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

Dec 2014

Project Reference Number

NIA_NGN_070

Project Registration

Project Title

Improving Customer Operations by 24 hour site Safety Monitoring

Project Reference Number

NIA_NGN_070

Project Licensee(s)

Northern Gas Networks

Project Start

December 2014

Project Duration

1 year and 7 months

Nominated Project Contact(s)

Richard Hynes-Cooper

Project Budget

£171,441.00

Summary

NGN together with WCCTV have been working on an end to end process for the implementation of a trial of fixed and body mounted CCTV cameras to support day to day operations specifically looking at reducing CO2 emissions, supporting lone workers and improving customer satisfaction. Initial small scale trials to prove concept have been concluded and now more meaningful field trials need to be undertaken for six months using volunteers from a number of different NGN departments.

Departments within NGN that will take part in the field trial are;

- Enabling Team – (2 x personnel) - Currently all our major mains replacement projects are walked by personnel at least twice to create a pre construction survey as part of the required CDM packs. Proposal to run a trial using body mounted camera providing a more accurate record of onsite conditions and risks prior to construction that will aid a more efficient planning assessment and to ensure a better customer experience

- Monitoring of Replacement (REPEX) activities (4 x fixed cameras + 2 x body mounted) – Currently all live sites are visited daily by Site Managers to ensure compliance with legislation. We would like to trial on at least 4 different operational sites in challenging locations the possibility of installing fixed on site CCTV to permanently monitor activity.

- Asset Health Surveys – (1 x personnel) – Statutory inspections of our fixed assets is done by one individual who will be responsible for ascertaining the condition of the asset and whether it requires any maintenance. Use of bodycam on an individual to give a more permanent record of the condition of assets and live feeds back in to office can standardize the way in which we assess the condition of our assets.

- Measurement Technicians Improved records and on site data accuracy- (1 x personnel) – accurate records of mains replacement work undertaken need to be recorded and input into NGN systems. By using body worn CCTV cameras measurement technicians can accurately record site data as a permanent record supporting data quality and accuracy.

- Network Maintenance staff – (1 x personnel) - Identify and record plant and equipment condition, carry out site surveys and attend to faults all these activities could be enhanced by the use of body worn CCTV cameras specifically on site fault rectification and training by live streaming from site back to the office.

The use of fixed site cameras requires a nominated “controller” to monitor the feedback from the fixed cameras and collate operations on a day to day basis.

Third Party Collaborators

Wireless CCTV Ltd

Nominated Contact Email Address(es)

innovation@northerngas.co.uk

Problem Being Solved

NGN has an operational workforce working on variety of different on site operations such as:

- Mains Replacement
- Emergency & Repair
- Surveyors
- Measurement Technicians
- Enabling Teams
- Maintenance
- Asset Risk Management (ARM)

Across all of the day to day operations undertaken by NGN staff and contractors there are a number of underpinning elements which shape what NGN is all about as a business. These range from Health and Safety, customer, managing assets and caring for the environment right through to looking after and training its employees and supporting and managing the supply chain. NGN covers an area of 25,000 square kilometres and delivers gas to around 2.5 million domestic and business users through a pipeline network some 36,000km in length.

NGN operational activities create a large amount of CO2 emissions and NGN has been looking at ways to reduce the amount of mileage and unnecessary journeys being undertaken by its staff. One idea is to use on site CCTV systems either fixed or body mounted to allow any NGN employee at any location to view the CCTV images rather than having to travel to site.

NGN would like to explore how using CCTV either fixed or body mounted can support day to day operations, reduce CO2 emissions, improve safety performance and support lone working staff all of which will improve the service provided to customers and increase customer satisfaction.

Method(s)

NGN will undertake a field trial of technology including fixed on-site CCTV and body mounted cameras. A range of staff from its industrial workforce would be identified for the trial to ensure all working activates were covered under this NIA project. This would allow NGN to assess the relative benefits of this technology based on work type. For example, body mounted cameras may prove invaluable for repair activates with significant benefits but may be un economical for maintenance when considered against a cost benefit analysis mode.

Specifically the trail would cover the following areas;

Practical trial of fixed CCTV units with web based portal for monitoring

Practical trial of body mounted camera across a range of activities (replacements, maintenance, repair)

Office based “controller” to monitor site activity and communicate with field based staff

Testing the use of equipment to support remote assessment of technical competencies (STCs)

Measurement of travel distances and reduction in travel between sites as a result of CCTV and body cameras

Recording of customer and HS&E incidents avoided as a result of remote supervision

Written procedures for CCTV and body cam

Assessment of data protection issues

Training on use of equipment

Data storage and archive of recorded material

Provide a record of activities on site to validate as built records (GIS, HSG47) and NRSWA, customer impact

Mitigate any complaints or claims against NGN

Provide a means for coaching and feedback to site staff remotely, improving efficiency and customer impact

Provide a portal for training of site staff and also to record activities as they happen for later use as part of either on the job or classroom based training programmes

Provide a record of site activities that could be used as learning when investigating incidents and accidents

Allow more accurate up front planning and enabling therefore improving delivery of work and minimising customer disruption

Provide a record of reinstatement

Allow wider and timely input into solving operational issues and (Stop, take a Minute)

Allow remote site inspection and audits to be carried out

Recording of assets on fixed sites including asset health inspections

Fault finding and wider support to network maintenance technicians on fixed sites

Better evidence to support the plant status process with less site visits required

Monitor the impact of lone working

Provide reassurance and support to NGN staff undertaking lone working

Scope

NGN together with WCCTV have been working on an end to end process for the implementation of a trial of fixed and body mounted CCTV cameras to support day to day operations specifically looking at reducing CO2 emissions, supporting lone workers and improving customer satisfaction. Initial small scale trials to prove concept have been concluded and now more meaningful field trials need to be undertaken for six months using volunteers from a number of different NGN departments.

Departments within NGN that will take part in the field trial are;

- Enabling Team – (2 x personnel) - Currently all our major mains replacement projects are walked by personnel at least twice to create a pre construction survey as part of the required CDM packs. Proposal to run a trial using body mounted camera providing a more accurate record of onsite conditions and risks prior to construction that will aid a more efficient planning assessment and to ensure a better customer experience
- Monitoring of Replacement (REPEX) activities (4 x fixed cameras + 2 x body mounted) – Currently all live sites are visited daily by Site Managers to ensure compliance with legislation. We would like to trial on at least 4 different operational sites in challenging locations the possibility of installing fixed on site CCTV to permanently monitor activity.
- Asset Health Surveys – (1 x personnel) – Statutory inspections of our fixed assets is done by one individual who will be responsible for ascertaining the condition of the asset and whether it requires any maintenance. Use of bodycam on an individual to give a more permanent record of the condition of assets and live feeds back in to office can standardize the way in which we assess the condition of our assets.
- Measurement Technicians Improved records and on site data accuracy- (1 x personnel) – accurate records of mains replacement work undertaken need to be recorded and input into NGN systems. By using body worn CCTV cameras measurement technicians can accurately record site data as a permanent record supporting data quality and accuracy.
- Network Maintenance staff – (1 x personnel) - Identify and record plant and equipment condition, carry out site surveys and attend to faults all these activities could be enhanced by the use of body worn CCTV cameras specifically on site fault rectification and training by live streaming from site back to the office.

The use of fixed site cameras requires a nominated “controller” to monitor the feedback from the fixed cameras and collate operations on a day to day basis.

Objective(s)

To reduce the business carbon footprint, in particular by minimising the need for site managers to travel between sites. Moreover, to minimise incidents that have an adverse affect on customers and to enhance safety performance. Finally to enhance our ability to assess skills and competencies on live jobs.

To prove that CCTV fixed and body mounted equipment can enhance efficiency, reduce costs and improve customer satisfaction. The trial will be able to clearly demonstrate;

- Which departments benefit most from the use of CCTV equipment; it is proposed that teams from REPEX (DSP), network maintenance, enabling teams and measurement technicians
- What type of CCTV solution (fixed, body mounted, recorded, live stream) if any is best for each type of workstream/department
- }Monitoring of current working practices to then compare with future improvements to gauge the improvement in performance gained from use of the new technology
- What are the savings in CO2, mileage and journey's/travel time as well as general feedback regarding working days and whether CCTV has improved performance and efficiency of staff
- That NGN has a scaleable, documented and future proof end to end process
- Has CCTV increased the efficiency of NGN operations and improved customer satisfaction
- NGN has the appropriate policies and procedures in place to cover the legal requirements of using CCTV systems as part of its operations
- Has the use of CCTV improved the safety and wellbeing of lone workers
- Training requirements and training package production
- That the body worn solution can be incorporated into existing PPE without compromising safety or working practice
- That an intrinsically safe version of the body worn solution can be developed and implemented for use in hazardous areas.
- Findings will be captured in a report, with quantifiable outcomes and benefits illustrated where possible. A cost benefit analysis (CBA) will be produced by department demonstrating where the equipment can be most effectively and efficiently deployed.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

- Improved customer satisfaction
- Identify where the technology is best utilised.
- To reduce the business carbon footprint associated with site travel and supervision
- Improved relationships with stakeholders
- Improved accuracy of data recording
- Improved quality of onsite coaching and feedback
- Develop a solution that becomes integrated into standard PPE
- Develop an intrinsically safe version of CCTV equipment for use in hazardous areas

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

Trailer mounted fixed CCTV units

Body mounted CCTV cameras

System monitoring controller,

Field trial to be undertaken in geographic areas spread across NGN patch

Enabling Team

Monitoring of Replacement (REPEX) activities

Asset Health Surveys

Measurement Technicians Improved records and on site data accuracy

Network Maintenance staff

Technology Readiness at Start

TRL6 Large Scale

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

Field trial to be undertaken in specific geographic areas for each department with individual field trials spread across the whole of NGN.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

Total Project Cost - £171,441

External Cost - £128,710

Internal Cost - £42,731

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 focus of this project is to reduce the carbon footprint by reducing the need for Site Managers to travel between sites and instead allowing remote monitoring of multiple sites from one location. Could potentially reduce visits to and from sites by up to as much as 50%

Please provide a calculation of the expected benefits the Solution

On average one of our Site Managers would spend around £2400/year on fuel travelling 14400 miles around the network. If CCTV proves successful in on site monitoring it would reduce this by 50% saving £1200 per Site Manager.

NGN employs over 103 Site Managers across all areas of the business could generate savings of £123,600 a year as well as the saving in carbon emission of over 500 tonnes of Co2.

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

This can be replicated across all GDNs, the technology can be applied to a number of different site scenarios.

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

Across all GDNs could provide savings of up to £988,800

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

This is a unique trial to test how existing technology can be deployed within NGN to reduce CO2 emissions and improve customer and safety performance as well as developing innovative solutions to training and intrinsically safe equipment solutions/deployment. If successful other GDN's could roll this out across their networks.

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