Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form. The full completed submission should not exceed 6 pages in total.

NIA Project Registration and PEA Document

Date of Submission

Apr 2017

Project Reference Number

NIA_SPT_1701

Project Registration

Project Title

Development of a lone working device, incorporating satellite communications and fall detection.

Project Reference Number

NIA_SPT_1701

Project Licensee(s)

SP Energy Networks Transmission

Project Start

April 2017

Project Duration

0 years and 9 months

Nominated Project Contact(s)

Andrew McDiarmid

Project Budget

£60,000.00

Summary

This project will have two main work packages:

1. **System Development**
   The system will be developed, and the system will be integrated into the viewing platform software.
2. **Testing and demonstration**
   The system will be tested in a controlled environment, and will be debugged and certified. This will allow a fully-functioning demo system to be delivered to us for field testing and training.

Third Party Collaborators

Aerospace Technical Services

Nominated Contact Email Address(es)

innovate@spenergynetworks.co.uk

Problem Being Solved

Often, substation inspectors and linesmen are required to work alone and in remote locations. In order to meet lone working requirements, they must have a way to be able to call for assistance if an incident or emergency occurs. This is not always possible in these locations however, as the mobile phone coverage across large areas covered by our transmission and distribution networks are, at best, patchy. This cannot therefore be relied upon

There are satellite phones which can be used for this purpose currently. However, these cannot always be used in emergency

situations – for instance, if the user is incapacitated or unconscious. There are also devices that contain fall detectors and can make emergency calls, but these all use the mobile telephone network, leading to the original issue of coverage.

Method(s)

The project will develop a system which will allow a mobile smartphone to use the satellite network for communications when the mobile phone network is not available. This will take the form of a phone sleeve, and will also incorporate a fall detector. The fall detector will be able to record the user's location details, and the monitoring software will be able to record and display this on the cloud-based viewing platform.

Scope

This project will have two main work packages:

1. System Development

The system will be developed, and the system will be integrated into the viewing platform software.

2. Testing and demonstration

The system will be tested in a controlled environment, and will be debugged and certified. This will allow a fully-functioning demo system to be delivered to us for field testing and training.

Objective(s)

The main objectives of this project regard the development of a system which will allow emergency calls to be made when mobile phone service is unavailable, and will have the functionality to place an emergency call when a fall is detected.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The delivery of the above objectives, within budget and within agreed timelines, as is reasonable depending on the knowledge at this stage of the development phase.

The project will be managed within SPEN applying due diligence and best practices where appropriate.

The staged outcomes will include reports and specifications available for other licensees.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

The scale of the project is appropriate for this early-stage product research and development. The development of the demonstration unit will allow field and acceptance testing, and allow training for the device to be carried out.

Technology Readiness at Start

TRL5 Pilot Scale

Technology Readiness at End

TRL7 Inactive Commissioning

Geographical Area

The device will be tested in various areas across our transmission and distribution networks. There are a number of our substations and areas on our OHL network where the mobile network provides insufficient coverage.

Revenue Allowed for the RIIO Settlement

None

Indicative Total NIA Project Expenditure

£60,000

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 savings generated are difficult to estimate; the main saving will arise from reducing lost time from potential incidents, and ensuring that there is timely rescue for any incidents which occur. Additionally, OFGEM's CBA estimates the social cost of injuries and fatalities as £1.79m and £30,000 respectively. These costs could be avoided through this device, as it decreases the potential for fatalities and for serious injuries.

Please provide a calculation of the expected benefits the Solution

N/A – As outlined above, the savings are dependent on the area and the scale of the issues identified.

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

The project can be rolled out across all licensees, and it can be used widely – every Licensee has a requirement for lone working, and are therefore obliged to ensure it is carried out safely.

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

The rollout costs are not possible to determine at this stage as they are dependent on the final cost of the product per unit, and the number of units each licensee would buy.

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

All Transmission and distribution Licensees have areas on their network where mobile phone service is unreliable – particularly areas in the north of Scotland, rural areas of England and in parts of Wales. As a result, the other Licensees will have issues with ensuring that their lone workers are safe and protected where these issues exist.

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