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

Sep 2017

Project Reference Number

NIA_SPEN0023

Project Registration

Project Title

Connected Worker Phase 1 - Field Data Automated Capture

Project Reference Number

NIA_SPEN0023

Project Licensee(s)

SP Energy Networks Distribution

Project Start

October 2017

Project Duration

2 years and 7 months

Nominated Project Contact(s)

Watson Peat & Shaun Stevenson

Project Budget

£300,000.00

Summary

Data captured in the field that relates directly to the work undertaken on-site on underground assets that has to be collected on-site and would be consumed and utilised by the either the Work Management System (SAP) or Geospatial Management System (ESRI) to include items such as installed or decommissioned assets.

Third Party Collaborators

Everis

Nominated Contact Email Address(es)

innovate@spenergynetworks.co.uk

Problem Being Solved

Though the industry has recognised the importance of field data to support effective decision making, the reliance on Field staff to collect and input field data comes with the burden of data accuracy and timeliness.

Collecting accurate data at the right time is in itself a time consuming task and not necessarily one that our Field staff are specifically trained for. Their skills, abilities and interest are rightly technically biased towards on the installation, maintenance and repair of the network. Data collection is a peripheral activity which is often a distraction from the ‘real’ task. Today it specifically requires an action to be taken by the field team member. That action costs time that could be spent on more ‘direct’ action on our network. Furthermore, the data collected from site often needs to be re-entered to another system, checked or qualified. Our expectation is that the level of data collection is only likely to increase.

We need to find a way to improve the quality, accuracy, and timeliness of the data collected in the field that also reduces the data collection burden on our Field staff.

Method(s)

This project will look at how new technologies and applications of existing technologies can be used to improve the direct gathering of data on our underground assets, integrating this data into the SPEN corporate systems.

Though our Field Staff do enter some data using electronic means, much of it is still manually collected and requires specific action by the Field Staff to collect and enter the data, especially in reference to linear assets such as cable and overhead lines.

There are available technologies like GPS, geo-fencing and barcoding to improve the level and quality of data collected from the Field by collecting the data in a more automated way that facilitates the direct use of that improved data quality directly into our back-end systems removing the need for multiple data entries.

For example, collecting installed location of assets/ repairs using GPS enabled devices to capture the exact location of the installed position at the click of a button (or scan of a QR code on the asset), taking away the need for measuring tapes and hand drawing a representation that then needs to be re-drawn by another resource in the geospatial system. There are also other possibilities for more automated field entry, either direct to the system or through a QA process.

Scope

Data captured in the field that relates directly to the work undertaken on-site on underground assets that has to be collected on-site and would be consumed and utilised by the either the Work Management System (SAP) or Geospatial Management System (ESRI) to include items such as installed or decommissioned assets.

Objective(s)

To validate and confirm the technologies are capable of;

- Providing a significant level of data capture automation
- Reducing time spent in the field collecting and entering field data
- Providing that data for consumption directly to corporate systems
- Reducing the need for secondary (back-office) data entry

Providing a cost effective solution that is financially viable

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

Demonstrated capability of capturing field data in an automated way

Transfer of that data to corporate systems without further intervention, or with limited QA

Financial viability in the form of a business case

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

We anticipate that the project will include trials in at least one district in SPM or SPD. A small number of field teams will participate in the trial.

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL7 Inactive Commissioning

Geographical Area

SPD. SPM and SPT licence areas

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

£200,000

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)

This depends on the application of the process, £250k per annum as estimate. SPEN process circa 30,000 records per annum, with a potential benefit of £10 per record.

Please provide a calculation of the expected benefits the Solution

We estimate 1000 records per month, process time saved by site staff as 10 mins per record, office staff 20mins pre record. Say 30mins x 1000 =500 manhours @ circa £20 per man hour equates to £10,000 per month. Project breakeven point is therefore 24 Months.

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

Depends on system functionality, however principles could be applied across all asset intensive businesses

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

Unable to be specific, will dependent on systems that others use

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

Proven process for updating of asset information that maintains accuracy and quality whilst improving direct resource efficiency and back office processes.

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