

Project Specification

Tender details - the opportunity

Company name	RAIQC Ltd
Company address	26 Staverton Road, Oxford, United Kingdom, OX2 6XJ
Description of company activity/SIC code	<p>Description: Report and Image Quality Control (RAIQC) is a web-based clinical simulation platform designed to upskill medical image interpretation, leading to improved patient flow and outcomes.</p> <p>SIC code: 86101 - Hospital Activities</p>
Objective of the proposed innovation project- this MUST involve activity that results in the development of or introduction to the market of a new product or service (max 300 words)	<p>Developing a secure cloud-based environment for independent validation of medical imaging artificial intelligence (AI) algorithms.</p> <p>Over the last few years, there has been a massive interest in development of AI algorithms for medical image analysis. However, before being adopted into clinical practice, the algorithm need to be validated using heterogeneous independent datasets to assess their accuracy and safety. In addition, the AI validation requires for the algorithm to be compared to human medical image interpreters (readers) to see if it matches or improves their performance.</p> <p>The current process for AI validation trials requires companies to engage with individual Trusts and set-up on-site IT infrastructure. This process often has to be repeated at multiple sites as it is not sufficient to validate the algorithm on data from a single Trust. This is a lengthy process, sometimes lasting up to 3 years, due to all the necessary governance and ethics approvals, negotiating and signing all the necessary Data Sharing and Data Protection agreements, finding the necessary number of readers (and engage external readers through honorary contracts if there is a need for more readers than the Trust can provide), as well as delays caused by limited data sets.</p> <p>Through this project, we wish to set-up a secure cloud based environment which allows validation data to be sourced from multiple sites and curated into representative datasets.</p> <p>RAIQC Ltd has partnered with the National Consortium for Intelligent Medical Imaging and have Data Sharing</p>



	<p>and Data Protection agreements in place with multiple Trusts. The proposed project will allow RAIQC Ltd to offer a new commercial service for AI companies to undergo independent validation of their algorithms and have them compared with human readers in a decentralised cloud environment. It would tremendously simplify the process of running a validation trial for the AI companies, as any reader, either from the UK or anywhere in the world, could provide their expertise through a web-browser on the RAIQC platform. The reader study length could be brought down to 3-4 months.</p> <p>The cloud environment will communicate with partner Trusts and AI companies via dedicated secure Application Programming Interface (API) which would support:</p> <ul style="list-style-type: none">- transfer of DICOM images (X-ray, CT or MRI scans)- inference of DICOM images by AI algorithms- transfer of algorithm output- transfer of annotations and diagnostic opinions on medical images
<p>Company's current situation - existing project team and innovation project development stage (max 400 words)</p>	<p>RAIQC Ltd is a spinout company from Oxford University Hospitals and University of Oxford. It started as a radiology education and training company. In June 2020, it developed educational content for COVID-19, upskilling frontline clinicians to interpret medical images (X-rays & CT scans) in identifying the presence and severity of COVID-19 infections.</p> <p>The company has also secured contracts with national organisations such as Health Education England or Prostate Cancer UK to develop additional content and assessment modules in the RAIQC platform in different areas, such as NG Tube placement or Prostate mpMRI reporting.</p> <p>In addition to providing radiology training through its cloud based platform, RAIQC Ltd also leveraged its technology to annotate medical imaging for AI</p>



	<p>companies looking for ground truth training data for algorithm training.</p> <p>The company has now partnered with the National Consortium of Intelligent Medical Imaging (NCIMI) whose goal is to build a pipeline for innovation to allow new medical imaging AI tools to be developed, tested, validated and adopted into the NHS.</p> <p>To expand company operations, there is a requirement for the company to enable easier communication and transferring of data between the AI companies, RAIQC and hospital imaging databases.</p> <p>The current project will allow RAIQC to facilitate independent validation of AI algorithms without data being transferred to the AI companies which will streamline validation process and provide RAIQC Ltd with a significant competitive advantage.</p> <p>Through the project, RAIQC Ltd will liaise with hospital partners, NCIMI and AI companies to determine how an API would function, what data is expected to be sent and received by RAIQC, and now requires software development help in implementing the API in its platform.</p> <p>RAIQC Team involved in this project:</p> <ol style="list-style-type: none">1. Dr Sarim Ather, CEO & Co-founder<ul style="list-style-type: none">- Experience: Radiology Registrar at Oxford University Hospitals NHS Foundation Trust and Royal College of Radiologists Trainee Committee Executive.- Role in Project: Primary contact person between stakeholders, project management2. Pete Aylward, Technical Lead<ul style="list-style-type: none">- Experience: Has designed, built and managed several digital healthcare products. He was the project manager, co-ordinating the clinical and technical teams.
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	<ul style="list-style-type: none"> - Role in project: manages technical development, ensuring system maintenance and usability according to specification; - 3. Cosmin Mihaiu, Operations Lead - Experience: Co-founded a medical technology company and commercialised it within the NHS. Has previous experience of co-ordinating over 6 R&D projects - Role in project: helps in project management, ensuring deadlines are met.
<p>Business need - what expertise and support is required from a Knowledge Base to reach the objective(s) above? (max 400 words)</p>	<p>The company is looking for a software developer experienced in back-end solutions and API development. The developer would work alongside RAIQC Technical Lead and RAIQC's commercial partners to identify the best approach in securely transmitting data.</p> <p>The developer is expected to work 5 days a week on this project.</p> <p>Technologies required:</p> <ul style="list-style-type: none"> - Amazon Web Services S (S3, lamdas) - API Integrations (GitHub) - RESTful webservices (Django Rest Framework) - Python (2 and 3), Django - SQL Databases
<p>Please list six key words that describe your potential project, i.e. ICT, engineering, biotech etc.</p>	<p>ICT, software development, AI, API, Medical Imaging, DICOM</p>
<p>Required timescales (if any) for Project Start and duration, and if applicable anticipated product launch date</p>	<p>Project Start: 1st Aug</p> <p>Duration: 12 months;</p> <p>Months 1-3: development of basic API with minimum set of requirements;</p> <p>Months 4-6: testing the API with AI companies/NCIMI to ensure constant communication between the AI algorithm, RAIQC and potential imaging database;</p> <p>Months 6-12: iterating and improving API based on feedback.</p> <p>Initial Launch: Q4 2021</p>

	Final Project Launch: Q1 2022.
Optional - company budget available to match fund KEEP+ grant (if known) please see 'Further details' for maximum funding amounts	£35,000
Company Contact for further information	Dr Sarim Ather, CEO & Director, sarim@raiqc.com , +44 (0) 7877 724 961
Required tender response date (min 20 working days from posting of advert)	19 March 2021
<p>Responses are sought from organisations classified as Knowledge Bases, defined under the ERDF Definition of the Knowledge Base: Higher Education, Further Education and Research Entities which are: UK Public Sector Research Establishments, Research and Development Organisations, Research and Technology Organisations.</p> <p>The Company is seeking a Knowledge Base partner to work with them to develop a project which, dependent on a successful Grant Application, will be supported by the KEEP+ ERDF project using one of the two types of intervention described below. Please also see KEEP+ website - www.keepplus.co.uk</p> <p>In Stage 2, if the grant application to KEEP+ is successful, the Company requires the expertise of the Knowledge Base partner, to work with them to deliver the solution i.e. the project intervention supported by the KEEP+ grant.</p>	
Criteria for Decision making	<p>Assessment criteria are as follows</p> <ul style="list-style-type: none"> • Expertise fit 50% • Timing fit 25% • Suitability of proposed methodology 25%
Date for Contract Decision	Minimum of 20 working days from date of advertisement
Tender response templates	Please approach the company for the exact format of your response.

Further details for potential respondents

You are responding to a tender for an activity which is eligible for part funding by the European Regional Development Fund, specifically under the KEEP+ Programme.

The KEEP+ Programme aims to support SMEs to develop new products and services by fostering long term collaborative relationships between Knowledge Bases - Universities and research institutions - and SMEs who need expertise and support for innovation.

Please see KEEP+ website for further information www.keepplus.co.uk or contact the KEEP+ project team 0845 196 4207 julie.benabdeljelil@anglia.ac.uk or 0845 196 4985 kayleigh.parkes@anglia.ac.uk

KEEP+ provides maximum allowable grants for its specific types of intervention. Those intervention types and maximum grant levels are as follows;

- KEEP Knowledge Exchange Embed Partnership (typically 12 months' duration) - this intervention involves a graduate working on a mid- to long-term activity with the support of a specific academic staff member, the graduate is based within the beneficiary company - grant allowance 50% of eligible costs and £10,000 capital.
- KEEP Research and Innovation Collaboration (no fixed duration) this intervention involves an academic colleague working on a short- to long-term activity, they are based at the Knowledge Base but with regular face-to-face interaction with the beneficiary company - grant allowance 50% of eligible costs plus a strict maximum of £10,000 capital.

The following is a guide to the types of cost that you should expect to occur should your application be successful;

- KEEP Knowledge Exchange Embed Partnership (typically 12 months' duration) - project development, associate wage, academic wage, administrative support, training and travel (on the part of the knowledge base employees), minor equipment (please note there is a potential separate grant for major capital purchases), recruitment
- KEEP Research and Innovation Collaboration (no fixed duration) - project development, academic wage, administrative support, consumables (please note there is a potential separate grant for major capital purchases)