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 2014

Project Reference Number

NIA_SGN0024

Project Registration

Project Title

RCA GPS Survey

Project Reference Number

NIA_SGN0024

Project Licensee(s)

SGN

Project Start

October 2013

Project Duration

1 year and 4 months

Nominated Project Contact(s)

Oliver Machan, Innovation Project Manager

Project Budget

£477,240.00

Summary

The scope of this project is to work in partnership with hand held device and integrated software suppliers and to support the field trial of a GPS enabled device that will wirelessly exchange project and asset data with the exchange server running geospatially enabled automation software. This will involved designing (3 months), building (3 months), testing the schemas that control the data flow and validation, the communication protocols between the server and device, the interface for the mobile and testing everything in a live environment alongside the existing process (6 months) and review (3 months). Testing will include (but may not be limited to) Functional integration Testing, User acceptance testing, Non functional testing, regression testing and Operational Acceptance testing. Once complete we will be able to assess the benefits using the information generated throughout the trial.

Following a review, the project budget has been reduced as an element of the costs has now been funded from an alternative budget

Nominated Contact Email Address(es)

sgn.innovation@sgn.co.uk

Problem Being Solved

A large part of Scotia Gas Network's business is based on replacing or laying new mains and associated infrastructure. As such, there is a constant stream of asset and project related data going out to and coming back from the field locations where this work is taking place. We currently largely rely on paper based processes for communicating this information and updating our asset register. This is a time consuming process for all involved and leaves the process open to error at various stages. This is a far reaching issue affecting various arms of the business. Although some GDN's already use electronic data systems, this Method represents a significant step forward from being provided static data in the field to being able to interact with it and communicate those interactions back electronically. Figure 1 in the documents tab shows the current process for capturing mains replacement information as an example.

Method(s)

By implementing an electronic data exchange and capture process we can greatly reduce the possibility for error while at the same time increasing efficiency and reducing the timeline of the process. The envisaged solution will use a GPS enabled device for use in

the field coupled to a data exchange server running geospatially orientated data capture software. Figure 2 in the documents tab shows the new equivalent process to that displayed in Figure 1.

Scope

The scope of this project is to work in partnership with hand held device and integrated software suppliers and to support the field trial of a GPS enabled device that will wirelessly exchange project and asset data with the exchange server running geospatially enabled automation software. This will involved designing (3 months), building (3 months), testing the schemas that control the data flow and validation, the communication protocols between the server and device, the interface for the mobile and testing everything in a live environment alongside the existing process (6 months) and review (3 months). Testing will include (but may not be limited to) Functional integration Testing, User acceptance testing, Non functional testing, regression testing and Operational Acceptance testing. Once complete we will be able to assess the benefits using the information generated throughout the trial.

Following a review, the project budget has been reduced as an element of the costs has now been funded from an alternative budget.

Objective(s)

The objectives of this project are to:

- Allow SGN to transmit and receive project and records data automatically between a field device and the server
- Allow automated analysis of the data to take place
- Allow the data to be integrated in to the various front office enterprise systems automatically post quality assurance checks.
- Evaluate and report on the costs and benefits of the system trialed

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The key success criteria will be:

- Trial of a collection of new hardware and software technology which utilizes global positioning and geospatial records technology integrated into a single solution.
- Record and display tabular geospatially tagged data in ‘real time’ using specialist software.
- Field trial data clarifying the effectiveness of the equipment.
- Establish the potential for reductions in the time taken to capture, record, validate and update the data and information.
- Production of a technical report detailing the project outcomes

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

In order to ensure that learning associated with this project is maximised and that the future application of this technology is well understood, it is necessary to trial this new technology over the replacement spring/summer period, April 2014 to Sept 2014. The trial will take place in network locations in Scotland and South England in order to assess the various parameters of interest over different types of network and different geographical areas.

Technology Readiness at Start

TRL6 Large Scale

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

This project will be trialed in network locations in both Scotland and Southern England.

Revenue Allowed for the RIIO Settlement

While no savings are expected during project implementation (as both old and new processes will be running), it is expected that if successful the project outcomes will provide Network Licensees with an opportunity to reduce costs associated with records capture and update processes.

Indicative Total NIA Project Expenditure

The total project expenditure will be £477240, 90% of which (£429,516) 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)

The introduction of this newly developed technology has the potential to deliver large financial savings against the original method if successful outputs are achieved, since it is expected to greatly reduce the time taken for project and asset records data to be captured and processed. The automation of the process should also lead to a greater accuracy in the records captured reducing the need for exception analysis and corrective follow up processes involving both field and office based staff.

Please provide a calculation of the expected benefits the Solution

As shown in the description above, once bedded in it is anticipated the new method will reduce the overall time taken to capture new project and asset data by the Record Control Officer and the processing of the data various data processing teams from thirty days to just two. Taking into account of the additional hardware and software licensing costs it is anticipated that the benefit from this time saving will be equivalent to around 21 FTEs across the Field, Depot and Office environment which would realise a value of £435k per year once fully implemented.

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

All Network Licensees have to process project and asset data, making this type of technology integral to the maintenance, development and operation of the distribution networks. Depending on the scale of implementation required for each network, it is anticipated this technology and the learning from the project could be applied to a high proportion of new infrastructure and asset replacement/repair projects carried out by other Network Licensees. This is based on an assumption that National Grid, Wales & West Utilities and Northern Gas Networks all currently operate similar processes.

The project outcomes may show that applicability of the Method varies from network to network. The main focus of this project is to test the technology and understand the potential benefits.

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

Until the method is developed and tested fully it is difficult to determine an accurate price for the roll out of the method. Further development through this project will enable assessment of the cost of the technology and costs associated with its deployment.

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 results from the field trial and comparisons that are made against existing methods will be shared with the other Network Licensees by the production of a technical report, demonstration of the management system and practical demonstration if required. If proven to be a success this will allow Network Licensees to introduce this technology into their networks and enable them to begin remotely capturing project and asset records data across their networks and automatically processing it as required.

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