

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>LEAPIAN LTD</b>	Next generation machine learning & VR solutions for document analysis, classification and knowledge extraction	£96,250	£67,375
<b>Project description - provided by applicants</b>			
<p>Leapian is an early stage company developing advanced knowledge management software that originates from the founder's research at Cambridge University. Leapian's vision is a product called Readalo", in effect an application that can "read" and understand a large quantity of research papers and support a student or researcher with assimilating large quantities of knowledge. Leapian have developed a number of component parts of this application, however, the key challenge remains on the ability of the software to understand and differentiate the different parts of a scientific paper (i.e. identify the title, abstract, column structure, headers/footers etc...). Another key challenge is how the user interacts with the large amount of knowledge extracted from their papers. Leapian wish to develop two new advanced pieces of software: * An intelligent (machine learning) system that can read and understand the layout of any academic paper * A virtual reality solution that enables the user to interrogate and explore the knowledge extracted from their papers to enhance understanding, learning and the assimilation of knowledge. This project is aimed at allowing Leapian to develop these machine learning and virtual reality features in their software. The project will focus on the development of these new advanced features, testing and evaluation of the new software followed by testing of the software with a panel of carefully selected students &amp; researchers (i.e. target users)."</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
ZENOTECH LTD	Cloud Crystal	£95,434	£66,804

### Project description - provided by applicants

EPIC ([\[https://epic.zenotech.com\]](https://epic.zenotech.com)<sup>[0]</sup>) by Zenotech provides a simple and secure way for complex computational workflows to be allocated and run on cloud-based hardware. Unlike similar services that provide an access portal to a single supplier EPIC provides a unified access point to a growing range of on-demand resources - including Amazon AWS, Cambridge University, CFMS, Hartree, HPC Midlands, Oxford University and Oracle Bare Metal Cloud. EPIC can also access internet-connected resources including internal, research or supply-chain hardware. EPIC includes job monitoring, billing, budgeting, security, privacy, and data management functions. Each workflow task can be run on the most suitable resource, subject to availability, cost, security and data location. Arup describes EPIC as game changing (see [\[https://zenotech.com\]](https://zenotech.com)<sup>[1]</sup>). Cloud Crystal will deliver a new AI / Machine Learning based forecasting system to EPIC -- with the initial training data from the existing database -- to provide users with real-time estimates of the availability of more competitively priced options for their large computing tasks. This is a key potential enabler, as cloud hardware providers charge a premium for resource reservations and heavily discount the dynamic spot market for immediate access to unused resources. The machine learning system will be developed with the Liverpool University Institute for Risk and Uncertainty and disseminated via the Uncertainty Quantification and Management (UQ&M) SIG run by the KTN / Innovate UK. The project supports HMG strategy for digital technology and is an example of the use of AI and machine learning for engineering -- delivering against the priorities identified in the recent whitepaper "Growing the Artificial Intelligence Industry in the UK" by Professor Wendy Hall for DCMS and BEIS. <sup>[0]</sup>: <https://epic.zenotech.com> <sup>[1]</sup>: <https://zenotech.com>

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>FLUIDLY LIMITED</b>	Feasibility of Automated Zero Touch Cashflow Forecasting using Artificial Intelligence	£99,756	£69,829
<b>Project description - provided by applicants</b>			
<p>Cashflow management is a well known challenge for small business. In the UK more than 99% of companies are classed as SMEs, 50% fail in their first five years, with 80% of failures due to cashflow issues. The tools for managing and forecasting this critical aspect of their business are lacking, many business owners manually forecast using company account data downloaded to spreadsheets. Current forecasting tools simply implement this same approach using cloud accounting data. Fluidly will use time series analysis and machine learning to improve cash forecasting. Fluidly will use a company's cloud accounting data to make predictions and surface insights automatically, at any time, without human touch. Our aim is to pre-empt financial difficulties, spot anomalies and to optimise cashflow using artificial intelligence as opposed to implementing existing flawed cashflow forecasting methodologies. We have already launched a web based application for debtor management for improved cash positioning, this project will build upon that platform.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
U-FLOOR TECHNOLOGIES LTD	EMOP - Energy & Maintenance Optimisation Platform	£99,933	£69,953
<b>Project description - provided by applicants</b>			
<p>Registered Social Landlords (RSLs, 5.6m homes, EHS,2016) and private multi-property homeowners (1.9m homes, LSE,2016) spend £7.1bn/year on repair &amp; maintenance (R&amp;M), out of which the average cost of repair caused by damp or excess-cold varies between £4k -£7k/home resulting an enormous amount of unnecessary expenditures. This is predominantly attributed to the poor quality of data RSLs currently use to make decisions on energy and maintenance interventions, relying purely on EPCs. The pressure is increasingly high on RSLs considering recent legislation mandated 1% annual rent cut (IFS,2017), as well as the recent Duty of Care obligation to protect tenants' well-being (CareAct,2014). To address this opportunity, we are developing an Energy &amp; Maintenance Optimisation Platform (EMOP) that combines real-time high-value data collected by our unique smart sensors with a wide range of existing data-sets, using our proprietary self-learning algorithms to support informed decision-making for landlords. EMOP, supported by cutting edge low-power communication network, can help landlords to undertake targeted preventative maintenance through optimising energy and refurbishment interventions.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
AGILE IMPRESSIONS LTD	Blockchain Enabled Controller for E-Mobility Sharing (BECEMS)	£99,456	£69,619
GREEN RUNNING LIMITED		£73,667	£51,567
<b>Project description - provided by applicants</b>			
<p>E-mobility is set to be a cornerstone of future low carbon travel. EVs currently make up about 1% of global vehicle sales, but EV penetration is forecast at 35-47% of new cars by 2040 (BNEF, 2017). By 2030, EV sales are expected to account for 60% of UK new car sales, but mass electrification of mobility still relies on improved access to charging services. E-mobility innovators Agile Impressions and artificial intelligence experts creators of Verv Green Running, designed a novel solution intended to meet the market need for improved EV charging services. The consortium seek to explore the potential for a Blockchain Enabled Controller for E-Mobility Sharing (BECEMS). BECEMS allows private charging station owners to share their charging assets with others and do the billing, by connecting it to a network accessible to the public. Businesses, communities and individuals just have to register and set times when their private charging point is free for use, improving utilisation factors and therefore returns on investment for existing and new charging assets. This feasibility study validate and refine the technical and commercial potential of BECEMS, applying cutting edge technology to improve the user experience and economics of EV charging infrastructure.</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>PRAGMATIC PRINTING LIMITED</b>	TRUE (Thin-film Rectifiers for UHF Electronics)	£99,818	£69,873
<b>Project description - provided by applicants</b>			
Including radio-frequency (RFID) capability within everyday objects opens-up a wealth of market opportunities, from the ability to interact directly with the consumer, to scan-free retail and accurate stock management. Ultimately this is the platform on which the Internet-of-Things (IoT) is based, however, the cost point of the incumbent silicon solution prevents this becoming a reality for all but the highest end consumer goods. Flexible electronics, with its substantially lower circuit and system costs, is ideally suited to expand the range of applications that can be addressed by RFID. In this project PragmatIC, a pioneer in the design, development and manufacture of non-silicon flexible integrated circuits on plastic substrates (FlexICs), aims to achieve a step-change in the front-end performance of the RFID circuitry (operating at 900MHz) and reduce the overall power consumption of the flexible circuit. This is expected to open-up a multi-\$Bn opportunity over the coming years, in particular linking with the UK's digital manufacturing strategy, based on the sub-cent system costs that can be achieved.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>RELATIVE HEALTH LIMITED</b>	D-TWO-H: Dynamic Time Warping for the Optimisation of Hypertension	£97,902	£68,531



### **Project description - provided by applicants**

It is well recognized that ambulatory blood pressure (BP) monitoring by means of wearable sensors has the potential to enable new levels of health-related vigilance and medical care in a number of novel settings, including, for example, controlling chronic hypertension and monitoring in-patients during convalescence. However, a significant challenge to realizing true non-invasive blood pressure (NIBP) measurement remains the problem of accounting for the unknown tension in the underlying arterial wall: If one simply measures pressure external to an artery (for instance, on the overlying skin), one is measuring the balance of intra-arterial pressure and the rapidly varying arterial wall tension. Ideal NIBP methods solve the problem of estimating intra-arterial wall pressures independently of the arterial wall tension. Yet, there is no optimal solution to truly wearable NIBP measurement. The ideal wearable device would be lightweight, easy-to-apply, non-invasive, small, unobtrusive, and as close to imperceptible as a regular wrist-watch. The fundamental assumption in Machine Learning is that analytical solutions can be built by studying past data models. Machine Learning supports that kind of data analysis that learns from previous data models, trends, patterns, and builds automated, algorithmic systems based on that study. As Machine Learning relies solely on pre-built algorithms for making data-driven analysis and predictions, it claims to replace data analytics and prediction tasks carried out by humans. In Machine Learning, the algorithms have the capability to study and learn from past data, and then simulate the human decision-making process by using predictive analysis and decision trees. Dynamic Time Warping is a temporal operator Machine Learning Algorithm architecture that specialises in finding the optimal match between two given sequences (e.g. time series) with certain restrictions. The sequences are warped non-linearly in the time dimension to determine a measure of their similarity independent of certain non-linear variations in the time dimension. This sequence alignment method is often used in time series classification. Although DTW measures a distance-like quantity between two given sequences, it doesn't guarantee the triangle inequality to hold. D-TWO-H looks to use a uniquely configured Machine Learning Algorithm to identify trends between optical sensor samples and thus develop a map of arterial performance which can thus allow a user to calculate a value for trending Blood Pressure. It is hoped that these works will enable the resolution of a continuous Blood Pressure as a metric that can be acquired by consumer health wearable devices.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>FUTURE TECHNOLOGY RESOURCES LTD</b>	Magpie: Creating the next generation of innovators with a novel STEM resource tool	£346,101	£242,271
LEARNING FOUNDATION		£87,448	£87,448
<b>Project description - provided by applicants</b>			
Future Technology Resources (FTR) and Learning Foundation (LF) are pioneering the use of technology to transform STEM education. The project seeks to meet the market demand for innovative products and services that can address current deficiencies in teaching and student engagement in STEM education, particularly Computing, across key stages 1-4. FTR anticipates that their platform will rapidly expand its UK market share, driving profit growth and further investment in technology development and commercialisation. LF anticipate that the successful project will increase their ability to identify and support schools with low STEM education levels thus advancing their cause of making technology accessible to all UK pupils, closing the attainment gap for Pupil Premium children and ensuring that all young people leave school as confident and competent users of computing technology.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>INVENTOR-E LIMITED</b>	Smartie Tag with RF Energy Harvesting	£205,352	£143,746
REXEL UK LIMITED		£23,105	£11,553
SKN Electronics		£19,668	£11,801
THE MANUFACTURING TECHNOLOGY		£105,265	£105,265
<b>Project description - provided by applicants</b>			
Inventor-e will augment their asset management system, Smartie-Tag, by implementing solutions to create a tag that can provide location and remote condition monitoring functions, as well as recharge itself. The company, along with its project collaborators, the Manufacturing Technology Centre, SKN Electronics and Rexel, will develop and demonstrate the technology during a 12-month project funded by Innovate UK.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>PIMLOC LIMITED</b>	Pimbox: Personalised private image management, using innovative neural networks	£351,262	£158,068
TUXABLE LTD		£113,497	£51,074

### **Project description - provided by applicants**

PIMBOX is an Experimental Development project in the field of Machine Learning (ML"). ML is an extremely active area of academic research whose exploitation to date is almost exclusively restricted to large-scale implementations such as data mining in large corporate environments and the provision of global, on-line services. Recent advances in research have shown that it is possible to reduce the scale of the computational resources required to run suitably-designed and appropriately-trained ML systems. (The importance of large and appropriate training sets is undiminished.) This holds out the possibility of bringing many of the capabilities of large-scale systems into low-cost, individualised implementations. The best-known examples are sensor signal processing for "self-driving" cars and the long-anticipated IOT. The PIMBOX project, on the other hand, challenges several of the pre-conceptions of ML-based on-line services. These require users to upload unencrypted private data to take advantage of the ML-based tools and services that are offered free-of-charge in return. "If it's free, you are the product." PIMBOX aims to provide self-trainable ML data management and curation tools for secure local home and commercial networks. These will have better usability than the best on-line services. Users may then encrypt private and personal data before using on-line backup or sharing. The project engages the close involvement of leading academics in the field of ML, with highly-experienced industrial h/w and s/w engineers, and market and business developers."

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SENTIENT MACHINES LIMITED</b>	Sentient Assist and Automate (SAA)	£99,983	£69,988
<b>Project description - provided by applicants</b>			
Almost 70% of all customer contact in the UK and globally is voice. During these voice interactions, much frustration is caused by being put on hold for a long time - 84%, dealing with employees who are unfriendly - 81%, and having to repeat your issue to several company reps - 80% (Source: Accenture 2013 Global Consumer Pulse Survey Global & U.S. Key Findings). Sentient Assist and Automate is a self-learning voice-bot platform that aims to remove this frustration by cutting the waiting time by up to 95%, removing the repetition issue, and improving the effectiveness of the call centres. The platform aims to automate the majority of customer voice interactions. For the remaining calls, the aim is to delegate them to the relevant agents and assist them, so they improve the benefits for the customer, leading to higher customer satisfaction. To achieve this we use the latest advances in deep learning and natural language processing to learn from the existing conversations, in order to build a voice bot that is emphatic and capable of solving issues for customers in real-time.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>FOLIUM FOOD SCIENCE LIMITED</b>	Using an innovative CRISPR Guided Vector technology to prevent and disrupt biofilms in the food chain and humans	£190,470	£133,329
University of East Anglia		£43,109	£43,109

### **Project description - provided by applicants**

Bacterial biofilms present a massive problem to today's society, causing equipment damage, product contamination, energy and product losses, and medical infections. These health concerns affect food, environmental and biomedical sectors, with a cost to industry, cities and hospitals of >£382 billion globally each year. Traditional approaches to biofilm management have previously made use of harsh chemicals such as bleach, labour-intensive physical removal with abrasive materials or simply discarded effected piping or tubing. These methods are costly, time-consuming, labour intensive and ineffective for biofilm removal with a multi-attack approach often required. There is a major unmet need for effective biofilm management and control solutions which are simpler, cheaper and more sustainable than existing technologies. This project seeks to research the use of a novel gene editing technology to selectively target individual strains of bacteria and prevent/disrupt the formation of biofilms to be applied as a crop spray treatment in agriculture. This will enable Folium, in collaboration with the John Innes Centre/University of East Anglia to establish a leading market position as the first company to formulate this specific genetic technology in to a crop treatment. The impact of this project would provide an initial cost avoidance to the fresh fruit and vegetable industry of c.£40 million by offering an alternative to current treatment methods and reducing crop spoilage and biofilm contamination in the food supply chain, with potential to go on and transfer this technology to biomedical therapeutic applications and manufacturing cleaning solutions.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
ULTRAHAPTICS HOLDINGS LTD	Improving haptic sensation	£99,631	£69,742
<b>Project description - provided by applicants</b>			
<p>Current virtual reality and augmented reality systems focus on the use of audio and visual cues. A key missing element is touch. Ultrahaptics has developed haptic feedback systems which recreate the sensation of touch without bulky and unnatural wearable devices. Instead, our non-contact haptic system uses focused high-intensity ultrasound to simulate a sensation of touch. This method exploits the acoustic radiation pressure, which is also used in ultrasonic levitation systems. In a VR applications, this technology will be combined with hand tracking to allow the user to interact with a virtual scene without the need for physical controllers yet retain a direct connection to the scene via the sensation of touch. Currently, the technology can generate single points or simple moving paths. In order to render sensations for VR scenes, larger objects and surfaces must be generated in real time so that the user can interact with them. This project will rewrite the underlying algorithms which power Ultrahaptics devices to solve for larger, more complex acoustic fields. This will allow improved haptic sensations of objects in VR and AR scenes. Additionally, it will greatly simplify the process by which objects are rendered allowing developers greater freedom when using the designing applications which utilise Ultrahaptics technology. The success of this project will enable Ultrahaptics to move into the VR/AR domain much more quickly and hence drive growth in the UK economy.</p>			

**Note: you can see all Innovate UK-funded projects here**

**<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>TEMPORAL COMPUTING LTD</b>	Next Generation Computing - hardware for improved computation based on data as time	£99,446	£69,612
<b>Project description - provided by applicants</b>			
Computer processors are a wonder of modern technology, but are reaching their performance limits and are yet to solve many problems that humans take for granted, like how we see, hear and interpret information. A fundamental rethink is required and Temporal Computing has achieved this by building a technology that relies on time (in the same way as the brain) to represent data. Our approach saves time and reduces energy consumption, and we believe this will become the method of computation for the future. The aim is to protect and prove this technology, becoming the 'goto' hardware for implementing computer based solutions to the problem of mimicking more complex human capabilities, like recognising family members from video and audio and listening to spoken conversations.			

**Note: you can see all Innovate UK-funded projects here**

**<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>STEAMA COMPANY LIMITED</b>	Connect the unconnected: IoT for peer-to-peer energy sharing in nanogrids	£97,870	£68,509

### **Project description - provided by applicants**

620m people lack access the electricity in sub-Saharan Africa. Small, rooftop solar home systems (SHS) are a sustainable solution to supplying electricity across these developing countries in an affordable manner, increasing energy reliability and replacing the use of harmful fossil fuels. However, the poorest consumers currently pay 9x more per unit of energy for their SHS, compared to those with larger systems. The costs of producing solar hardware mean this problem is difficult for small standalone systems on their own to overcome, despite increasing competitiveness in the market. Without innovation, millions are at risk of being left behind and continuing to live without access to affordable electricity. A potential solution to this problem is to use solar nanogrids. In these super-small grids, owners of larger systems share their excess capacity with their neighbours in a peer-to-peer network. This would provide cheaper electricity to the smaller end-users and a saving mechanism for the SHS owner. Existing SHS companies have the SHS kits to provide the energy generation but lack the expertise and technology to manage and automate these networks. We aim to build on our low-cost, resilient IoT platform to assess the technical and operational feasibility of an advanced automation system for smart nanogrids. Our proposed system utilises emerging computing and communications technology to reduce the operational cost of supplying electricity. Our existing cloud software platform integrates with pay-as-you-go mobile money systems, and provides a suite of tools based on real-time analytics and automated decision-making. By adapting it for nanogrids, we will enable the retail of affordable electricity, even in the most challenging, remote locations. This will unlock the widespread roll-out of electricity to rural communities, significantly reducing the economic, health and environmental damage caused by unsustainable energy sources.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>EVERLUTION SOFTWARE LIMITED</b>	Locardi ... Identifying login sharing, stealing and abusing	£98,063	£68,644
<b>Project description - provided by applicants</b>			
Locardi is a project to tackle the growing problem faced by online companies of user's sharing or abusing logins. This results not only in the loss of subscription revenue, but also the threat of catastrophic data/intellectual property loss where logins are used in automated scaping of proprietary data. Through the use of machine learning techniques and anomaly/outlier detection algorithms, Locardi's vision is to research and develop a suite of tools that analyse a website's time-series log data to provide actionable intelligence to revenue protection, sales and compliance teams through a unified cloud based dashboard.			

**Note: you can see all Innovate UK-funded projects here**

**<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>BLAKBEAR LTD</b>	An ultra-low-cost integrated paper-based sensing and electronics platform	£98,178	£68,725
<b>Project description - provided by applicants</b>			
Traditional approaches to air quality monitoring involve networks of fixed measurement stations, which requires significant investment. For example, the Automatic Urban and Rural Network (AURN) has 175 sites across the UK. These monitoring stations are often located away from roadsides and major traffic congestion areas, which result in localised high concentrations of pollutants. Sparsely distributed around a city, these stations can provide accurate time-series data, but with limited spatial detail. This makes it highly challenging to determine the spatial distribution of air quality from the measured data, and so modelling approaches are used to calculate distribution of pollutants. Real-time continuous measurements from a large sensor networks would transform the process of determining distributions of pollutants and air quality levels, supporting these modelling approaches, and potentially even making them redundant. Deployment of low-cost sensors in significant numbers will enable detection of pollution hotspots, and will inform real-time pollution mitigation strategies. The technology that BlakBear is developing will enable precisely this.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>ADVANCED DIGITAL INNOVATION (UK) LIMITED</b>	AIM-FORE : Adaptive Inter-Domain Models for Optimisation and Real-Time Evaluation	£99,812	£69,868
<b>Project description - provided by applicants</b>			
Specialised digital platforms to mediate and transform public-facing services such as healthcare, social care, smart cities, and education, are becoming one of fastest-growing tech sectors globally. A critical success factor for companies providing these platforms is the ability to rapidly optimise for each new customer domain to maximise signup, retention and response rates within the platform itself, and the impact on human behaviours, service improvements, and ultimately on the outcomes delivered by the service. In the AIM-FORE project, ADI will use leading edge Machine Learning and analytics techniques, supported by the Leeds Institute for Data Analytics (LIDA), to create new models that span multiple data sets and start to experiment with how this knowledge can shorten the time to adapt our platforms to each new customer context.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>POWERSVAULT LTD</b>	Blockchain & IoT Enabled Energy Revolution (BITE-ER)	£99,131	£69,392
<b>Project description - provided by applicants</b>			
<p>The home is being remodelled into a connected and personalised eco-system of services, spanning energy management and distributed generation to appliances, vehicles and climate control (PwC 2017). Powervault, the UK's first provider of cost effective distributed battery energy storage solutions (BESS) to domestic homes, (lowering consumers' electricity bills whilst reducing peak grid demand) wishes to take advantage of this substantial market opportunity through integrating its BESS system into the connected home. Through incorporating cutting-edge digital technologies in the BESS, it is envisaged that Powervault will revolutionise the way energy is generated, used and managed throughout the home, allowing not only for householders to optimise energy management in accordance with the rest of the smart home ecosystem, but to facilitate the generation of additional revenue streams, through demand side response, frequency response and peer to peer trading. This feasibility study seeks to explore the viability and establish the pathway towards taking advantage of the significant market opportunity presented by the connected home (estimated to be £2bn UK market opportunity by 2020), whilst facilitating the UK's transition towards minimal environmental impact of energy consumption (through distributed energy generation/storage), whereby in light of this objective, it is essential that UK homes become smarter.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>INTELLIGENT ROBOTS LIMITED</b>	SILTR - Simple Intra-Logistics Transport Robots	£93,420	£65,394
DK FULFILMENT LTD		£0	£0
<b>Project description - provided by applicants</b>			
Intelligent Robots is an early stage start-up developing autonomous robotic solutions for intra-logistics and other commercial environments. We are one amongst a handful of SMEs in the UK active in this arena, seeking to exploit emerging technological progress in industrial automation, robotics and artificial intelligence to create machines that not only solve real-world problems, but are also truly affordable and easy to deploy. Public funding received for this project supports the development of a prototype robotic platform that can be deployed in warehouses serving the small order retail e-fulfilment industry. Lessons learnt from this exercise shall enable us to improve our technology and attract future private investment as a means to commercialise the technology worldwide.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SYNTHESIA LIMITED</b>	Visual understanding of faces in motion	£99,120	£69,384
<b>Project description - provided by applicants</b>			
VISIM - VISual understanding of faces In Motion will develop new techniques to capture the detailed dynamics of the face directly from video footage. Facial performance is a cornerstone of high-end visual effects across the creative industries from digital beauty work in advertising, photoreal digital humans in games, to block-buster visual effects in films. VISIM addresses the requirements to deliver accurate and detailed facial tracking in video, without the requirement for the dedicated camera systems used today in high-end content production. The outcome for VISIM will be a step change in the detail and quality of video-based facial performance capture, this will create a cost-effective solution that will enable access to high-end content creation cross-sector in digital media and entertainment.			

**Note: you can see all Innovate UK-funded projects here**

**<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results**

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
THREE MEDIA ASSOCIATES LTD	DMDA - Digital Media Data Analytics	£419,626	£293,738
Imperial College London		£118,479	£118,479
<b>Project description - provided by applicants</b>			
<p>**DMDA - Digital Media Data Analytics** is a 12-month project that addresses the needs of the media industry's big data and media supply chain management requirements. Currently, the broadcast and film sector require a range of hardware and software for handling their large data and content libraries. These libraries contain media assets and files of different types along with their associated metadata. The data is often stored disparately across multiple business and technical systems on various types of hardware, and as new requirements, metadata and format demands increase for various geographical regions handling and processing this data quickly, efficiently and cost effectively has become a serious problem. _Three Media Associates_ currently supply software to handle and produce such content and associated metadata for the media sector. This project goes beyond handling the current data amounts and looks to address the future needs of these clients. Three Media Associates have identified a way to apply Machine Learning and Data Analytics to better manage, simulate and optimise their clients' workflows using big data assets. DMDA will see _Imperial College London_ apply their expert knowledge of data analytics and optimisation techniques so that Three Media Associates' products have the required speed to quickly and efficiently model, simulate and optimise these complex workflows. This will provide a toolset for the digital content processing sector to quickly match workflows to the multiple and often conflicting business and distribution needs based on available global technical and human resources, driving large time and cost efficiencies.</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SENSOR DRIVEN LTD</b>	Ultra-low power event-driven sensing	£99,494	£69,646

### **Project description - provided by applicants**

The instrumentation industry requires remote monitoring devices that continuously listen and consume minimal power. Devices may be listening as sensors, measuring physical parameters such as temperature, vibration or leakage, or they may be listening for remote control to wake up a device and trigger an action such as communicating data. However, always-on sensing draws continuous power, and therefore, in many situations, this kind of monitoring is not viable, as it would either require sensors to be wired into the mains, or frequent battery replacement. We recently developed an integrated circuit that listens to sensors continuously, using only the power from the sensor, enabling the rest of the electronics to be fully powered down. Batteries now no longer need replacing, as lifetimes of decades can be achieved. Currently the technology has a fixed threshold of 0.5V, which limits its use to a subset of sensors that produce signals of several volts and a subset of applications where a sensor wake up threshold of 0.5V is applicable. This project aims to further develop the wake up technology to address a much wider range of sensor applications. The project will reduce the threshold from 0.5V to 10mV and will also enable it to be tuned over a large range according to the application. We will design an ultra-low power (less than 10 nanowatt) configurable pre-amplifier to interface with the detector circuit, whilst still keeping all other circuitry powered off until an event occurs. This level of amplifier power consumption is smaller than the self-leakage from a small coin cell, so in practice will not reduce the lifetime of the sensor. This project will design and evaluate a prototype sensor device with low, variable trigger threshold and lifetime limited by battery self-leakage only. We will commercialise the technology through sensor manufacturers by providing modules to be incorporated within their devices.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>OnMyMobile (a trading name of YTKO Ltd)</b>	DLL - Distributed learning and ledgers	£39,794	£27,856
<b>Project description - provided by applicants</b>			
<p>Distributed Learning and Ledgers (DLL) is a short, 3 month, feasibility study which aims to establish the system design and preliminary proof of market for the use of distributed ledgers (aka blockchains) and xAPI to deliver an efficient and trustworthy mechanism for recording learning experiences at a level of detail far greater than end of course certificates or daily learning profiles. Experience API (xAPI), is an e-learning software specification that allows learning content and learning systems to speak to each other in a manner that records and tracks all types of learning experiences. Blockchains are familiar for their use in financial transactions (eg BitCoins) and generalised distributed ledgers are a secure, trustworthy, mechanism for recording transaction, such as those generated by the use of xAPI in learning materials. The DLL study will evaluate the technical issues relevant to delivering a synthesis of distributed ledgers and xAPI in an e-learning context and study the impacts this will have on selected use cases in order to build a strong foundation for further development. DLL will promote distributed learning by facilitating decomposition of existing, lengthy, educational (and training) courses into many shorter ones which can garnered across a variety of activities and over flexible timescales. This will, in turn, underpin the provision of learning outside of the existing formal educational paths for all aspects of education, in work training and lifestyle/interests.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>2 DEGREES LIMITED</b>	M2030 bee Energy Simulator: Application of collaborative digital technologies to manufacturing resource efficiency	£70,000	£49,000
HSSMI LIMITED		£29,994	£29,994

### **Project description - provided by applicants**

How can we halve our natural resource use and double our productivity in 10 years? By consistently improving by 7% year on year. This is what we know the best performing produce, manufacturing and retail companies can do. 2degrees has the online platform to start this improvement process for companies in many different sectors. Now we need to develop our dataset to model portfolios of improvements that can unlock that 7%. 2degrees and HSSMI are partnering to bring together deep experience in manufacturing system modelling, with a proven track record of creating intuitive software products to solve complex problems in industry. 2degrees have validated improvement actions across many areas of Energy, Water and Waste productivity and a best practice sharing platform to enable industry professionals to quickly draw up improvement plans. HSSMI have the knowledge of how to simulate production environments to optimize on these types of improvement actions. By partnering on this project, both companies can bring expertise to model and simulate actions for professionals to develop more robust improvement plans. By using simulation on an ever expanding and improving set of actions, and by sharing relevant insight across an audience of thousands of professionals, we can scale adoption much more quickly. This funding will help to enhance a new platform in a sector where high-cost, long lead-time, bespoke solutions are the norm and comparison of improvement projects is very difficult. This new online product will give a much broader range of professionals access to a simulation tool which is intuitive and powerful.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>FRONTM LIMITED</b>	CatchM - an intelligent fish catch logging, monitoring and assurance solution for marine fishing operators and regulators in the UK and Europe, with worldwide and cross-industry potential.	£98,172	£68,720
INMARSAT GLOBAL LIMITED		£0	£0

### Project description - provided by applicants

CatchM is a research project by FrontM to establish feasibility of a catch monitoring and logging solution using edge intelligence (satellite internet connection in remote environments), artificial intelligence and data optimisation algorithms. The 2013 Common Fisheries Policy (CFP) brought in a Europe wide ban on the the quota violating act of throwing good fish back into the sea. However, discarding persists in the UK and worldwide (27% of catches [<http://www.fao.org/docrep/008/y5936e/y5936e07.htm#fn4>][0]). Attempts at enforcement through existing VMS (Vessel Monitoring Systems), REM (Remote Electronic Monitoring) over CCTV are proving unworkable at an overall global cost of \$4.5 billion/year ([[www.fao.org](http://www.fao.org)][1]). CatchM has the potential to be an efficient value-for-money catch logging and discard monitoring solution for marine fishing operators and the Marine Management Organisation, the UK's fishing regulator. This project is aimed at proving the effectiveness, cost savings and wider industry benefits of CatchM as a new VMS alternative to the struggling expensive REM solution. About Front M FrontM helps communication service providers establish more meaningful relationships with their customers in remote spaces. Less than half the planet is connected over terrestrial mobile telecommunication networks. Satellite operators are working towards overcoming this connectivity divide. This includes connecting industries operating in remote spaces: maritime markets (e.g. fishing, work-boats, dredgers, freight); remote land markets (e.g. mining, first responders in disaster zones); and aviation markets (e.g. commercial aviation). While technological advancement in Artificial Intelligence is transforming the landscape in urban and always-connected environments, in remote spaces the high cost of satellite bandwidth makes it prohibitively expensive for businesses to take full advantage of AI that needs constant-cloud connectivity and high bandwidth availability. The FrontM platform overcomes that and helps businesses serving remote customers over satellite connections to hold intelligent, humanised and fluid automated interactions with remote users. This creates operational efficiencies through smarter detection and prediction of customer needs, and automation of a user-centred meaningful response, leading to a better experience for their customers. FrontM: \* works in remote environments to deliver instant help for customers in their moment of need \* uses data compression and optimisation to deliver maximum information while consuming minimum bandwidth of satellite network \* includes a private and secure front end for businesses and their customers FrontM is led by management and technology experts with 30+ years of satellite communications industry experience. Our team includes thought leaders, technologists and data science specialists and edge computing PHD scientists. [0]: <http://www.fao.org/docrep/008/y5936e/y5936e07.htm#fn4> [1]: <http://www.fao.org>

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
TAMARIN GROUP LTD	AI-powered childcare matchmaking	£99,291	£69,504
<b>Project description - provided by applicants</b>			
Borne out of our passion for modern, intuitive, and comprehensive solutions to the challenges of early parenthood, <b>**our vision for this project**</b> <b>**is a new way of connecting parents with private child carers through a game-changing childcare matchmaking" process, powered by artificial intelligence, available on a technology platform**</b> . An optimal match between parents and child-carers benefits everyone: - The parents, who will be able to balance better their desired parenting style with career aspirations; - The child-carers, who are more likely to have rewarding professional experiences; and of course - The children, who will grow up in a more stable and harmonious environment, nurtured by satisfied parents."			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
TRANSACTION LIMITED	AVA	£99,700	£69,790
<b>Project description - provided by applicants</b>			
The commercial logistics and road freight transport industries are under pressure to become more efficient. Using _digital_ gaming _technology_ this project will _enable_ players _to see_ how to minimise losses (maximise value) in logistics and transport. In doing so it will build on a technique developed by Transfaction, the project lead, which builds upon an entropy measurement system developed by Claude Shannon in his 1948 A Mathematical Theory of Communication." Players of the game will progress from playing as Transport Manager, running their own fleet, to playing as Logistics Manager, running a facility and fleet, and then as Network Director, running an eco-system of trucks and facilities. The game will reward increased information sharing with improved profits and delivery service, The intention of the game is to use a fun way to convey the serious message that a greener efficient logistics and transport is possible"			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>FORGE DESIGN CONSULTANCY LTD</b>	A Blockchain Platform for Design Collaboration	£96,145	£67,302
<b>Project description - provided by applicants</b>			
The feasibility demonstrator of the Forge platform created by this project, proves the concept of a blockchain-enabled collaboration tool for the creative industry. Designed to promote collaboration between individuals and startups that have great product ideas, and freelance design specialists. The world's best industrial, automotive and product designers can be found via the future platform and invited to contribute to projects in exchange for equity in an idea, or conventional payment. It can also serve as a one stop freelancer management tool for small businesses to reduce recruitment, on boarding and staff turnover costs. Simple working agreements and contracts between parties would be set up in the blockchain to provide complete trust and security, as well as the tracking of IP and other related information; and proven project templates made available, to give each user the confidence to define their deliverables and manage their project in a timely, effective way. The Forge platform seeks to prove sound investable projects can be set up without industry experience, democratizing access to the best design capability.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>ENLIGHTEN ENERGY LTD</b>	PV-SoilSayer: Optimising PV Soiling Monitoring	£99,839	£69,887
<b>Project description - provided by applicants</b>			
Enlighten Energy specialises in innovative solutions to renewable energy challenges, particularly asset optimisation. With an international team of PV experts, Enlighten Energy is seeking to bring to market an innovative sensor-based technology that optimises the PV panel cleaning process, reducing energy production losses and significantly increasing the efficiency of PV panels. With PV cleaning being one of the most expensive components of Operations and Maintenance (O&M) costs, Enlighten Energy is providing a solution that not only improves the outputs of this renewable technology, but also increases the adoption of PV through lowering annual running costs. Enlighten Energy is committed to supporting the global shift towards 100% power generation through renewable sources, and believe that this project and the further development of the core technology for further applications within the renewable energy sector, can bring countries closer to this point.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>AUGMENTED INSTRUMENTS LTD</b>	Enabling Accessible, High-Performance Digital Crafts for	£69,972	£48,980
Queen Mary University of London	Makers and Artists	£29,723	£29,723

### **Project description - provided by applicants**

This project will create powerful yet accessible tools for craft practitioners to create interactive digital systems. The project is based on Bela, an open-source embedded hardware platform designed for interactive audio applications such as musical instruments, audio effects and sound art installations. Bela has an established user community in audio technology, research and education, but this project proposes to address a potentially larger community of makers and craftspeople of all levels of technical experience. The maker movement, which consists of a diverse global collection of artists, craftspeople, hobbyists and educators pursuing do-it-yourself approaches to technology creation, is a growing economic force in the UK and abroad. While many hardware and software tools exist targeting this market sector, there are few good options which combine state-of-the-art processing power, connectivity to physical sensors and materials, and ease of getting started. Some of the most popular tools are based on outdated technology, while tools capable of creating the richest, most nuanced interactive systems are still targeted primarily at experienced engineers. During the project, we will create a proof-of-concept of a new generation of Bela hardware which is smaller, lower-cost and modular, allowing the user to interface with electronic textiles (e-textiles), paper circuits, microphones, speakers, sensors and actuators. This will be coupled with a software framework running in the browser which comes with a rich and adaptable set of example materials. We will take a human-centred approach to developing these materials, assessing the needs of the community early in the project and validating the results through workshops led by research partner Queen Mary University of London. Innovate UK funding will allow us to invest in validating new ideas and approaches which we could not feasibly fund from our current sales income alone. The project outcomes will let us significantly expand our business by creating lower-cost Bela hardware that is suitable for third-party distribution. It will also help us reach a global customer base which consists not only of technically-inclined musicians and audio developers, but also makers and craft practitioners of all disciplines and backgrounds. In so doing, the project will deliver benefits to the UK economy by generating activity across the supply chain and expanding the pool of people who can create their own interactive digital systems.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>CREATE TECHNOLOGIES LIMITED</b>	Anonymous Crowd Monitoring (ACM)	£98,837	£69,186
<b>Project description - provided by applicants</b>			
Crowding is a way of life for most people living in cities and urban areas, leading to raised levels of stress, anxiety and frustration. In addition, designers and operators of built environments need to ensure safety and security for large volumes of people in crowded areas. This project will explore the feasibility of using a novel technology to provide completely anonymous information on crowd movement that can be used to improve the citizen experience and ensure their safety while not tracking or identifying individuals. This technology will be trialled and demonstrated to stakeholders before further commercialisation beyond the project			

**Note: you can see all Innovate UK-funded projects here**

**<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>P.E.S. TECHNOLOGIES LIMITED</b>	Developing plastic electronic volatile organic compound sensors for determining soil health	£46,694	£32,686
National Inst of Agricultural Botany		£16,320	£16,320

### **Project description - provided by applicants**

Soil is one of the three major natural resources essential for agricultural productivity, with the other two being air and water. Soil should be teeming with life---especially microbial life---but intensive farming practices such as frequent ploughing, the removal of crop wastes and the use of heavy machinery have degraded soils throughout the world, and the associated costs of this degradation are estimated to be \$6.3--10.6 trillion. As farmer's profits are being squeezed there is considerable interest within the farming community in monitoring long-term changes in the health of their soils based on the way they farm their land. To correctly manage soil health, farmers need reliable information on the health of their soils. For this they need to be able to measure the chemical, physical, and biological properties of soil. However, farmers currently have no, or very few tools they can use to measure the biological properties of their soils. For example, current methods to assess the biological properties rely on measuring the CO<sub>2</sub> content of soil samples, which does not provide information on the range of microbes present in the soil. Other promising techniques such as next generation DNA sequencing of soil microbes are too expensive, require experts, and provide information that is difficult to analyse (the exact roles of the vast majority of different microbial species present in a soil sample are currently unknown). In addition to CO<sub>2</sub>, microbes also release other gases called volatile organic compounds (VOCs). Despite the useful information VOCs provide on soil life, they are currently not utilized by farmers to assess soil health because the equipment to measure soil VOCs is expensive, laboratory-based, and requires trained operators. This project proposes the development of a portable, low-cost VOC sensor to overcome those constraints. The proposed sensor that can be connected to a smart phone or laptop for powerful data analysis in a cloud-based software package and will thus complement existing soil nutrient testing practiced by farmers. Coupled with visual assessments for physical properties the proposed sensor will enable farmers to make soil health assessments themselves. P.E.S. Technologies, a plastic electronics start-up, and NIAB-EMR, a horticultural research transfer organisation, propose a joint technical feasibility study to develop a tool for the detection of soil VOC profiles. Once validated for soil health testing, the same sensor architecture could be adapted for applications in healthcare, food processing, waste management and remediation of contaminated land.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>RELATIVE HEALTH LIMITED</b>	Long Term Short Memory approach for Hypertension (LOTSOM-H)	£97,902	£68,531

### **Project description - provided by applicants**

It is well recognized that ambulatory blood pressure (BP) monitoring by means of wearable sensors has the potential to enable new levels of health-related vigilance and medical care in a number of novel settings, including, for example, controlling chronic hypertension and monitoring in-patients during convalescence. However, a significant challenge to realizing true non-invasive blood pressure (NIBP) measurement remains the problem of accounting for the unknown tension in the underlying arterial wall: If one simply measures pressure external to an artery (for instance, on the overlying skin), one is measuring the balance of intra-arterial pressure and the rapidly varying arterial wall tension. Ideal NIBP methods solve the problem of estimating intra-arterial wall pressures independently of the arterial wall tension. Yet, there is no optimal solution to truly wearable NIBP measurement. The ideal wearable device would be lightweight, easy-to-apply, non-invasive, small, unobtrusive, and as close to imperceptible as a regular wrist-watch. The fundamental assumption in Machine Learning is that analytical solutions can be built by studying past data models. Machine Learning supports that kind of data analysis that learns from previous data models, trends, patterns, and builds automated, algorithmic systems based on that study. As Machine Learning relies solely on pre-built algorithms for making data-driven analysis and predictions, it claims to replace data analytics and prediction tasks carried out by humans. In Machine Learning, the algorithms have the capability to study and learn from past data, and then simulate the human decision-making process by using predictive analysis and decision trees. Long short-term memory (LSTM) is a recurrent neural network (RNN) Machine Learning Algorithm architecture that remembers values over arbitrary intervals. Stored values are not modified as learning proceeds. RNNs allow forward and backward connections between neurons. An LSTM is well-suited to classify, process and predict time series given time lags of unknown size and duration between important events. Relative insensitivity to gap length gives an advantage to LSTM over alternative RNN, hidden Markov models and other sequence learning methods in numerous applications. LOTSOM-H looks to use a uniquely configured Machine Learning Algorithm to identify trends between optical sensor samples and thus develop a map of arterial performance which can thus allow a user to calculate a value for trending Blood Pressure. It is hoped that these works will enable the resolution of a continuous Blood Pressure as a metric that can be acquired by consumer health wearable devices.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
POLITECH LIMITED	Applying reinforcement learning to optimise an innovative polling platform	£96,981	£67,887
<b>Project description - provided by applicants</b>			
<p>Opinion polling is an integral part of the £4.6BN UK market research industry (\$45BN globally). However, existing polling techniques are becoming less reliable. An investigation by the National Polling Council in the wake of the 2015 General Election concluded that errors were down to 'unrepresentative samples'. We believe that this decline in accuracy is down to the business models of the incumbent polling companies and their inability to cope with societal change. Their practice of financially incentivising panelists to participate compromises their results in two ways. Firstly it introduces bias and secondly it is financially unviable for them to survey more than around 1000 people at a time. Poli is looking to tap into the reach and scale of social messaging platforms, to build a polling product that relies on digital engagement to motivate panelists rather than material compensation. With a zero marginal cost to deliver polls we can scale our panel to a size that competitors cannot. We have already built a system that uses the Facebook Messenger platform for poll delivery. In this project we want to test the feasibility of using reinforcement learning to maximise user engagement and poll accuracy. If successful we have the potential to radically change established business models in the field of market research.</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>GROUP-MUV! LIMITED</b>	Wireless Group Tracking System	£99,613	£69,729

### **Project description - provided by applicants**

Many organisations, such as schools, tour group organisers and care companies, have a duty of care for their pupils and service users. However, a key challenge they face is the ability to keep track of individuals during group activities in crowded, unfamiliar surroundings, for example a trip to a museum. Our innovation aims to address this. Group Muv! comprises of a wearable device and back end server which exploits the Internet of Things to accurately and unobtrusively monitor the movement of groups, relaying data to a designated coordinator. As a result, it ensures the wellbeing of groups of individuals while reducing the stress for those responsible for meeting the duty of care. The wearable device is designed to be lightweight, durable, low cost, waterproof, have a long battery life and be user-friendly, setting it apart from existing technologies, such as smartphone tracking, which doesn't address the issue of tracking groups of individuals in crowded spaces. Our initial target customers are self-guided groups visiting venues such as museums, for example primary and secondary schools. The wearable device enables users to take part in activities safely without the need for constant supervision and promote positive risk taking, enabling users to pursue their chosen goals and potentially recover more quickly and regain health. It also provides peace of mind to both the group organiser and, for example, parents of children attending a school trip, and tourists visiting unfamiliar places. A rental model is proposed whereby the host organisation pays a monthly fixed fee for the devices and then makes them available to groups either as an 'added value' service or for a small cost, thereby making it a justifiable resource which will support its uptake. The device has also been conceived for both indoor and outdoor use and, in addition to school groups, potential markets identified include: healthcare management organisations, military, emergency, services, security companies, education, event management and private individuals. Two key technologies influencing the development and creation of Group Muv! are the roll out of Sigfox and NB-LTE-M, two wireless network technologies for connecting devices to the internet. Both technologies are helping to unlock the promise of the Internet of Things by making it simple and affordable to connect low power consumption devices to the cloud, with no need for a GPS chip-set.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SUNDOG MEDIA TOOLKIT LTD</b>	Machine learning for automated colour processing of high dynamic range motion picture content	£369,426	£258,598
WALT DISNEY COMPANY LIMITED(THE)		£0	£0
<b>Project description - provided by applicants</b>			
Use of artificial intelligence applications to address high dynamic range and wide colour gamut colour pipeline issues in professional media production.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SUCCORFISH M2M LIMITED</b>	Wireless Industrial Marine Environmental Sensor	£99,462	£69,623

### **Project description - provided by applicants**

**\*\*Project aim:\*\*** To develop low cost fit for purpose sensor system that can be deployed in the marine environment to collect and transmit valuable environmental data using commercial, scientific and recreational vessels as transmission hubs to send the data to the cloud once the sensors come within a range of up-to 1000m. The technology will be supported by efficient data storage, sharing and presentation tools, turning the data into valuable information. In essence the project aims to make marine data collection ubiquitous and autonomous, to the benefit of individuals, businesses and society. The marine environment is incredibly complex and poorly understood. The surface of the Moon's has been mapped to a higher standard than the sea floor. Part of the reason for this is that data acquisition in this environment is expensive and incredibly challenging for people and equipment alike. The Internet of Things is a well-developed concept that touches most of our lives on a daily basis. Using the same principles this project will research the practicalities of wireless and autonomous re-chargable sensors that can be easily deployed in and on the marine environment to gather data. It will see the development of technologies that can be reliably deployed for prolonged periods in this hostile environment. Data recovery will be based on the principle of using vessels of opportunity, thus cutting the infrastructure and maintenance costs. Traditionally ferries and large ocean going vessels have been used as vessels of opportunity. Using these vessels creates limitations as they normally operate to fixed routes. To overcome this our project will develop a data collection solution that will operate on smaller commercial vessels such as tugs, commercial fishing vessels or support vessels for offshore aquaculture or renewable energy operations. The technology will also be suitable for less challenging recreation applications, acknowledging the demand and opportunity offered by Citizen Science. The availability of this data will benefit seas users on a micro level, be they aquaculturists or fishermen looking to optimise conditions to maximize their productivity. Equally the same data set will benefit society by providing insight into climate change or feeding into the metrological models and helping to forecast our weather more precisely.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>GATI AUTOMATA LIMITED</b>	Real time dynamic price optimisation for eCommerce retailers	£99,984	£69,989
<b>Project description - provided by applicants</b>			
<p>Although eCommerce industry is rapidly growing, dwindling margins and conversions are the biggest challenges for online stores. Even for high street retailers like Argos and Currys, over 97% of shoppers leave without making a purchase, which leads to retailers offering lucrative vouchers and discounts to entice shoppers. Hence, Gati Automata Ltd wishes to provide a dynamic pricing solution to online retailers to price products without compromising on the margins but also prices that shoppers are more likely to pay. Dynamically priced products can be added real time on product listing, target customer segments, specific sales channels, specific period and create an optimal pricing strategy. GAL is a fast growing machine learning startup focussed on online retail. Every week GAL ML applications power thousands of on-store marketing campaigns for retailers from various countries. GAL wishes to undertake a feasibility study project to prove key technologies and later add to its current system. Areas of research and prototyping include use of machine learning, advanced data processing, event processing, segmenting shoppers using purchase analysis to determine pricing, which is extremely innovative. The feasibility study will cost £100k and a grant of £70k is sought to undertake this highly innovative project.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>KAGENOVA LIMITED</b>	Next-generation virtual reality with artificial intelligence	£99,960	£69,972
<b>Project description - provided by applicants</b>			
While virtual reality (VR) experiences based on 360-degree photos and video are prevalent already, and content continues to grow rapidly, user uptake has been somewhat subdued. This is because 360-degree VR experiences lack interaction. A user can look around a scene but cannot move within it. For example, in a 360-degree VR environment it is currently not possible to take a step to view the scene from different perspectives or to lean forward to inspect the details of objects in the scene. Even when simply looking around a scene, users typically make small movements of their head, of which they may not even be aware. As soon as motion like this in the physical world is not reflected in the virtual world, cyber motion sickness is induced and the user quickly feels nauseous. We will develop techniques to support motion in 360-degree VR experiences, providing a more realistic and immersive experience and, in the process, eliminating cyber motion sickness.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> **Use the Competition Code given above to search for this competition's results**

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>KIM SOFTWARE SOLUTIONS LIMITED</b>	AVERT (Adaptive Virtual Reality Training)	£73,409	£33,034
OAKLEY MOBILE LIMITED		£254,405	£114,482
<b>Project description - provided by applicants</b>			
<p>From fighting threats to fighting fires, our emergency services rely on their training and experience as much as we rely on them. KIM Software Solutions and Oakley Mobile Ltd have developed the AVERT Platform - an Adaptive Virtual Reality Training solution. Utilising the latest cutting edge virtual reality technologies, the AVERT platform provides emergency services with the ability to train for situations that would otherwise be logistically challenging or cost prohibitive. These virtual scenarios meet current and future training requirements using three fundamental principles - Act, Assess and Adapt. The AVERT platform gives training staff the ability to see through the eyes of the trainee in order to better understand and record their decision making whilst networking enables trainees and trainers to interact within the same virtual scene. The AVERT platform's physical set up (consisting of room, person and prop sensors and motion tracking hardware) provides the liberty of movement to fully interact with the scenario. With the addition of remote-link training and active real-world props based on equipment from manufacturers like Heckler &amp; Koch, Glock and TASER International, the solution will continue to develop with the technology.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>ANB SENSORS LTD</b>	Novel Self-Calibrating pH Sensor for Use on Autonomous Underwater Vehicles.	£66,684	£46,679

### **Project description - provided by applicants**

The overall objective of this project is to research, develop and produce and demonstrate a prototype pH sensor, utilising a novel self-calibration system, onboard an AUV to a depth of 250 metres. The absorption of CO<sub>2</sub> is causing detrimental changes to ocean chemistry. When CO<sub>2</sub> reacts with water, carbonic acid is produced causing 'ocean acidification' which is having adverse effects on marine life, including; fisheries, fish farms, shellfish banks and coral reefs. A vast number of sensors will be required to gather the data necessary to understand ocean acidification and its effects, however this is currently not possible due to expense. AUVs are proposed as the solution to the need for making numerous measurements across the World's oceans. The proposed solution is to provide swarms of low cost, small AUVs that collect data for extended periods of time. As such, AUVs are a rapidly growing platform for ocean and water monitoring/management. However, to fulfil the role of a data collection platform, AUV's need sensors that can be deployed on the small/low cost AUV, which requires low cost, small, calibration free sensors. ANB Sensors Ltd (ANB), a UK micro-SME, have identified and filed patents on a disruptive enabling technology, which allows the measurement of pH in demanding (low-salt and low-buffer capacity) aqueous media, such as drinking and seawater. The technology provides accurate measurements (+/- 0.01 pH units), without the need to re-calibrate the sensor; differentiating it from the state-of-the-art. The calibration free operation of ANB's pHenom sensor and its small size mean that the sensor is ideal for use onboard AUVs. This will unlock their wide spread use as data collection platform for ocean and water monitoring/management.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>CORROSION RADAR LIMITED</b>	Novel Distributed Sensors	£74,769	£52,338
University of Glasgow	Network Integrated With IOT For Industrial Asset Integrity Monitoring	£23,493	£23,493

### **Project description - provided by applicants**

CORROSION RADAR (CR) LIMITED strives to be a global leader in remote sensing technologies and advanced analytics systems for smart infrastructures. Monitoring the Corrosion and Corrosion Under Insulation (CUI) that can cause catastrophic failures and major downtime for many sectors, are the main focus of the company. Most of the current practises of corrosion detection uses a reactive approach and manual non-destructive techniques and risk management where limited data is available. The key technical innovation proposed in this project is a CUI monitoring sensor distributed system with the IoT infrastructure. The primary mission of the CR technology is to reduce maintenance cost without compromising on the safety of people, assets and environment. This will also lead to reducing downtime and can equally be applied to many sectors such as Oil & Gas, renewables, chemical and thermal power plants and nuclear. In this project, CR in collaboration with the industry-led Innovation Centre for Sensor and Imaging Systems (CENSIS), is proposing technical feasibility study towards an IoT infrastructure (including the hardware, power and connectivity solutions) that will enable data from the CR distributed sensors network and other data streams, to be processed and arrive as actionable info to the end user. The efficiencies are created through reducing the barrier to large scale deployment of CR sensors, and enabling a predictive maintenance regime to the industrial asset management. This is very valuable for safety critical assets and operation in different sectors which help in avoiding catastrophic failures and major downtime. It will assist an asset manager to plan maintenance reducing operation cost.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
AXI-TEK LTD	Compton Scatter Imaging for NDT	£98,615	£69,031
<b>Project description - provided by applicants</b>			
This project will develop a prototype instrument based on a novel approach to x-ray backscatter imaging to detect defects within thick sectioned carbon composites such as those used in the aerospace industry. The instrument will be able to identify and classify defects such as delamination, porosity, cracks and resin rich/poor regions. The prototype instrument will initially focus on an in-line inspection capability, but longer term objectives will be to extend this instrument to operate as a portable non-destructive evaluation instrument for in-field inspection of service aircraft.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SIRIUS CONSTELLATION LTD</b>	Intelligent Situational Awareness Platform	£596,287	£417,401
King's College London		£133,696	£133,696

### **Project description - provided by applicants**

\*\*This collaborative project between Sirius Constellation Ltd and Kings College London will look at the technical feasibility of applying a number of Artificial Intelligence (AI) techniques to the ever increasing amount of near or actual real-time satellite data (and other) that is becoming available to commercial and defence operators in order to provide more accurate and trusted assessments and enable more efficient use of available assets.\*\* Using a vast amount of data drawn from multiple sources (satellite earth observation, Automated Identification Systems, terrestrial and satellite radar, optical and infra-red imagery, and others), the system will apply advanced and innovative AI technology to provide the operator with an uncluttered, consolidated picture of the situation as well as a detailed analysis of the environment, in which attention is drawn to unusual activities. Responses to developing situations will be proposed. Significantly, through the use of Explainable AI (xAI), an operator will be able to understand why the platform has drawn a particular conclusion or recommended response. This project will develop the use of AI and xAI tools for use with near-real-time situational awareness information, demonstrating the commercial and operational benefits. The developed system will provide an operator with an uncluttered picture of activity by displaying contacts (vessels etc) that have been detected and tracked by one or multiple sensors. The picture will be continuously analysed and the operator presented with an intelligent analysis highlighting anomalies and changes that might influence his particular operation. This application of AI and xAI will generate significant operational efficiencies, significantly in the need for fewer analysts and fewer, more efficiently employed assets (e.g. ships/aeroplanes). There are numerous potential applications, for example: \* the monitoring of a commercial supply chain with analysis of the consequences of any disruption; \* routine surveillance of an area for security purposes; \* the efficient management of port activities; \* the monitoring of, and response to illegal fishing; \* the management of a commercial shipping fleet dealing with the day-to-day requirements to respond to changes in tasks, weather, security and vessel efficiency; \* military operations. The project will advance Kings College London's knowledge and understanding of state-of-the art Artificial Intelligence and feed into future capabilities of Sirius Constellation Ltd, leading to significant job creation and export opportunities.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
TECEXEC LIMITED	GRADIS - Graphene Dispersions in elastomers	£99,233	£69,463

### **Project description - provided by applicants**

The inclusion of engineered nanoparticles has been shown to dramatically improve the performance of many materials and there is growing commercial interest in their widespread use across most industries. For example, carbon nanotubes and graphene are proving to have an enormous impact on properties such as tensile strength and electrical and thermal conductivity when added to polymers. There are also numerous examples in the field of inorganic particles, such as nano titanium dioxide being used in transparent UV-resistant coatings. Much of the excitement, interest and investment to date has been focused on the creation of high quality, uniform particles of various kinds. This is particularly true for graphene, where sheets of carbon, (ideally) one molecule thick, are formed. However, to be used in real applications, these usually need to be mixed into a fluid medium, at large industrial scales and meeting strict economic targets. Unfortunately, many of the current approaches to the manufacture and production of graphene do not meet these needs, particularly when applied to elastomeric polymers. Effective dispersion and stabilisation of nano particles in fluids and elastomers usually require a combination of chemistry and the highly controlled application of mechanical energy. In the laboratory, for fluids, high shear mixers, ultrasonic mixers and media mills are currently the state-of-the-art for mechanical mixing, but they are difficult to scale up and are limited to low viscosities. For high viscosity materials and elastomers, internal mixers and two or three roll mills are typically used, both at laboratory and production scales. TecExec Limited is a British company that has developed a range of innovative mixing technologies over the last 20 years. It has concentrated on high energy mixers that are used by companies all over the world in process intensification applications at industrial scales. The TecExec Group has recently developed a rotor-stator technology for continuous mixing that it believes could be used for nano particle dispersion in elastomers. This project intends to test this hypothesis using graphene like materials for industrial-scale applications and thereby open the market to large-scale exploitation.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
VEOWARE LIMITED	Feasibility study of very high resolution satellite imagery service enabling data analytics	£50,345	£35,242
SATELLITE APPLICATIONS CATAPULT LIMITED		£21,279	£21,279
<b>Project description - provided by applicants</b>			
<p>VEOWARE's project focuses on delivering timely very high resolution imagery data at significantly lower price than current market offering, enabling more data analytics business and high potential market growth . The company believes that data captured from space at a resolution of less than 50cm is the complementary tool to the low resolution Copernicus Sentinel data, which is now freely available. Very high resolution data has exciting potential to unveil the finest details of our society and unlock tremendous value on the downstream application market. Such imagery can simplify business operation globally by monitoring one's facilities from space (instead of hundreds of drones). One can understand why facilities or asset have trouble, without the need to go on-site. The better the resolution the smaller objects one can see and the more information one can extract on that object or event. VEOWARE is thrilled to propose its imagery as a service at a price that is less than one order of magnitude lower than the current offering for very high resolution data. The company plans to disrupt the industry by allowing one to finally close a good downstream business case when using fresh near-real time imagery and - one thing leading to another - to un-lock the intelligence that terrestrial businesses are willing to pay for (e.g. Insurance).</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - Up to 12 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>GEOCENTO LIMITED</b>	Natural language processing for earth observation market traction	£55,689	£38,982
<b>Project description - provided by applicants</b>			
Geocento is an aggregator of imagery and related products and services from the range of suppliers, based on innovative web technologies. The company plans to use its in-depth knowledge of user cases to design and test a Chatbot interface for users of imagery, which will improve significantly the experience for users who can be overwhelmed by the complexity of the experience of discovering and ordering imagery. This technology will be established on top of Geocento's aggregating APIs that access imagery from a wide range of image suppliers and will also reflect Geocento's consolidated offerings. The impact of this development will be to substantially lower the barriers to entry and costs of developing access to imagery for users while at the same time growing market penetration for suppliers.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>BIG COUCH LTD</b>	(FAIR) Film Acceleration through Innovative Revenue-sharing	£258,703	£181,092
Imperial College London		£68,085	£68,085
<b>Project description - provided by applicants</b>			
The independent film industry in the UK currently features an opaque maze of middlemen who operate in the space between content creators and content consumers. Big Couch has established its position in the European film and tech industries with the innovative finance algorithm for films entitled 'crewfunding'. Big Couch will develop the unique FAIR blockchain platform for revenue distribution in the independent film sector. The project explores how networks of blockchain-based smart contracts can lower friction, increase transparency and decrease settlement times. Big Couch will collaborate with Imperial College Centre for Cryptocurrency Research and Engineering and Imperial College Business School to address and overcome the technical challenges that currently exist with blockchain, to increase transparency, trust, productivity and cost savings to independent filmmakers.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
COMPOSITES EVOLUTION LIMITED	Nanocomposites with Exceptional Fire Performance (Graphire)	£355,841	£249,089
AIM AVIATION (JECCO) LIMITED		£37,689	£18,845
Sheffield Hallam University		£105,174	£105,174
<b>Project description - provided by applicants</b>			
<p>Lightweight composite materials, such as carbon- and glass-reinforced plastics, are widely used to improve the performance or efficiency of transport structures. However, when composites are used in confined public spaces, such as aircraft and train interiors, they are required to meet stringent fire requirements. As most composites are inherently combustible, satisfying these fire requirements is generally challenging. In practice it means that the material selection and design options for composites in fire critical applications are currently limited. This project aims to develop and validate lightweight composite materials that provide a step change improvement in fire performance. This will be achieved through novel combinations of materials, including so-called "nanomaterials" such as graphene. The project builds upon recent breakthrough results in which a novel prototype composite material demonstrated an order of magnitude improvement in fire performance. Whilst narrow in their focus, these results were significantly better than those observed previously. The objective of this project is to extend the development of this breakthrough concept to a broader range of materials with wider market applicability. If successful, this will be to the benefit of both passengers and designers who will be able to enjoy safer, more appealing and more flexible interiors.</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

Participant organisation names	Project title	Proposed project costs	Proposed project grant
IMPERIAL CHEMICAL INDUSTRIES LIMITED	Depollution of air using polymer-based coatings	£190,690	£95,345
FINDEN LTD		£203,875	£142,713
JOHNSON MATTHEY PLC		£167,397	£83,699
University College London		£213,032	£213,032
<b>Project description - provided by applicants</b>			
<p>Air pollution is one of today's most concerning problems, causing unacceptable health issues to many people in our societies. This project will strive to deliver materials, and products for easy customer use, that can help tackle this problem for UK and global benefit. The project will take novel technology now emerging from the UK's academic (University College London) and business (Johnson Matthey) communities and optimise its use in a widely used product such as decorative paint using cutting-edge chemical imaging technology (Finden). This project will deliver high quality decorative paints (Dulux from Imperial Chemical Industries) that offer the customer the additional functionality of air depollution in their homes, their schools and their places of work to compliment the colour and protection that Dulux paints currently offer. This will focus especially on tackling indoor air pollution from carbon monoxide, benzene, nitrogen oxides and formaldehyde. Such functional decorative paints will also act as a springboard for uptake of this novel technology in other polymer-based coatings, such as active food packaging and respiratory protection devices, and the project will also look to exploit new chemical imaging technology.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>MEDIA RESEARCH PARTNERS LIMITED</b>	LUCID Rights: Leveraging Uncertainty in Content & Metadata to Enable Indelible Digital Rights	£177,638	£124,347
BRAINTREE LIMITED		£116,624	£81,637
THE COPYRIGHT HUB FOUNDATION		£100,146	£70,102

### **Project description - provided by applicants**

Creative content is the undisputed driving force and focal point of the majority of online consumer activity today. However, a lot of the current and past commercial value is lost by not allowing for image and video content to be uniquely and robustly linked to copyright and ownership details. Further, in the professional media industry, supply chains encounter complex rights issues which cause 80% of all content not to be 'rights ready', or commercially viable. While at a first glance this seems like a problem that can be addressed with off-the-shelf components, deliberate obfuscations or accidental variations in content and rights (collectively called uncertainty), do not allow for conventional online search tools to work well for this problem. This leads to the current situation where rights discovery for online content is a manual, error prone and cumbersome process, with substantial effort required to remain within the law, and virtually no effort (and minimum risk) for those that wish to violate copyright law. The LUCID Rights project brings together an interdisciplinary team of internationally-leading experts in machine learning, knowledge discovery, high-performance image & video engineering, copyright law, and business & content licensing models in order to address this important challenge. The key objective is to create a unique solution for rights discovery and indelible signature creation for the content properties and copyright information that will be robust to noise or uncertainty in the rights description. The confluence of standards for machine-readable contracts and compact signature generation allows for this to also be trialed within standard-compliant mechanisms, thereby enabling openness, and commercial traction within short timeframes. This will allow for the first time to apply advanced machine learning to disrupt the domain of digital content rights, thereby unlocking the potential for new markets and services within the UK and internationally.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>INTELLIGENT ENERGY LIMITED</b>	PROGRES PROduction of GRaphene coated platES for fuel cells	£393,567	£236,140
CENTRE FOR PROCESS INNOVATION LIMITED		£168,671	£168,671

### **Project description - provided by applicants**

The PROGRES project builds on previous Innovate UK projects and will address super light-weighting challenges for weight sensitive UAVs (and other) powertrain applications. It will aim to industrialise and upscale production graphene enabled, highly conductive and corrosion resistant polymer coatings with the potential to achieve cost savings of up to 90%. Light-weighted stacks enable UAVs to fly higher and longer with enhanced, system operational capabilities over the incumbent battery technology. Coated plates make up ~80% of the weight of a fuel cell, but mass reduction requires innovation of the plate stack materials/coatings. Similarly, light-weighting is key in accessing automotive and portable markets. As generally accepted aerospace materials, PROGRES also aims to validate production scale processes for Ti and Al foils. Ti represents a (first) step change in light-weighting of fuel cell stacks, but requires new supply-chains and complementary upstream/downstream production and QC processes; and the potential to scale to high-volume/low-cost production. The technical feasibility of using total-barrier protection (highly) conductive coatings will also be assessed for Aluminium to harness its superior weight/performance potential. Total-barrier properties will be key to ensuring that performance does not degrade due to the ingress of very low pH (<1) electrolytes at the surface. Extended operational life will be benchmarked, with minimal degradation and acceptable running times >800hrs. A successful project outcome will establish a UK based competency within a global UAV marketplace.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

Participant organisation names	Project title	Proposed project costs	Proposed project grant
NOVOLAB LIMITED	Biofilm Control in Ultra Low Temperature Laundry. (BioCULT)	£429,997	£300,998
DEVAN-PPT CHEMICALS LIMITED		£103,206	£51,603
Unilever UK Central Resources Ltd.		£2,000	£0
University of Leeds		£228,013	£228,013
<b>Project description - provided by applicants</b>			
<p>The aim of this project is to develop a unique method of reducing the washing temperature required to remove dirt and bacteria from soiled clothing. The technology is highly disruptive and exploits ideas and concepts only now emerging from the research base. The biofilm control technology has applications both within the laundry industry and beyond in the global fight against biofilm proliferation. The project brings together a multinational UK based global leader in laundry and homecare; a multinational UK based manufacturer of sustainable chemicals, an innovative SME and a leading UK university with a reputation for excellence in textile technology.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
REDBITE SOLUTIONS LTD	Social Networked Smart Infrastructure Assets	£636,000	£445,200
NORTH HERTFORDSHIRE HOMES LIMITED		£98,960	£59,376
University of Cambridge		£173,107	£173,107
<b>Project description - provided by applicants</b>			
<p>Recent, tragic, events in social housing have brought to the forefront the need for change in the way assets that are owned, managed and used by different parties are monitored and maintained. Asset owners and managers must be held accountable for their decisions. Asset end-users e.g. tenants must have access to up-to-date and clear information on asset inspection schedules and whether these are being followed. End-users must be listened to, their collective feedback should be captured and used to improve asset maintenance and scheduling. This project proposes a solution powered by the latest mobile digital technologies that will allow all parties with an interest in an asset to interact with the assets, update records and leave feedback all via the same system, with access to relevant and important information. All data captured will be fed back into the asset management processes and schedules supported by machine learning and artificial intelligence techniques that intelligently filters input from users and merges that with existing data within the asset management systems. The result will be enhanced decision-making based on the value of infrastructural assets to tenants, asset usage and feedback from end-users, showcased by 2 exemplars, one in social housing and one in a University. Our aim is to empower members of our society at a very poignant time to engage with a transparent and trustworthy change that addresses pertinent concerns that are shared by so many.</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ILIKA TECHNOLOGIES LTD	P-type Oxide Semiconductor Thin-films (POST)	£577,657	£404,360
ARM LIMITED		£8,775	£0
PRAGMATIC PRINTING LIMITED		£252,088	£176,462
<b>Project description - provided by applicants</b>			
<p>The main motivation for this project is to open new market opportunities in radio frequency identification (RFID), the Internet of Things (IoT) and other flexible electronics applications, through the development of low-cost flexible p-type transistors (PMOS) to complement existing amorphous oxide n-type (NMOS) capability. NMOS based logic is sufficient for initial RFID applications in flexible electronics but complementary logic (CMOS), formed from combining n-type and p-type devices in single logic elements, is both lower power and faster than either NMOS or PMOS alone. As the overall power budget is often constrained (e.g. in mobile phones) then improved power consumption provides opportunities in increasing circuit complexity or areas requiring very low power. To date, commercially viable inorganic PMOS materials have not been identified. The project focuses on a targeted evaluation of the parameter space of novel P-type metal oxide based semiconductors, using high throughput thin film techniques proven for rapid identification and screening of the processing and composition space of functional thin film materials. Through this there will be demonstration of thin film transistor performance capable of implementation in a cost-effective flexible CMOS technology. This will be supported by SPICE modelling and circuit simulation to demonstrate expected circuit performance.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>ALL STREET RESEARCH LIMITED</b>	Virtual Investment Researcher	£651,976	£456,383
University of Cambridge		£199,502	£199,502
<b>Project description - provided by applicants</b>			
<p>All Street is recognised by the UK Cabinet Office as a market maker in alternative finance. The company provides investment research on SMEs. Both individual and institutional investors are demanding more investment research on SMEs, but the level of coverage is actually falling. There are over 5 million SMEs in the UK with an estimated funding gap of Â£30bn and only a technology solution can scale investment research coverage to a meaningful level. In partnership with the University of Cambridge, All Street has developed the prototype for a virtual investment research system using machine learning and artificial intelligence. This technology will enable All Street to significantly expand its SME research coverage, providing investors with the information they need to invest in this key economic segment. The project has significant economic and social impact, in helping to bridge the SME funding gap and enhancing financial literacy.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>HAYBEESEE LIMITED</b>	A Satellite and Hopping-Robot System for Agri-IoT	£450,203	£315,142
ABACOGROUP UK		£132,009	£79,205
SATELLITE APPLICATIONS CATAPULT LIMITED		£99,569	£99,569
<b>Project description - provided by applicants</b>			
A system using ground and EO data to create prescription maps, which constantly learns and becomes more accurate from ground data calibration. Allowing the ground robot to be constantly guided to new found objectives to enable precision targeted interaction including weed killing.			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 12 to 24 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
HELIAQ UK LTD	Technology Demonstration of a Transformational Global Satellite Ground Network	£244,756	£171,329
DEIMOS SPACE UK LIMITED		£229,407	£114,704
GOONHILLY EARTH STATION LIMITED		£30,000	£21,000
IN-SPACE MISSIONS LIMITED		£14,660	£10,262

### **Project description - provided by applicants**

The primary information bottleneck in any space-based system is the transmission of satellite data to earth. This is especially true for low-orbiting constellations, where satellites are only visible from a ground station for a few minutes per day. In this project Heliq and its partners are demonstrating the key technologies for establishing a global network of high-performance ground stations, which can be built and deployed at ultra-low cost. This low cost enables the rapid establishment of the large global network, which will give satellite operators dozens of communication opportunities per day at costs previously unheard of. The global small satellite fleet is rapidly growing, especially in the nano- and micro-satellite mass ranges. This growth is fuelled by the rapidly increasing capabilities and decreasing costs of such satellites. It is now feasible to build very small satellites and constellations that have the same functionality as much larger satellites from a few years ago, at a fraction of the cost. But hundreds of small satellites in low-orbiting constellations, each producing large amounts of data, presents a major challenge: How can these large volumes of data be downloaded? Small satellites are typically only visible once or twice each day from a point on earth, and then only for about 4-10 minutes depending on altitude and orbit. A typical small satellite is therefore in contact with a specific ground station less than 0.5% of the time on average. This short contact duration not only severely limits the volume of data that can be downloaded, but also typically introduces a significant latency between the collection of the data and reception of the data on earth. The most viable method of simultaneously increasing data volume and reducing latency is to use a network consisting of a large number of ground stations. But until now this has been cost-prohibitive. Heliq is therefore developing a global network of dozens of low-cost ground stations that are completely flexible in terms of communication frequencies and protocols, and operate fully autonomously. By leveraging technologies developed for astronomy and big-data applications, this network will allow full utilisation of current and future satellite constellations. Based on the 2.4m S-Band ground station already developed by Heliq, the current project involves the development of ground stations with more collecting area (3m diameter), additional frequency bands (UHF), and deploying 6 stations globally in a test network. This project lays the foundation for larger future commercial networks.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 24 to 36 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>PROGNOMICS LTD</b>	Exploiting graphene's properties for sensing and monitoring applications	£450,513	£315,359
AIXTRON LIMITED		£50,632	£0
NPL MANAGEMENT LIMITED		£170,032	£170,032
SEMEFAB LIMITED		£197,205	£118,323
UNILEVER U.K. CENTRAL RESOURCES LIMITED		£44,183	£0
University of Cambridge		£140,585	£140,585



### **Project description - provided by applicants**

Exceptional electronic properties, surface sensitivity and selectivity, makes graphene an ideal candidate for a wide number of potential applications. However, in order to exploit these properties and enable such applications, substantial industrial research is necessary to overcome considerable material and process challenges that prevent graphene technology to move from the laboratory to large-scale manufacturing. Our Industrial Research project will explore novel graphene surface chemical modification processes, transfer methods and integration processes to be transferred and tested at the industrial level, enabling entirely new applications for in-line monitoring of allergens in food manufacturing, and Point-of-Care (POC) critical health diagnostics. The extraordinary surface sensitivity of graphene, coupled with the correct technology to modify its surface, makes it an ideal material for sensing applications. Performance evaluation of our optimised processes will be conducted through metrology on advanced sensing test structure, for the detection of i) milk allergens in food products and ii) Myocardial Infarction (heart attack) and the rapid detection of Cardiovascular Disease (CVD\*) biomarkers. The needs for tackling these two exemplary applications stems from: - the prevalence of food allergies (increasing globally and prompting food producers to pay increased attention to monitoring of the food processing plant): where there is a possibility of cross-contamination, food producers are obliged to label products and recall incorrectly-labelled products and "faulty" batches-- costing industry millions and producing negative publicity; - The incidence (and mortality) associated with heart attack and the global increase in the burden of National Health Services and global population caused by CVD\* - a rapid response in ruling out a potential heart attack and, if detected, understanding the disease progression in quasi real-time, will provide a powerful POC tool to clinicians, hospitals, and emergency units, help saving lives and lower costs. The development of our graphene-based technology will allow to ultimately enable fabrication of real-time sensing devices, developed for in-situ monitoring of food & food processing units and POC critical health diagnostics, would enable instant and low-cost monitoring. The availability of quality control measures to be integrated with Aixtron's growth equipment will enable a pathway to rapid transition of graphene technology from research lab to factory. The availability of integrated graphene-based sensors for in-situ monitoring would offer end-user Unilever a real breakthrough in monitoring for milk allergen contaminants and explore new medical technology applications.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

## Results of Competition: Emerging and Enabling Round 3 - 24 to 36 Months

Competition Code: 1709\_EE\_R3

Total available funding is £15m across 3 streams

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPTOCAP LIMITED	Miniaturised integrated visible laser sources for displays, augmented reality, sensing and communications - MiniRGB	£472,533	£236,267
FRAUNHOFER UK RESEARCH LIMITED		£375,738	£375,738
OPTOSCRIBE LIMITED		£139,616	£97,731
POWERPHOTONIC LIMITED		£286,944	£200,861
<b>Project description - provided by applicants</b>			
<p>This project seeks to develop miniaturised red, green, blue (RGB) laser sources that will play a significant role in future laser displays, augmented reality hardware, optical communications and medical equipment. The miniRGB source will exploit three innovative technologies including two advanced laser manufacturing techniques of waveguide writing and lens formation. Using an ultrashort pulsed laser, 3D waveguides can be written into glass to create optical circuits with great design freedom. The lens formation method uses lasers to micro-machine lens structures onto glass surfaces with complex lens profiles being possible. A third innovation of compact laser array packaging will be used to allow coupled sources more than 50 times smaller than the current state of the art. The project team includes project lead, Optocap, an optical component integration and packaging company; PowerPhotonic an SME specialising in direct laser lens formation and Optoscribe, an ultrafast laser inscription company. The fourth partner, research and technology organisation Fraunhofer UK, will develop the waveguide writing process and build the project demonstrator. The project will feature an industrial engagement work package to find the drivers and stakeholders in the target markets and a commercialisation work package to accelerate the technology to market after the project.</p>			

Note: you can see all Innovate UK-funded projects here

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 24 to 36 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
ZOO DIGITAL GROUP PLC	Multimedia Analysis for Unsupervised Dubbing In Entertainment (MAUDIE)	£848,280	£508,968
University of Sheffield		£314,492	£314,492

### **Project description - provided by applicants**

With the availability of numerous streaming video services that now operate around the world, feature films and TV series are being enjoyed by much larger audiences than ever before. This has led to a significant surge in demand for high quality, professional services to adapt titles into multiple languages using both subtitling, where translated text is displayed over the picture, and dubbing, where the voices of on-screen actors are replaced by foreign language speakers. The most popular approach taken by content owners is subtitling, since this is on average 10% of the cost of dubbing the same content. However, consumer audiences are becoming more and more discerning, and the providers of streaming video services are finding that it is increasingly necessary to provide high quality voice dubs for a growing number of countries. Recent research by the Media Entertainment Services Alliance (MESA) indicates that around \$1.4bn was spent in EMEA on dubbing in 2016, a figure that is expected to grow at a rate of more than 10% annually. Traditionally, dubbing has been fulfilled predominantly by independent, dedicated dubbing studios that operate in each country. These provide recording spaces, control rooms, equipment and a staff of in-house specialists to work on projects. Each such studio engages the services of voice actors, most of whom reside nearby and can therefore attend recording sessions without incurring significant travel and subsistence expenses. With the recent growth in demand, the entertainment industry now faces a significant shortfall in capacity and talent used to create foreign language dubs due to the limited availability of these dedicated dubbing studios and their key staff. In 2017, ZOO Digital, a partner in the consortium and established provider of subtitling services, began offering a new disruptive approach to dubbing that utilises cloud computing to significantly increase industry capacity. Despite this, there remains a fundamental constraining factor due to the limited availability of experienced \_dubbing directors\_ who are needed to oversee each recording session. This project will use recent advances in machine learning research in order to automate much of the role of the dubbing director. This will mean that voice actors will be able to perform their work unsupervised, with critical appraisal of their timing accuracy and performance provided in near-real time by automation software. This will pave the way for a substantial increase in capacity for high quality dubbing to meet the expanding industry requirements.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 24 to 36 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>SMALL ROBOT COMPANY LIMITED</b>	An AI driven operating system for robotic precision farming and other networked autonomous systems	£808,570	£565,999
COSMONIO LIMITED		£144,455	£101,118
PAYBODY FARMS (MAIDWELL) LTD		£31,008	£21,706

### **Project description - provided by applicants**

There is an innovation problem in farming today. Despite massive developments in precision farming, a farmer currently farms much like they did 30 years ago. Individual precision farming products, such as autonomous tractors, variable rate sprayers and crop scanning drones are being adopted, but these are expensive, and individually only bring incremental benefits. More advanced products and technologies are becoming available, but are viewed as untested or unreliable by farmers who are typically risk averse, non-technical and unwilling to make large capital investments. All farmers need a step change in the efficiency and productivity of their land to feed a rapidly growing population, while working within tighter regulations to ever smaller profit margins. The greatest challenge in realising the potential of precision agriculture is in creating a 'network effect' of multiple innovations working together in order to achieve significant step change. Linking together granular data collection, automated data analysis, per-centimetre soil maintenance and per-plant crop care, will provide the massive increases in production necessary, while simultaneously reducing the need for energy, chemicals and water. The Small Robot Company is a group of experienced entrepreneurs, engineers, service designers, and farmers. We are creating a revolutionary way to farm broadacre crops. We are building an end to end robotic crop care ecosystem, designed from the farmer's perspective. We call this Farming as a Service (FaaS). At the heart of this ecosystem is a distributed, AI driven operating system called FaaS-OS. This software will autonomously control farming robots across multiple broadacre farms, based purely on inputs gathered and analysed with minimal human interaction. This project is to build and trial the first iteration of FaaS-OS. The ultimate output will be software that will autonomously control a fleet of farming robots based purely on inputs gathered and collected by other robots. This project is innovative because it is not a product, but a service designed specifically for the farmer, by farmers. It will be simple to adopt and easy to use. Finally, this project will deliver a service infrastructure that could be applied to any other crop type using any robotic or precision farming products, and be used by countless other robotic services.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results

# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 24 to 36 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
<b>ADVISE-DETA LIMITED</b>	A Graphene Sensor for Defect Detection and Predictive Maintenance in Composite Materials (GRAPHOSITE)	£351,550	£246,085
Brunel University London		£225,823	£225,823
CAMBRIDGE NANOMATERIALS TECHNOLOGY LTD		£154,562	£108,193
DZP TECHNOLOGIES LIMITED		£346,769	£242,738
HAYDALE COMPOSITE SOLUTIONS LIMITED		£343,930	£240,751
TWI LIMITED		£279,082	£279,082

### **Project description - provided by applicants**

Defects can inadvertently be produced in composite materials either during the manufacturing process or during the normal service life of the component. Some non-destructive testing methods such as ultrasonic testing and strain gauging exist for defect detection in composites. However, these have limitations (including cost) that have prevented them being used extensively. Notwithstanding, the Department for Business Innovation & Skills (BIS) UK Composites Strategy, insists that the UK needs to focus on advancing composites reliability and increase market share of existing sectors and ensure the use of composites in new sectors. This project therefore seeks to develop GRAPHOSITE (A Graphene Sensor for Defect Detection and Predictive Maintenance in Composite Materials for use as a highly efficient, more convenient composite monitoring tool). Our technology will be based on an enhanced graphene-substrate interaction, with the ability to embed within a composite structure. The successful exploitation of the technology will result in cumulative revenue of £103m after 6 years in the market.

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results



# Innovate UK

**Results of Competition: Emerging and Enabling Round 3 - 24 to 36 Months**

**Competition Code: 1709\_EE\_R3**

**Total available funding is £15m across 3 streams**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

Participant organisation names	Project title	Proposed project costs	Proposed project grant
<b>SOLUIS GROUP LIMITED</b>	Project Mobius: Transforming Education with Immersive Technologies	£649,900	£454,930
University of Glasgow		£261,813	£261,813
<b>Project description - provided by applicants</b>			
<p>Project Mobius will convert the teaching power of Virtual Reality (VR) into a goldmine of continually expanding educational data. We will build exceptional Virtual Reality teaching applications for Higher Education, transforming student learning across a range of subjects and gaining deeper understanding of how students learn; such as how long they take to do a task, what different approaches they use, what aids the cognitive process and how well learning is retained over time as the complexity of the learning experience increases. In a classical teaching environment, capturing such fine-grained student learning data is impractical, costly and inefficient. This means that educators are deprived of valuable data that would allow them to improve and refine the learning process for their students. VR represents a potential transformation in the way teaching is traditionally delivered, but it also represents an opportunity to capture unprecedented levels of information about the learning process. Our Mobius platform will host a range of VR teaching applications from which (anonymised) learner data can be drawn. It will then interpret this data into tailored analytics reports for educators, and for the broader data market. By harnessing the power of VR, we will empower educators to create a better, more effective, student learning experience, creating a valuable stream of data in the process.</p>			

**Note: you can see all Innovate UK-funded projects here**

<https://www.gov.uk/government/publications/innovate-uk-funded-projects> Use the Competition Code given above to search for this competition's results