Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
IOLIGHT LIMITED	Low-cost Fluorescence Microscope	£88,994	£62,296

Project description - provided by applicants

A small, low cost fluorescence microscope will be developed for biomedical R&D. Existing fluorescence microscopes are expensive, >£5000 & cumbersome. They target high quality quantitative fluorescence imaging for development of specimens tagged with fluophores, often via genetic engineering. As this tagging technology has become mature, researchers are now using fluorescence in larger scale applications which require a small, easy to use tool for qualitative sample screening. Eg Manchester University (Development (2014) 141, 1514-1525) use tadpoles genetically engineered to express fluorescent proteins to study anti-infective mechanisms - They told us that they need to screen many tadpoles for the best fluorescence and need a small low-cost fluorescence microscope to do this no such tool is available. Many researchers (eg K.Hedges, Humbolt State University) are resorting to DIY which is time consuming. We will develop 3 demonstrations of portable low-cost fluorescence microscopes and get feedback from 30 users. ioLight will then use this information to build prototypes and them products for sale. Imaging and Microscopy reports the optical microscope market to be $1.7Bn in 2018

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
Navtech Radar Ltd.	A feasibility study on a low cost drone detection radar system	£99,377	£69,564
Project description - provided by applicants			
Navtech radar will explore novel applications of micro-Doppler and FMCW radar in order to investigate the feasibility of producing a radar system that will successfully detect Unmanned Aerial Vehicles (UAVs/Drones) with near-hemispherical detection. Innovative techniques will be used to provide differentiation between drones and birds so as to reduce false alarms as much as possible. Navtech provide security solutions to a wide range of industries including nuclear power plants, airports, prisons and other areas of critical national infrastructure, and have been made increasingly aware of the risk that drones pose to sites. Affecting health and safety of passengers in and around airports, carrying contraband into prisons, and potentially carrying explosives or recording devices into high security sites, the threat of increasing drone use is a problem that must be met with an effective, commercially viable solution.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
MA Systems and Control Limited	Wind based Aesthetic Static Structure for Ubiquitous Renewable Energy: WindASSURE	£76,381	£53,467

Project description - provided by applicants

In general the public find wind turbines ugly and they will protest their installation in urban areas and areas of natural beauty. This stifles the widest deployment of wind energy harvesting. Because of this public impression, organisation's like sports stadiums, councils, hotel chains, and highway agencies cannot easily integrate turbines into their buildings infrastructure and therefore cannot add wind renewables to their low carbon footprint planning. A good alternative to turbines would be sleek static structures, of architectural beauty, designed to please, designed to include functionality such as messaging and lighting. They would operate at all wind speeds and could therefore be deployed everywhere. Organisations could have them integrated in their buidlings (either at design time or later) and have their cosmetic appearance and shape customised to suit a given theme or context. Blending into the surroundings, these structures would meet with limited protest at the planning permission stage. Supported by public acceptance, cheaper to buy and install, they would be far more widely deployed and begin to compete with urban solar. Our aim is for WindASSURE to act as an enabling technology, opening up new markets, new manufacturing and export opportunities.

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DZP Technologies Ltd.	Printed 2-Dimensional graphene-related materials for ubiquitous gas sensors	£93,254	£65,278
Project description - provided by applicants			
This feasibility study proposes the development and demonstration of printable gas sensors based on 2-Dimensional Transition Metal Dichalcogenides (2D-TMD). These materials belong to the group of graphene-related materials because similarly to graphene, they can exfoliated into monolayers of unusual properties. In contrast to graphene, the 2D-TMDs are semiconductors and they have a tunable band gap. As a result, they are useful candidates for gas sensing applications. In industrial context, the proposed 2D-TMD sensors have the potential to disrupt existing approaches. The new gas sensors will be thin, flexible, low-cost, and in many cases, disposable. This creates new applications and opportunities for integrating these sensors in smart phones, wearables, biosensors and medical diagnostics, and connecting with the Internet of Things. The proposed sensors will be used in future by system integrators and combined with many other sensors to increase the functionalities and value of the future smart systems, and implement new business models.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Industrial Tomography Systems plc	Flow-Itometer - the integrated non-nuclear density and flow meter	£99,952	£44,978
Project description - provided by applicants			
ITS is the world leader in electrical process tomography - the industrial equivalent of CAT scanning - where an array of electrodes placed around a pipe or vessel is rapidly scanned. These measurements are analysed using an imaging algorithm to produce a picture of the contents in real time, allowing chemcial engineers to "see inside their process". This project represents the extension of ITS's industrial product range, providing an instrument that can measure both density and flow of fast flowing, abrasive slurries. At present these measurements can only be taken using nuclear sources - typically the last resort for any sort of measurement. A safer, non-nuclear instrument will enable operators to improve the efficiency and safety of mineral processing, improving productivity and reducing the proliferation of hazardous nuclear materials.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Senseye Ltd	Enabling Smart Factories	£79,837	£55,886
Project description - provided by applicants			
Smart Factories are centered on the application of big data and analytics and promise major benefits in efficiencies and productivity. Genuine use cases are scarce due to the lack of integrated and structured data, limiting scalable benefit. This project will assess the feasibility of automatically generating a layer of integrated and rich data to provide factories with workable data.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Red Sensors Limited	The feasibility of a novel low cost, high performance, LiDAR solution for multiple markets.	£99,900	£69,930
Project description - provided by applicants			
The lack of a reliable low cost LiDAR with 360 degree scanning capabilities, is currently restricting the widespread adoption of this critical 3D mapping and tracking technology. Red Sensors has created an innovative LiDAR design which overcomes the challenges facing the sensor industry, to provide a low cost, reliable, 360° real-time multi-beam scanning solution for use in multiple markets. The company will demonstrate the feasibility of the design during a 12 month project funded by Innovate UK.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Flexciton Limited	Flexciton Industrial Proof of Concept	£98,118	£68,683
Project description - provided by applicants			
Flexciton is building an innovative technology which will disrupt the established approaches to operations of large industrial rotating machines. We aim to save huge amounts of energy and costs wasted from oil and gas, chemical industries and power generation. These industries need efficiency improvements to stay profitable especially after the global oil price crash. The technological explosion of industrial sensors and the progress in connecting industrial machines in a cloud-based environment (industrial Internet of Things) enabled the acquisition of various types of information in real-time, examples are fuel prices and process data. The computational power has increased with the use of cloud computing. Flexciton will integrate these technologies and use large amounts of industrial data to develop the optimal operation and maintenance schedules of complex industrial plants. This method is enabled by the progress in the above technologies and it is expected to save tens of millions of pounds for large industrial users annually.			

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Innovate UK

Results of Competition: **Emerging and Enabling Technologies Round 1**
Competition Code: **1610_SC_EMEN_R1**

Total available funding is up to £5m for Stream 1

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
BLOCK DOX LIMITED	BlockDox - Unique Occupancy Assessment Platform for Buildings	£99,980	£69,986
Project description - provided by applicants			
With implications for space optimisation, operational cost reduction, H&S, & energy performance (buildings accounting for ~40% of total energy use, with a significant part of this energy wasted in servicing unoccupied buildings), having accurate knowledge of localised occupancy information is critical to smart intelligent building strategies. Despite representing the primary challenge facing all building operators & facility managers obtaining a precise and reliable measurement of occupancy remains difficult based on current solutions, the impact being that most buildings are inefficiently managed with poor energy performance. BlockDox offers an interoperable platform that can be integrated into any Building Management System. It combines a patent-pending sensor fusion method with unique machine & deep learning algorithms to deliver an accurate assessment of real time & predictive people counting/flow. The solution addresses an unmet market challenge with 99% accuracy with the potential to deliver up to 56% Heating, Ventilation, and Air conditioning (HVAC) savings, improved staff resourcing/use of floor space, improved security implications incl. crisis management. Potential for the solution to be applied to other sectors including Transport, hospitality & healthcare.			

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Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DynAikon Ltd	No More MoCap	£99,987	£69,991
Project description - provided by applicants			
The "No More MoCap" project aims at making the special effects used to animate and augment fantastic characters in famed movies like Avatar and The Lord of the Rings available to creatives, students, and in time to the public in general. DynAikon Ltd. is developing a unique technology which will be low cost yet empowering in producing automatic movement recognition and articulated shape understanding from typical camera inputs. This will permit a wealth of new applications where the user will not need to rely on expensive and complex hardware and software set-ups. Furthermore, the solutions being developed by DynAikon offer the potential to be used in un-constrained conditions, indoors or outdoors, without the need for the use of a studio space. Ultimately, the No More MoCap project will make it possible for the non-expert to engage in creative ways with the Internet of Things by helping mixing digital and physical realities in transparent, intuitive ways.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Embecosm Limited	Security Enhancing Compilation for Use in Real Envionments (SECURE)	£99,420	£69,594
Project description - provided by applicants			
Security is an important and fast growing area of computer technology. Recent exploits such as the Mirai botnet have highlighted how the Internet of Things (IoT) is becoming a primary vector for massive attacks. Security must be improved, yet IoT devices are commonly small, and have the least compute resources to devote to security. Almost all code for any device, has to go through a compiler to translate the program to the low level binary running on the processor. The compiler is thus ideally placed to look at code, determine insecure coding patterns and provide automated support for writing secure code. Applying security at compile time, minimizes the load on resource constrained IoT devices This project will take the latest academic research into security and attempt to integrate these within the two most widely used compilers, GCC and LLVM. Professional security engineers in general, but particularly for IoT, will then have a tool to warn them when they are writing insecure code and help them write it more securely.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
REAL SPACE LTD	SingleReality - tomorrow's VR on today's devices.	£99,689	£69,782
Project description - provided by applicants			
The immersive virtual (VR) experience offers opportunities in entertainment, engineering, design, the arts, business and healthcare markets. VR will shape new ways of working, training, and communication. Current approaches require tricking™ the user into seeing depth in two distorted offset 2D images. The user often experiences discomfort and nausea on prolonged viewing. Attempts at improving the viewing experience have required the use of increasingly costly computational hardware, pushing prices up. SingleReality is an innovative optical solution offering a superior VR experience from a single high resolution 2D image; no imaging processing is required and therefore no computation hardware. We envisage a low-price point for SingleReality which will disrupt the current VR market by providing a novel optical arrangement to fit inside an off-the-shelf headset allowing a VR experience by choosing either to mount a smart device, or watch a television or cinema screen.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Mindsl Analytics Limited	Golden Rule - Understanding & Preventing Cyber-Fraud	£89,248	£62,474
Project description - provided by applicants			
This is a proposed project for 'Golden Rule' prototype software, using patented technology recently emerged from research, to explain patterns of cyber-fraud. With cyber-crime (including data breachs) fraud patterns are now rapidly changing and exisiting static detection and prevention approaches are starting to fail. Worldwide payment fraud that funds organised crime and terrorism had losses of $13.9bn & could grow to $40bn by 2020 despite all measures put in place. Recent research into neuro-symbolic processing has emerged that is able to explain abstract learnt patterns as English-like "golden" rules. Automatically explaining new and previously unknown cyber-crime fraud patterns leads to improved human understanding & better prevention; productivity is increased & the societal impact of fraud will be cut.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Chromition Limited	Next Generation Luminspheres™ Lighting	£99,170	£69,419
Project description - provided by applicants			
The global Light Emitting Diode (LED) market is forecast to reach $105.5 billion by 2019. Currently, the main applications for LEDs are energy efficient lighting and backlighting for displays used in smart phones, personal computers and televisions. State of the art LED technology relies on the use of rare earth minerals as a source of phosphor. China has large rare earth mineral reserves and the mining of these has had significant adverse environmental impact. The value and limited availability of these rare earth mineral reserves has resulted in the Chinese government limiting supply outside China by restricting international export, which has an adverse impact on price and availability. Chromition will develop Luminspheres, which are nanometre sized phosphor materials, designed to replace current rare earth LED phosphors. Luminspheres are manufactured at low temperature in water from readily available carbon based precursors, and are brighter and smaller than incumbent LED phosphors, hence requiring significantly less material needing to be incorporated into an LED chip for the same light output.			

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Innovate UK

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Competition Code: 1610_SC_EMEN_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Super Local Ltd	geoCookies: spatial memory for IoT objects and mobile devices	£92,691	£64,884
Project description - provided by applicants			
Inspired by web cookies, which allow smoother web browsing, our vision is simple: through big data and precise positioning, we will make it possible for IoT objects and mobile devices to interact seamlessly with the environment. Each time you visit a geographic site, a unique geoCookie is generated and stored by an app on your device. The next time you visit that area, your device checks to see if it has a geoCookie that is relevant and sends the information contained in that cookie back to the app to improve interaction. GeoCookies enable a vast range of applications. For transportation apps, they will be used to automatically provide contextual notifications at bus stops, train stations and on underground metro systems. For shopping apps, notifications may be used to generate coupons matched to shopping preferences. For security, geoCookies may be used to provide location-based authentication for example when completing a mobile payment transaction. geoCookies can capture analytics such as dwell time and browsing habits to enable bricks and mortar intelligence to rival the online world. Our project will evaluate geoCookie feasibility, exploring strengths and weaknesses, required to take this product to market.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Bennamann Limited	Unlocking the potential of grass leaf anaerobic digestion	£99,872	£69,910
Project description - provided by applicants			
Traditionally anaerobic digestion (AD) has used feedstock from agricultural outputs or industrial waste. The majority of plants are at the large-scale, feeding their outputs to the grid. This project proposes to use grass as the primary feedstock for a micro-scale AD solution that will be installed on the grounds of SMEs. This is facilitated through a novel process that decreases processing time by a factor of 4-6, and results in a much smaller, low cost plant. Rather than feed the outputs to the grid, we aim to sell the highest value outputs (compressed/ liquid biomethane - CBM/LBM) to the domestic heating/cooking and transport markets. We wish to test the feasibility of our novel grass AD process in a lab environment in order to assess the technical and economic assumptions we have made. We will be offering SMEs additional revenue streams and increasing the profitability of a range of businesses, while simultaneously increasing the indigenous UK biogas and biofuel supply exponentially. We are already testing a similar business model, which is based on small dairy farms in the UK through an Innovate UK grant. This feasibility study, would allow us the opportunity to assess the potential for disruptive diffusion in global mass markets.			

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Innovate UK

Results of Competition: **Emerging and Enabling Technologies Round 1**
Competition Code: **1610_SC_EMEN_R1**

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Youtility Limited	Youtilily | Empowering consumers in a disengaged market	£98,431	£62,764
Project description - provided by applicants			
Youtility is developing an innovative web-based platform to aggregate consumer utility data into a single and secure platform. During the project Youtility will undertake research and testing of new proprietary engagement technology to empower consumers in a disengaged market, increase competitiveness amongst providers and have a dramatic cost saving impact on users particularly the 4.5m consumers (17% of UK households) affected by fuel poverty. The UK Government estimates that 9.5m households could benefit from potential savings worth £2.9bn p.a. if consumers were on appropriate energy tariffs - this situation is not unique to the energy sector, with cost and consumption savings achievable across other markets (e.g. telecoms, insurance, media etc.). Behavioural efficiencies by consumers in Europe could save £1.8bn and 12 terawatt-hours of energy p.a. Governmental and regulatory pressure to reform the UK domestic utility market, alongside greater access to consumer data (through Smart Meters and the development of service provider APIs), as well as providing time constrained consumers with easy access to information are all conducive to a breakthrough in the way consumers manage household utility consumption and engage with providers.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Palliser Engineers Ltd	Emerging and Enabling Round 1 - under 12 months and under £100k	£80,742	£56,519
IBSENTELECOM LTD		£17,794	£12,456

Project description - provided by applicants

The growing demand for high bandwidth, reliable and affordable data communications has major connectivity bottlenecks, notably the 'last mile' delivery of broadband to homes and businesses. BT Openreach's planned upgrades of G.Fast technology and Fibre to the Home (FTTH) will replace existing infrastructure but prices continue to rise with landline rental fees often representing the greatest proportion of consumers' bills on basic broadband tariffs. Even with recent government announcements, consumer demand for services is likely to outstrip supply unless flexible and easily installed alternatives can complement the spread of fibre. The OWLS project has been set up to achieve major price reductions for high broadband and easily installable data links using Optical Wireless Communication (OWC) devices. Low cost infra-red data links are being developed that show the capability to extend the range of existing wireless connectivity directly into homes. Where communication hubs are available, people will be able to buy units for the home and set them up with minimal effort. OWLS development under this programme will establish how early products should be packaged and connected, first for UK opportunities and then for a variety of communities overseas.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NeuDrive Ltd	Manufacturable Extended Gate Array Sensors (MEGA Sensors)	£99,268	£69,488
Project description - provided by applicants			
MEGA Sensors will demonstrate an array of organic thin film transistors in a format compatible with biological sensing. Such arrays could be employed for applications in high throughput screening, healthcare and toxicology analysis, lowering costs to end users and speeding up the development cycle through a greater number of parallel measurements. The project makes use of FlexOS, a high performance organic semiconductor technology of NeuDrive Limited that can be coated in large area formats to make arrays of high performance, stable organic thin film transistors operating at low voltages. As part of the project, end users will contribute at the outset towards the device array specification setting and participate in evaluation of the benefits of the technology at the end of the project.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Guidance Marine Limited	Development of a HMI for a novel environmentally referenced dynamic positioning sensor	£99,558	£59,735

Project description - provided by applicants

When operating around offshore platforms and infrastructure, vessels rely on multiple sensors of different technologies to provide information to their Dynamic Positioning (DP) systems, enabling them to approach and maintain position. Commercially available radar and laser local position reference sensors, installed on the majority of DP enabled vessels, are used to position the vessel relative to targets installed on the infrastructure. The use of targets presents a number of safety issues and cost implications including: safety concerns during installation; unreliability of reflections due to the poor quality of targets, interference from obstructions; maintenance and CAPEX costs; increased operational time and costs. Guidance Marine (GM) is a leading global developer and supplier of DP position measurement technologies. GM has developed a novel environmentally referenced sensor to enhance the safety and efficiency of global DP enabled operations at sea in response to industry concerns and direct mandate from oil majors. During this industrial research project, GM will develop a human-machine interface that ensures that outputs of this technology hide technical complexity to the end-user and allows maximal impact of the technological advance.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Omnifi Ltd	Omni-beacon Physical Web Platform	£89,973	£40,488
Project description - provided by applicants			
The Omni-beacon Physical Web platform is designed to allow those operating public spaces to connect these locations to dynamic web content via Physical Web Beacons through by a web-based platform. This project sets out to validate our customer and user facing proposition, improve our MVP beacon hardware and design, develop and trial a user facing web platform.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Sefton Technologies Ltd	PEBiC: Photonics Enabled Biofilm Control	£87,730	£61,411
Project description - provided by applicants			
The project aims to tackle the growing problem of bacterial contamination on medical devices used in hospitals without the use of antimicrobial agents, which contribute to the rise in antimicrobial resistance. The project is led by an innovative SME utilising relevant expertise from a leading UK university and specialist suppliers.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Opposable Games Limited	Salvaged Immersive VR warehouse	£84,216	£58,951
Project description - provided by applicants			
Opposable Games are creating the UK's first fully shared, social VR experience, which will be made available at premium leisure centers in late 2017. Award winning pioneers of Virtual Reality technology and games, Opposable are allowing fans and newcomers to the Salvaged world to step into the game in groups of up to eight players. Players will be able to see each other in Virtual Reality in the role of super agents, exploring ancient space craft (by walking around 200m x 200m locations) on the orders of shadowy corporations and encountering unusual races of peaceful, and not so peaceful creatures. At certain times team may encounter other salvage squads, and will be able to customise their weapons, armour and spaceships as they gain more experience. In order to deliver this experience, Opposable have invested in cutting edge VR networked VR setups, motion capture technology and leveraged the universe first created in the Salvag game. The company will be partnering with high profile leasure destinations for licensing of the experience, and will look to expand the concept globally over the next three years.			

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

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
Holosphere Limited	Auto AR	£90,189	£63,132
Birmingham City University		£8,828	£8,828
Project description - provided by applicants			
Holosphere Ltd is collaborating with a leading global premium car manufacturer and Birmingham City University to prototype and evaluate a scalable sales tool for the automotive sales sector. The tool will enable a portable and interactive version of the systems normally reserved for bringing theatrics to exclusive high-end car launch events and using an emerging technology to make it accessible to a much wider audience. The system being developed will use projection mapping™ - augmenting physical surfaces with computer generated materials and textures, to bring to life a scale 3D printed model of a new car. The system will enable users to walk around and interact with the car in real-time - changing configurable elements of the vehicle such as colours and paint finishes, wheel selection, option packs and trim. Holosphere Ltd have already identified numerous other applications for this adaptive and immersive technology which have the ability to disrupt existing markets and create new ones both in the UK and globally. These new markets will be made available by the lower cost, ease of setup and extra functionality over existing systems.			

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Innovate UK

Results of Competition: **Emerging and Enabling Technologies Round 1**
Competition Code: **1610_SC_EMEN_R1**

Total available funding is up to £5m for Stream 1

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
Zenotech Ltd	Cloud Burst	£100,000	£70,000
Project description - provided by applicants			
Awaiting Public Project Summary			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
Emyrus Ltd.	Plasma	£99,420	£69,594
Project description - provided by applicants			
Despite its unique physical properties, graphene is chemically inert. Finding cost-effective and environmentally friendly ways to chemically modify graphene (for incorporation into other materials) without destroying its physical properties poses a major challenge to scientist and technologist. This has hindered the wide-spread uptake of graphene-enhanced products. Vacuum-based plasma treatment of graphene has offered a potential solution, through the chemical functionalisation of the material allowing it to be incorporated into a variety of materials matrices. However, this approach has only had limited success and impact because the modification of the graphene is not well defined and the material itself can be damaged in the plasma process. This means dispersions of graphene often required in industrial processes are unstable leading to the unique properties of graphene not being realised. This project will allow Emyrus Ltd to test the technical feasibility of a new, disruptive plasma-based process which can overcome the problems seen with current plasma technologies.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
Minibems Limited	Minibems HIU Control	£99,838	£69,887
Project description - provided by applicants			
It is widely acknowledged that heating plant seasonal efficiency is determined by return temperatures and that lowering return temperatures to heating appliances increases their efficiency. Additionally, it is also recognised that cycling boiler plant on-off also impacts efficiency negatively as heating appliances only reach nominal efficiencies once they have been fired and stabilised through running for a period of time. Minibems has been developed to achieve this, while providing cloud based visibility of the energy system to allow remote fault diagnosing and energy consumption monitoring. Minibems is a heating control solution that has been developed from extensive R&D, that has demonstrated field test site efficiency gains of >25% compared to standard control approaches to solve these issues. The purpose of this R&D project is to develop an integral controller with a Heating Interface Unit to quickly deploy Minibems into district and communal heating and generate energy savings. Minibems is a technology company based in the South West of England and is focussed on being a market disruptor in the heating sector.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
Applied Graphene Materials UK Limited	High Efficiency Graphene Synthesis - HEGS	£95,941	£67,159
Project description - provided by applicants			
AGM has already started to commercialise its technology by providing graphene nanoplatelets in formats that can be readily adopted by its customers. AGM has recognised that not all graphene is created equally and the methods of manufacture have a huge influence on the characterisitcs of the materials produced and therefore its ultimate usefulness. Having understood many of the process parameters which deliver specific performance characteristics AGM now seeks to be in a position to supply these materials in large volumes and at an appropriate cost. The lower the total manufacturing costs the greater the scope of applicability for graphene across multiple market sectors globally.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

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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
Amarna Ltd	Socioscope: improved sociological forecasting for business & goverment using cyberdata	£73,363	£51,354
Project description - provided by applicants			
Socioscope provides a dashboard for depicting and forecasting social trends, to help commercial enterprises and government departments plan their activities and avoid being taken unaware by sudden shifts in public opinions and priorities. The engine of Socioscope is a codification of socio-historical change known as Dark Age Theory, while the fuel consists of online data supplying a view into the planetary collective consciousness via commentary and browsing habits. The core innovation is based on a recognition that the global conversation is both the product of human thought and a shaper of that thought, and involves the mathematical techniques needed to capture this recursive relationship. Socioscope offers its users a giant step forward from technologies like opinion polling and economic models, whose failures are attributable to incomplete modelling of the complex, multi-dimensional feedbacks inherent in social systems.			

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Innovate UK

Results of Competition: **Emerging and Enabling Technologies Round 1**
Competition Code: **1610_SC_EMEN_R1**

Total available funding is up to £5m for Stream 1

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
Modelling Engineering & Development Company Limited	CTI-Pro: Coiled Tubing Inspection System Prototype	£71,175	£32,029
University of Exeter		£28,218	£28,218
Project description - provided by applicants			
The focus of this collaborative project is the experimental development of a compact, low power and affordable Coiled Tubing (CT) Inspection system Prototype (CTI-Pro) for the global oil field services industry. CTI-Pro is intended to inspect defects in CT during wellsite operations to provide end users real-time measurements of CT integrity and their remaining life. This is key to minimising the expensive risks of unexpected failures of CT in wellsites, and maximising their usage life and productivity. CTI-Pro will lead to a new product, that addresses the urgent need of the industry for a commercially available and affordable on-site CT inspection tool (currently limited to few expensive "services" with heavy and cumbersome equipment). CTI-Pro will be designed and engineered based on magnetic flux leakage (MFL) technology, with distributed sensors that enable volumetric inspection, intelligent detection and low power operation. Commercial exploitation of the new product would enable potential business growth with a new source of revenue for the lead industrial partner and other businesses engaged with them. The new product will also add value to their existing CT inspection products and strengthen their competitiveness in the global market.			

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Innovate UK

Results of Competition: **Emerging and Enabling Technologies Round 1**
Competition Code: **1610_SC_EMEN_R1**

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CGA Simulation Ltd	ARplan - Augmented Reality Planning for Security and Military Applications	£99,897	£69,928
Project description - provided by applicants			
CGA Simulation's ARplan is an innovative approach to providing decision making tools aimed intially at the defence and security sector but with later applications for civilian and commercial industries. It deploys advanced Augmented Reality approaches and leverages emerging platforms with a specific use case based on a need that has been identified in previous research and development by CGA.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Biz2Mobile Ltd	Asset Visibility And Advanced Analytics For Enterprise IoT	£99,924	£69,940
Project description - provided by applicants			
As companies and whole industries evolve and adapt new technologies and business processes in the enterprise mobile space, the amount of data available to them has grown exponentially. B2M has helped many companies make sound, informed decisions based on information gathered from Enterprise Mobile Computing Devices, such as ruggedized mobile phones and portable computers. B2M is now planning to include new and emerging technologies in internet connected sensors and intelligent things as part of its analytics portfolio.In this Innovate UK funded project B2M will develop a series of compelling and innovative case studies based upon actionable analytics for this extended portfolio. The studies will provide a blueprint for how UK companies can leverage Enabling Technologies to both retain customers, develop new products and services, and realise significant revenue growth.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Open Cosmos Ltd.	BROOD1: Open Cosmos data platform feasibility study	£95,096	£66,567
Project description - provided by applicants			
Feasibility study of the implementation of better services and use of nanosatellites to satisfy the demand of data in multiple sectors. The miniaturisation of payloads is enabling nanosatellites to generate useful datasets that will be used to target specific needs in several remote sensing sectors.			

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Innovate UK

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Competition Code: **1610_SC_EMEN_R1**

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
InnoCryst Ltd	Mapping of lattice defects in single crystals	£70,450	£49,315
University of Manchester		£28,146	£28,146
Project description - provided by applicants			
In this industrial research project, we aim to develop a novel analytical method to study crystalline materials. The approach will combine modelling and experiments utilising the specialist knowledge of an SME-sized company and the infrastructure and expertise of the University of Manchester. The results will contribute to the available research, development and analytical capabilities across a large range of materials and products.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Switchee Ltd.	Switchee - The SMART energy meter designed from the ground up for large landlords.	£90,356	£63,249
Project description - provided by applicants			
Switchee have built a proof of concept prototype (patent pending) smart thermostat for larger landlords which will be the first of its kind, as it will monitor occupant usage patterns and adjust heating provision accordingly. We have tested the prototype in a cohort of social housing and received a very positive response. We have 9 further UK housing associations signed up for concept trials. The value proposition is that by monitoring and learning occupancy habits and trends, Switchee can optimise heating controls and reduce both energy bills and the carbon foorprint of social homes by up to 20%. The data Switchee uses to understand occupancy patterns can give landlord maintenance and customer support teams valuable management information.This project seeks to take Switchee from a prototype device that has already demonstrated proof of concept and take it through the development stage. We will work with potential end users to gain commercial feedback and evidence of utility, to enable a focussed project launch after project completion.			

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Innovate UK

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Future Joinery Systems ltd	Arregated Joinery Platform	£88,042	£61,629
Casa Architects Ltd		£8,910	£6,237
Open Desk (FABBED LIMITED)		£3,000	£0
Project description - provided by applicants			
Parametric tool kit and digital distribution platform to enable architects and designers to work directly and efficiently with a network of CNC enabled local joinery workshops to deliver good value mid to high end cabinetry.			

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Innovate UK

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Competition Code: 1610_SC_EMEN_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Claresys Ltd	Miniaturised Laser Detector	£68,610	£30,875
Aston University		£29,371	£29,371
Project description - provided by applicants			
The last decade has seen the development of handheld, high power diode lasers that can be purchased cheaply. These dangerous tools are treated as a toy but with over 40,000 incidents of lasers being maliciously shone at aircraft reported to the FAA and CAA, the threat to pilot and public safety is becoming a major problem. The aim of this project is to combine novel laser detection techniques developed at Aston University, with optical and systems technologies from Claresys Ltd to produce a small, cost effective, stand alone laser detector and recorder. This innovation will be capable of quickly being deployed in aircraft to alert aircrew to threats as they arise, and to record evidence including location and laser type for potential later prosecution.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Mint Diagnostics Ltd	Point-of-care diagnostics for stress monitoring based on graphene-aptamer technology	£97,500	£68,250
Project description - provided by applicants			
We combine the two emerging technologies of graphene and aptamers to realise a portable personal device for monitoring stress levels. The product offers a 'personal anti-stress coach' service, via a combination of biosensing functionalities and data interpretation, with a dedicated mobile application and a user-centric design.The product goes beyond the activity tracking devices, and can provide real-time feedback about the user's lifestyle, suggesting actions and helping to prevent the development of health conditions			

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Competition Code: **1610_SC_EMEN_R1**

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Aqua Power Technologies Limited	Remote Power Solution For Offshore Data & Sensor Platforms	£38,100	£26,670
Aquatera Limited		£15,000	£10,500
Project description - provided by applicants			
Aqua Power Technologies is leading the development of a novel wave energy converter technology. The project aims to undertake feasibility studies, through market research, and numerical simulation modelling, in an effort to better understand the novel structures performance in a range of simulated scenarios, which will subsequently be validated by a prototype of the fundamental operational components.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Pixel Reality Limited	Virtual Reality for Realtime Immersive Visual Impact Assesment (RIVIA)	£92,639	£64,847
Project description - provided by applicants			
The Virtual Reality for Real-time Immersive Visual Impact Assessment (RIVIA) project sets out to improve visual impact assessment for proposed developments in the built environment; transitioning from the conventional use of 2D photomontages into a real-time 3D immersive virtual reality environment. RIVIA will develop a new toolset and demonstrator, that will be used to deliver rich benefits of real-time assessment & validation, interactive temporal changes of seasons/light and object hide/reveal. The project will be undertaken by Pixel Reality a world class visualisation studio based in Liverpool, who specialise in the production of photo-real imagery for construction clients, property developers, architects and owner occupiers.			

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Innovate UK

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Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
BIM Academy (Enterprises) Ltd	Smart Connected Buildings: Model based performance monitoring and feedback loops	£39,942	£28,000
National Energy Foundation		£39,924	£28,000
Northumbria University		£32,687	£32,687
Project description - provided by applicants			
Buildings are becoming increasingly 'connected', be it in the provision of services or added functionality for consumers (smart heating, lighting, security, IoT appliances, IFTTT), metering and billing by utility providers (smart meters and monitoring) or in the wider supply chain's pursuit of ever more detailed performance and condition monitoring and management (sensors, actuators, asset alerting). The aim of this project is to test the feasibility of bringing all of this data together to a central model that gives the data and insight not only some context but which also allows for the generation of meaningful actionable advice for householders, building and asset portfolio managers and also the wider supply chain. What will be developed and tested is the concept of a central open platform that can interpret and provide feedback and actionable advice from the wide range of data generated in the build, construction and most importantly, use, of buildings. Timing of this is particularly pertinent given that building users are becoming increasingly empowered with regards to how they use and understand buildings; putting asset managers and the wider supply chain at risk of being left out of touch and behind the curve.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CustoMem Ltd	Water purification using novel biomaterials	£99,787	£69,800
Project description - provided by applicants			
Nearly half of the world's population will lack access to sufficiently clean water by 2030 (WHO 2015) and increasingly polluted water sources are a challenge to industry, environment and human life around the world. Persistent, toxic, pollutants such as arsenic and chromium accumulate in water supplies and the toxic anion variants of these heavy metals are difficult to remove with current technology due to their complex chemistries. Present strategies to handle these harmful pollutants via filtering (AOP) or chemical removal are expensive, high energy, and not environmentally friendly. 'Adsorbentâ€ materials, that pollutants stick to when water flows over or through them are a promising solution but current adsorbent materials are either too low performance or very expensive. CustoMem are engineering biology to produce biological materials designed at the chemical level to trap these pollutants. This is a sustainable, economically accessible biological solution to a global problem. CustoMem's materials are sterilised before usage and can be responsibly used in existing water treatment infrastructure as a drop in solution.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Intelligent Hormone Sciences Ltd	Intelligent Hormone Sciences menopause symptom and serum sample smart-app tracker	£95,208	£66,646

Project description - provided by applicants

Intelligent Hormone Sciences Ltd are developing a new approach to the management of women's health prior, during and after menopause. Our aim is to eliminate every preventable consequence of menopause for all women by using emerging technology and sensors to provide a safer, self-managed hormone replacement therapy. Currently, there is no single product which accurately tracks menopause symptoms and links these to hormone levels. Our mission is to develop the first non-invasive, hormone monitoring wearable device, linked up to a smart app user interface for accessible and useful reporting for women. Doctors will be able to accurately prescribe the appropriate hormone dosage a woman needs to relieve her symptoms safely. Innovative design is key to our mission; creating a smart, sleek, consumer-friendly and beautiful product for middle aged women. We want to democratise women's health and bring it to the forefront of the consumer health market. An intelligent, data-driven approach to sex hormone deficiency and menopause.

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Competition Code: 1610_SC_EMEN_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Remote Sensing Applications Consultants Limited	Sentinel-1 Crop Growth Monitor	£96,824	£53,254
Project description - provided by applicants			
Information on crop growth is an important metric allowing analysis of agricultural productivity, prediction of yield and prescription of appropriate interventions. This project will develop a service based on crop growth indices derived from time series of satellite radar data, emerging technology that was initially developed by RSAC in the MASCOTS project. The approach exploits data already being obtained and pre-processed by RSAC to produce our Land Cover® plus Crop Map product. The indices represent an improvement on some traditional optical indices, providing better correlation to growth stages and, because radar is unaffected by the weather, more frequent and reliable updates throughout the growing season that are also cheaper. To maximise market impact, we will secure a commercial arrangement with at least one suitable agri-industry market owner. Successful launch of the service would produce a greater return for RSAC on its investment in radar data pre-processing and result in significant growth of our small company, as it continues to evolve from a previously research project based company into a genuine provider of services. Innovate UK funding will de-risk Year 1 operations.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CyberOwl Limited	Early Warning System for Data Exfiltration	£89,375	£57,500
QinetiQ Group plc		£25,000	£12,500
Project description - provided by applicants			
Network security monitoring needs an early warning system. Attacks are getting slower, stealthier and more sophisticated. The average detection time of a security breach is lengthening, resulting in the wrong balance of reactive and proactive defence, and driving up the total cost of security and remediation. Existing monitoring tools will simply fail to cope with this. Broadly, the signature- or rule- based tools are very retrospective. This is quickly becoming obsolete, in a world where a specific malware is often only used a small handful of times. By contrast, anomalous behaviour monitoring overwhelms the defender with false positives and struggles to deal with pre-infected environments. There is a need to monitor networks for threat probabilities of indicators associated with early phases of attacks. This is a new approach to network security monitoring. It will shift the advantage back to the defender, by allowing them to 'nip attacks in the bud', before the organisation is exposed to significant costs of data loss. This approach also enables warning of unknown attacks and exploits; a fundamentally different approach to post-incident forensic signature-based methods.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Purple Communications (Europe) Ltd	TC-Cap	£82,766	£57,935

Project description - provided by applicants

Public description of project Please describe your project. This description will be published only if your project is subsequently funded by Innovate UK to comply with government requirements. Providing this summary is mandatory but the text will not be assessed. Please ensure it is suitable for public disclosure. Funding will not be provided to successful projects without this.It is easy to imagine the social isolation created by losing your hearing as you grow older. The career blockage experienced by younger deafened people is less understood.Most people are not aware of the significant public service cost because hard of hearing people cannot use a voice-telephone for time-critical services. Using a third person as a relay is costly and time-consuming. TC-Cap provides an automated text display for the hard-of-hearing person to read, during the call. TC-Cap automates the process with bespoke smart software, reducing the display latency and slashing costs. TC-Cap also captions video calls so that enhanced lip-reading is possible. Enabling the use of a voice telephone can offer cost savings in the UK of over £20m pa, reduce the need for human assistance in Government's Access to Work by possibly £2m pa , and reduces isolation, improves personal security and enhances family life. Existing services in USA, Australia and UK are costly and time-consuming; TC-Cap is efficient and embedded in new ubiquitous technologies. TC-Cap increases well-being, re-connects people with society and opens up productive career prospects for younger hard-of-hearing people.

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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
BluWireless Technology Limited	Low latency Virtual Reality Over Wireless (LoVROW)	£99,562	£69,693
Project description - provided by applicants			
Public description of project Please describe your project. This description will be published only if your project is subsequently funded by Innovate UK to comply with government requirements. Providing this summary is mandatory but the text will not be assessed. Please ensure it is suitable for public disclosure. Funding will not be provided to successful projects without this.The project will develop a technology that combines low latency video compression combined with an appropriate error correction technology that provides a robust streaming of real time virtual reality pixel stream over WiGig wireless at data rates upto 8Gbps. This will be demonstrated in principle and practice using a combination of software and FPGAs at lower rates/video resolutions in order to find the optimum design "sweet spot" for compression, error correction and low latency.			

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Innovate UK

Results of Competition: Emerging and Enabling Technologies Round 1
Competition Code: 1610_SC_EMEN_R1

Total available funding is up to £5m for Stream 1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Zinergy UK Ltd	Resilient Electronic Patch Enabled by Printed Energy Storage Devices (Re-Patch)	£79,853	£55,897
Cambridge Innovation Technologies Consulting		£61,910	£43,337
Project description - provided by applicants			
Picture a band-aid. Visualise how thin, flexible and light it is. How it adapts its shape to your body and how reassuring and seamless it feels to have it on. Now imagine that band-aid is a personal well-being monitor with sensors measuring health and environmental parameters and the capacity to communicate wirelessly with the wearer and the carer when a potential risk situation is detected. Technology development in energy systems and sensing electronics is finally at a point where the development of the product described can be made a reality. Enter: RE-Patch. This project is focused on developing a low-cost smart wearable biomedical patch powered by an ultra-thin and flexible energy source. Two UK companies have partnered to achieve this by miniaturising an existing biomedical patch- developed and patented by one of the partnering companies- and integrating an energy system that includes a thin and flexible battery and a supercapacitor -developed and patented by the second partner.			

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Results of Competition: **Emerging and Enabling Technologies Round 1**
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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Powervault Ltd	Integrated Control System for Bi-directional Power Solutions (ICSBPS)	£87,036	£60,925
Project description - provided by applicants			
Powervault (PV) aims to be the UK's first specialist provider of cost-effective distributed electricity storage, lowering consumersâ€™ electricity bills, reducing peak demand and increasing the utilisation of onsite renewable energy. Since inception in 2012, PV have sold >300 of their core domestic product, and built up a number of partnerships with installers, and distributors. With a track record for innovation, and emphasis on creating an affordable, mass market product, PV have received recognition from a number of organistaions; Climate-KIC, Green Angel Syndicate, Nesta, Innovate UK and BusinessGreen, reflected in having secured >£3million in investment to date. The ICSBPS feasibility study will explore options for improved usability of bi-directional power technologies such as energy storage or electric vehicle charging infrastructure. A key emphasis of the project will be on product safety, and whether new electronics innovation can improve usability and safety.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GBR14 Limited	Prototype All Black Store	£98,812	£69,168
Project description - provided by applicants			
The project is to execute a feasibility study of a security concept, namely the All Black Store (ABS). The feasibility study will be achieved by building and testing a prototype data store using the ABS concept. So that in all points of the application server and client system, the data and the whole system is protected by cryptography. This prototype will then be tested and a report written. The objective of the project is to protect everyone's private data, yet enable a more functional internet for everyone. i.e. provide an easy to use technology that can better protect everyone's data, government, company, customer or individual from the consequences of cyber attacks.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Barnsbury Road Finance Ltd	Enabling Data Integrity and Mobility in Equipment Finance	£29,617	£20,732
Kwori Ltd		£47,152	£33,006
Project description - provided by applicants			
SME companies are the the economic backbone of the UK. There are over five million SME companies who collectively employ over 16 million people and turn over close to £1.8 trillion each year. Enabling our SME with the right equipment to fuction at the highest level of productivity is key. If the UK economy is to lead in the global economy then SME companies must be able to access finance to acquire equipment in a fast, flexible and affordable manner. This project specifically sets out to apply blockchain/distributed ledger and 'smart contract' technology to equipment financing. The project will ensure that we determine feasibility and optimise the commercial application of these emerging technologies. Ultimately the goal is to connect SME companies with institutional investors in as secure, as fast and as business-friendly manner as possible.			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Metrarc Ltd	BlockchaIn device Metric ENhanced Security (IMmENSe)	£99,647	£69,753
Project description - provided by applicants			
The proposal will develop novel authentication and authorisation mechanisms for networked financial data using distributed ledger (blockchain) technology. Recent progress in blockchains suggests that one of the interesting potential applications of the technology is in 'disintermediation protocols', which remove the need of having trusted third parties in a collaborative environment involving many (potentially anonymous) stakeholders. A recent UK Government report also suggests "the technology offers the potential, according to the circumstances, for individual consumers to control access to personal records and to know who has accessed them." The aim of the proposal is to facilitate secure access and traceability to confidential financial records and messages focussing on the governance and assurance of access to records. A significance focus will be on removing the need to have a trusted authority in order to lower the costs associated with the operation of the system, which will allow for a strong business model for the deployment of the system. The work will focus on maintaining network integrity in managing distributed financial transactions and messaging (fintech sector).			

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Archangel Aerospace Ltd	HAPS LTA Laser-RF gateway	£99,487	£69,641
Project description - provided by applicants			
This project will develop a prototype laser receiver terminals for future integration into HAPS			

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