

Project Specification

Tender details – the opportunity

Company name	Seneye Ltd
Company address	B1 Abbey Farm Commercial Park, Horsham St Faith, Norwich, NR10 3JU. United Kingdom.
Description of company activity/SIC code	SIC code 26511 - Manufacture of electronic measuring, testing etc. equipment, not for industrial process control
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>The aim of this project is to develop new selective optical sensor films for the detection of dissolved gases O₂, CO₂ and NH₃ in freshwater ponds and sea water along with pH. The materials designed will work in conjunction with a web enabled electronic device by shining a known light on to the sensor material that is then reflected back into the electronic readers spectral analyser allowing interpretation of the responses into environmental levels. The electronic reader device has a unique and patented optical engine.</p> <p>The project deliverable will be the creation of a production ready sensor materials in the required resolutions and ranges. The ranges of sensitivity and resolution required will depend on the application and whether used in saltwater or freshwater. Also to be included in the work package is the lab time needed to collect the data needed for characterising the different sensor responses across the different water types, ion strengths and temperatures. The project will take sensor material development from TRL2 to TRL 5. The final sensor materials must have the following characteristics: low cost production, reversable sensitivity, long shelf life, stable in water, ideally polymer based, responsive to parameters, and ideally give a colour change responses not fluorescent. Seneye will use its own state of the art Gen 2 hardware and software for data collection</p>



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	<p>during the testing phase and use that for material characterisation.</p> <p>www.Seneye.com.</p>
<p>Company's current situation – existing project team and innovation project development stage (max 400 words)</p>	<p>Seneye is a market leader in the real time sensing of aquatic environments where the protection of life is paramount. It currently sells a cost-effective cloud based sensor system to, research, public aquariums, ornamental aquarists and aquaculture companies. Seneye is looking to build on its success by introducing new sensor films with additional parameters to ensure fish not just survive but also thrive. The extra sensing will allow Seneye to provide a complete and essential tool for aqua cultured food production around the world. Aquafarming is one of the world's most efficient and sustainable methods to produce high-quality protein and, as an industry, is currently valued at over \$240 Bn. More specifically there has been significant growth over the past years in RAS (recirculating aquaculture systems) where fish are grown in manmade ponds or in facilities and it is here that live robust analytics are key.</p> <p>In the last 10 years the Seneye team has created a proven track record in the design and delivery of IOT sensor systems. It has established good relationships in both the ornamental aquatics and aquaculture markets. It's the knowledge of the market and demand from customers that is driving this next round of innovation.</p> <p>The R&D team at Seneye is focused on software development and all software from embedded, smart algorithms, to cloud to apps is produced in-house at the Norwich Head Quarters. The hardware and product development on this new project is well underway with working prototypes and early mouldings produced. The new Seneye hardware platform is the second generation from Seneye and has a patented sensor system that is able to read 7 sensor films; it is envisaged future sensor material will be requested by customers beyond those stated. The all new gen 2 optical engine has much more detailed spectroscopy allowing for even more precise chemical analysis.</p>

<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 ideal partner will have an existing deep knowledge in the design, development, testing and production of polymer sensor materials.</p> <p>The programme of work is focussed on the initial production of optical indicators for: CO₂, NH₃, O₂ and pH in months: 1 to 5 and then moving to the incorporation and testing in the existing optical sensor units for later characterisation.</p> <p>Help will be required to identify a suitable large-scale producer of the indicators once a sensor design is settled on.</p> <p>Monthly reporting will be required followed by quarterly meetings with Seneye. Seneye will cover all approved travel and subsistence costs.</p> <p>The transfer of knowledge will be a two-way process for both Seneye and the chosen partner. This project provides a great opportunity to work with a world-leading company in the field of analytical chemistry in water and could lead to further and more significant further collaboration for a wider range and application of the technology.</p>
<p>Please list six key words that describe your potential project, i.e. ICT, engineering, biotech etc.</p>	<p>Sensor, Aquaculture, IOT, Chemistry, Analytics, biotech.</p>
<p>Required timescales (if any) for Project Start and duration, and if applicable anticipated product launch date</p>	<p>The project is expected to be 12 months starting the beginning of October.</p>
<p>Optional - company budget available to match fund KEEP+ grant (if known) please see 'Further details' for maximum funding amounts</p>	
<p>Company Contact for further information</p>	<p>Matthew Stevenson matt.s@Seneye.com</p>
<p>Required tender response date (min 20 working days from posting of advert)</p>	<p>Please respond within 20 working days from posting date.</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.

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

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.

Criteria for Decision making	Assessment criteria are as follows <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)