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 2015

Project Reference Number

NIA_SSEPD_0007

Project Registration

Project Title

Field Team Support Tool

Project Reference Number

NIA_SSEPD_0007

Project Licensee(s)

Scottish and Southern Electricity Networks Distribution

Project Start

April 2015

Project Duration

3 years and 4 months

Nominated Project Contact(s)

SSEN Future Networks Team

Project Budget

£490,000.00

Summary

Network maps overlaid on geographic maps are the base of the information provided. The documentation added will be tied to the staff job function, and downloaded as needed by the operative. The background IT support work will develop the CIM so that data can be sent both ways. The project will not cover the requirement for control or switching, being a purely information supply system, to ensure that staff have access to the latest data relevant to their job function. The project will progress in 4 phases.

Phase 1 will demonstrate the benefits of using a tablet device for routine work, showing network maps, and standard documentation. This will be trialed using Apple iPads running IOS.

Phase 2 will start the development of the app for Android devices, and confirm the final look of the app, along with the company documentation to be included.

Phase 3 will add in historical data, using data taken from other company systems via the CIM.

Phase 4 will add integration with the company Outage Management System to allow for tasking, and task updates from the field.

Third Party Collaborators

EA Technology

Open Grid Systems

Nominated Contact Email Address(es)

fnp.pmo@sse.com

Problem Being Solved

Field Team staff (linesmen, jointers & fitters) have a large number of documents covering safety, processes, and procedures that they need to have access to. Geographic and network maps of the area that they are working on are also required. Currently all of this documentation is printed and carried in the staff vehicles. The documentation can be unwieldy to keep up to date, and may result in important safety considerations being missed for the day's tasks.
During storm situations Line Scouts are often not fully versed in the intricacies of the Overhead Line Network. They have difficulty in clearly identifying damaged assets, both the type and location on the network. It can be very difficult to complete paper forms during a storm, and also can take a significant amount of time to get the reports back to the control centre so that they can be analysed and the correctly equipped repair team sent out to repair the damage.

Method(s)

A prior IFI project was undertaken with the same supplier, OGS, whereby SSEPD looked at providing field staff with a tablet device that can hold the necessary documentation, can be updated in real time, and provides a visual display of the power network, overlaid on to a geographic map, or through augmented reality techniques, on live images displayed on screen.
This project will further develop the tablet device so that it can be used to report task progress and issues back to supervisors and managers, and to ask for advice and further documentation if necessary. During storm situations details of issues, including photos, can be sent back to Storm Control so that managers can make informed decisions. Changes to the work programme can be communicated to the field staff via the device. The project will use a standards based Common Information Model (CIM) to allow the different sources of data held within the company to be fed out to the tablet, and for data sent from the tablet to update the data sources.

Scope

Network maps overlaid on geographic maps are the base of the information provided. The documentation added will be tied to the staff job function, and downloaded as needed by the operative. The background IT support work will develop the CIM so that data can be sent both ways. The project will not cover the requirement for control or switching, being a purely information supply system, to ensure that staff have access to the latest data relevant to their job function. The project will progress in 4 phases.
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Objective(s)

1) To determine the user interface to be used for Field staff to interact with the data sources.
2) Demonstrate that data can be transferred between the tablet and the server in a standardised and secure format that is immune to external interference.
3) Evaluate the scalability of the system, being able to record and display many thousands of reports. The system should show that it is able to support the full lifecycle of each report.
4) Identify whether or not the system is able to maintain data integrity.
5) Confirm that data security is maintained.
6) Demonstrate the benefits for a full scale rollout, and the costs that would be involved.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

1) Evaluate the usability of the tablet.
2) Show back end applications being updated from the tablet, and the new data passed back to the tablet and displayed.
3) Demonstrate that the system can cope with the required level of traffic to and from the CIM.
4) Demonstrate the security of the device, and the ability to delete the device from server control, and delete access to the application remotely.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

The project scale is appropriate for the benefits envisaged. If the project proves successful, then there will be benefits to the field staff in having up to date documentation with them, without having to return to depot for the documentation for their next task. The supervisor productivity will also improve as they are able to know what tasks their team members are working on, on an hourly basis.
The project will be limited to a small number of tablets in both Scotland and South England areas, so that the differing needs of different departments can be fully investigated. There will also be a small number of servers procured to use to host the CIM, and carry out the data integration. Once the project completes, a recommendation will be made on a further roll out of tablets to the whole of the field staff, and a suitable number of servers to deliver the necessary services.

Technology Readiness at Start

TRL6 Large Scale

Technology Readiness at End

TRL9 Operations

Geographical Area

Scotland, North of the Tay, and central south coast of England

Revenue Allowed for the RIIO Settlement

At this stage no saving on expenditure can be assumed.

Indicative Total NIA Project Expenditure

The indicative total NIA Project Expenditure is £490,000, 90% of which (£441,000) is allowable NIA Expenditure.

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)

Successful deployment of this project could result in a number of benefits accruing to the customer. As the majority of these would result in efficiencies of everyday working they can be difficult to forecast upfront to any degree of accuracy. As such the initial benefits case has been built up on a specific efficiency saving on the amount of claims made against SSE, as this has the required level of info available.

Please provide a calculation of the expected benefits the Solution

Base cost – Innovation cost = £2,258,808 - £2,190,190 = £68,618

Assumptions
- 10% saving on processing time
- 31 units used
- Full network coverage assumes 400 units
- 14/15 total claim costs £4.2M
- Implementation, support & training costs £86,375

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

The method will be replicable across all other Network Operators, both Electricity and Gas. The tablet devices will be common consumer grade, and can be either of the 2 main operating systems, IOS or Android. The back end servers for data integration will likewise be commercially available standard specification servers. The app and CIM software will have to be purchased from Open Grid Systems to replicate this project directly, but systems with similar functionality could be developed.

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

The costs will include the tablet devices, at £600 per staff member, 3G sim connections at £84 per staff member per year, 4 servers at £5,000 per server, and software at £15,000 per server. There are also ongoing support costs which will depend on the number of users of the system, and the level of development that the DNO requires. All of these costs will need to be met by each Distribution Network Operator that adopts the system.

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

DNO's will be able to see how the integration of data between differing applications from the use of a standards based CIM in the management of data in the Distribution Network Operator (DNO) context is able to be used at the Field Team level to improve the level of customer service, increase productivity, and speed the resolution of faults to decrease time off supply.

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

Reduction in costs to the customer of routine and storm situation fault location and repair.

☑ 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