1).

Requirement 1

Facilitate the energy system transition and/or benefit consumers in vulnerable situations (Please complete sections 3.1.1 and 3.1.2 for RIIO-2 projects only)

Please answer **at least one** of the following:

How the Project has the potential to facilitate the energy system transition:

n/a

How the Project has potential to benefit consumer in vulnerable situations:

n/a

Requirement 2 / 2b

Has the potential to deliver net benefits to consumers

Project must have the potential to deliver a Solution that delivers a net benefit to consumers of the Gas Transporter and/or Electricity Transmission or Electricity Distribution licensee, as the context requires. This could include delivering a Solution at a lower cost than the most efficient Method currently in use on the GB Gas Transportation System, the Gas Transporter's and/or Electricity Transmission or Electricity Distribution licensee's network, or wider benefits, such as social or environmental.

Please provide an estimate of the saving if the Problem is solved (RIIO-1 projects only)

The 2014 storm period cost the customers of the company approximately £60 million. If the use of the app allows quicker responses to fault reports, such that the saving of 10 minutes per task in time allows for a reduction of 0.1% in the overall costs, it would amount to a saving of £60 thousand per annum. Other faults outside of storm events will also benefit customers as the reductions in time will provide a quicker resumption of power after a fault, with field staff able to go to the correct fault location, customers being kept up to date with the details of the fault resolution, and an improvement in public safety as faults are resolved quicker.

Please provide a calculation of the expected benefits the Solution

Current procedures expect fault locations to be determined either by technical means, through Supervisory Control And Data Acquisition system, or by scouts, aerial surveys, or passing staff. The anticipated savings of 10 minutes per task provides for an annual saving of £60,000. Over the 8 year RIIO period this gives
£480,000 - £220,000 = £260,000.
This benefit could be higher if take up of the app is higher than expected.

Please provide an estimate of how replicable the Method is across GB

The method will be replicable across all DNOs and across all of their geographic license areas. The system as developed will recognize DNO license boundaries, and advise the user of the DNO that is taking their report.

Please provide an outline of the costs of rolling out the Method across GB.

The costs will be that of licenses for the application provided to the customer, and the development of the data integration system to support the application and ensure that the full benefits can be gained. The overall cost should be less than £150,000, part paid by SHEPD, to set up with a much lower annual cost for the licenses, of £40,000, which includes support for the DNO during Storm events.

Requirement 3 / 1

Involve Research, Development or Demonstration

A RIIO-1 NIA Project must have the potential to have a Direct Impact on a Network Licensee's network or the operations of the System Operator and involve the Research, Development, or Demonstration of at least one of the following (please tick which applies):

☑ A specific piece of new (i.e. unproven in GB, or where a method has been trialled outside GB the Network Licensee must justify repeating it as part of a project) equipment (including control and communications system software).

☐ A specific novel arrangement or application of existing licensee equipment (including control and/or communications systems and/or software)

☑ A specific novel operational practice directly related to the operation of the Network Licensees system

☐ A specific novel commercial arrangement

RIIO-2 Projects

☐ A specific piece of new equipment (including monitoring, control and communications systems and software)

☐ A specific piece of new technology (including analysis and modelling systems or software), in relation to which the Method is unproven

☐ A new methodology (including the identification of specific new procedures or techniques used to identify, select, process, and analyse information)

☐ A specific novel arrangement or application of existing gas transportation, electricity transmission or electricity distribution equipment, technology or methodology

☐ A specific novel operational practice directly related to the operation of the GB Gas Transportation System, electricity transmission or electricity distribution

☐ A specific novel commercial arrangement

Specific Requirements 4 / 2a

Please explain how the learning that will be generated could be used by the relevant Network Licensees

The experience of our customers in using the app will instruct ourselves on the utility of such an approach. This learning can be disseminated amongst all DNOs, and will indicate how well the stakeholders take to being allowed to report faults to their local DNO in this way.
All DNOs will have disparate data sources, and this project will demonstrate a benefit from integrating these data sources.

Or, please describe what specific challenge identified in the Network Licensee's innovation strategy that is being addressed by the project (RIIO-1 only)

n/a

☑ Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

Is the default IPR position being applied?

☑ Yes

Project Eligibility Assessment Part 2

Not lead to unnecessary duplication

A Project must not lead to unnecessary duplication of any other Project, including but not limited to IFI, LCNF, NIA, NIC or SIF projects already registered, being carried out or completed.

Please demonstrate below that no unnecessary duplication will occur as a result of the Project.

n/a

If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.

n/a

Additional Governance And Document Upload

Please identify why the project is innovative and has not been tried before

n/a

Relevant Foreground IPR

n/a

Data Access Details

n/a

Please identify why the Network Licensees will not fund the project as apart of it's business and usual activities

n/a

Please identify why the project can only be undertaken with the support of the NIA, including reference to the specific risks(e.g. commercial, technical, operational or regulatory) associated with the project

n/a

This project has been approved by a senior member of staff

☑ Yes