Innovate UK

**Results of Competition:** **Smart Round 5 2015-16 - Proof of Concept**
**Competition Code:** **1511_SmartRnd5_PoC**

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| Participant organisation names | Project title | Proposed project costs | Proposed project grant |
|---|---|---|---|
| **Archipelago Technology Group Ltd** | Smart Proof of Concept - Powerdrop: a breakthrough technology for precision deposition of industrial fluids in clean, high volume, high value manufacturing. | £162,942 | £97,764 |

| Project description - provided by applicants |
| --- |
| Powerdrop is a breakthrough technology for precision deposition of viscous, industrialmaterials in clean, high volume, high value manufacturing. As it can deposit virtually anymaterial with precision, and at speed, it is applicable to the wide range of end user industriesand applications where existing coating techniques like spraying have high levels of wasteand other disadvantages.These existing deposition technologies are wasteful in material, energy and processefficiency. For example, in the automotive industry 40% of the sprayed paint never lands onthe car. This over-sprayed paint must be collected and disposed of. The cost worldwide inwasted paint alone is over £1.6 billion per year. To this must be added the capital and energycosts of air handling and waste disposal.Whilst inkjet technologies offer extremely high levels of deposition efficiency, these haveneither the throughput, nor ability to handle viscous fluids needed for most of theseapplications. Powerdrop is based neither on ink jet, nor on traditional coatings technologieslike spraying or screen printing. Instead it uses a completely new architecture to deliver someof the advantages of both.Large scale coating applications include automotive coating, depositing glaze for ceramictiles, depositing protective coatings onto printed material, electrodes for solar panels andadhesives used to manufacture consumer products. In addition, the control that Powerdropbrings to the coatings process will enable new opportunities to use 2D and 2.5D functionalcoatings to improve product design and performance. Applications include texturing ceramictiles, adding wood-grain effects to laminates and 2.5D security features on ID cards.The objective of this project is to create a Proof of Concept demonstration of continuouscoating of automotive paint and other industrially important materials of interest to potentialcustomers. |

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| **Concirrus Ltd** | Proving concept of an array of IoT connected air quality sensors for Smart Cities | £188,079 | £100,000 |

**Project description - provided by applicants**

Concirrus, an award winning technology company have an ambition to build on ourimpressive turnover growth- £2.5M in two years from start-up- to £10M in the next two years.We have successfully delivered (Smart funded) vehicle telematics development projects. Thisproject seeks to adapt similar methodology to unmet needs in air quality monitoring.The UK and many other EU members currently exceed levels of atmospheric pollutionstipulated in directive 2008/50/EC. Readings to measure compliance are taken at fixedlocations. This fails to identify hotspots (key traffic intersections, industrial facilities) thatcause non-compliance over wide geographic areas (city or region level). Individuals want ameans to make informed decisions to avoid their contribution to and exposure to poor airquality. Existing apps and alert services fail to provide this.We will assess the capability of a novel combination of inexpensive sensors to produce datacomparable to state-of-the-art reference sensors. We will test in lab and operational conditions' next to live sensors. We will assess whether having many inexpensive sensors in a dynamicarray can produce data of comparable quality to state-of-the-art.Ultimately, we will demonstrate an architecture that enables a universal air quality network,capable of accommodating any type of sensor. Post-project we will show data capture inmoving scenario, adding further value. Anyone could use outputs to produce a useful, finegrained,spatio-temporal dataset of air quality allowing: Individuals to make choices about travel routes and modes, avoiding exposure to andcontribution to poor air quality Local authorities to identify and eliminate pollution hotspots, leading to compliancewith 2008/50/EC Planning, construction and surveying industry to provide fine grained data to sitepublic and residential buildings to avoid poor air quality Employers to avoid exposure of their workforce to potentially hazardous air

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| **Chaddenwych Services Ltd** | Chaddenwych Services Limited - The Electron Platform | £132,311 | £79,386 |
| **Project description - provided by applicants** | | | |
| When the UK energy market was privatised in the 1980's it was envisaged that competitionamongst generators and suppliers would bring benefits for all in the form of reduced utilitybills; However, today the retail energy markets are recognised as dysfunctional withasymmetric price responses to cost changes ('rocket & feather'), low levels of switching andcustomer satisfaction with suppliers and consumer's trust is at an all-time low. Numerousincidents, widely reported and recorded by Ofgem, show that energy suppliers cannot betrusted. The Electron Platform is a radically new technology that capitalises on systemsbreakthroughs in the past year in order to offer a secure, open, decentralised blockchainplatform that receives, verifies and stores meter readings (both Smart and manual meters),tariffs and supplier contracts using smart contract DApps that run without the possibility ofdowntime, fraud, or third party tampering and exists outside of the control of individualenergy suppliers. This will create an open transparent market that can be more effectivelyoverseen by Ofgem and on which multiple services such as billing and switching can beimplemented in a competitive and efficient manner. | | | |

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| **Eth Core Ltd** | Proof of Authority: a next-generation foundational distributed ledger platform for institutional communication, authorisation and consensus | £165,950 | £99,570 |

| Project description - provided by applicants |
| --- |
| Benefits come from working together, but trust boundaries prevent individuals andorganisations from dealing freely with each other, because of the high risk that interests arenot aligned. In order to engage for social or economic gain, actors must cross these trustboundaries. Presently this requires trusted intermediaries: HSBC, eBay, AirBnB, or thegovernment of the UK. Intermediation is viable only through network effects. As such, trustbecomes a scarce resource' expensive to obtain and yet easy to abuse.Costs come down to verification, reporting, auditing, and external relations; all primarilymanual tasks. Digitisation has changed business profoundly, from traditional industries suchas banking to new sectors like IoT; however, trust is still a manual, human-intensive activitywhich comes at incredibly high costs. Industry experts estimate that banks alone spend up to80% of their operational cost on trust-related tasks, e.g. post-transaction verification due to thelack of suitable transaction platforms.New decentralised blockchain technology has the potential to become the core of a newconcept: a universal machine that commoditises trust. Under this grant, we will develop adeployable PoC of a trust-machine platform, based on our Proof-of-Authority (PoA)blockchain technology, which can be operated by a flexible plurality of self-chosenindependent parties who are empowered to collaborate 'trustlessly'.The Ethcore team have been at the forefront of technological development as part of theEthereum project (in 2014 the second most successful crowdfunded campaign), which wasnotably mentioned most recently in the UK government report on blockchain technology aswell as featured by the Economist. This grant will support the development of our PoAdistributed ledger system ' a foundational building block for next-generation secure multipartytransactional systems for financial institutions, government and enterprise. |

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| **Andrew Lucas Ltd** | Noon | £186,576 | £100,000 |
| **Project description - provided by applicants** | | | |
| Every day, the UK insurance industry pay out ~£2.5M in'Escape of Water - EoW' claims as aresult of burst pipes/faults in a property's plumbing system. EoW currently represents thebiggest threat to property accounting for 24% of all domestic property insurance claims. EoWfrom domestic properties also presents a significant environmental impact: ~9.7bn litres ofwater is lost every yr due to domestic appliances breaking their connection; the averagehousehold leaks up to 45K litres of water per yr as a result of leaky appliances & leakingpipes.Smart meters offer a partial solution, providing consumers with the opportunity to monitortheir usage in (near) real time. However no existing system effectively addresses thesignificant issue of EoW, with the actual adoption of any form of smart water metering techstill behind that of the energy sector (just 7 out of 25 water utilities in the UK offering smartermetering) as a result of a no. of key tech challenges:-Current techs do not allow the householder any form of control/action, ie switch applianceson/off-Limited meter battery life, impacting cost benefit, storage capacity & transmission range ofdata-Lack of inter-operability between networks-Privacy & security concernsBased on consultation with UK Insurers & Utility companies, Andrew Lucas - AL (leadingsmart home tech designer) aim to address these limitations through the development of aunique low cost smart system that will allow for effective management of EoW. Stronginterest has been expressed from Insurers to use Noon as an incentive as part of a policy -providing additional piece of mind to their customers. AL also seek to target utility companies& sustainable homes, direct B2C taking advantage of the global smart water meter marketforecast to reach £747M by 2020. Mkt entry Qu4 2017. | | | |

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| **Silentbloc UK Ltd** | Silentbloc SMART 2016 - Next generation conical Spring | £131,989 | £79,193 |
| **Project description - provided by applicants** | | | |
| To take a number of product design concepts and explore the development of the nextgeneration of conical springs for rail bogies. | | | |

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| **Project Andiamo Ltd** | A 3D printing solution to solve parents pain with orthotics services | £157,524 | £94,514 |

**Project description - provided by applicants**

Orthotics is a speciality involving the application of external devices to the body to providesupport and manage pain and deformity. In the UK there are 2 million people requiringorthotic services costing the NHS £207 million/year. Current wait times for an orthotic are upto 12 months. Coupled with a shortage in qualified orthotists, orthotic provision services havefailed to meet the market demand.The current approach to orthotics has not changed in over 50 years. Manual casting is a slowprocess taking up to 3 months and requires input from a range of health professionals,including technicians, physiotherapists, and orthotists. The whole process can take up to 12months, by which time the patient's condition may have deteriorated. This may mean theorthotic no longer fits, or in the case of a child they may have outgrown the orthotic. Thisresults in ineffective treatment, skin irritations and repeat visits to the cliniconly to repeatthe process. In turn leading to needless distress on the family and childFollowing our own personal experience of the orthotic provision service, we have proposed aninnovative approach to manufacturing and providing orthotics. Our concept utilises state ofthe art 3D imaging and additive manufacturing with expert biomechanical analysis to designand manufacture customised orthotic devices. Our concept streamlines the orthotic provisionservice and meets the needs set out by the British Health Trades Association (BHTA) andNHS England. We believe we can deliver an effective orthotic within 1 week of consultation.The potential economic benefits to the taxpayer are enormous, with every £1 spent onorthotics services worth £4 to the NHS, such is the impact of orthotic care on overall health.Demand for orthotics is expected to grow with the ageing population and increasingprevalence of chronic disease, such as diabetes. Our rapid, streamlined service will beperfectly placed to meet this need. We now seek to prove our concept.

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| **Puma Energy LLP** | Puma Energy - Condition monitoring and fault diagnosis of continuous manufacturing machines using current signature analysis – iMonitor | £146,387 | £87,832 |
| **Project description - provided by applicants** | | | |
| Machine health monitoring is a predictive maintenance tool which deals with preventing animpending machine failure. Continuous health monitoring of the manufacturing unit willprovide the capability for improved production rate by eliminating machinery downtime andreducing the maintenance and operational costs.There is a growing demand for innovative and competitive non-intrusive intelligentretrofittable technologies in the machine condition monitoring market which currently worth~£1.05 billion and is expected to grow at a CAGR of 7.6% by 2020. Key drivers responsiblefor this accelerated growth in this market are; need for uninterrupted mechanism to predictequipment failures, achieving reduction in frequency and severity of outages, maximizing thecomponent life and equipment performance through effective scheduling of maintenanceprograms.We, Puma Energy LLP, have developed a wireless, cost & energy efficient, user friendly,safe, non-intrusive and retrofittable system (iMonitor) offering machine health monitoring in acloud environment. iMonitor will detect machine efficiency and predict any machine faultthrough measurement and analysis of electric current signature variance translated intoinformation using learning algorithms. | | | |

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| **CSTCorporation Ltd** | Concrete Tester | £122,162 | £73,297 |
| **Project description - provided by applicants** | | | |
| CST Corporation propose a proof of concept project to develop basic prototype device of anew ConcTest, which will allow rapid and accurate prediction of'wet' concrete strength.Manufacturers and users of concrete products experience issues due to the requirement to wait28 days until the cured product can be tested for strength. Also if the poured concrete fallsbelow the specification, costly remedial work is required; this leads to manufactures relyingon costly over-specified formulations. We intend to build and test a prototype device based onour patented methodology. The device will be able to quickly and accurately predict theeventual strength of concrete before pouring, reducing delays and cost. The device is uniqueand removes the need for batch sampling; for the first time all batches of concrete can bechecked that they meet the required specification. | | | |

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| **Eozone Engineering Ltd** | A stabilized ozone fog to efficiently sanitize greenhouses and other difficult to clean structures, using micro / nano bubble stabilization and vaporisation control - Greenhouse Sanitisation | £155,738 | £88,900 |

**Project description - provided by applicants**

The UK produces nearly 2000 Ha of high value greenhouse-protected crops, with a sales valueapproaching £1 billion. These intensive crops experience bacterial and fungal infectivediseases, causing losses of up to £150 million. Resistance to treatments is increasing andchemical use is becoming increasingly restricted and also require long airing times to allowtoxic residues to dissipate, meaning that a more effective form of greenhouse disinfection isneeded. The use of ozone as a sanitizer is one possibility, since it is highly effective andbreaks down to oxygen. However its high reactivity causes unacceptable variability in itsefficacy.We have identified a method to create a novel stabilized ozone'fog' that resistsdecomposition during distribution and reaches the target surface with consistently high levelsof potency, with minimal wetting of surfaces by condensation. We believe we can develop asanitization unit that can reliably disinfect complex greenhouse structures and can possiblyalso be used in the presence of growing plants. Our project is to prove the feasibility of thisconcept and to understand the dosage and aerosol characteristics that would be required. Thefuture developed technology is envisaged to be usable to treat an entire greenhouse and alsohave the embodiment of a hand- held unit to treat individual areas when required; ultimately itmay also be applicable to use in healthcare and food warehousing.

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| **CloudNC Ltd** | CloudNC Proof of Concept | £251,628 | £100,000 |
| **Project description - provided by applicants** | | | |
| CloudNC have identified an opportunity to develop a unique, machine agnostic, cost-efficientCAM platform leveraging artificially intelligent algorithms, GPU acceleration, massivelyparallel computation and cloud supercomputing to automatically generate more efficient CNCtoolpaths. | | | |

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| **Vivacity Labs Ltd** | Vivacity: Cyclist Detection | £155,095 | £93,057 |
| **Project description - provided by applicants** | | | |
| Awaiting Public Project Summary | | | |

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| **Applied Blockchain Ltd** | Blockchain Smart Contract Data Privacy, Speed of Access and Data Scalability | £112,000 | £67,000 |
| **Project description - provided by applicants** | | | |
| A key feature of Blockchain smart contract technology is that all data is visible to allparticipants in the network. This project addresses the need of participants to provide datavisibility only to intended recipients, whilst keeping the data hidden from other networkparticipants, even though they all hold a copy of the data. The solution requires no sharing ofkeys or secrets off-chain. In addition, data is pre-decrypted into a local smart cache, providingeach participant fast access to the smart contract data they are permissioned to see. Finally,this project will provide a solution for scalable underlying blockchain data storage. All of thiswill be implemented, packaged and presented for the sample use case of regulatory reportingin the financial markets. | | | |

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| **Dem Dx Ltd** | DemDX Proof of Concept | £166,991 | £100,000 |
| **Project description - provided by applicants** | | | |
| Dem Dx is a supportive decision diagnostic tool aimed at medical students and health care workers, to aid them in differentiating presenting symptoms and suggesting the critical investigations needed to reach a definitive diagnosis.It harnesses the power of a unique medical algorithm, verified by artificial intelligence and decades of clinical experience, constructed within an open architecture system to provide a transparent, step by step reasoning process based on clinical signs, symptoms, and historical evidence. This enables medical students and clinicians to take a more structured and thorough approach at the bedside, avoiding unnecessary investigations, treatment and missed diagnosis.The initial concept to be investigated in this project will be implemented through partnerships with select UK medical schools who have already shown interest in using Dem Dx as an educational tool, supporting medical students in applying their theoretical knowledge to the clinical setting. Ultimately through the power of a collective community of medical students and clinicians, Dem Dx hopes to be the primary platform through which health care professionals can submit contributions, access expert peer reviewed content and the latest evidence based protocols from across the globe. All contributions will be moderated by the Dem Dx team of medical professionals and experts in an ongoing process to keep pace with ever changing world of evidence based practice.The grant will enable us to prove the concept of Dem Dx, a revolutionary clinical supporttool, harnessing the power of a global community of clinicians to reach a more accuratediagnosis in a safer, more efficient way. | | | |

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| **Owayne Ltd** | LivingMarket | £164,880 | £98,928 |
| **Project description - provided by applicants** | | | |
| The business opportunity supporting LivingMarket is driven by the absence of accuratemarket and customer analysis tools for Small and Medium Enterprises, which operate withactual financial and demographic data and at the same time safeguard data privacy.Banks and other financial institutions hold detailed and accurate data sets (e.g. POStransactions) that can underpin new value added services for SMEs. However, in order toexploit these rich data sets, new ways to deal with data privacy are needed, in accordance toregulations.LivingMarket introduces a novel anonymisation approach and is the first attempt to addressdata privacy through anonymisation in the financial domain for accurate analytics.LivingMarket will provide market and customer insights through analysis of financial,transactional and demographic data and will be delivered as Software as a Service (SaaS).SMEs will be able to access insights including: near real-time sales reports; benchmarkingagainst others; characteristics of businesses with top performance; customer segment analysisand rating; customer behavioural analysis (including analysis on recurring and occasionalcustomers); suggestions of best location for a new branch, cross-merchant analysis andsuggestions for synergies.Our novel anonymisation and analytic techniques are expected to create a new market ofnovel services with economic benefits for SMEs and financial institutions. | | | |

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| **C-Tech Innovation Ltd** | C-Flow PLT | £97,014 | £58,208 |
| **Project description - provided by applicants** | | | |
| C-Flow PLT' is a new design of electrochemical cell and plant, offering much highercapacities ' 4x flow rates - than are possible with current stack designs. It is a modular pilotplant offering a step change in flexibility and reduced development costs for use by academicand industrial R&D users.Current designs are stack systems with multiple adjacent cells in an arrangement similar to aheat exchanger or filter press. There is an inherent constriction to the flow of electrolyte intoand out of each cell in this design. This means that increasing flow rates lead to high pressuredrops across the equipment and capacity is limited: capital costs are high.We will prove our concept of a very high flow rate electrochemical plant by designing andbuilding a four cell system including test rig, and balance of plant, with a target linear flowvelocity of 1ms-1 across the electrodes, corresponding to 75 litres/min of both anolyte andcatholyte per cell. The flow rate is four times that of comparable current cell designs and is astep change increase in the operational capacity of electrochemical pilot plant, approachingproduction scale volumes but with a much smaller footprint and an order of magnitudedifference in cost.The design is modular ' each cell is contained in its own cassette. This allows flexibility ofoperation. Individual cells can be switched in and out of operation for maintenance with drybreakcouplings and with no disturbance to other cells. It also allows easy scale up andaddition of capacity.This project will prove the concept with a four cell system and test rig, designed for 300litre/minute operation of both anolyte and catholyte and 4000Am-2 current capacity. The unitwill be evaluated on three different chemical systems, demonstrating the usefulness fortreatment of dilute systems (e.g. waste water), viscous chemical synthesis requiring highturbidity (and therefore flow rate), and synthesis requiring high volumetric flows. | | | |

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| **Bluespot The Knee Clinic Ltd** | Knee Tracker - a patient-centred mHealth device for improving outcomes for OA and TKR patients. | £139,928 | £83,956 |

**Project description - provided by applicants**

The Bluespot Knee Clinic has identified an exciting opportunity to commercialise KneeTracker - a patient centred, connected device to improve outcomes after knee replacementsurgery, and to treat osteoarthritis patients. The total knee replacement (TKR) procedureinvolves severe surgical trauma and a protracted recovery period requiring compliance withan exercise regimen. Demand for TKR procedures is increasing due to an ageing population, ayounger'market', and a rise in obesity related issues. Further costs, and patient risk, areincurred when remedial surgery is warranted due to complications after leaving hospital.Active and healthy patients benefit far less from out-patient appointments, but they are seenregardless. Additionally, pre-assessment of a patient's suitability for surgery is not currentlybased on a measurement of their knee mobility.We believe there is a clear need to target resources to those who would benefit most, to assessbetter the preparedness of patients for TKR surgery, to manage better their expectations, andreduce the number of revision procedures.Knee Tracker is a low cost'connected' knee exerciser for pre- and rehabilitation of TKR andOA patients. We estimate that implementation of Knee Tracker could help the NHS save andtarget resources, reduce the number of risky and costly revisions, and benefit the patient bymotivating them to engage in their treatment and thus improve outcomes.

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|---|---|---|---|
| **Aqua Command Ltd** | AquaSMART: Innovative self-powered, remotely controlled water meter for leak/flood prevention | £163,784 | £98,270 |

**Project description - provided by applicants**

Over the past 10 yrs UK water bills have risen above inflation levels, a further increase ispredicated due to planned investment in the water network (£44bn by 2020) & increasingdemand (an extra 800M litres/day by 2020). An additional upward pressure is placed on billsby Escape of Water -EoW which costs UK Insurers £2M every day and accounts for the up to45K litres of water each year from the average houshold.Research has shown that water meters can cut consumption by 15% (£58p.a./household, avg.bill £385). The majority of the UK water meter market (75%) is made up of low cost (~£100)meters supplied by Arad, Sensus, Elster, Itron which are powered by rechargeable batteries &thus are limited as they do not have adequate power for effective leak/flood prevention toaddress the significant issue of EoW. These limitations are recognised within the industry, asevidenced by Aqua Command Limited's (ACL) independent research, which involvedextensive consultation with ~30 end users.To address the major business opportunity for a low cost water meter with leak/floodprevention, ACL is seeking to the develop AquaSMART: Advantages:- First meter to be self-powered by a combination of power sources (turbine, thermoelectricelectric generator (TEG) & water battery) providing sufficient power for leak/flood prevention- Low cost (£100/meter) compared to best in class IntelliH20 (£300/meter)- Improved data granularity to detect small leaks 'measures usage down to 100ml/minute,existing meters only measure usage to 570ml/minuteWith support from IUK, this project aims explore the feasibility of using a combination ofpower sources; deliver a basic prototype of AquaSMART incl. novel hardware, software &firmware components; & complete PoC testing. If successful the technology offer significantbenefit to households, utility companies, Insurers and house builders with potentialapplication as a monitoring tool for assisted living

**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: Smart Round 5 2015-16 - Proof of Concept
## Competition Code: 1511_SmartRnd5_PoC

### Total available funding for this competition was £7.944M from Innovate UK

**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 |
|---|---|---|---|
| **Calla Lily Personal Care Ltd** | Overcoming materials & manufacturing challenges for a novel feminine hygiene product - Calla Lily Personal Care Ltd | £171,921 | £100,000 |
| **Project description - provided by applicants** | | | |
| The design of feminine hygiene products has remained unchanged for many decades; Callaly is a new innovation that will change this situation. A leading gynaecologist in our team has created a novel, patent protected 'hybrid' tampon and sanitary pad combination that provides women with a step change in comfort and hygiene. The product fuses the best features of pantyliners and tampons combining them into a product that is inherently more hygienic during use.To-date our team has developed our 'hybrid' tampon on a manual basis in addition to conducting initial favourable user trials and taking substantial steps to project the concept IP. Our challenge now, and the subject of our current project, is to translate our current handmade design into a format that is suitable for mass manufacturing. To make this transition we face the following research & development challenges: 1 ' Material selection of key components that enhance the function of the hybrid tampon; 2 ' Design for manufacture study on the current device to ensure volume production is feasible and economic; 3 ' production of a limited number of prototype hybrid tampons to enable confirmatory trials to be conducted. | | | |

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|---|---|---|---|
| **S&AO Ltd** | Proof of Concept: Semiconductor based Doppler Radar Cloud Profiler (DRCP) | £179,215 | £100,000 |

**Project description - provided by applicants**

S&AO Limited was established to reinvent the market for atmospheric remote sensing bydeveloping existing concepts into world leading technology and solutions. The currentportfolio of designs includes a Radar Wind Profiler, a Lightning Detection Solution, and theDoppler Radar Cloud Profiler, which is the subject of this Innovate UK Proof of Conceptsubmission. The sensor designs have been developed by Dr Dirk Klugmann, the founder ofS&AO, who is an internationally recognised expert in the field of atmospheric observations.This project designs, builds and tests an initial bench prototype of the DRCP to carry outfeasibility studies and test the science and engineering of the concept. S&AO will also look toprotect its intellectual property with a patent.If successful, the DRCP will provide for the first time cost-effective yet extensive access to avaluable, high quality data set of unobscured height coverage of cloud observations as well aswater droplet sizes and velocities throughout layers of cloud, even in the presence of fog. Ourrecently completed Innovate UK Proof of Market project confirmed the demand for this newand ubiquitous data-set which will enable meteorological and climate scientists to bothenhance their existing atmospheric models and create new models.The improved weather forecast accuracy that will result from the use of DRCP data willprovide significant operational benefits in key transportation markets. For airlines and airportoperators, more timely and accurate forecasts will provide an early warning of impendingicing and fog conditions allowing them to more efficiently manage and re-plan their servicesto reduce the impact of delays and reduce the need for diversions and cancellations. In theroad transport sector, improved forecasts of icing conditions will better inform the decision todeploy road gritters. In both cases there are clear financial savings and increased safety for thevehicle operators and the travelling public.

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| Participant organisation names | Project title | Proposed project costs | Proposed project grant |
|---|---|---|---|
| **iProov Ltd** | DEDICATA - DEtection of Doctored Imagery Cyber ATtack on face Authentication | £155,023 | £93,013 |
| **Project description - provided by applicants** | | | |
| iProov is a pioneer in the field of identity verification, delivering an outstandingly simple andeasy user authentication experience, by means of face verification on mobile devices andlaptops. It protects against the chief threat to face verification - hacker spoofing attacks -by unique, proprietary methods. The iProov service is provided as a cloud-based identityverification service to security-conscious service providers, such as financial institutions,healthcare providers, ecommerce and web services requiring precise identification of users, aswell as to secure employee access in enterprises large and small. Password'related loginmechanisms have long been problematic in these contexts, and a biometric login service hasdistinct advantages, provided it can provide good enough discrimination. iProov's patentedprotection against forgeries and replays is the most advanced in the industry, but a new classof potential attacks has recently been identified. If a hacker were to use the latest geneticalgorithms to search for vulnerabilities in this protection, a prolonged scalable attack mighteventually succeed. So the objective of this project is to develop the counter-measures againstthis ' to innovate a new kind of immune system against the next generation of attack onimage-based biometrics. | | | |

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