

Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
KAREN FARDELL & ASSOCIATES LTD	Alleviating Bed Blocking	£49,990	£49,990

This project will test and validate an innovative visualisation tool that will help fast track the discharge of patients waiting for home adaptations, whilst reducing the need for in-person contact and risking further spread of the Coronavirus.

It aims to alleviate the current bed blocking crisis which cost the Government a staggering £587m between 12 June 2017 and the last December 19 poll.



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HYDRUS PURIFICATION TECHNOLOGIES LIMITED	Virus Safe Textiles	£49,933	£49,933

Hydrus Purification Technologies are the team behind Hydrus-75, a sodium hypochlorite sanitiser used by the NHS as a surface disinfectant and in hygienic wipes. It delivers exceptional results at low concentration levels. Our novel coating for hard or flexible surfaces and textiles meets the urgent need for Personal Protective Equipment and clothing for clinical and medical settings. This project will demonstrate coated textiles and garments which are intrinsically safe and re-useable. They will also be capable of production in the UK, using readily available textile machinery and industrial or domestic sewing machines.

Much of the Personal Protection Equipment (PPE) currently used in clinical-medical environments is made from paper and plastic microfibres, blown or felted into tight meshes designed to block particles. Even the best FFP3 masks (costing <£4-each) do not block individual particles of viruses like Covid-19, they must be disposed of between patients and when moist (in FFP3 masks, about 2 hours). High tech fabric and graphene coatings are now coming to market, Graphene coated textiles can block virus particles and last longer, however production processes are costly and coatings degrade quickly. Even the best new masks can only be washed and safely re-used 3 to 6 times. Clearly the ideal for surgical clothing is a highly protective, safe, washable, re-useable solution which offers mask level protection, yet making gowns and surgical clothing with such textiles is currently prohibitively costly. Graphene coated textiles are extremely durable - earlier versions of our coating are found in expensive sportswear for extreme environments. Our coating can block virus particles 10x smaller than the best existing PPE. By preventing liquid penetration to its base layer, our textile remains useable for longer periods during sessional-use. Between patients, masks using our textile can be sprayed with Hydrus75 (a highly effective, low cost disinfectant product we already supply to the NHS) for immediate re-use, or washed and dried for re-use later the same day. It can even be zapped with electricity to disinfect it.

Our re-useable PPE also has a positive environmental impact, greatly reduce the quantities required, whilst at and relieving supply issues.; In China alone 192k-tonnes of used surgical masks are disposed of annually, from clinical settings alone. This toxic waste is either incinerated, or inappropriately landfilled.



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RAWWATER ENGINEERING COMPANY LIMITED	Rawwater 'click-fit' reusable visor for pandemic protection/humanitarian aid	£49,735	£49,735

Reusable visor to protect healthcare staff from COVID-19

Concerned by the number of local GPs, frontline healthcare staff, key workers and carers who were unable to obtain full-face protection in their fight against COVID-19, Warrington-based Rawwater Engineering Company Ltd. set about designing a reusable visor.

It took fewer than three days for Rawwater to finalise its proto type design and begin 3D printing visors free of charge for healthcare staff.

Unlike traditional disposable visors which use clear acetate sheet and are intended for single use, Rawwater's visor uses strong domestic, catering or medical-quality disposable cling film.

After use, the cling film is easily removed and folded in on itself for safe disposal as medical waste. The visor, however, can be reused and re-filmed after first being sterilised with Milton or similar.

This means that just one visor and a supply of inexpensive film could help keep a medical worker/key worker safe for the duration of a pandemic or in other circumstances where there is a risk of infection transmission.

Unlike acetate that is in short supply, suitable grades of cling film are readily available.

The Rawwater visor features a simple click-together design and an ingenious yet straightforward way of tensioning the visor film to ensure it remains taught and clear.

The visor is lightweight, comfortable and can be worn over prescription glasses. It does not mist up or impact the vision of the wearer.

Rawwater has been printing visors as quickly as it can using two 3D printers. To accelerate production, it has also given other businesses free access to its design.

That said, it takes Rawwater 24 hours to print just four visors. And that's a long time. Further development of the design for fast, efficient injection moulding is the answer.

Rawwater sees its visor design as providing an effective solution wherever traditional face protection is in urgent need/short supply.

The company will use the funds awarded by Innovate UK to:

• Further develop the visor design for rapid, cost-effective scale-up,

• Research disposable films specifically for use with the visor,

• Secure all necessary regulatory approvals,

• Work with carefully selected specialists to begin developing emergency visor/film packs for hospitals, healthcare/key workers, overseas and humanitarian aid - in fact, any circumstances where a reusable visor could be the difference between life and death.

The project will create at least 5 skilled jobs at Rawwater's research centre.



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HANGER19 LTD	Guaranteed Reliability and Availability of Chargers in Emergencies (GRACE)	£46,066	£46,066

The electric vehicle (EV) revolution is gathering pace with more fleets, especially public sector, transitioning to EVs. Transport was highlighted as an essential pillar of the Covid19 response, with vehicles essential for providing healthcare and delivery services. While petrol stations are established, the EV charging sector is still immature and challenges remain. There is still insufficient charging infrastructure for the growing need and reliability of charging infrastructure still remains an issue.

During the Covid-19 issues, there were multiple times when chargepoints failed to operate for essential service sites and required intervention to resolve the issue. To support these essential services, it was necessary to send a person to site in order to fix the chargepoint. This further highlights an issue known throughout the industry - the time taken to resolve charging point faults is too long. This is largely because a disproportionate number of faults require an engineer visit, even if it is an internal chargepoint software issue or hard reboot required. A better solution is required to reduce this need and fix more faults remotely.

GRACE will develop an innovative hardware module that can be installed into existing chargepoints that allows remote access to resolve issues and the same level of access that is achieved through a site visit. This will reduce the number of engineer visits and increase the speed of issue resolution. This will significantly increase the uptime of chargers and provide a more reliable service for key worker sites. This will be backed by a software and service layer to enable a higher level of support 24/7\.



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UNDER THE DOORMAT LIMITED	NHS Homes	£49,790	£49,790

We want to build the UK's first centrally managed home accommodation portal, matching requests for relocation from NHS staff and other critical public servants with professionally managed home accommodation providers.

In late March, UnderTheDoormat learned that NHS staff in London were struggling to find places to stay during the Coronavirus crisis. They needed safe places to stay to protect vulnerable people in their household, to stay following eviction, or to reduce extremely long commutes following reassignments.

The NHS has agreements with hotels which can work for large scale re-housing, but these staff needs are overwhelming central NHS capability so companies had to respond flexibly to their situation.

We created a scheme to house NHS workers in free accommodation -- NHS Homes. This scheme has now grown into an industry initiative with over 20 UK companies offering free accommodation in more than 2,500 homes across the UK during the crisis -- see [https://www.thetimes.co.uk/article/landlords-urged-to-free-up-empty-homes-for-nhs-staff-fighting-coronavirus-s3c2vbgf0][0]

In its first few weeks it has already made available more than £3m of free accommodation to NHS workers and we expect this to grow significantly as we onboard more companies and place more workers in homes.

We have built a network of professional companies who can guarantee industry standards able and willing to host NHS staff.

As the programme grows we need to innovate to make the process quicker for NHS staff, the companies providing homes, and to give greater visibility to NHS management so they can resource plan effectively.

A grant would enable us to build out a digital portal to match the stated supply in an area with the demand of qualifying staff. An automated system would enable local providers to host staff quickly & efficiently, even verifying their public servant status.

This technology would ensure we could provide a distributed network of properties to NHS staff and potentially other critical public servants at short notice for the duration of this crisis and for future scenarios.

Our vision of success is to be able to effectively place over 5,000 NHS staff across the country in professionally managed homes that would otherwise be inaccessible to them and over time to provide a portal to help provide accommodation in professionally managed homes across the country to all Key workers in emergency situations across the UK.

[0]: https://www.thetimes.co.uk/article/landlords-urged-to-free-up-empty-homes-for-nhs-staff-fighting-coronavirus-s3c2vbgf0



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PERSEPTIVE LIMITED	AirShield: Virtual 'Air Curtain' to protect against COVID-19 transmission from patients to healthworkers in hospital ICUs	£49,883	£49,883

The current coronavirus pandemic has highlighted how hospital in-patients with respiratory infections can spread disease to staff and other patients. Medical staff comprise 10% of coronavirus cases in Italy and early signs indicate that UK medical staff will also be disproportionately affected. Patients with contagious infections (e.g. Measles, SARS, TB) are normally isolated in negative pressure rooms, but in epidemic and low resource settings, this is impossible. Learning from the SARS epidemic of 2003, some countries have put all intensive care beds in negative pressure rooms, but in the UK almost all of these beds are still on open wards.

AirShield solves this problem, allowing virtual isolation of the patient in intensive care (or hospital ward), whilst maintaining easy access to the patient from all sides of the bed. This is managed by adapting laminar airflow technology widely used in laboratories to maintain sterile work areas to the clinical environment and retrofitting to hospital beds. The air will be filtered of any exhaled droplets/aerosols so a wall of clean air surrounds the patient. Risks of infection spread to staff and other patients (and subsequent sickness and potential deaths), are significantly reduced. The system is simple to implement, cost-effective and easily scaled, enabling expansion of isolation beds as existing hospital facilities are overwhelmed, and has wider application for other infectious diseases globally, especially in low resource environments.



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INTERCEDE VENTURES LTD	Aircraft Sanitisation Verification Service (ASVS)	£49,870	£49,870

The COVID-19 pandemic has resulted in the grounding of the majority of the world's fleet of aircraft. As the pandemic is brought under control and travel is again possible, maximising safety will be paramount. Virus particles, e.g. CORVID-19, can remain infectious in the air for hours and on surfaces up to days depending on the type of surface and the environmental conditions. In this context, in the future, airlines will place much greater importance on maintaining high standards of disinfection to prevent further dissemination and giving necessary reassurance to passengers. To keep travel costs at a reasonable level, it will be important to ensure that a disinfection process has been effective without increasing the "down time" of the aircraft. For rapidly disinfecting the whole of an aircraft interior, a technique known as "fogging" (i.e. spaying a thin mist of disinfectant in to the air, which then coats surfaces) is seen as critical for the future. The big issue with this is ensuring that the coverage is comprehensive. This project addresses this challenge.

This five-month project will produce two key outputs. Novel, inexpensive, paper-based (biodegradable) patch sensors that can be distributed on a range of surfaces inside an aircraft before disinfection and that will change colour to show that the correct level of disinfection has been achieved. The patch sensors will use dyes that will change colour when they come in contact with the disinfectant used to clean the plane. The second aspect of the project will be the development of a reader, initially based on a smart phone platform, that can measure the colour and consequently determine the amount of disinfection. This can be displayed on the screen and sent to a central location that will record the results from all the sensors placed on that plane.

The project will be delivered by Intercede Ventures Ltd, which comprises a team of former senior managers with the airline industry. Working with a UK-based sensor manufacture, a university, an international chemical distributor and partner airlines they will launch the product by the end of 2020\.

The impact of the project will be huge in terms of passenger safety. In addition, it will help the airline and tourism industries recover from the COVID-19 crisis by giving airline passengers much needed confidence in the safety of air travel, as the world economy slowly starts to recover.



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CLOSED LOOP MEDICINE LTD	Determination of the link between hypertension and Covid-19	£47,426	£47,426

Hypertension (uncontrolled high blood pressure) is the leading preventable cause of premature death worldwide. Globally, 1.39bn people are estimated to have hypertension, and it caused ~10.7 million deaths in 2015\. It is projected to affect more than 1.5 billion people around the world by 2025\.

In the UK ~30% of adults have hypertension, 9.5m have a diagnosis, and a further 5m people in England alone may have hypertension yet be unaware.

In the current pandemic of COVID-19, people with hypertension are facing additional challenges in managing their condition as they are:

*socially isolating and not being able to meet with their GP/Healthcare Professional (HCP) with the same frequency

*reading stories in the press and scientific literature that indicate that a high percentage of patients with hypertension who contract COVID-19 have severe illness, are admitted to an intensive care unit, receive mechanical ventilation, or die.

Being able to remotely monitor people with hypertension through use of a phone app that records daily BP readings, current treatment regimens and indicate any COVID-19 symptoms will address a current clinical need and enable medical management and patient engagement without the need for direct patient-HCP contact.

We aim to update an already developed phone app designed for a hypertension focussed clinical study to include additional features for deployment in a new clinical trial in a COVID-19 setting. The trial will aim to demonstrate a "business as usual" approach to managing and monitoring a long term condition as well as collecting data help to answer questions that are of concern for the hypertension community namely:

*Does blood pressure drug use and/or level of blood pressure control affect risk of COVID-19 infection?

*Does blood pressure drug use and/or level of blood pressure control affect severity of COVID-19 illness/pneumonia?

*Do particular types of blood pressure medication affect risk of COVID-19 infection?



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OCASTA STUDIOS LIMITED	Remote clinical teaching technology for all UK medical schools	£49,492	£49,492

The Covid-19 pandemic has interrupted undergraduate medical teaching dramatically, by stopping classroom sessions and the ability of students to work in hospitals to gain clinical experience. **This has the potential to stop new doctors completing their training and so depriving the NHS of valuable staff at a time of unprecedented healthcare need.** To help answer this urgent issue the UK medical schools under coordination by the Medical Schools Council have come together to adopt the CAPSULE clinical learning platform to support remote learning (https://info.capsule.ac.uk).

CAPSULE has been developed by the Brighton & Sussex Medical School and Ocasta, a leading eLearning solutions provider. CAPSULE is unique as it contains over 650 clinical cases with 3,500 questions, including medicine, surgery, paediatrics, psychiatry, therapeutics, obstetrics and gynaecology, general practice and professional studies. All content is supported by an editorial board of senior clinicians from all specialities, there is a rolling process of core review, case editing and selective case additions - maintaining active and relevant content.

CAPSULE has been in use since 2016 in a small number of UK medical schools, however, the pandemic has spurred collaboration across the sector has allowed the educational content on CAPSULE to be updated and enhanced to support a faster, wider deployment.

The project funded by the innovation grant will allow the platform to be further established as a learning tool, with capabilities to advance remote teaching facilities, to support better student progress tracking with tailored teach and to promote research into the effectiveness of remote teaching practices.

Through this funding, CAPSULE will become an industry-proven platform to support an increasing industry move to remote, self-paced learning, supported by teaching sessions to cement understanding. This will lead to opportunities across other overseas territories for CAPSULE and a technology platform better able to be adapted for other market sectors and industry verticals.



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SATAVIA LTD	Aviation Industry COVID-19 Recovery	£49,737	£49,737

The International Air Transport Association (IATA) is estimating that the COVID-19 pandemic will cost the airline industry more than \$314 billion, reducing revenues by 48% in 2020, as a result of travel restrictions and their aftermath (IATA COVID?19 Updated Impact Assessment, 14 April 2020).

In April 2020, the International Civil Aviation Organisation (ICAO) reported that scheduled flights in the UK were down by 89% and the cost of lost airline revenue in the second half of 2020 may be close to \$16 billion. Overall GDP in the UK will be reduced as a result of COVID-19 by 6.5% in 2020, at a cost close to \$200 billion. The total impact on European airline revenue will be a 55% reduction in Revenue Passenger Kilometres (both international and domestic) for the full year 2020, at a cost of \$89 billion (ICAO document: Effects of Novel Coronavirus (COVID?19) on Civil Aviation: Economic Impact Analysis, 15 April 2020).

The vision of the project is to analyse the progression of the COVID-19 pandemic and predict the recovery of the aviation industry. The project initially involves modelling the progression of the COVID-19 pandemic and then will develop a 'return to service' model for the commercial aircraft fleet, region by region.

SATAVIA has supported the Ventilator Challenge UK project (www.ventilatorchallengeuk.com) to provide data analytics on estimated ventilator numbers. The SATAVIA data science team has developed capability to predict ventilator number requirements based on modelling of the progression of the pandemic. Several of the data science team previously have epidemiological backgrounds which enabled us to quickly develop an analytical grade model.

We intend to extend SATAVIA's current 'envirotech' software platform to include epidemiological analysis capability. Key objectives will be to: (1) Integrate COVID-19 forecasting methodology with confidence intervals, test using historic data, and validate the predictions; model how the progression of COVID-19 cases correlate with climatic conditions and policy interventions, and the use this to understand options for air travel to resume.

The main focus of the enhanced capability will offer a near-real-time analysis of industry recovery as travel restrictions are released to predict commercial flight activity into 2021\.

The project is highly innovative as it brings together a diverse and highly capable data science team, and extends SATAVIA's software technology to aggregate a diverse range of data sources spanning epidemiological to atmosphere and climate analysis, for an industry that is a critical part of the global economy.



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Radical Fibres Ltd	Viral-filtering nanofibre face protection	£47,666	£47,666

We aim to develop a filter material that is effective at stopping very small particles, smaller than the COV19 virus (60nm) and thus effectively stop virus transmission. This filter material will be integrated in masks for the general public, to help with a safe return to work and will be certified for viral filtration efficiency independently.

The UK economy is forecast to shrink 35%, with 2 million jobs lost. Until immunisation becomes available nation-wide (and worldwide), there is a significant risk of major disruption and the UK cannot afford a return to lockdown. Face masks are the new norm, but, apart from the high-end medical N95 respirators, no other filters are rated to stop viruses effectively. The supply of high-end respirators must be prioritised for frontline medical staff.

Our solution is to manufacture filters using polymer nanofibres made from a biocompatible material, filters which are highly-breathable, flexible and can be used as inserts into textile, simple face masks. This will increase the protection of cloth masks (even home-made ones) significantly, with the efficiency then being ruled by the tightness of the fit around the filter/face. The polymer nanofibres will also use static electricity to trap even the smallest of nanoparticles, and may be of further use in areas of high pollution or for people with chronic respiratory problems.

Nanofibres are produced using a high electric field to pull a fibre out of a droplet of solution on the end of a needle (a process called electrospinning), a very slow process that would make filters for ~3 masks/day. Due to electrostatic shielding, bringing more needles to bear is not a linear process, requiring higher and more unsafe voltages, and limiting the choice of polymers that can be used (eg. no flammable solvents). Our innovation is a modular solution that increases deposition rates by 1000 - 10000 times per module.

In this project, we will develop the prototype filter material, validate it independently for viral filtration and move to pilot production of a consumer and a medical filter.



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HUMANISING AUTONOMY LTD	Measuring Impact of Social Distancing on Transportation (MISDT)	£49,151	£49,151

Social distancing policies have been imposed in response to the COVID-19 crisis. Citizens are being advised to keep a two-metre distance on streets, at stations, within shops, and on public transportation. These recommendations are impacting public transport organisations in many ways. Organisations are becoming heavily reliant on their staff at stations and transport interchanges to maintain the health and safety of passengers and other users, this includes encouraging social distancing. Due to the current lack of appropriate monitoring measures to understand and analyse passengers' behaviours and movements, staff are encountering difficulties in ensuring the safe use of public facilities, both in real-time and to proactively deliver effective interventions at high-risk locations.

Humanising Autonomy (HA) and Transport for Greater Manchester (TfGM) are proposing a collaboration to improve the safety for all users of public transport interchanges. By deploying HA's behaviour video analysis software, staff will be able to easily detect the following: adherence to social distancing, number of people and those in groups, directional movement, use of infrastructure and behaviour analysis (seated/standing/walking/exercising, etc.). This could help inform TfGM's response and recovery strategies (e.g. the reallocation of departure stands & loading bays, the laying out of social distancing information). Data can also be used to better understand capacity for walking and cycling, in order to complement other data streams (Smart Junctions, Counts, surveys, etc.).



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I3D ROBOTICS LTD	Stereo Theatre	£47,954	£47,954

This project will interface 2D and 3D machine vision solutions with virtual and augmented reality systems to produce a digital twin of a patient in an operating theatre. This offers game-changing advances in surgical procedures as it allows for senior surgeons to remotely experience the operation and interact with the local surgical team to provide help and offer advice.

i3Dr has many years developing and producing systems for industries such as steel and nuclear and the key output of this project will be to transfer its technology to the healthcare sector. i3Dr's technology was a key component in the winning of NDA's multi-million pound decommissioning competition where 2D and 3D machine vision was interfaced with VR and AR systems. This project will build on that work through interfacing i3Dr's machine vision solutions with AR/VR systems and be tested in the medical AMRC's digital theatre. This will allow the team to create an immersive experience of the theatre and prove that this technology may be used for real-time updates of the real-world to the digital twin.

Correct implementation of these ideas could lead to improved patient outcomes, care and safety as well as increasing the number of hospitals hitting their targets. The technology is not restricted to operating theatres and may be used in many areas of healthcare requiring a digital twin such as ordering supplies, cleaning & sterilisation of equipment, streamlining theatre use times, and the on-site manufacturing of medication.



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AMANTYS POWER ELECTRONICS LTD.	Remote Monitoring and Condition Based Maintenance of Power Electronics in Critical Energy and Transport Infrastructure	£49,948	£49,948

"Remote Monitoring and Condition Based Maintenance of Power Electronics in Critical Energy and Transport Infrastructure"

Amantys will conduct a feasibility study, based on its proprietary power semiconductor junction temperature (Tj) estimation technology, to adapt existing techniques and develop new algorithms to enable a robust method of monitoring the condition of power electronics in converter stacks. This will enable remote monitoring of the condition of critical infrastructure assets such as the converters in off shore wind turbines or in rail traction systems and enable early predictive maintenance, reducing catastrophic failures and maximising up time of the assets in question.

Societal benefits will include reduced cost of ownership of the assets, overall reduction in carbon emissions and greater resilience, particularly important in times of crisis.

The project outcome will be CM algorithms validated using pre-existing data on modified existing hardware. The solution will be "ready to lab validate" at TRL 6/7 enabling rapid commercialisation.



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FOUR D RUBBER COMPANY LIMITED	Reusable Protective Material	£49,165	£49,165

This project is to develop UK manufactured reusable sterile polymer material for use in protective equipment including aprons, gowns, surgical drapes, bed and trolley drapes and mask headbands and diaphragms.

The Covid-19 outbreak has highlighted the opportunity to improve the approach to protective equipment and materials used in the UK healthcare and other sectors. Current PPE and protective materials are largely single use plastic products sourced from geographically remote locations with long supply chains and competitive demands. The result has been significant challenges to obtain large quantities of protective equipment over a prolonged period of time with associated environmental impacts from shipping and disposal.

The superior physical properties of the material will enable it to be resterilised and reused. This will reduce the total volume of protective equipment required to service the needs of the UK's and other countries health services. Reuse of equipment, coupled with UK manufacture, will result in waste and total carbon footprint should reducing significantly in line with the Government's aim to be carbon neutral and to have zero avoidable waste by 2050. At the same time a strategic source of material in the UK will be developed underpinning a unique manufacturing facility located within a coalfield regenerated area.



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MEDWYSE LTD	Medwyse: Using AI to instantly retrieve COVID-19 knowledge from latest research to aid frontline clinicians	£39,897	£39,897

Medwyse is developing an artificial intelligence (AI) based platform to help clinicians find answers to their clinical questions quickly and reliably. Since the outbreak of COVID-19 in early 2020, clinicians, researchers and scientists have been rushing to understand this new disease. Numerous academic publications and guidelines are being published every day and it is difficult for clinicians to keep up with all the new research and guidelines on how to best care for COVID-19 patients and themselves. These resources are released by different publishers, government bodies or medical specialty societies. Clinicians need a single point of access to this information and a much easier and faster way to search through these resources. Our AI platform will ingest peer-reviewed biomedical journal articles and national guidelines and then quickly retrieve the relevant knowledge to answer clinicians' questions. This can help save clinicians' time in keeping up to date with the latest research and guidance and improve the adoption of best practices so clinicians can protect themselves and provide the best care for COVID-19 patients.



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IGEOLISE LIMITED	Covid-19 transport travel times	£35,880	£35,880

TravelTime Technologies have already built and commercialised a technology platform, accessed by API, that enables clients in 40 countries to analyse their own data by travel time, not distance. As one example, the NHS use our platform to determine where to locate health facilities within reach of an optimum population. However, Covid has changed travel times dramatically as mainline and underground stations have closed, bus and train timetables have changed, and road speeds have increased. This means that when planning the location of Covid testing centres (for example) 'Covid travel times' mean far more than 'normal travel times'. We've had multiple requests for a 'Covid TravelTime API' from government departments, NGOs, charities, health services and other organisations who are on the front-line tackling Covid. In response we have already mirrored our existing platform and in early May we will start testing our 'Covid TravelTime API'. We will deliver it free of charge to these front-line services, irrespective of their API usage. We believe this will be the only such API in the world and it will, without doubt, save lives. After Covid, when travel times return to normal, we will repurpose this 'mirror' API so that transport planners can use it to model the impact of proposed new transport infrastructure on the existing road, rail, bus and subway networks. What's innovative about this proposal is; 1) it builds upon an already patented, innovative and existing TravelTime Platform without which the 'Covid TravelTime API' could not be built. 2) There is no equivalent 'Covid TravelTime API Information Services) of Arcgis from ESRI, Alteryx, and the opensource QGIS -- there are few data planners in the front line teams battling Covid who don't use one (or more) of these GIS services. It means our API will instantly be available at a click of a button (literally) for just about everyone in the front-line organisations asking for it. And 4) post covid, when we repurpose the API for future infrastructure planning, ag



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HYBRISAN LTD	Changing the face of facemasks	£49,311	£49,311
Covid-19 has created a shortage of anti-viral products such as sanitisers and Personal Protective Equipment (PPE). This is both a short-term issue -- to cope with a huge increase in demand -- and a long-term issue as the crisis has exposed the fragility of international supply chains.

Hybrisan has developed a biocidal electrospun nonwoven material than can be used as an alternative to current materials. The material can be used to make reusable, biocidal face masks that will improve safety of front-line workers and reduce the global shortage of face masks due to the Covid-19 pandemic.

The aim of this project is to test and develop the nanofibre material for use in face masks, wound dressings and other uses. An InnovateUK grant will allow Hybrisan to rapidly develop and independently test the fabric for use in face mask applications.

Hybrisan intends to manufacture the materials in the UK while also setting up international partnerships to produce finished products such as face masks, and is already in discussions with suppliers such as 3M. The vision is to create a series of unique, IP protected materials that can be manufactured in the UK and deployed globally to create supply security for the UK while also establishing a Welsh business as a global leader in manufacturing a new generation of anti-microbial products.

The business is currently setting up in-house production facilities to enable UK-based material supply and is in discussions with partners for UK and worldwide production.

This grant will allow Hybrisan to accelerate product development, by working with world-leading design and development consultancy TTP to carry out design development, independent testing, prototyping and production planning.

We expect to develop the first prototypes within 3-4 months. Initial launch of the product is expected in Q3 2020, with full global production to start in early 2021.

Hybrisan is a UK-based manufacturer of biocidal products that are effective against viruses, including Covid-19 as well as bacteria and other microbes. The unique liquid biocide product is safe to use and more effective than alcohol-based sanitiser. This product is already proven and is being sold to clients such as the NHS, and the company is rapidly expanding to meet demand.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
REALITY CHECK PRODUCTIONS LTD	The Round	£48,559	£48,559

The Round is an innovative new platform, built by Reality Check Productions with support from spatial computing experts Magic Leap, for professional artists and creatives to produce, build and distribute live performances delivered to audiences' homes globally. Utilising real-time remote-capture and operating technology and virtual creation tools, The Round will bring audiences and their friends closer to live theatre than ever before in a social, virtual theatre at home.

Created especially for the platform, productions in The Round use Mixed Reality technology to allow audiences to watch new live shows, with their friends, from any viewpoint.

During the current public health crisis, it is vital that we continue to create innovative and exciting new theatrical work for audiences at home, while at the same time supporting those industries so badly affected by social distancing measures in place globally.

The Round will further contribute to the industry's continued growth by mitigating its environmental impact by reducing the need for international travel, physical waste from set construction and energy consumption from performances.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CROWD REACTIVE LIMITED	Virtual Event Environment to Combat Social Distancing	£35,845	£35,845

Covid-19 has forced a huge change in the events industry; 54 million attendees worldwide have been affected by cancelled events (Forbes, April 2020).

* Brands who sponsor events are unable to engage with potential customers. Paul Hicks, Director, CSM says 'brands have budgets, but no experiences for them to spend it on'.

* Attendees are missing out on interactions that could have positive life impacts.

* Event organisers are losing revenue as brands are not paying for sponsorship. "We will have a two-digit million loss," Olivier Rihs, MD of the cancelled Geneva Motor Show.

EventsTag's solution is an online visitor experience for brands sponsoring or hosting events.

Brands can create a 3D display of the event environment that visitors can access on their phones or computers. Visitors can navigate to interaction points. They can view a live stream, use a photo booth, chat with visitors, purchase merchandise, download content or play a game.During the project EventsTag will launch with 3 trial clients and expect to have commercialised its use within 1 month of the project ending.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHION THERAPEUTICS LTD	Transient knockdown of the ACE-2 Receptor using the RALA Technology for COVID-19	£49,911	£49,911

RNAi therapeutics have the potential to transform healthcare interventions as evidenced by the approval of 2 products in the last 2 years for life threatening diseases. RNAi therapy is designed to transiently reduce a defective gene for therapeutic purposes. It is a rapidly growing market with 109 RNAi based therapeutics in clinical trials (July 2018) \[Turnbull 2020\]. However, there are still issues that surround the RNAi therapeutics which include getting to the appropriate tissue and then ensuring intracellular delivery to the destination site. Recent studies have also indicated that those with underlying health conditions such as diabetes, high-blood pressure or smokers have an increased number of ACE-2 receptors in the lung epithelium \[Leung 2020\]. Studies have revealed that COVID-19 uses the ACE-2 receptor to enter cells in order to produce more viral particles that can infect more ACE-2 receptor positive cells \[Kuba 2005\]. The ACE-2 receptor plays a role for many biological functions but if expression could be lowered for a short period of time it could reduce the infectivity of the virus and help tip the balance towards healthy recovery. RNAi could be used to transiently reduce expression of this ACE-2 receptor but only if there is an appropriate delivery system. Therefore with clear alignment to the specific theme of healthcare in this COVID-19 grant call, pHion have developed a solution for RNAi delivery that is safe, does not further exacerbate the immune system, preferentially delivers the therapeutic to the lung and is cost-effective, ultimately enabling widespread adoption of the RNAi therapy. The innovation centres around the use of a peptide termed RALA that is designed to condense RNAi into nanoparticles (NPs) that have the properties necessary to cross cell membranes, escape endosomes delivering the cargo to the cytoplasm with high efficiency. The NPs formed between the RNAi which is designed to reduce ACE-2 expression and the RALA peptide do not require cold chain storage can be stored for many months without losing functionality. The proposed 6 month pilot study is designed to demonstrate that the RALA/RNAi NPs can reduce ACE-2 receptor expression in human lung cells and then in vivo for a short period of time. This evidence would be critical to secure future investment for the development of this therapeutic and the next steps would be toxicology and a Phase I trial. This short-acting RNAi therapy holds potential for any coronavirus outbreak that targets the ACE-2 receptor.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AUTOLUS LIMITED	Evaluation of novel protein based disease ameliorating therapeutics	£49,710	£49,710

Autolus are working to leverage existing expertise in antibody binder technology. We have designed a series of molecules that have the potential to lower viral load in patients, which is expected to reduce disease severity and lower the likelihood of developing symptoms that result in hospitalisation. The goal of the project is to evaluate the technical feasibility and rapid development of disease-ameliorating biological drugs.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ANTIKOR BIOPHARMA LIMITED	Accelerated Coronavirus clearance immunotherapy	£49,966	£49,966

The COVID-19 pandemic is the 3rd-known coronaviral-disease with an alarmingly-high transmission rate. These incidences will keep returning and we must be prepared with innovative technologies to combat future epidemics/pandemics. Vaccinations are the gold-standard but this may not always be successful and can have adverse effects and/or lead to incomplete protection.

Antibody-Drug Conjugates (ADCs) are a form of targeted chemotherapy using immunoglobulins to deliver cytotoxic chemotherapy drugs (payloads) to tumours. Antikor are developing the next evolution of this concept using much smaller antibody-fragments that can penetrate tumours more effectively, clear from the body more rapidly whilst delivering more payload due to our proprietary high-loading technology. We propose to apply our FDC platform by harnessing these key features to develop a therapeutic drug that could rapidly reduce COVID-19 viral-load over a matter of hours thereby reducing disease severity, intensive-care-unit hospitalisation and death.

Antikor has proprietary antibody-fragment libraries with the expertise to discover antibodies to practically any target, has identified suitable 'payloads' and has all the resources and experience to develop anti-viral FDCs. There is no precedent for this novel drug class but there is a strong case from the supporting data showing a correlation between viral load and disease severity.

The technical approach (6-months) will be to use phage-display technology to discover antibody-fragments against COVID-19, with candidates emerging from Antikor's library already pre-designed to form stable, highly-loaded drug-conjugates.

Leads will be candidates for more detailed biological studies including rodent models of coronaviral infection/clearance, which will be done in collaboration with identified respiratory virologists. This approach acts to reduce viral load more rapidly than drugs like hydroxychloroquine or replication inhibitors and could be more effective than conventional neutralising antibodies due to the clearance mechanisms harnessed and faster tissue perfusion into critical organs such as the lung and kidneys. If successful, Antikor has networks to commercialise this therapy which enables patient benefits to be realised sooner and add value to the Company through a broader technology proposition.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WOWSOME XR	ioLive - A collaborative, interactive media production and broadcasting framework, designed for streaming live artistic performances	£49,968	£49,968

About half the world's population is facing mass quarantine and the unique situation of social distancing created by the Covid-19 crisis. All live performances have ceased, while currently available platforms do not support live performances from the homes of artists with professional quality live editing like what the Television broadcasters deliver.

This project aims to bring live internet streaming closer to the experience of live TV, by developing a technology framework that enables live collaboration of artists with producer, director and editor -- professionally mixed and cast on web based interactive display for the audience. The project lead is an immersive technology software company in partnership with a popular live stream daily cultural event.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CHARACTER COUNTS LTD	EasyPeasy Home Learning content task- force: Supporting families with young children	£46,867	£46,867

EasyPeasy requests £46,867 in matched funding (£23k already secured) to support a 3-month content task-force to become the go-to early years app for parents and teachers during the COVID-19 crisis, and beyond.

The home environment has a greater influence on children's early development than full time centre-based childcare. Despite this, home learning is an under-developed market and support is lacking for the 2.5 million parents with children aged 0-5 across the UK. Already existing developmental gaps between advantaged and disadvantaged children will widen as a result of lockdown with inequalities in home learning environment no longer mitigated by centre-based care. There is a significant need to provide support, guidance and encouragement to families to ensure they stay happy, healthy, and well, and to support children's ongoing learning and development throughout social distancing. At the same time, widespread school and nursery closures threaten the survival of the early years sector, and the need to support the ecosystem to innovate and adapt to distance learning is paramount.

EasyPeasy is a child development platform that offers parents activities and guidance to turn everyday parenting stresses into opportunities for playful learning. It is the only digital platform of its kind with proven impact on both children's cognitive development and parents' wellbeing through Randomised Control Trial evaluation, with observable benefits to families across culture and socio-economic background in 10-18 weeks of use. EasyPeasy is a partner of the Department of Education, delivering proven impact through the government's Early Years Social Mobility Programme.

As well as offering free access to EasyPeasy for parents and teachers across Q2 2020, through this project we will accelerate development of new functionality on our platform to support user-generated content, and work with nurseries, schools, and children's charities to adapt and digitise their programmes and curriculum so they can continue supporting their local communities, and work towards new and sustainable delivery models.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
METASONIXX LTD	Metamaterial-based Noise Control in Intensive Care Units	£49,828	£49,828

Intensive Care Units are noisy places, with alarms and machinery buzzing all around. With Covid-19, they will become frightfully noisier: 10 commercial oxygen concentrators or ventilators are sufficient to create the noisy equivalent of a motorway in a hospital ward. Considering that some of the ventilators built in converted factories are even noisier, imagine how noisy will be the London Excel Centre turned into Nightingale hospital!

While the priority is to save patient lives, this noise may be considered to be unimportant. After all, we are at war with Covid-19\. Still, noise in ICUs is proven to impact on the recovery time of patients and on the concentration and mental health of medical staff. Some of the NHS heroes that now work in first-line may even need treatment afterwards, like war veterans.

We felt that improving this situation could be our small contribution to the war that is keeping us all isolated. Therefore, in this project, we will study the feasibility of a solution to manage noise in ICUs, based on acoustic metamaterials. This is an innovative engineering and design approach, which allows normal materials to acquire properties not otherwise existent in nature.

We will design a screen that can be put up as necessary and can selectively cancel unwanted noise, letting through specific sounds (e.g. patient alarms) if desired. Our screen will be designed to be lighter and thinner than classical sound-absorbing panels, but as effective as very thick plywood in blocking unwanted noise.

Metasonixx is a leader in transforming normal materials, like plastic or wood or metal, into acoustic metamaterials, which manipulate sound impacting on them. Our know-how is protected by 3 patents and underpinned by research in two UK universities, Sussex and Bristol.

In this project, our engineers will explore mass-production of our prototypes, supported by experienced commercials, to ensure efficient delivery and a realistic exploitation plan, and by ICU staff, to ensure that our product is tailored to real needs.

We expect a positive impact on the wellbeing of staff and patients in ICUs shortly after the end of the project and beyond the current pandemic, as our technology will be adaptable to other noise sources. Beneficial applications to noise management in other sectors of our society (e.g. cars, homes and open offices) might stem from this project on the medium/long term.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MEDISHOUT LTD	MediShout: Digital Technology And Artificial-Intelligence (AI) To Help Hospitals and GP Practices Prevent and Manage Covid-19	£49,631	£49,631

Healthcare staff are battling Covid-19 on the frontline and they need functioning equipment, logistics and infrastructure to treat patients. They need ventilators to give oxygen, stock to take blood tests, deep-cleans, and personal-protective equipment (PPE), both to protect themselves and their patients, and to prevent the spread of infection. However, with hospitals and GP practices in crisis-mode, responses are understandably un-coordinated. Staff see all the problems but their voices are not heard. There are no quick or simple ways for staff to report the problems they see which means their insights are lost forever. Without this crucial data, healthcare organisations cannot swiftly fix issues to ensure staff are best equipped to treat patients.

This project will develop healthcare's first mobile phone App for front-line staff to instantly report any Covid-19 logistical issue to managers, helpdesks or equipment suppliers who can resolve the problems. For example, if staff report a lack of PPE and the level of urgency, this can help the hospitals and equipment suppliers allocate resources to where they're needed most. With the situation on the front-line changing so rapidly, our platform harnesses the insights of staff in real-time so hospitals and GP practices can adjust to the evolving situation.

A core reason for this project being so innovative is what it does with the collected data. Firstly, having all issues reported through one portal means information will be stored in a single, structured data-base. This not only allows short-term resolution of issues but will drive longer-term improvement to healthcare. The lessons learned will help healthcare better prepare for future waves of Covid-19, or new pandemics occurring secondary to other viruses. Aggregating structured-data will also result in the ability to use artificial-intelligence capabilities to predict future events. For example, the project will aim to predict when medical equipment will break or help understand where PPE will be most needed.

This project will offer a fantastic return on investment. The strong project team have a superb track record of delivering meaningful digital health solutions to organisations across the world. They will use their in-depth knowledge of healthcare, with the support of several NHS organisations, to deliver a high-impact solution that can be scaled quickly during this project. It will better protect NHS staff, it will ensure that healthcare systems function more efficiently, and it will save lives; these are benefits that far outweigh the value of grant funding requested.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPECTRUM LOGIC LIMITED	Low Cost, High Throughput Western Blot Antibody Detection Device for Those Already Infected with COVID-19	£49,591	£49,591

There is an unmet need for COVID-19 antibody testing for those already infected with SARS-CoV-2\. This can be accomplished using serological Western Blot assays in a lab setting by detecting antibodies to SARS-CoV-2 in blood samples. The antibodies bind to antigen proteins and are visualisation using bioluminescent particles. This test can show whether your immune system has fought-off SARS-CoV-2, even months previously. Western Blot assays have been used for many years to test for Hepatitis B and other viral diseases. Unlike home test kits, they offer excellent sensitivity and specificity (no false positives) approaching 99.99%. The test can be multiplexed with multiple samples run in parallel. The imaging takes approximately 20 minutes to run plus some preparation time. The test uses different reagents from the rtPCR testing widely used today for antigen testing, which are in short supply.

The test will help scientists fight the pandemic by giving researchers a more accurate measure of how many people have had the COVID-19\. On a personal level, many people wish to know whether that have already suffered from COVID-19 and posses protective IgG antibodies.

Existing Western Blot instruments are expensive and have poor sensitivity, because they use either scanning line sensors or lens-coupled CCDs. Our instrument will enable accurate laboratory antibody testing to be ramped up inexpensively. Our project will use unique, large-area CMOS image sensors coupled to fibre optic faceplates already used in surgical X-ray systems for 1:1 imaging without a lens or scanning. This allows our bench-top instrument to capture much more of the light measured in the assay, making it more sensitive. Because the sensors are already in mass production, the new instrument will be far cheaper than existing instruments (about 15% of the cost). Sensors can be rapidly mass produced using the existing supply chain.

This will be the first product of its type using 1:1 imaging with a large-area image sensor. It will be applicable to other Western Blot applications including COVID-19 antigen testing, life science research, veterinary medicine and food safety.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INGENZA LIMITED	Recombinant yeast production of COVID- 19 antigen to support clinical testing	£47,667	£47,667

This project aims to support a novel and vital alternative strategy to realise broad population immunity to the SARS-CoV-2 virus (the cause of COVID-19 disease) in the event that the adenoviral-based vaccines currently under development in the UK prove insufficiently efficacious, safe and/or cost-effective. It will show that yeast-based production of a key viral protein fragment (antigen), that has proven immunogenic in feasibility studies when linked to a novel Virus Like Particle (VLP), provides a rapidly scalable, highly cost-effective and versatile means to enable widespread vaccination of the UK and global population.

Crucially, whereas the VLP can be readily produced in the bacterium _E. coli,_ the viral protein fragment is unsuited to production in bacteria and has only been prepared in cultured human cells, a method that cannot be cost-effectively scaled-up for clinical trials and full scale manufacture. However, the yeast _Pichia pastoris_ can produce complex mammalian proteins efficiently, enabling rapid scale-up and highly cost effective production. Ingenza recently engineered _Pichia_ to prepare novel antibacterial proteins to high purity by optimising their production, purification, testing and yield from _Pichia_, using an innovative manufacturing platform called "visABLE" which enables selection of the most productive and stable _Pichia_ recombinants and recovery of their heterologous target protein.

In this project we will repurpose visABLE to deliver a recombinant _Pichia_ strain to rapidly prepare and supply the viral antigen, that will be combined with the novel VLP developed by researchers at Oxford University for efficacy testing. If comparably immunogenic, the _Pichia_ production system will permit rapidly scalable, highly cost-effective and cGMP-compliant manufacture of this vaccine component, thereby accelerating the development, testing and availability of a vital alternative to current COVID-19 vaccine production systems in development as well as providing a versatile and novel platform to enhance future UK viral responsiveness.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ICENI DIAGNOSTICS LIMITED	Are you fit to work? A home test for COVID-19	£49,112	£49,112

In any infectious disease outbreak, the rapid triage of potential carriers of infection is essential to control the spread of infection and to allocate resources efficiently. We will repurpose the technology, most famously used in the pregnancy test, to create a new diagnostic to rapidly identify coronavirus carriers. This approach requires no infrastructure and can be used in the community with minimal training or expertise. This tool leads to a simple 'red line' output within 15 minutes, enabling early identification of infected individuals. Crucially, Iceni Diagnostics has successfully applied this technology for influenza diagnostics already; insight into how to adapt these tests for the detection of coronavirus is also in place. The scientific basis of this new test is to exploit the carbohydrates that coronaviruses attach to on human cells, which we will immobilise in our devices. The key advantage of this technology is that is easy to produce and can be scaled up, using established manufacture and distribution chains, to meet the substantial demands for immediate and recurrent coronavirus testing in the weeks and months ahead. It is intended to be used for triage - to enable large numbers of people to be tested with a +/- outcome, enabling positive response patients to be rapidly identified, quarantined and subjected to further testing, while enabling negative-response individuals to return to their normal work-life activities.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DEGOULD LIMITED	AutoDent: Enabling social distancing in manufacturing operations in response to the COVID-19 pandemic.	£49,975	£49,975

Degould is an award-winning innovative engineering company focused on providing intelligent inspection solutions to the automotive industry. DeGould has a strong existing network of OEM clients, including Jaguar Land Rover (JLR), BMW, Bentley and Daimler.

This project aims to adapt DeGould's successful approach to finished vehicle inspection to develop **AutoDent**, a mobile dent detection system that can be applied to early stage inspections in the production system. This will enable car manufacturers to:

* **Safely return operations within social distancing guidelines**

* **Improve quality and productivity to reduce costs**

The successful deployment of this technology will support the automotive sector to recover from the pandemic effects. By fast-tracking the development of DeGould's AutoDent, the UK will be better placed to maintain employment levels, a competitive position in global markets and make the UK more resilient to similar disruption in the future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INOCARDIA LIMITED	Priming the AI-Contractome for COVID-19	£49,780	£49,780

Returning to a 'normally' functioning global society post COVID-19 will require effective drugs and vaccines, particularly if we are unable to develop long-term immunity to the virus.

Hospital studies have shown us that COVID-19 weakens the heart, leading to more severe consequences, so we must ensure that the new drugs we develop to fight COVID-19 do not also damage the heart.

It is paramount that these new drugs are safe enough to be used at home as well as hospital and by people who do not know they have COVID-19 or may already have underlying heart conditions and are at increased risk.

Our project will enable Pharmaceutical companies to design new COVID-19 drugs that are 'heart safe' faster and with greater chance of success.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AQUALUTION SYSTEMS LTD	Development of an effective alcohol-free hand rub	£49,201	£49,201

Many community and health-care associated infections are preventable through good hand hygiene i.e. cleaning hands at the right times and in the right way with the most suitable method. Indeed enhanced hand hygiene has been a key part of the government strategy to contain the Covid-19 pandemic.

The optimum method of maintaining good hand hygiene is through use of soap and hot running water. However, this is not always possible, practical or convenient. This has led to a surge in the use of alcohol based hand rubs (ABHRs).

ABHRs are not produced using standard ingredients nor do they have a standard / declared strength, despite a minimum 65% concentration being required for them to be effective. In addition these products rarely have usage instructions on the label, despite the fact that BSEN 1500 states that 6 ml (2 washes with 3ml each time) is the necessary dose. Different alcohols have a varying spectrum of target organisms and not all alcohols are effective against all pathogens. ABHRs can cause drying / cracking of hands and can sting if applied to broken skin. In addition they are flammable and can cause harm if ingested. They are not safe to use in all environments (eg primary schools, dementia care settings) and are not acceptable to people of certain faiths.

This project focusses on creating a convenient and efficacious hand rub based on hypochlorous acid. Hypochlorous acid is produced by the mammalian body in response to pathogen attack. It is a fast acting and safe biocide which is effective against a wide range of pathogens (bacteria, viruses, yeasts, moulds, protozoa, spores). It is already used in the healthcare sector in liquid form (hard surface disinfection and hand sanitation) however professional users and consumers alike are used to gels and are hesitant to use non-gel formulations. This project will identify a suitable gel base to formulate a hand rub containing hypochlorous acid whilst maintaining the superior efficacy of the hypochlorous acid compared to alcohol as a biocide. It will look at optimal dose rate and rub time. The end result will be a safe, broad-spectrum efficacious hand rub that possesses all the convenience attributes of an ABHR without the disadvantages. The labelling would be designed to make it clear how much should be used to comply with the requirements of BSEN 1500 and the packaging would have a simple use mechanism to dispense that volume.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
U-FLOOR TECHNOLOGIES LTD	OptimisAir - Air quality control combined with behaviourial science	£49,703	£49,703

Occupants' daily activities make up 35% of the factors leading to indoor air-pollution \[UCL,2018\]. In the face of COVID-19 we are expecting people to spend much more time in their homes which has two serious knock-on effects:

1) occupants experience longer exposure to indoor pollutants, increasing the risk of respiratory illnesses;

2) Poor IAQ is linked to COPD, asthma, stroke & heart diseases -- all of which are underlying health conditions, increasing the risk of severe illness from covid-19, putting further pressure on the NHS.

To address this challenge we are now developing OptimisAir: an integrated 'Indoor air quality management system' that helps Registered Social Landlords reducing their maintenance costs through automated airflow control combined with AI-based activity-recognition and nudge-techniques to reduce the root cause of poor indoor air quality. It uses IoT-enabled sensors to monitor indoor pollutants and utilises game-changing technologies (machine-learning, activity-recognition, 'nudge'/behavioural sciences) to tackle an age-old problem: poor indoor air quality, dampness and draughts in homes.

The outcome of the project creates a novel, patented system at an extremely competitive cost.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
O'NEILLS IRISH INTERNATIONAL SPORTS COMPANY LIMITED	Fast Track Design and Manufacture of a Mass Market Personal Protection Device to Lower the Risk of Contracting COVID- 19.	£49,909	£40,925

As well as the serious implications for people's health and the NHS, COVID-19 is having a significant impact on business and the economy. PWC estimates the year one impact on UK GDP could range between -4% and -8%. Further, they suggest the worst-hit sectors such as transport, hotels and food service, could see their annual output down by anything from around 15% to around 40%.[][0]\[1\]

The pressure to resume business and life as normal is a growing challenge for governments globally but public health advisors are highlighting that restrictions on daily life need to continue until a vaccine is widely available. The so-called Exit Strategy from the current lockdown is likely to comprise a gradual lifting of restrictions for certain groups e.g. by age and possibly for certain areas where numbers are deemed to have peaked. A range of tools will be required to support the gradual lifting of restrictions.

With the support of Innovate UK, this project will involve the fast track design and manufacture of a mass-market innovative personal protection device to lower the risk of contracting COVID-19 and future viruses.

This project has resulted from the government call for manufacturers to consider diversifying production to meet the urgent need for personal protective equipment in the UK.

O'Neills is a multi-sports manufacturer specialising in the design and manufacture of bespoke playing and training kit to teams globally. O'Neills is ideally placed to deliver this project as a vertically integrated manufacturer with in-house skills in product development, and a wide range of apparel and product manufacturing equipment. We have a strong supply chain in place for the core raw materials to be used in this project.

[][1]\[1\] [https://www.pwc.co.uk/services/economics-policy/insights/uk-economic-update-covid-19.html][2]

[0]: https://oneillssportswear-

my.sharepoint.com/personal/oward_oneills_com/Documents/INNOVATE%20UK/CURRENT%20SNOOD%20APP/ONeillsSnood%20Project%20Summary.d ocx#_ftn1

[1]: https://oneillssportswear-

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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRASS AGE LIMITED	Vetobac Antimicrobial Copper Touch Surface Products	£49,856	£49,856
The Vetobac Antimicrobial Copper Project involves working with laboratories and professionals to set up test parameters and procedures and carrying out testing to give conclusive evidence of the antimicrobial efficacy of copper alloy touch surfaces in killing the SARS-Cov-2 virus. This would involve trials with typical use conditions to provide evidence that would promote general awareness of the unique and continuous antimicrobial properties of copper and its alloys. Some testing has already been carried out in the US but the test conditions do not accurately reflect actual use conditions in the wet and the dry state.

Typically touch surface products in public areas such as door handles, handrails, washroom rails and hospital touch surfaces are manufactured from stainless steel or other metal or plastic surfaces. Bacteria and micro organisms remain alive on these surfaces for days and can easily be transferred between users including health care workers, patients. Copper alloy surfaces are known to be highly effective in killing a wide range of bacteria and viruses but these products become too expensive for every day use because of the manufacturing processes involved in producing the products with these materials. Detailed review of manufacturing processes is required along with production of dies and prototypes to be able to test and assess the the products for functionality and market acceptance aesthetically and longer term maintenance.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SONODOT LTD	Smart warehousing solution to improve efficiency, performance and employee health & safety amidst the Covid-19 pandemic	£49,621	£49,621

Sonodot Ltd are developing an advanced Smart Warehousing solution to help address key challenges facing today's warehouses and logistics industry. Warehouses are currently ill-equipped to handle high volumes of orders and deliveries, supply chain fluctuations and uncertainties, with added time, human resource and cost pressures during the Covid-19 pandemic.

The project builds on Sonodot's existing indoor tracking technology which was launched in 2019 to continually monitor the movements of material handling vehicles (e.g. forklift trucks) wherever they are in a warehouse. The high-performance location intelligence platform reports this data to warehouse managers, allowing them to make better decisions around safety, human labour and fleet utilisation.

New functionality and tools will be rapidly developed and integrated with the existing Sonodot platform, ready for large-scale pilot installations at the end of the project. Full market launch is anticipated late 2020, making a significant contribution to the warehousing and logistics industry in terms of performance and efficiency, whilst ensuring employee health & safety and preparing for short-, mid- and long-term impacts of this global disruption.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BIOTECH RESEARCH PARK	OpenCell: SARS-CoV-2 CONTAIN mobile testing labs	£49,920	£49,920

Open Cell has developed CONTAIN labs: high-throughput SARS-CoV-2 testing laboratories using laboratory automation to increase testing capacity whilst maintaining the high standards of testing in current accredited central testing facilities. CONTAIN (CONtainerised Testing with Automated Inspection and Notification) labs will augment existing testing facilities and reduce the burden on NHS hospitals by providing additional testing to meet private-sector demand. A single lab can deliver 2,400 tests a day with just one operator. The labs are constructed from shipping containers which can be rapidly redeployed to any location needed.

We are facing an unprecedented situation, driven by a global pandemic. We need to act immediately to limit public harm. Moves to relax social distancing without mass testing would return the UK to an exponential growth in infections. Mass testing is one of the most important ways to reduce pressure on the healthcare systems, to ensure that quarantining can take place as early and as effectively as possible and that lockdowns can be lifted.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPEN MEDICAL LTD	Pathpoint ITU- 'cloud' solution to triage, track and review intensive care patients	£49,954	£49,954

Intensive Treatment Unit (ITU) is the highest level of treatment for the most sick patients in society. Covid-19 is a novel infection with no known cure currently, leading to severe organ failure in the worst affected patients. Currently intensive care doctors are managing their highest number of patients in the history of the NHS.

With high numbers of patients presenting to A&E departments, and quickly identified as needing urgent intensive treatment, many patients will be sent ('referred') to any site with capacity- which may not be in their immediate local area. If their health improves, they may be moved again to a designated centre for stabilised patients. With such high frequency movement of patients across different care settings and multiple staff involvement in patient care, our colleagues need a central system to track and review patient progress. We have served NHS 'acute' care for several years, and our experiences have led us to develop our 'Pathpoint ITU' tool for intensive care doctors. A secure web-based interface that gives doctors clear oversight of their daily workload, and enables any colleague who takes over the care of a patient to see the progress made so far, and the next steps required. This will help the national intensive care effort immensely.

When a doctor or nurse logs into the secure portal, a dashboard of newly referred patients is presented to them. Information about the patient's disease, and any existing illnesses, is displayed. All essential information the intensive care unit requires has been prepared by the emergency department in advance of the patient's arrival. Every patient comes to ITU with the same mandatory information required. This information is the basis on which prioritisation ('triage') is enacted. A colour coding scheme, with highlighted 'tags', further enhances the triage process. Multiple times per shift, ITU departments need to decide on outcomes of patients: whether to admit a patient to ITU, to continue with high level monitoring outside ITU, or to safely discharge a patient. A fully governed intubation care record, containing clinical checklists and documentation that is accessible by all key clinical staff, is an essential part of the ITU toolkit. Key data is generated by the system throughout a patient's journey. This data is useful for clinical researchers when assessing flashpoints in the treatment of this novel disease; adding further value to the national Covid effort.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TEACHERCENTRIC LIMITED	Providing structure and routine for students through covid-19 school closures	£48,625	£48,625

The goal of this project will be to develop a Smart Timetable module to support classroom learning during COVID-19\. We believe, providing structure for both students and parents will be critical during this new norm of balancing education and work.

The key objectives of this will be to:

- * Empower teachers to set classwork based on a flexible timetable.
- * Provide parents with the ability to overlay their own tasks on the timetable.
- * Enable students and parents to have a single view of their child's work schedule.

Although there are many forms of timetable apps and scheduling software in education - there are none that offers parents the ability to get a birds-eye overview of their child's school work set by teachers whilst having the ability to overlay and assign personal tasks/chores/treats from home based on prior amount of work set.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DRAPER BIOTECH LIMITED	EVOx 2020	£49,825	£49,825

Protecting front-line healthcare workers, patients and minimising nCOVID 19 infection rates, within the UK's general population, is a key strategy in managing the current pandemic, and probably will be so for the foreseeable future.

draperBIOTECH has pioneered and innovated novel applications of ozone treatments, producing safe, effective technology to thoroughly decontaminate emergency and patient transport vehicles. It's called 'EVOx', which has been derived from Agri-Tech challenges, tested for intensive livestock environments.

Harmful viruses, bacteria and fungi are often present on surfaces. Our research (independently verified by SciTech Laboratories UK) confirms that an ozonebased process is lethal to a wide spectrum of pathogens and organic structures.

SARS (Severe Acute Respiratory Syndrome) and MERS (Middle Eastern Respiratory Syndrome), which emerged in 2002 and 2012 respectively, are Corona-like viruses. nCOVID-19 is a variant of SARS and is referred to as 'SARS-CoV-2'. Studies conducted in highly regarded institutions, demonstrate that ozone kills SARS and MERS by deactivating its RNA (particular to viruses), a critical part of its structure.

The lethal effect that ozone has on SARS and MERS, and pathogens in general, demonstrates that EVOx will be effective against nCOVID-19\. Ozone sanitation will continue to work even when viruses mutate.

EVOx carries its own power bank making it compact and versatile. EVOx can be easily re-purposed in a variety of healthcare settings and safely used 'afterhours', in waiting rooms, day surgery units and outpatient departments, because of its modest size and weight. Our technology is easily adaptable to sanitise various enclosed spaces of different volumes.

Each EVOx cycle is concluded in several minutes. the system is automatic delivering a prescribed protocol. Critically, the units can be deployed elsewhere in the healthcare system.

Once the cycle is concluded, no residues remain and the ozone reverts back to natural oxygen. Thereafter, the environment is rendered completely safe for paramedics, drivers and patients.

Ozone has been deployed in a variety of ways since the early 1900s. draperBIOTECH has developed advanced applications of this established technology to produce an economical, simple, effective and practical unit with modest maintenance requirements.

Until the issues surrounding the current pandemic are addressed, (testing, mass-immunity, vaccination etc.) this new application is a significant step forward in the fight against nCOVID-19\.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EM SCIENTIFIC LIMITED	A rapidly scalable, differentiated COVID-19 antibody/immunity test for mass-testing: proof of concept.	£49,907	£49,907

Our innovation is the development of a new test for COVID-19/SARS-CoV-2 human antibodies to detect immunity. The test is rapidly scalable, highly automated, can be readily transferred and standardised across multiple instruments, manufacturers and laboratories. It has high inherent specificity and sensitivity in contrast to existing tests, reducing the false positive and false negative rate. To our knowledge, this is the first targeted mass spectrometry test for SARS-CoV-2 immunity.

The test is also complementary to existing point-of-care and future immunoassays as it uses different set of consumables, instrumentation, laboratories and scientists with different skillsets. This expands the UK's immunity testing capacity under UK government's testing strategy Pillar 3 and 5\.

Our vision is the test's application to vaccine development and mass-testing in the UK and US, rolled out this summer from several central laboratories which is how mass PCR-testing is conducted currently.

The key objectives of the project include implementing this test in one of our laboratories and assessing its diagnostic accuracy and reliability using confirmed COVID-19 blood samples. This would enable us to work with Public Health England (_PHE_) or Innovative New Diagnostics foundation (FIND) to assess the performance of this test in a larger cohort of samples, including asymptomatic and mildly symptomatic cases, ahead of adoption for mass-testing.

The focus of this project is to demonstrate our method is capable of quantifying human SARS-CoV-2 antibody levels and meets diagnostic and technical performance metrics in the initial cohort of blood samples.

Once this test is set up, it can be readily adapted to other antigens/coronaviruses for future outbreaks. Due to the high level of automation the costs of this test reduce significantly upon scaling, meaning it is well suited to cost-effective mass testing. We will also adapt this platform to develop other clinical tests in other disease areas.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BAKEPLAN SOFTWARE LIMITED	From oven to door: a software solution to help craft bakers deliver directly to households.	£49,736	£49,736

Most craft bakeries rely on supplying hospitality businesses such as restaurants and cafes or trading in their own high street shops. The Covid-19 shutdown and lockdown resulted in the loss of most of their usual customers. Therefore, many have introduced home delivery services.

This shift from supplying businesses to supplying consumers presents many big operational challenges.

Craft bakeries typically deal with hundreds of customer orders every day, all of which need to be produced overnight ready for delivery the next morning. This unique challenge has been addressed from the very earliest days of business computing [1] and there are a number of specialised bakery management software systems available, such as Cybake, Flexibake and BaPS.

These B2B systems perform the necessary number-crunching to collate customer orders, calculate production requirements, manage recipes, control allergen and nutritional information and organise logistics. However, they are not designed to manage home deliveries.

This project will provide craft bakeries with a dedicated online platform that combines consumer-facing e-commerce technology with specialist bakery production functionality. We will re-purpose our existing bakery software platform, transforming it from a business-to-business (B2B) to a business-to-consumer (B2C) system within five months. This system is urgently needed, and we will therefore release new functionality every month.

Without this solution, bakers would need to use generic e-commerce platforms for fresh food such as Amazon Fresh, Deliveroo and Uber Eats. However, these do not provide bakers with the necessary specialist functionality and, moreover, have a serious impact on bakers' slim margins.

This project will not only assist an industry that has been heavily hit by Covid-19 but will also deliver long-term benefits to society.

The current crisis has demonstrated how dependent we now are on supermarkets. By enabling local food producers to supply consumers directly, we can introduce more balance into the supply chain.

The "Farm to Fork" movement is well-known; a new "Oven to Door" movement is quickly emerging. Craft bakers are already helping to keep the nation fed and are now providing householders with a much-needed service. This project will help more craft bakeries to do this both in the short and long term.

\[1\] The first business computer was the LEO 1 developed for the bakery café chain Lyons Tea Rooms in 1951



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OXFINITI LIMITED	MedOx+ Mobile Medical Oxygen System	£50,000	£50,000

Medical grade oxygen supply is essential for NHS and private hospitals. Oxygen is delivered either through pipes or by using oxygen cylinders. The current Covid-19 pandemic has put a significant strain on the availability of oxygen. Some hospitals have declared a critical event when there has been insufficient oxygen available. The Royal Free hospital has had to restrict use as the pipeline supply pressure system has dropped to an unacceptably low level to meet demand. This has meant limiting which patients can receive oxygen.

Most hospital systems supply oxygen using permanent pipeline installations. In normal times these systems would be capable of satisfying demand. Such systems are difficult to upgrade quickly in response to sudden increased demand.

The solution is to provide a flexible means whereby a hospital can quickly add oxygen capacity to its existing systems. Adding capacity by upgrading an existing installation would take time. The extra capacity would be a waste of money if it was not used in more normal times. 'MedOx+' is a mobile oxygen generator that can quickly be deployed in a hospital to provide a supply of medical grade oxygen as and when required. In order to use a MedOx+ oxygen generator it has to meet stringent regulations. It has to be certified, its deployment and use must be under control of the responsible hospital technician. It has to be able to reliably operate 24/7\. This project is to build a pilot mobile certified oxygen generator unit to quantify what the specifications and logistics a network of units would need to meet for emergency oxygen deployment across the UK.

Research will be undertaken amongst key healthcare managers of existing pipeline systems. This would be to ascertain how MedOx+ would physically connect into their existing pipelines. It would also address any barriers to adoption, its overall design, business models and costs, logistics, safety, maintenance, training, security, equipment operational reporting and control. A MedOx+ unit would be built and its use trialled within a hospital.

Our ultimate aim is to use the findings from this project to develop a multi-purpose certified mobile MedOx+ unit. A modular design that enables a MedOx+ unit to be quickly re configured for a different application. MedOx+ units could be used for emergency oxygen supply for hospitals, water remediation (river spills) and municipal/industrial wastewater treatment.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MYED LIMITED	MyEd Home Learning platform to help all UK schools to connect with their pupils to deliver teacher-led, structured and interactive home learning: A development supported by Channel 4.	£49,088	£49,088

The vision for this project is to deliver a fully functioning and tested prototype of MyEd Home Learning (MHL) platform by the end of November 2020 that is ready for second phase development for a national launch by the beginning of June 2021\.

The objectives of the project are to:

(1) Research the challenges teachers and schools encounter in delivering continuity of formal education to their pupils during periods of national crisis and the limitations of the existing home learning platforms and online media.

(2) Design, develop and test a fully functional prototype of the service amongst teachers, pupils and parents.

(3) Refine and retest the prototype so that it is ready for speedy development into a Beta version for a national launch by June 2021\.

The focus of this project is on conducting further research of the first stage demonstrator prototype (that MyEd has already developed) amongst teachers, pupils and parents to inform the development of the detailed user experience, design and technical specification of the MHL service. The fully functioning prototype will be ready by mid-October for testing with teachers, pupils and parents during Autumn half-term holidays. The project will be concluded by the end of November with the delivery of the finished prototype.

This development is supported by Channel 4\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LatchAid Ltd	LatchAid: Modernising breastfeeding support services to help mothers and babies breastfeed during the Covid-19 pandemic and beyond	£49,996	£49,996

Breastfeeding support services in the UK are patchy, under-funded, and predominantly rely on face-to-face delivery, which is now paralysed by the Covid-19 pandemic due to social distancing measures. Millions of mothers and babies are isolated at home and suffering in silence when they experience breastfeeding issues. Research shows that 90% of mothers give up breastfeeding before they want to. Among them over 60% are due to pain and health issues (i.e. cracked nipples, breast infection) caused by incorrect latching (how the baby fastens onto the breast) and the lack of appropriate support.

Using digital solutions to deliver breastfeeding support is urgently needed. This project provides the platform to achieve this gradually during six months. LatchAid's Beta mobile app contains 3D interactive breastfeeding animations, breastfeeding support chat rooms, and infant-feeding FAQs. It has already been commended as a much-needed, revolutionary innovation by users in 10 different countries across 6 continents. This funding will scale our reach and fast track the development of three additional features, tailor-made in response to the Covid-19 pandemic. They enable the delivery of digital breastfeeding support at scale: (1) Virtual breastfeeding support groups; (2) A virtual breastfeeding supporter (3) Interactive expert webinars. Powered by Artificial Intelligence, our virtual support groups foster a scalable and accessible ecosystem where mothers can learn breastfeeding skills and connect with others for vital peer-to-peer and professional support anywhere, anytime. The virtual breastfeeding supporter chatbot enables us to support millions of users globally 24/7\. We are passionate about improving the breastfeeding outcome and women's feeling of self-efficacy, which will in turn bring substantial benefits to the families and society.

Breastfeeding organisations and professionals severely disrupted by the Covid-19 pandemic can resume service delivery through our platform. In the short term our objective is to support the UK mothers who are struggling with breastfeeding now. In the long term our mission is to enable the mothers of 800,000 babies born in the UK and 140,000,000 babies born worldwide every year to easily access reliable and trustworthy information and support with their breastfeeding needs.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
UROFOAM LIMITED	Mass production of re-usable surgical and N95 style face masks made from Polyurethane foam	£44,096	£44,096

Urofoam Ltd has been manufacturing technical polyurethane products in the UK for the past 30 years. We are specialists in mass-produced moulded foam components, servicing industries such as; sports, automotive, aerospace, oil and medical.

As a result of the impact of Covid-19, we have focused our attention on developing a washable and reusable face mask to help meet the nation's shortfall in supply. The mask will have performance characteristics comparable to those in the market at the moment, can begin production within a month and can be mass-produced.

The face mask is made from a moulded polyurethane foam which allows air to flow both ways and is designed to filter airborne droplets from both the wearer and the surrounding area. Because it is washable and reusable it is designed to be used in sub-clinical healthcare areas such as hospital cleaners, porters, ancillary staff, care workers. It is not designed for intimate healthcare contact where single-use, disposable masks destined for incineration would be most appropriate.

Current masks are produced using either polyester or wood pulp fibres, each having limitations from a supply chain perspective. Our polyurethane mask sources almost all materials from the UK, with the remainder coming from Germany. As part of the moulding process, we can also incorporate antiviral and antimicrobial compounds which limit the risk of transmission.

Our intention is to convert 3 of our 4 volume production lines to produce masks, with an initial output in excess of 20,000 units per week.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACTION ARTIFICIAL INTELLIGENCE LIMITED	Conversational Interfaces to address Financial Distress caused by COVID-19	£49,480	£49,480

COVID-19 has placed unprecedented strain on many peoples' finances, whilst at the same time creating new pressures on financial institutions. The number of people in debt is likely to increase significantly leaving many in financial distress and placing significant burdens on financial institutions. The resultant social, health, and economic costs threaten to be severe.

This work programme provides a conversational interface for people in financial distress to enable them to engage with their financial institutions in a userfriendly way via frictionless, asynchronous, and automated technology.

The benefits include providing people in financial distress with a supportive and sympathetic process that they can use in their own time. For the financial institutions, they benefit from greatly reduced costs of service.

Commercial-strength Conversational Interfaces are simple to use because users can talk about their requirements and actions in everyday language. The ability to use text and voice, and supporting vernacular, slang, and poor grammar and spelling, makes the conversational interface non-discriminatory and accessible regardless of gender, age, or ethnicity, whether stationary or on the move. All segments of society are targeted as beneficiaries.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VITRUE LTD	Avoiding the onslaught of musculoskeletal conditions caused by Covid-19 isolation using computer vision based musculoskeletal diagnostic tools	£49,518	£49,518

The Covid-19 crisis represents the largest challenge to our health system in seventy years. The vast majority of efforts are rightly focused on saving lives. However it is crucial that we mitigate and prepare for the medium and long term knock on effects of the crisis. One of these effects in the massive increase in musculoskeletal problems such as back pain. With tens of millions of people confined to working from home, tens of thousands of patients with musculoskeletal surgeries or treatments put on hold and the sedentary behaviours of most of the population massively increased, this avalanche of musculoskeletal issues is inevitable if we do nothing to intervene.

This project will capitalise on Vitrue's existing musculoskeletal diagnostic technology by innovating further to reduce all three of the problems introduced above without the need for any specialist equipment meaning it will be accessible to the population as a whole.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ELISHA SYSTEMS LIMITED	Affinity Biosensors for COVID-19 Antibodies	£44,234	£44,234

Biosensors provide an extremely useful, user friendly and cost effective route for rapid diagnosis. This has been seen for diabetics with the introduction of the blood glucose biosensor in the 1990's, which now has advanced to full disease management systems using smartphones. With new technological advances discovered to link affinity reagents to electronic surfaces, it is now possible to produce biosensors to any protein. Affinity reagents are biochemicals that bind proteins e.g. antibodies or virus antigens, very tightly thereby making the tests being developed absolutely specific to the target being detected. The vision for this project and the main area of focus will be to generate biosensors to coronavirus antibodies and antigens (COVID-19) to make a serological test for the virus. Associated with this main aim is a trial of a new set of electronic components to run the biosensors created. Combining these and the biosensors made will allow the production of a compact field measurement system to detect if a person has been infected and even if a person is still infected.

The project protocols will demonstrate the feasibility of the biosensors to be manufactured and also to test their sensitivity and specificity to the virus proteins to be detected. To date the serological tests to detect COVID-19 have been inadequate in field use. It is aimed to overcome this with new specific reagents being incorporated into the biosensors and this will be a prime outcome of the project.

In addition to detecting COVID-19, the whole system is future proofed, because it will be possible to change the specificity of the biosensors by changing the affinity reagent used. Therefore if a different virus appears, proteins and antibodies associated with any new virus can be detected by making a different biosensor with different reagents to change the specificity. In addition, the device described could be adapted to detect any protein, giving the capability of detecting any disease in the future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CGA SIMULATION LIMITED	Agent Based Epidemic Modelling (ABEM)	£49,996	£49,996

CGA simulation is a 3D modelling and simulation studio with experience of applying mathematical modelling processes to 'real world' issues and finding solutions. We have used 'Agent Based Modelling' (ABM) in the simulated towns and cities we have created to test the safety of autonomous vehicle technology and for meddling disaster planning. For this project, we propose to use ABM to model a series of scenarios and individual behaviours (both of individuals and viral spread), with the aim of predicting more specific outcomes than is currently possible using Bayesian modelling (the mathematical modelling that is currently informing the Government's lockdown interventions.)

We believe that at this more mature stage of the pandemic ABM modelling can provide much needed specific data, around which to create more targeted interventions and procedures to help move the lockdown agenda forward and plan more cohesively for future pandemics. This is because ABM does not model the entire population as one homogenous, hive minded entity but assumes individual agency of specific people, groups, or in the case of a recent project in which we used ABM, autonomous vehicles. In this previous project, we modelled individual cars as if the owners were visiting friends, going to work or going to the football. In other words, making their own decisions, with individual impacts. This is the approach we would take to modelling behaviours relating to Covid19 spread and it would enable us to tailor targeted interventions and approaches to specific activities like going to the cinema/ football. We could also investigate the role of super spreaders on viral spread and consider how informed interventions could help keep carers safer from infection, whilst caring for the sick.

This approach is innovative because it is a much more detail orientated approach to modelling than the current modelling approaches (which tend in the main to be statistical). In conjunction with existing modelling ABEM would help give policy makers one of the tools they need to get society and the economy back up and running before a vaccine is available.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HOLOXICA LTD	Holographic 3D Telepresence with Light- Field Technology for Remote Working	£50,000	£50,000

Holoxica is a research-intensive SME specialised in disruptive holographic and light field 3D solutions for professional applications. These technologies are naturally viewable with the naked eye, where full colour 3D images appear in mid-air, just like "Star Wars". The display technology is the next stage beyond current AR/VR that do not need glasses or goggles where multiple people can view the 3D image simultaneously. This is sometimes known as XR or MR (eXented/Mixed Reality). We have a highly experienced team delivering on extreme hardware, software and computer graphics projects.

Our vision is to solve human computer interaction with disruptive 3D technology. The idea is to enable next generation telepresence, or 3D video conferencing, to offer even more immersive and enhanced experiences beyond the limitations of current 2D or 3D technologies. Although 2D videoconferencing is established now, it cannot be easily scaled to full 3D. Current 3D is based on VR/AR headsets that are socially awkward, unnatural and reduce mobility as well as having unpleasant side-effects (headaches, nausea) from prolonged use. These make them unacceptable for collaborative experiences.

The idea has been around in science fiction for over half a century. The topic has been in the research domain over the past decade, with a variety of demonstrators in university research laboratories and at large network operators. These solutions are clumsy, expensive and impractical for everyday use.

Our approach overcomes the limitations of current technology to offer 3D experiences shown in sci-fi films with intuitive and natural interactions. The project will deliver a prototype system demonstrated in an office or home environment. This is a cost-effective solution based on commodity hardware and software that can be readily deployed and scaled. This innovation represents a step-change in the way people will interact with each other, computers and consume content in the near future. Apart from telepresence, applications are far reaching for 3D video playback, collaborative spaces and much more. It breaks all current barriers and opens a new frontier for collaborative technologies

The Covid19 crises has forced millions of people to work remotely from home. This has caused a boom for companies that offer collaborative tools and communications platforms. The winners include Microsoft teams, Google docs and Slack for collaboration and Zoom and Cisco WebEx, Microsoft Skype for video conferencing. Zoom's share price has more than doubled over the past month. The market is currently estimated at over \$3.1B.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ASTRIMAR LTD	Framework for Rapid Acceptance of Technology	£49,960	£49,960

There has been an unprecedented response by many organisations and individuals to help provide the vast quantities of essential medical and personal protective equipment urgently needed by healthcare and social care workers during the COVID-19 pandemic. The press have indicated many workers do not have sufficient supplies of this essential equipment and as a direct result, many people wanting to help are developing and manufacturing ad-hoc designs, for example using home-based 3D printing. However, many small businesses and individuals working from home are inexperienced in supplying the health industry and have little or no awareness of its certification requirements.

Certification can be lengthy and time consuming, if established processes are not already in place for product development, quality control and certification. Even for experienced organisations, certification of a new product may take some time. In emergency situations such as the COVID-19 pandemic, where large volumes of equipment are needed urgently, there is minimal time for testing and certification ahead of acceptance. Suppliers need to be able to quickly understand what they must and can do in a very short timeframe to ensure their product is fit for purpose and will meet acceptance/certification criteria. The alternative is that much of this good-intentioned "volunteer" effort will be wasted.

The project will create a generic, but easy-to-use, framework, applicable across a range of technologies, to help developers achieve rapid acceptance/certification of technology for emergency response or urgent need. The intention is that the framework will support (i) equipment suppliers understanding minimal acceptance requirements for their product, developing and collating appropriate and necessary assurance evidence for acceptance, and (ii) acceptance/procurement authorities more efficiently reviewing the submitted evidence of the product's fitness for purpose and certification when required.

The project will adapt established technology qualification, certification and quality management best practice to create a fast-track framework to help suppliers to "de-risk" technology in preparation for accelerated certification and more rapid acceptance by relevant authorities. The framework will use a risk-based approach to facilitate an accelerated route to acceptance whilst addressing the risks and reliability requirements associated with safety-critical items, such as PPE. It will be trialled as part of the project with a small design and manufacturing company.

The framework will be provided as a Microsoft Excel tool and will be made freely available. The project partners will also offer support services for those seeking further assistance with its application.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
MANCHESTER IMAGING LIMITED	AI-based self-directed distance learning for dental students	£46,655	£46,655
The project focus is global education of dental studentsat university dental schools. This sector is badly impacted by the current pandemic, struggling to maintain many aspects of dental student education and anticipating difficulties recovering functionally and economically in the aftermath and future years.

There are 17 university dental schools in the UK and a further 200 dental schools across Europe and a larger number in the US. In these schools are over 100,000 dental students that would benefitfrom an AI-based self-directed distance learning tool focussed on dental radiograph analysis skills improvement.

Dental radiograph analysisis central to dental diagnosis and treatment planning. Used correctly analysis of the dental radiograph is an important tool in preventative dentistryto detect a range of dental diseases and treat dental patients at an early stage.

Expert AI-based prompting systems are of value in many medical fields in which inspection of radiographs is necessary e.g. screening mammography, spinal, and ophthalmic images.

Dentistry is a further example where an AI-based prompting system, trained using expert data provided by dento-maxillofacial radiologists, has been shown to improve overall standards of diagnostic accuracy by dental students(data from University of Manchester and Manchester Imaging on file).

Additionally in a world where distance learningis increasingly valued many current university dental school teaching methods do not readily lend themselves to the_*_teaching of clinical analysis of medical images*. Using current technologies, dental students cannot easily record their clinical assessment of a dental radiographs and work on this with their tutors who have no means of assessing the student's performance improvement.

AssistDent(r) from Manchester Imaging Limited is an aid in the diagnosis of early dental disease, currently sold in the UK and Europe to dentists. They use it as a prompting system specifically to help when analysing bitewing radiographs looking for a particular early type of tooth decay. AssistDent is AI software available in a web application that isapproved as a CE marked medical device produced to ISO-13485 accredited standard.

This project will adapt and repurpose the AssistDent(r)to prompt for a much wider range of dental diseases so that it can be used by all university dental schools to enable dental students to improve their dental radiograph analysis abilitywithout having to attend the dental school facilities. It is envisioned that within the six months interim releases will provide access to new functions as they become available.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VAMSTAR LIMITED	AI-powered COVID-19 supplier risk index and demand planning toolkit	£49,794	£49,794

For health systems to better prepare and plan for the months ahead, Vamstar will create a risk-based framework to understand supply chain gaps and the evolving demand at a hospital-level in the UK and EU. The objective of the risk scoring matrix and the Demand-Planning-Toolkit is to focus on the most vulnerable parts of the health systems in Europe and facilitate decision making as quickly as possible. With the supply risk framework, we will be able to predict changes in the overall demand for various essential products and services needed to manage a crisis like COVID-19 and direct the focus of suppliers towards the most needed parts of the care delivery. Combining this with the Demand-Planning-Toolkit, Vamstar will be able to assess which suppliers have fulfilled a current order in the market and make predictions about when they will become fully production-ready to sell again. Additionally, the risk scoring framework and Demand-Planning-Toolkit will help stakeholders in the care delivery chain quickly assess countries that have developed or are developing preventative infrastructure and share the findings. This framework and connected real-time supply chain analytics will ensure that in the future such crises are managed with a more proactive strategy vs a reactive supply chain approach currently prevalent in our health systems.

By analysing this dataset through artificial intelligence, we want to understand the Pandemic-Supply-Risk both from a macro (ability) and micro (willingness) levels needed to manage a pandemic like COVID-19\. This toolkit includes necessary items such as face masks but also digital platforms that will aid in patient and population health management across these countries as it undergoes a rapid transformation.

Vamstar offers a data science powered platform for predicting and matching public contracts in healthcare and will create an automated "pandemic preparedness toolkit" specifically by using supply chain risk scoring matrix so as to focus on the most vulnerable parts of the health systems affected by the COVID-19 pandemic. It will leverage EU and UK data on public and private tendering, pricing sources and economic annual datasets to do this. Machine learning (ML) and deep learning will be used for tasks such as predicting ongoing list of suppliers with spare capacity, the date of shortages, and prices of key supplies. These predictions and analysis will form part of reports and an autonomous dashboard that will benefit the NHS hospitals and healthcare suppliers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
U-EXPLORE LIMITED	Digital Work Experience Platform	£49,554	£49,554

Many students never get the chance to access work experience.

As a result of the Covid-19 pandemic, even those fortunate enough to have secured placements will never see those placements fulfilled. For all of these students, this represents a major setback in their career development and it has the potential to widen an already significant gap for those young people from more disadvantaged backgrounds.

Our proposal to create a Digital Work Experience Platform ("DWEP") will help address this issue, providing large numbers of students from all backgrounds with access to a structured programme, co-created with and supported by employers.

Different to online employer encounters, the DWEP will focus more on replicating crucial outcomes typically achieved through on-site placements. Key features of the DWEP will therefore include simulated work-based tasks, independent research, reflective learning and assessment, pastoral input from academic tutors and employer feedback.

By building the DWEP on the existing Start platform ([www.startprofile.com)][0] - already used by thousands of schools, colleges and employers in the UK and internationally - it will be accessible, sustainable and scalable, benefitting hundreds of thousands of students for years to come in addition to those impacted now by Covid-19\.

The DWEP will blend the existing Start technology with an industry-leading Learning Management System including secure video-conferencing and collaboration tools, ensuring that a stable and secure platform can be built and deployed quickly to meet this urgent need.

To achieve our goal, we will collaborate with our extensive school, college and employer network to design and curate high quality digital work experience programmes for students. The result will be a flexible solution -- one which can be used by any school or college at a time to suit their timetable and students. It will also enable a wide range of employers - large and small - to engage with the programme, in both its design and delivery.

[0]: http://www.startprofile.com%29/



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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
OUTFIELD TECHNOLOGIES LTD	Securing the Apple Supply Chain – Using Aerial Imagery for Apple Count and Sizing for Managing Production, Labour and Logistics	£48,948	£48,948

COVID 19 has severely stressed orchard fruit supply chains as demand has risen, supply chains have faltered and international imports become uncertain. Growers this season are expecting labour shortfalls, or to use inexperienced local labour, and fruit is now of increasing importance. Growers currently manually collect limited data in a time consuming and inaccurate manner. To ensure food security in the UK, all of these issues must be addressed with better data and improved understanding of orchard conditions.

This project, building on existing technology, will develop a system to provide accurate counts of the fruit in the orchard with a high degree of geospatial accuracy. This data is needed by growers to manage their orchards and to plan labour storage and logistics; and throughout the supply chain for managing supply, ensuring sufficient fruit is available and planning international trade. We have existing surveying and data systems operating in Kent orchards, and will be using existing techniques for identifying blossoms in tree fruit orchards. The approach proposed is unique in the global market -- using oblique (side on) imagery gathered above orchards with commercially available drones to count apples and forecast outputs.

Several growers in Kent have expressed their support for this project, and we have permission from them use their datasets for this project. Moreover, growers have offered to provide thousands of trees' of hand counted ground truth data for this season to ensure the accuracy of the system developed.

This innovation will help the UK tree fruit industry to supply the market and thrive in the disruption from COVID 19\. It can rapidly provide a readily implementable solution to support an industry that is critical in the UK. This will mitigate the pressure it has been put under by the COVID 19 virus and improve food security in the UK. Keywords: Fruit counting, Aerial imagery analysis, tree fruit production, crop mapping, machine vision, automated aerial systems



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Cotton Mouton Diagnostics Ltd	Development of a serology test for COVID- 19 screening	£49,746	£49,746

Since the realisation that a new coronavirus was responsible for a cluster of pneumonia cases in China on 9thJanuary, more than 2 million cases and 135,000 deaths have been reported across the globe. The so-called 'COVID-19' pandemic has put healthcare systems under enormous pressure and has resulted in global economic collapse as a result of quarantine and social distancing policies being implemented. Governments across the world struggle to lift lockdown measures for fear of a bounce-back in the number of cases and fatalities.

In this project, we aim to develop a test that will allow people to be checked to see if they are immune to the virus. These tests would be carried out in a community pharmacy or at a GP surgery to allow for widespread testing. Those people shown to have immunity would potentially be able to return to work or look after vulnerable friends / family without fear of either catching or passing on the virus.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIOSTATUS LTD	Novel Cellular Probe Technologies for Screening Anti-Viral Therapeutic Candidates on Multiple Platforms	£49,646	£49,646

COVID-19 has demonstrated that emerging viruses are a major threat to human health. During rapidly spreading epidemics, infected individuals need to be treated urgently with antiviral treatments. The epidemic has further highlighted the need for rapid, effective screening of both novel and repurposed agents.

Effective screening requires the utilisation of a variety of instrument platforms, the right cell types as the test system and the right molecular probes to track how a cell responds to a drug when confronted by viral attack. These probes can be antibody-based to identify specific targets or small molecules that can track how a cell responds to a viral attack and whether a new candidate drug can prevent the tissue damage - "cytopathogenic effects" (CPEs) - of viral infections and their linkage to disease progression.

For the last 20 years, BioStatus has been inventing, developing and manufacturing innovative reagents for cell-based imaging, cytometry and screening applications. The company manufactures all products in the UK, and supplies customers and distributors worldwide to the ISO 9001:2015 quality standard. Our company is now bringing a focus to the challenge of screening of new drugs to treat emerging viral diseases and thereby contributing to reducing the health impact of infection.

Our specific contribution is focused on the development and synthesis of novel small molecule probes and reagents for the drug screening communities in industry and academia, with the immediate goal of improving the quality of the information derived from screening assays.

Our ultimate aim is to benefit patients in the health care system, by the provision of appropriately screened drug candidates for regulatory approval and clinical use in dealing with emerging virus threats.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WEY EDUCATION PLC	The Wey Virtual School: Engaging Education Solutions	£49,802	£49,802

The Virtual School is a programme designed to support all students in the UK affected by school closures. There are currently 5 million students in the UK affected by the Coronavirus and for whom education has been cut short. This is particular difficult for students completing their GCSEs and A Levels this year. Through Wey Education PLC, an AIM-listed public company, we are already the leading online education in the UK. With our Head Office in Wales, Wey is committed to providing high quality education to students unable to attend bricks and mortar schools due to a wide range of reasons, so we are in a good position to provide short, medium or longer term education via our scalable education platform and online model of live lessons and high quality educational resources. Through live lessons online, content and assignments we offer students unable to attend school an excellent opportunity, and our focus upon high quality teaching and engaging experiences come together in this new project and programme of activities.

The Virtual School project sets out a new approach, bringing together high quality virtual trails and experiences to the homes of many students in the UK with the stability of an education model established in 2005\. The project will ensure that all student excluded from school due to Covid-19 will have a chance to study online either in 1-month, 1-Term or multiple Term chunks depending upon the length of time of the Lockdown. This means that gaps in education will be closed either through enrolment as Learning-on-Demand learners or as fully enrolled students. In either case students benefit from the innovation of online education with the engagement of new virtual experiences using laptops from home.

The focus of the project will be to provide education in English, Maths, Science and Humanities subjects, themed programmes based upon Exploding Science, Time Traveller and Superheroes and with a focus upon 21st Century skills such as communication and collaboration. The short and longer programmes will focus upon Key Stages 2-5 and additional revision and summer school activities are all available online.

The project will seek to give students a chance to experience enlivened online education for the first time and offer schools and Local Authorities a chance to tailor blended and online provision to meet their own requirements. The project is committed to safeguarding and supports accessibility requirements for all ages and types of students.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BOND DIGITAL HEALTH LTD	Web Connected Platform for Capturing COVID-19 Rapid Test Data to Support Decision-Makers in Real-Time	£49,795	£49,795

Accurate, real-time data is essential in the ongoing fight against the coronavirus. Diagnostic testing is being held up as the key to understanding and slowing the spread of the virus. The approach has already had an impact in some countries during this outbreak and was endorsed by the WHO director-general, who urged countries to ramp up testing activity.

Similar to governments across the globe, the UK Government is buying huge quantities of rapid tests. Just like police drug tests, they give quick results and are highly accurate, affordable and portable, making them the obvious choice for mass population testing. They are much more fit for this purpose unlike the current frontline standard - the laboratory PCR test - which may be accurate but doesn't offer the turnaround time needed to combat a pandemic.

The latest generation of rapid diagnostic tests generate data which reveals valuable information about how the virus is spreading and allows authorities to predict future spread. Using this data, governments can take informed steps to action targeted interventions and protect public health.

Rapid tests provide accurate, lab-grade results at the point of testing. However, results can't always be read by the naked eye, so interpreting them is done either via portable, optical reader devices or smartphone readers, which utilise the phone's camera technology. This also mitigates the issues with misinterpretation.

However, the data these diagnostic devices generate is not being captured and used to its full advantage.

Our project is addressing this gap by providing the web platform and technology needed to connect these devices to the internet. Data is captured at the point of testing, stored and aggregated in the cloud where algorithms can be introduced to analyse it. It is instantly visualised on dashboards for decision-makers in real-time.

Additional data such as gender, age, underlying health conditions, blood type, and location will be collected, giving richer insight into epidemiology. Geotagged results and data trends will be made available on heatmaps in the dashboard. This will allow the NHS, public health bodies and other stakeholders to monitor emerging hot spots, enhance response times and allocate resources.

This is a completely novel approach. There are several projects around data capture but none of the proposed solutions integrate with an accurate, rapid diagnostic test. Our solution will not only help contain the coronavirus but ultimately eradicate it- and when fully deployed - prevent future waves of the pandemic.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIOLOGIC TECHNOLOGIES LIMITED	3D printed next generation diagnostic system hardware aligned with Pillar 5 of the UK diagnostic testing strategy	£50,000	£50,000

BiologIC Technologies (Cambridge UK) is developing the next-generation of life science automation fabricated from, and exploiting, the digital benefits of 3Dprinting. BiologIC's pioneering and highly integrated digital hardware architectures allow the creation of powerful and affordable 3D-printed bio-processing units ("BPUs"). These BPUs allow rapid development and execution of novel, high-value and high-volume biological workflows.

The project will result in a highly innovative solution for diagnostic testing in line with the government's testing strategy, which will become a critical component of managing COVID-19 and other pandemic responses.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SIMPLE SHARED HEALTHCARE LIMITED	Business recovery from COVID-19; Smart Messaging to protect workforce health and productivity.	£50,000	£50,000

Founded upon business psychology, "Florence" is a digital platform used by NHS Hospitals, General Practice, Mental Health and Community teams Florence harnesses targeted behavioural psychology-based Smart Messaging to engage patients, change their behaviour and help them to attain better and faster clinical outcomes than are possible otherwise. The system design allows teams to innovate incrementally and in novel areas with uses formally evaluated across hundreds of clinical conditions whilst building a wealth of knowledge around use for mental health and wellbeing.

Innovation with Florence has stretched the abilities of the system to its limits, gaining international recognition, and enabling significant changes in healthcare.

The impact of the system is well documented; (2020) Patients are 87% more likely to complete CBT therapy; (2019) Are 30% less likely to have a mental health relapse.

Building on the capabilities of Florence, an international collaboration inspired the development of our Next-Generation smart messaging system "Clara"(UK/USA) / "Nellie"(Australia). The technologies are massively scalable and flexible, removing limitations and incorporate both workflow and messaging improvements learned from 10 years with Florence.

Uniquely underpinned by broad, independent evidence regarding the behavioural and economic impact of the innovation within healthcare, we intend to leverage this considerable knowledge and knowhow to assist businesses to cost-effectively manage and mitigate the impact of COVID-19 on staff, get staff back to work sooner, keep staff at work for longer and reduce the associated economic costs of lost productivity for years to come.

This project aims to re-purpose Clara for use by businesses assisting them to effectively manage the many staff wellbeing, mental health, self-isolation and sickness/absence challenges generated by the first and subsequent waves of the COVID-19 pandemic. This will be achieved through evidence based smart interactive messaging to;

* motivate staff,

* reduce anxiety,

- * reduce the impact of home-working,
- * change thinking and associated behaviour toward forming confident healthy and productive personal and workplace habits,
- * reduce the feelings of loneliness and isolation,
- * improve the feelings of belonging to the company and being valued,

* create a sense of participation,

* improve mental health and wellbeing, whilst reducing the workload of HR staff.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HIGH FORCE RESEARCH LIMITED	UK Manufacture of Key Reagents for RT- PCR Testing	£47,246	£47,246

Nucleosides and nucleotides are the building blocks of DNA and RNA and play a pivotal role in DNA replication, transcription and translation, whilst their chemistry constitutes a vibrant field of research for both synthetic and biological chemists. They remain one of the most fruitful drug classes, with nucleosides providing keys structural components for about 50% of antiviral drugs and 20% of anticancer drugs used in the UK. Their (poly)phosphorylated nucleotide counterparts can be used as critical tools for chemical biology and sequencing technologies and most importantly, act as base reagents for the essential PCR test used in the detection of viral infections.

In order to increase the UK's capacity for testing of viral infections such as Covid-19, there needs to be a robust supply chain of key components that go into the test kits. Since the dNTP's that are used are currently sourced from overseas, part of the delay in rolling out national testing may hinge upon the availability and import of such materials. Through this project, we propose to deliver a reliable and robust manufacturing process under strict quality assurance protocols for high-quality dNTPs that can be used for the PCR test, within the UK. This will inevitably mitigate the medical, societal and economic effects of any future Covid-19-type pandemics.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RAGA TECHNOLOGIES LIMITED	Gramrphone - High Quality Live Music Streaming Software	£47,000	£47,000

Gramrphone is a new social live music streaming application that streams high quality live audio direct from Digital Audio Workstations to fans on mobile.

The plug-and-play application focuses on ensuring great audio quality for fans, to make it sonically sound like they are listening live in person, and making sure that fans can access the show easily on mobile and on the go.

The live audio gets streamed to a simple web player accessible via URL, so fans do not need to download anything.

Use Gramrphone to stream high quality live music performances, studio sessions and listening parties and drive real fan engagement.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
UNPHASED LTD	Consentify - Digital Consent	£47,855	£47,855

The clinical trials industry plays and indispensable role in developing new medicines. Every medicine, therapy or vaccination must undergo rigorous clinical trial testing before it can be safely released to the public, and when it comes to Covid-19 there is a significant time pressure.

As the clinical trials industry turns its attention to the search for a Covid-19 vaccine, issues caused by existing operational practices are becoming clear and the pooling of resources is causing significant disruption to existing clinical trials, delaying the development of life changing medicines relied on by millions.

Unphased is a clinical trials technology start-up. We've been embedded in communities of frontline research staff for the past 12 months, where the movement towards remote trials has been a topic of discussion for some time. But what we've seen and heard during the Covid-19 crisis has shown us that manual, paper based, yet legally required processes, such as informed consent, are causing major disruptions. After a Covid patient has signed the paper consent form, research nurses must take a photo of the form held by a staff member in full PPE, behind glass, using a smartphone in a sealed plastic bag. The photograph must then be emailed and attached to the patient's electronic health record. Alternatively, the paper form is left in an envelope for 7 days until it can be re-opened.

At a time where NHS staff are rightly commended as heroes, this is ludicrous.

Our project aims to build a digital clinical trial information and consent platform. In the short-term, this will enable research staff to complete consent securely and at a safe distance. In the long-term we are confident it will alleviate the burden of resuming trials disrupted by Covid-19, while helping research sites mitigate staff absenteeism and paperwork bottlenecks.

As a digital business, we have been able to continue 100% of our operations remotely. We hope to support the clinical trials industry to achieve the same.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FEEBRIS LTD	Community Management of COVID-19 in care & nursing homes	£49,898	£49,898

Elderly patients, especially with co-morbidities, are particularly vulnerable to COVID-19, with reported mortality rates of 10-20% for those over 70 years. The pandemic is imposing a massive burden on NHS services. Hospital facilities and GP practices have become overloaded and dangerous places for vulnerable people, who are now discharged prematurely or never admitted into hospital. This increases the burden on Adult Social Care (ASC) providers. Telemedicine can help to bridge the gap between clinicians and vulnerable communities. However, it is very difficult for a doctor to make diagnostic decisions on a respiratory case with co-morbidities based on just a video interaction.

The Feebris mobile platform enables non-medics to conduct health check-ups and a clinical team to conduct "remote ward rounds" in care/nursing homes. The platforms has specialist respiratory tools, including a digital stethoscope and AI for detecting & interpreting respiratory disease markers. This project will develop an AI toolbox for COVID-19 that, integrated with the base platform, will provide care teams with decision-support to identify COVID-19 cases remotely and facilitate clinical management. It will include specialist tools for: automated triage; disease progression monitoring; and communication of health status with clinicians and family, plus a digital user training module/programme to allow deployment at scale.

Current remote monitoring solutions offer no decision support for carers, are not geared for complex respiratory conditions, and have no AI for advanced remote monitoring. We have deployed our base platform into care/nursing homes across London and with a national live-in care provider. This puts us in a unique position to capture essential data for the development of the COVID-19 AI and achieve fast development & impact.

The impact of the COVID-19 toolbox in care homes is to standardise observation gathering, making carers more confident in making triage decisions and better equipped to provide essential information to remote clinicians. The pandemic requires urgent action and long-term restructuring of healthcare as long-term lung damage is expected in survivors. In the longer term, the technology will strengthen community management of COVID-19 and associated chronic issues, alleviating NHS pressure and ensuring high quality, proactive and personalised care.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SCOTMAS LIMITED	Tablet Based Disinfectants to Improve Hygiene Standards and Reduce Environmental Impact	£49,612	£49,612

COVID-19 will cause a significant increase in the requirement for disinfectants and other biocides to be used in homes and the general workplace. Upon the removal of movement restrictions, it is essential that people in non-healthcare environments receive adequate protection from virus and other pathogens via a change in regular cleaning practices to include more effective disinfection.

Established disinfectants are generally based on 95% water. Solid based, tablet disinfection products offer the opportunity to meet increased demand whilst reducing packing weight and volume by over 50x, thereby reducing strains on transport, warehousing and costs. Our project aims to make healthcare-levels of disinfection cheaper and more accessible to users in the home and general workplace.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TOUCAN APP LTD	Care card zero balance prepaid card	£45,095	£45,095

Toucan is launching a Care Card, a restricted access prepaid card for people who need to ask family members, carers or neighbours to shop on their behalf.

According to the NHS, 1.3 million 'vulnerable people' are unable to do their own chores like shopping because they are shielding. When asking a helper to shop on their behalf, getting hold of cash to hand over is difficult at the moment, and no-one wants to share their debit card and PIN number.

That's where the Care Card comes in. Not only will it provide better control for the account holder over how and when the money is spent, but it will give a view on what's been spent and what balance is left for both the account holder and their helper. The helper will even be able to upload a receipt of their shop, so everyone can keep track of how money is being spent.

If you're setting up a Care Card, you'll want to specify how the card can be used. How much will you want the helper to be able to spend in a day, a week, or in a single payment? And then you'll be able to invite the helper to receive the card at their address, with their own PIN. But crucially, at all times, the money available on the card remains under your control.

You'll be able to see every transaction coming through as it happens, as will your helper. And if for any reason you want to block that helper's access to your money, you can do so easily.

Family members will also be able to keep an eye on what's being spent if they need to, with access to a read-only version of the app.

Toucan's mission is to use technology to make financial services better and more accessible for those of us who are more vulnerable. They have previously worked with the Money and Mental Health Policy Institute and Nationwide Building Society, as well as being selected as part of Nesta's Open Up Challenge 2020 and the Barclays Techstars Accelerator programme.

This new product will sit next to their existing app, designed to help carers and those they care for manage their money safely together.

The Care Card will launch later in 2020\. Sign up at usetoucan.com for early access.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RED THE CONSULTANCY EUROPE LIMITED	Collaborate - Collaborative Resourcing Platform	£48,000	£48,000

Collaborate is a platform where entrepreneurs and business owners can look for the skills and assets that they want with the option of payment through many different forms.

Anyone who's ever worked in a company or run a business knows that there's not enough money around -- ever! Our experience in running a recruitment agency and in attempting to develop some services during the Covid 19 lockdown has given us a real insight into the needs of small companies, especially in tight economic times.

Our suggestion is that cash isn't always the most appropriate way to pay someone for their participation in a small business or project, and sometimes part ownership not only can be a more rewarding prospect, but can help align people together and incentivise labour in helping get a business up and running.

The breadth of skills amongst the U.K.'s working force is impressive, but it's not always easy to attract the skills that you need. That's why we are building Collaborate, a platform where people can look for help in building their businesses with the option of offering stakes and shares as well as cash payments for potential workers; and those offering their services can find a more rewarding way to work, and a way that develops their potential more profoundly than just getting a cheque through the door or a bank transfer.

Collaborate will build a network that will rebuild the U.K.'s economy.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CREO MEDICAL LIMITED	Improving the resilience of the UK's food supply chain with cool plasma	£49,192	£49,192

This project seeks to improve the resilience and efficiency of the UK's Food Supply Chain (FSC) by killing microbes present on fresh produce that if left unmanaged would lead to spoilage. This increases the shelf life of produce, enabling these items to be held at distribution centres for longer - improving resilience of the FSC to sudden peaks of demand. Managing spoiling organisms can be achieved using chemicals, but this is an unpopular approach with negative implications for the environment.

This project uses 'cool' plasma to safely manage spoilage organisms without leaving a chemical residue. Creo Medical has already developed the underlying cool plasma technology, which this project proposes to re-purpose for food applications.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRUSTED SOLUTIONS GROUP LTD	Endeavour - an end to end patient and healthcare transport solution	£49,138	£49,138
Trusted Solutions Group are a Manchester based start-up, founded in 2018 to develop an innovative Artificial Intelligence based solution to patient, health and social care, community and education transport. Our solution will allow the NHS, social care providers, community and private providers of publicly funded transport for individuals such as patients and pupils to be managed digitally and seamlessly. It will improve flow and reduce the number of missed NHS appointments, reducing costs and streamlining services. This project tests our solution with a community transport provider, ready for installation in the NHS just as transport pressures become acute as outpatient appointments resume after the Covid-19 pandemic.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SPECTRA ANALYTICS LIMITED	PATCHS (AI Powered Mental Health Network)	£49,957	£49,957

Mental health issues risk overloading our already stretched primary care services. Early research suggests that mental health issues are on the rise due to COVID-19 and government policies. Common issues include bereavement, isolation, financial concerns, health (directly/indirectly from COVID-19), and domestic and sexual abuse. The lockdown policies, lack of NHS resources and need for remote treatment is exacerbating these issues. We need a better way to deliver mental health services to care for patients and reduce pressure on primary care.

We plan to use our online consultation tool, PATCHS, as a platform to support the delivery of mental healthcare services. We intend to develop its capabilities so that it can support remote consultations by a network of mental health professionals. This will be aided by the development of an Artificial Intelligence algorithm that can detect the type of mental health issue, its severity, and to whom the patient needs to be referred. We also intend to set up online support groups so that GP practices can more easily deliver group care and the community can more actively engage with one another.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RINA CONSULTING LTD	Contactless inspection	£49,878	£49,878

The COVID-19 emergency has brought about significant changes to many of the activities we carry out every day, revealing many risks and needs, that could bring to scarce safety, delays, stops and higher costs for several business activities. One major sector that is experiencing unexpected need is that of inspections.

Due to COVID-19, HSE and OPRED (UK CA) are pausing their facility inspections due to social distancing requirements and are focused on providing remote services, but operators and duty holders remain responsible for the safe operation of O&G facilities. Therefore, they are employing minimal resource levels to manage operations. Only resources critical to operations are treated as key workers and hence able to mobilise to site. This means that not all contractors and service companies who normally support safe, efficient operations will be able to do so. Due to these constraints, conditions that pose a risk to safety and environment may accelerate as inspection frequencies are increased, and the appropriate competent engineers are not available at the facility to provide local support.

To address this increased risk to people and the environment, RINA is able to deploy smart remote inspections utilising critical key workers at the facility. RINA has developed a remote method for O&G inspections, based on a "smart helmet", which consists of a camera, microphone, a near-eye display, Bluetooth and Wi-Fi connections that allow sharing real-time data between a local staff member that wears it and a surveyor remotely connected. The project wants to couple this solution with a photogrammetric 3Dmodel (similar to Google StreetView) of the plant to be inspected, so as to create a navigable space, where it is also possible to attach documents (i.e. technical/administrative docs, inspection reports) on the components. Thanks to the Contactless Inspection project, the surveyor can navigate through the plant without being physically there, plan the necessary check, download the document and start filling the checklist. Once connected to the local staff wearing the helmet, the surveyor can guide him/her through the plant, having the screen split into real view and the photogrammetric model. The helmet travels, instead of the persons. A configurable dashboard, a wizard tool and a smart checklist will further support the operations. This technology can also be leveraged by the various UK Competent Authorities to ensure the safety of people and the environment during this period of social distancing.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DRINK TECH LIMITED	Convenience Store Online Marketplace & Delivery for the Vulnerable	£50,000	£50,000

Before Covid-19, consumer demand for convenience and online shopping were on a clear rise. Unfortunately for local high street shops, this meant reduced footfall and in-store sales compounded by the pressure of increasing business rates.

The current pandemic has unfortunately **exacerbated the pressures on local shops**. It has also highlighted the need for home delivery, especially to those who can't physically shop for groceries and essentials, people like the **vulnerable**, **NHS staff**, and the **elderly**.

The latest Google analytics Mobility Report for the UK shows physical traffic to shops is down by 41%. Unfortunately it's not uncommon to read headlines like "Coronavirus Shutdown Ravages High Street".

While grocery stores are trying hard to meet delivery demand, they simply can't keep up. Average wait times are now exceeding three weeks.

There is a solution though, our local convenience stores are well-stocked and looking for additional revenue. The problem is that to-date convenience stores have been underserved for online sales and delivery.

That's why we propose developing and operating a **purpose-built online marketplace and delivery platform specifically connecting local convenience stores and customers need**.

Drinkly started trading three years ago after understanding the need in consumer demand for ecommerce and the need for high street retailers to find new revenue streams as more consumers were shopping online.

We focussed on the underserved off-licence sector and have worked hard to drive revenue to off-license store owners. Our efforts have paid off, adding over 30% revenue to our first retail partner. We've also been recognised by industry for our work, being named 2019 Scottish SME Digital Business of the Year and being listed as one of TechNation's Top 2020 UK Startups.

In the throes of Covid-19, we understand how much more than ever consumers need home delivery of essential household items and that local independent retailers need to sell online to secure the future of their businesses during _and_ after the pandemic.

With our knowledge of building a marketplace and delivery platform for the off-licence trade, **we're uniquely positioned to use our technical and business experience to make this project a success**. This grant will allow us to develop and quickly deploy technology to connect convenience stores and customers and **play an important part in helping customers and retailers during these difficult times and beyond**.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Sano Genetics Limited	Patient-centric digital biobank for rapid at- home precision medicine research	£49,624	£49,624

Our inability to predict personalised disease progression (i.e. why do some people suffer more severely than others or respond differently to treatments) drastically reduces our ability to treat complex disease. Personalised medicine requires multiple sources of data on an individual level (including genetics, medical history, and other testing) and the ability to track changes in this data over time and in response to treatments.

Widespread social distancing has made data collection for precision medicine research substantially more challenging, as patients are unable to safely visit research sites.

Sano has developed a platform for at-home precision medicine research, including at-home sample collection and a software platform for longitudinal data collection. We have developed and validated the platform, and are seeking funding to collect samples and DNA test 1,000 people to better understand COVID19 infection, and the role that genetics plays in severity. This platform will enable researchers in drug discovery, vaccine development, and biomarker development to quickly quickly map, stratify and draw conclusions from big data sets collected via at-home genetic testing, self-reported longitudinal data, and links to existing medical records.

Beyond research into COVID19, this funding will additionally accelerate platform development to enable fully remote research and trial participation in other complex diseases where at-home precision medicine research is urgently needed.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IBFC-UK LIMITED	Assadaqaat Community - Connect (ACC), A Digital Platform for Supporting Communites and Encouraging Entreprenuership in Wales	£49,882	£49,882

Communities in Wales are well known for their generosity and donations for community causes. The Muslim along with other communities donates its obligatory and voluntary charities (Assadaqaats and Zakat) for the common good of our communities.

In view of COVID19 lock-down, the closure of businesses in retail, hospitality, transport, entertainment, and other small to medium business sector industries in Wales, members of our communities depending solely on daily wages or contracted hours are affected. In this hard times government and community are doing their best to help the affected members of our communities. We envisage that there is a bigger need for a coordinated effort to connect the 'privileged' members of our communities to the 'underprivileged' members of our society in Wales.

We have teamed up and propose a digital platform that will channelise the community generosity, benevolence and donations to these affected individuals and households. The proposed cloud based system called 'Assadaqaat- Community Connect' will bank on the generosity and donation from affluent sections of the society, organisations and government to help the effected segments of the communities in the following two ways:

1. To provide secure 'ACF Gift Food E-Cards/Vouchers' that can be used to buy essential food and household items at both big retails such as ASDA as well as other participating local grocery stores.

2. To provide interest-free financing to support entrepreneurs in post Covid19 lock-down scenario.

The proposed project will identify the needy households by carrying out an e-survey using local religious, cultural and social centres, community groups and community organisations. We already have a pool of individuals and organisations who donate through our not-for-profit organisation Assadaqaat Community Finance (ACF). We have already teamed up with ASDA and Marks & Spencer to offer especial 'ACF Gift Food E-Cards/Vouchers' to financially support and empower vulnerable members of our communities to buy essential food and household items from some nominated stores. We plan to expand this network based on the spatial distribution of needy communities.

Our proposed digital platform will help to scale up our work to identify and help those in need now and in near future. The interest-free financing will help generate economic activity and job creation with the help of generosity and donations from the community. Once economically stable, these entrepreneurs (beneficiaries) will become benefactors and start putting donations back in the pool. A truly transformational financial model for turning 'beneficiaries into benefactors'.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CREATIVENERGIE	Off-grid Oxygen: affordable generation & storage of oxygen for off-grid healthcare & humanitarian disaster response	£49,954	£49,954

Oxygen is classified as an essential medicine by WHO and oxygen therapy described as "highly effective" at reducing global mortality for various medical conditions. The importance of oxygen therapy has become mainstream news during the COVID-19 pandemic. According to the World Health Organisation, "good-quality oxygen concentrators can provide a sustainable and reliable source of oxygen to multiple patients. Oxygen concentrators operate by drawing air from the environment to deliver continuous, clean and concentrated oxygen. They may run for up to five years or more, with minimal service and maintenance."

Yet the availability of electricity, essential for powering oxygen concentrators/plants, compressing oxygen into canisters or piping it throughout a hospital, is an "important, but often overlooked, building block of health service delivery" \[poweringhc.org\]. Indeed, when only 44% of Sub-Saharan Africa's population have access to electricity, dropping to 22% in rural areas \[TrackingSDG7.esmap.org\] it is unsurprising that estimates indicate only 28% of health facilities in the region have "reliable electricity" access \[poweringhc.org\]. Globally estimates suggest "tens of thousands of health centers across low- and middleincome countries lack electricity" whilst similar numbers of hospitals "suffer from frequent and debilitating blackouts" \[poweringhc.org\]. Lack of electricity access constrains healthcare provision, most topically in the context of COVID-19, exacerbating difficulties in both generating and managing oxygen supply in response to sudden surges in demand for oxygen therapy.

Drawing on our expertise in the Sub-Saharan African off-grid energy access sector, we have identified an opportunity to innovatively enhance the energy efficiency of oxygen production as well as enabling this process to be powered by renewable energy. Our proposed off-grid oxygen concentrator will be custom designed to be affordable and easy to manufacture, maintain and repair within low-resource settings including disaster and emergency response. The intended oxygen output is set to fill a gap in the market, sitting between a portable pressure-swing-adsorption (PSA) oxygen concentrator (5-10L/min) and a (PSA) oxygen plant that supplies high pressure oxygen through a piped network across a healthcare facility or for compression into canisters to be consumed elsewhere. For example, each severely ill patient with COVID-19 would require 10L/min of oxygen therapy whilst a critically ill patient requires 30L/min (WHO Guidance for COVID-19 Treatment Centres). Hence our proposed solution seeks to design an off-grid oxygen concentrator that can meet the requirements of such treatment for more than one patient at a time.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LEVSTONE LIMITED	'Neighbourhood Support Teams' - digital service	£49,653	£49,653

BRIEF: emerging or increasing needs of society during and following the Covid-19 pandemic; make UK more resilient to similar disruption; demonstrate both realistic and significant benefits for society (including communities, families and individuals).

SOCIETY NEEDS

New digital service to help vulnerable citizens, such as frail elderly loved ones living alone or people self-isolating, by connecting them to family, carers and neighbourhood community, so they feel socially linked and less isolated, feel more cared for and valued, have an easier mechanism to express their needs and concerns, and feel it's easier to ask for help.

And the digital service helps the neighbourhood community volunteers, families, friends and health and social carers to get together, assist their teamwork and coordinate their acivities, to help look after, care for and support vulnerable citizens.

With covid-19 communities came together and people volunteered; street wardens went around calling and checking if people were ok.

This new digital service will address these needs and is provisionally called "Neighbourhood Support Teams."

We became community wardens and saw people put energy in. But it was difficult to know who had done what, or if people felt comfortable and secure to express their needs. There was huge goodwill and energy, people were mobilised but without the necessary tools, so people resorted to using WhatsApp groups, but it didn't involve families and it didn't involve health and social carers...

The idea is to have a digital service that allows people to securely setup care teams. Users can be assigned a variety of roles and people can easily create 'care needs' (such as help with shopping, collect a prescription...) and these needs can then be shared and done by the helpers. It gives people an at a glance view to see everybody's needs are being fulfilled.

A person could click to say 'fever/cough' and it will help community health and social carers become involved and (say) phone to ensure the family know what to do and what support they can receive. It means the local community can give people more support when they need - maybe delivering a food hamper and checking they have essential medicines and sanitizer equipment.

The digital service will be flexible for future needs. Example, as society starts to unlock vulnerable people still need emotional and physical support - perhaps with anxities about going out.

LEVstone will work with local communities to co-design this innovative service.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PROXIMIE LIMITED	Proximie Remote ICU Support Service	£49,845	£49,845

COVID-19 is arguably the greatest challenge faced by the NHS in its history. Intensive care units (ICUs) are being placed under immense pressure as the virus continues to spread at a relentless pace. New ICU infrastructure is being built; however, the logistics of intensive care provision has yet to be addressed from a workforce perspective.

With qualified healthcare providers in high demand and short supply, ensuring that medical expertise is available across the country is challenging.

How can the NHS rapidly leverage its clinical resources to meet the growing need?

The solution is the Proximie ICU platform.

The Proximie ICU system builds on the success of the original Proximie platform, which is a secure and clinically robust solution already deployed in NHS hospitals to connect surgeons remotely during live procedures.

Proximie's experienced agile development team will design and build the ICU solution in a three-week period and will work with existing hospital partners to support set-up and develop recommended clinical workflows.

The system will be a secure, lightweight platform that can be rapidly deployed in any ICU environment to enable clinicians to compound their expertise and provide advice for multiple patients from a single command centre.

The beauty of the solution lies in its extreme simplicity. A laptop, tablet or smartphone and camera are placed at the patient bedside to provide a live video feed. A healthcare professional will be able to instantly alert clinicians that they require support via the click of a button or direct message. A clinician, working remotely or self-isolating at home, can access the Proximie ICU system via the Chrome browser on a laptop and immediately view multiple patient video streams on a dashboard. This information can then be used to provide real-time advice to healthcare professionals at the patient bedside, resulting in timely, and higher quality, patient care.

Moreover, the system reduces PPE requirements and the potential spread of infection by decreasing the number of individuals physically present in a clinical area and reducing the time delay associated with having to don PPE.

Proximie has received requests from multiple UK and US hospitals to rapidly build and deploy the solution. The platform will be designed with collaborative input from the NHS and the ICU team at Guys and St Thomas' Hospital.

This is a responsive, high impact project that will reduce costs and help save lives.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FUTURE HEALTH WORKS LTD	Leveraging Artificial Intelligence and Computer Vision to Deliver Surgery at Scale in a Post-COVID-19 World	£47,510	£10,020

COVID-19 has placed our healthcare services under extraordinary pressure. The decision to prioritise hospital capacity for COVID-19 and cancel planned surgery, to free up crucial resources, is the only option under these circumstances. However, this decision will have lasting consequences for both our society and healthcare system; 2.1+ million patients have had their surgery canceled, ([The Independent, 2020][0]), 33% of which are orthopaedic surgery (Royal College of Surgeons).

With waiting lists already long (British Orthopaedic Association, 2020), these new, added cancellations will create an unprecedented burden, lasting years beyond the outbreak of COVID-19, with Patients potentially waiting years for treatment, with limited access to the support they need.

When surgery returns, healthcare providers will need to continue to protect the "at risk age group" from COVID 19, avoiding unnecessary hospital appointments, and keeping inpatient admissions to a minimum.

Technology can support the increased scale at which hospitals deliver orthopaedic surgery, freeing up healthcare professionals' time and reducing the cost of care. The introduction of remote monitoring can keep vulnerable patients safe, facilitate day case surgery and reduce complications and in-person appointments.

Accurate clinical assessment of joint function (range of motion) is a key component to monitoring orthopaedic patients. This assessment supports decisions from rehabilitation to progress with recovery. Traditionally this assessment is delivered in-person by either a surgeon or physical therapist using a goniometer.

We have developed technology using computer vision AI that can be remotely accessed through a smartphone camera. This independently-validated technology can provide clinical teams with the information they need to carry out assessments of joint function remotely.

We propose to productise this technology through our mature, established digital orthopaedic patient engagement platform, that is already deployed within leading orthopaedic centres in the UK (NHS & Private), to deliver an end-to-end solution to remotely manage patients and enable widespread adoption.

This proprietary, first-of-a-kind technology will provide immediate benefits to patients who are currently awaiting surgery without an operation date, whilst supporting healthcare providers deliver orthopaedic surgery at greater scale and protecting at-risk patients from COVID-19\.

This technology will contribute to potential productivity gains of £120+ million per annum in the NHS by reducing the length of in-patient stay from 3 nights to 1 night for 40% of annual joint replacement procedures (200,000) and a further £12.5+ million by moving 10% of the 7.8 million of NHS trauma and orthopaedic outpatient clinics to virtual.

[0]: https://www.independent.co.uk/news/uk/home-news/coronavirus-nhs-operations-cancelled-cases-deaths-hospital-a9464726.html



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OXFORD DYNAMICS LIMITED	AirAngel: A Novel Forced Air Breathing Mask	£38,471	£38,471

Face masks are increasingly being worn to protect from airborne pathogens and pollution. These work by filtering the ambient air when the wearer breathes in, typically removing around 95% of moisture droplets and particles greater than 5 microns (millionths of a meter) in diameter. Coronaviruses, such as Covid-19, are as small as 0.3 microns, and can only be stopped from entering the wearer's nasal and oral system when attached to a larger particle. Fortunately, this is generally the case when the moisture droplets are generated by an infected person.

Oxfordshire based, tech start-up Oxford Dynamics is developing a novel, new face mask system, called AirAngel(tm), that avoids the wearer needing to breathe the ambient air. Instead, clean air is supplied each time the wearer breathes in. Compressed fresh air, stored in a small cylinder on the user's back, is delivered to the wearer's oral-nasal face mask via a novel micro regulator - essentially a small scale version of a diver's scuba system - but without a bulky mouthpiece. In this way, users get to breathe the air they choose, not the air they're forced to.

AirAngel will allow users to recharge their own air cylinders via an automated docking station. This permits users to recharge air cylinders at work or home thus ensuring the safety, convenience and availability of a clean air supply. A docking station will contain a filtration system to ensure dust and contaminants are not transferred into the AirAngel air cylinder during refilling.

By having a fully reusable self-contained air system, Oxford Dynamics hopes to significantly reduce a wearer's exposure to pathogens and pollution, whilst removing waste to landfill incurred with traditional filter masks.

AirAngel exists at a concept stage with a number of key elements currently undergoing design and prototyping. Funding for this project will help accelerate the development of the product towards commercial release.

Overseas interest from India, home to 22 of the world's 30 most polluted cities, has been expressed and nascent talks are underway, supported by the UK's Department for International Trade (DIT).

All product development and product accreditation with take place in the UK, with manufacturing expected to take place both in the UK and India.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INVENTIA UK LIMITED	Encrypted Mobility Intelligence & Proximity Tracing (E-MIPT)	£49,980	£49,980

E-MIPT project is about creating a prototype digital tool for the government and the public aimed at controlling and stopping the spread of infectious diseases that leads to a global pandemic like the COVID-19\.

By installing SIM card applications to collecting, aggregating and analysing radio measurements (radio fingerprints) taken by cellular devices on a regular basis, the system will be able to trace the proximity between mobile devices at all times. By combining this information and live feed from hospitals about newly infection cases, potentially infected people can be informed so they can self isolate or take necessary actions, and hence interrupting the transmission of the infection to more chains. This also means the government authorities will be able to predict the actual current and future virus cases and allow them to make informed and strategic decisions to combat its spread.

To achieve this, the system will intelligently scan through the historical cellular radio fingerprints of the newly infected person for the last 2 weeks, for example, and identify the devices that produced a similar radio fingerprint at the same 10 minutes time window (which implies that a close contact had occurred at the same time and location). The process will be recursively repeated for all the chains of possibly infected people so ultimately the whole chain of infections will be identified.

Additionally, the radio fingerprints are converted into anonymous locations on a 250 m2 grid of a map. Furthermore, the mobility state (e.g., idle at a home location, inside their 250 m2 zone or moved outside the zone) can be predicted from the radio fingerprints with total anonymity. This will help the government authorities to identify mobility rates in the country and support the lockdown of specific zones instead of the whole country, and finally inform people about the risk involved with entering a specific zone.

E-MIPT uses sophisticated algorithms and encrypted mechanisms for mobility intelligence and proximity tracing without compromising the privacy of individuals. This is because the identity of the mobile device is never exposed to the system. Instead, a digital key, that only the mobile device knows it belongs to it, will accompany the data. Additionally, the system as a whole will include an opt-in opt-out mechanism.

A web portal will be provided to the public so they can enter their digital key and the system will tell them if they are at risk of infection.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ICARUUS LIMITED	Redesign of PPE to achieve rapid decentralised manufacturing, reusability and increased savings for the healthcare industry	£29,923	£29,923

This project proposes the redesign of the key pieces of PPE currently used by the NHS in response to the COVID-19 outbreak.

Current levels of demand for PPE are at their highest levels in living memory. A surge in hospitalisations has lead to depletion of national stockpiles and considerable distribution challenges. An additional lack of PPE manufacturers in the U.K. has greatly increased the cost and lead time of supplies arriving from overseas suppliers due to a lack of appropriate materials in the global supply chain and enormous competition from other purchasers.

To address these challenges, we shall ambitiously redesign PPE to achieve rapid, localised manufacturing, reusability and significant cost savings to the NHS. Furthermore, this proposal will look to establish a virtual sampling system, a live lead time tracker and PPE manufacturing hubs in areas of the UK which are facing significant logistical obstacles. This will ensure that all healthcare stakeholders have access to rapid, sustainable and effective PPE for the foreseeable future.

This project is proposed by Icaruus Limited, a small London based apparel and equipment design and manufacturing business.

During this 6 month project, Icaruus shall aim to develop several iterations of CE certified PPE that will be market-tested and manufactured under lockdown conditions. The evidence gathered will enable Icaruus to release cheaper, locally produced PPE alternatives that will be ready for full-scale use by the NHS and other key worker institutions. A successful redesign of PPE requires both official certification and stakeholder approval. As such, Icarus has begun preliminary design and research with various London based NHS hospital trusts. Obtaining grant funding will greatly improve the scale and time frame of the redesign and ensure that the project has the best chance of reaching a successful conclusion.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OXI-TECH SOLUTIONS LIMITED	Portable Chemical Free Decontamination Pod for PPE, People and Equipment	£47,242	£47,242

Oxi-Tech Solutions Ltd is developing an ozone-based solution which will decontaminate people, clothes, PPE and equipment using a fine mist of ozonated water within a walk-through cross-contamination barrier. The process requires only potable water and electricity. Ozonated water is a powerful, environmentally benign and safe disinfectant that does not suffer the dangers of conventional chemical disinfectants. Harmless to people walking through wearing minimal PPE, this ozonated water will revert to clean water within minutes and evaporate, leaving the recipient exposed surfaces disinfected.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACCELOGRESS LIMITED	Save-a-Space for social distancing in transport services	£49,882	£49,882

This project addresses the urgent need for transport operators to be able to efficiently implement social distancing on their tram/rail services amid current COVID-19 restrictions and to optimally manage demand, access and transport capacity at peak-times in the long-term.

The UK government reported transport use is down by more than 60% for all transport types since February. Rail and Tube use are down by 97% [Coronavirus press conference: 15 April 2020\]. This is having significant impact on operators' revenue and commercial viability [TfWM, 2020\]. Operators have significant financial and societal motivation to bring passenger numbers and revenues up again asap, but gradually, once lockdown starts to step down whilst maintaining social distance on trams/trains.

Accelogress proposes to develop and demonstrate an innovative public transport service resource management solution as an extension to our best-in-class existing Save-a-Space (SAS) real-time parking management platform, to be deployed initially at the Midlands Metro tram (6m passengers in 2018/2019) in partnership with TfWM.

Such an approach was also suggested elsewhere, acknowledging that "Criteria and strategies" need to be developed "for a gradual return to normality beyond the acute restrictions that have been imposed on basic rights such as the freedom of movement," the researchers at the Leopoldina National Academy of Sciences in Germany write in a position paper. Furthermore: "... Travel, both business and private, could also be resumed under those circumstances. The scientists recommend that the greatest possible distance needs to be created between people on trains, planes and buses and that masks should be worn covering the mouth and nose. In the case of German national railway Deutsche Bahn ... the company could establish a reservation system that ensures that a certain number of rows of seats between passengers are kept free." \[SPIEGEL news site 14/04/20: http://tiny.cc/1bo6mz\]



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
VISION 3 LTD	Voice Interaction, Recognition and Participation (VIRP)	£47,072	£47,072

In a world where in-person interaction has been cut off, the opportunities afforded by immersive media to connect, entertain, educate and train people are even more important. Voice interaction takes immersive media to a whole new level, allowing users to speak to, and hear from, virtual characters. In the real world, we remember and are emotionally impacted more by the information we receive from a person. This innovation allows this same experience, giving users the perfect environment in which to connect in a separated world.

Currently, however, the technology needed to integrate voice interaction into immersive media is only available to the few project teams working with large budgets, plenty of manpower and generous timescales. It is not available to those building immersive tech as an individual or small developer team, and therefore the immersive media industry's growth is stemmed.

This project would see the creation of a game engine plug-in; a piece of 'middleware' called VIRP (Voice Interaction, Recognition and Participation) which would be a bridge to pre-existing AI voice hardware functionality for all developers. This would democratise the use of voice interaction in immersive tech, allowing for its use cross-industry for education, entertainment, training and connection.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CYBERLIVER LIMITED	Cirrhosis Remote Care Management impacted by COVID-19	£49,707	£49,707

The COVID-19 pandemic has necessitated an unusual allocation of healthcare resources which inevitably, _negatively impacts on resources available to care for patients with chronic diseases like cirrhosis (scarring of the liver in advanced disease)_, who still require high levels of medical oversight. Unlike many chronic diseases, cirrhosis mortality is increasing exponentially; it is the third cause of premature death in working-age people, with 62,000 years of working life lost/year, and NHS care costs \>£3.5bn. In 2019, there were 73,669 UK hospital admissions from cirrhosis. 25% of all cirrhosis patients are at risk of needing acute treatment for complications such as fluid overload, confusion, kidney dysfunction, infections, and gastrointestinal bleeding. These patients _require a regular clinical assessment_ and even when discharged following a recent hospital admission, have _re-admission rates approaching 40% in 6 weeks_. During the current pandemic, such patients have limited access to direct clinical review, and many avoid hospital for fear of infection. Invariably this has meant that many cirrhosis patients will not receive the level of care they need and will incur further morbidity and mortality, not currently captured by the reported Government COVID-19 statistics.

This project aims to address this clinical need by remote monitoring of at-risk cirrhosis patients, using remotely acquired important vital signs such as heart rate and blood pressure, (using low cost, blue-tooth, low energy wearable technology), and assessment of higher mental function and weight (established smartphone app tools), all of which are key metrics that are perturbed as cirrhosis advances. By efficiently collating this data on CyberLiver Ltd.'s modified, existing platform set-up for management of alcoholic liver disease, our 'CirrhoCare' platform intends to improve the clinical workflow such that vital data is organised and presented to clinicians on a dashboard, to facilitate informed, remote telemedicine 'consultations'. This will allow early detection of signs of cirrhosis complications in the community, and rapid triage of patients needing early direct clinical review, at a time when this is a limited resource. Our solution will prioritise care whilst limiting risk of COVID-19 exposure, and also personalising this to an individual patient's needs and disease, making it more acceptable and convenient for patients. In the long term, costs efficiencies will arise through more streamlined outpatient direct contacts, potentially applicable to a wider liver disease remit, and with scalable processes, whilst delivery costs will reduce further as this technology is more widely adopted, in a digitized NHS.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IPOWER ENERGY LTD	STACS Smart Technology and Community Support	£35,240	£35,240

STACS Smart Technology and Community Support is a Project being undertaken by iPower Energy Ltd, with Solo Energy Ltd and Connected Response Ltd providing support as sub-contractors

The STACS project will develop and test the provision of alerts and other connectivity services for low income and vulnerable households as complementary additions to smart energy management projects. The developed alert service will raise an alert when there is a shift from typical electricity load patterns within a vulnerable household, such as if there is not the usual increase in electricity use in the morning as a kettle is put on etc. Whilst this may or may not be a cause for concern, a simple alert provided to a relevant person can enable them to check the situation.

The project will also develop and evaluate connectivity options for smart energy projects in low income communities with the aim of incorporating low cost connectivity for the household, alongside the connectivity required for the smart energy project.

STACS contributes though enhancing inclusive digital connectivity and smart home-based alert services to meet societal needs for community support services, healthcare, social care, wellbeing, education and entertainment, especially at times of global disruption. The Scottish Council for Voluntary Organisations (SCVO) has highlighted the problem that "digital connectivity will quickly become a lifeline for our most vulnerable people in the COVID-19 emergency." However, in the most vulnerable populations, many people do not have access to digital services.

By building on smart home-based energy services for low income households, for which a good business case and funded solution can already be made for many vulnerable households, additional alert services and other digital connectivity services can be provisioned at low marginal cost. In addition, our energy services themselves contribute to addressing significant incidence of under-heating which itself adds to the vulnerability of many households.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FACTOR 50 LTD	HelpMyStreet.org - creating a national platform to support volunteers during this crisis	£49,116	£49,116
It started with a postcard or leaflet put through a neighbour's door, offering to help. Then it grew. Across the country, people are stepping up to help those in need. We're seeing some amazing acts of care and kindness.

This is not just about giving time, it's about _helping_; doing something positive for the communities we all live in.

However

These have blossomed into whatsapp and facebook groups. But none of these scale.

* It's hard to see which streets are covered and which ones aren't.

* None of these allow us to verify the volunteers.

* Or solve data protection consistently.

* Or allow relatives from one side of the country to easily get in touch with the "street champions" who live next to vulnerable relatives who are a long way away.

These group leaders and street champions are amazing - but are over stretched and we want to give them the tools they need.

Covid-19 is moving so quickly. Frightening. We needed to move just as fast.

Who are we?

We're a diverse group of people who live around the UK, but all have a connection to Nottingham.

We are doctors, health practitioners, tech and data people, community volunteers and marketers. The founding team work for Factor 50, a healthcare analytics and digital company that works with the NHS, particularly in mental health.

Help My Street CIC is a not-for-profit Community Interest Company.

Our principles

The things that matter to us ...

Help - We're here to make volunteering, and finding volunteers, as simple as possible.

Safety - We're committed to creating a safe and trusted service for volunteers and those in need.

[HelpMyStreet.org][0] has been launched to help the Helpers.

How will Innovate UK funding help?

The funding that Innovate UK provides will help to make this platform truly scalable. Matching helpers with those who need help is a mini market place, and this funding will enable us to build a scalable platform that matches requests for help with those who can provide the help.

[0]: https://helpmystreet-live.azurewebsites.net/



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SNAPDRAGON MONITORING LIMITED	ScamScammer: keeping online shoppers safe	£49,640	£49,640

One aspect of daily life that has changed as a result of the current pandemic is how we purchase goods. Outside essential trips to supermarkets and grocery stores almost all of us have moved online to shop. Figures from the latest RetailX index show, from a survey of 1000, **only 2.5% are not shopping online.**

Unfortunately there are those who, wishing to take advantage of this surge in activity and general consumer anxiety, are selling substandard and fake goods online, stealing bank details and profiteering through sales of counterfeits of essential items such as face masks and anti-bacterial gels.

SnapDragon Monitoring specialises in fighting fakes and scams online. We have taken our expertise, fostered through helping brands stop counterfeiters and intellectual property thieves from damaging their businesses, to **directly help consumers stay safe as they shop online during this pandemic, and beyond.**

SnapDragon is delighted to introduce **ScamScammer**, our dedicated service providing you with valuable consumer tips, topical advice and the ability to gain expert judgement from our experienced, multi-lingual analysts.

ScamScanner will help shoppers obtain refunds for fake goods bought from all the major e-commerce sites. You can also learn how to report fake and scam listings to platforms and, for more serious cases, we offer information on how to contact banks and Citizens Advice, if you have been the victim of theft.

By submitting the URL of a product or site, ScamScanner assesses its legitimacy and safety delivering a 2 point response, almost instantaneously, using our existing algorithms and expert team:

- 1. **Counterfeit Detection** -- is the product or site fake?!
- 2. **Scam Risk** -- is it a scam or threat to your personal/banking details?

Our response will let know if the product is genuine and if the site selling it is to be trusted. If you want further information, you can speak directly to our analysts through our interactive chat functionality.

For convenience, we also offer our ScamScanner browser extension, which provides all of the functionality of our site within a simple, user-friendly interface, accessible directly within your browser.

This new site and tool will help keep you safe shopping online, while simultaneously helping both us and the authorities prevent and tackle profiteering and the organised crime which is funded by the sale of counterfeits.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VOLUNTEERO LTD	Volunteero - Improving the lives of those who are socially isolated and lonely	£38,017	£38,017

Volunteero is a platform to make volunteering as easy as clicking a button. As anyone who has tried to volunteer can tell you, it is a minefield laced with red tape. 90% of people claim to want to volunteer, only 20% do. Why is that?

Volunteering isn't easy, here are some of the most commonly stated reasons for not doing so:

- * Cannot find the right organisation
- * The sign up and training process is slow and inefficient
- * Volunteering opportunities are often inflexible
- * People are fearful of making long term commitments

If these are true for anyone reading well, we are changing all that. Volunteero is an app that allows you to:

- * Find the organisation whose social cause is one you are passionate about
- * Sign up and complete required training all within the app itself
- * Find individual tasks that can be completed in isolation, tasks that best fit your ability and schedule
- * Complete tasks and record your experience

Whether you complete 1 task or 1000, you are able to make a real difference!

We believe that no one who wants to volunteer should have a valid excuse not to. We have ambitions to improve the global rate of volunteering but also to make sure each volunteer can access the opportunities to which they care most and are best suited.

Volunteero is being built by 3 friends all in different countries across Europe, all volunteers themselves and all with a genuine desire to make the world a better place.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CARECOMPARE SERVICES LIMITED	Pilot Project for Care Matching Services	£46,225	£46,225

Many people in the U.K. require support for everyday activities such as dressing, bathing, cooking and cleaning as well as for tasks such as taking their medications and using medical devices. The ability to continue living in one's own home is often incredibly important, but finding the right type of care to enable this can be difficult, with most individuals having no prior experience of searching for such care at the time they need it. They are also often unwell, making the task of finding an appropriate provider an additional stress at what is already a challenging time. Local councils are increasingly unable to financially support individuals with their care needs, and anyone with savings of over £23,500 must already pay the entire cost of care themselves.

The Covid-19 emergency has led to a rapid increase in the number of people expected to require homecare, and put an additional strain on an already fragile care sector, with many care workers either unwell or self-isolating, leading to a lack of availability. Furthermore, traditional routes that individuals use to find care such as speaking to friends, neighbours, their GP or social workers are significantly limited due to social distancing measures. Finding an available, appropriate care provider is therefore a serious challenge that many individuals face.

CareCompare is an online platform that helps individuals requiring homecare services to quickly find the care they need. Users register on the site, complete a short form outlining the care they need, why they need it, when they need it, their postcode and any other requirements. This is then sent via a secure system to care providers who, if available to provide this care, reply within 4 hours with an 'offer' detailing information about their company, a link to their most recent inspection report by the Care Quality Commission, previous user feedback, price and, critically, availability to start. The user can then connect with their chosen company, with the company receiving the user contact details and getting in touch to set up a package of care.

With the generous support of Innovate U.K., CareCompare will be piloted in the Mid and South Essex Health and Care Partnership from June to September 2020 across a range of sites including hospitals, GP practices, community hubs and social services. For more information, please visit our website at https://www.carecompare.net.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PEREGRIN MARKETPLACE LIMITED	Rapid Recap: Accelerated Rescue Financing Portal	£47,959	£47,959

Rapid Recap is a project to facilitate private rescue financing for the UK's most innovative high-growth businesses adversely affected by COVID-19\. These businesses are largely not eligible for the Enhanced Coronavirus Business Interruption Loan Scheme (CBILS) and have cash requirements that exceed other forms of available government support. Our objective during the project period is facilitate rescue financing for these UK businesses. We will achieve this by providing free online resources to fast-track rescue financing, including (1) standardised and customisable digital documentation and (2) a portal for rapid exchange of information between fundraising businesses and angel investors, venture capital (VC) firms, non-bank lenders and other qualified financiers in the UK and abroad. Rapid Recap is distinct from other available products and services because it will be tailored to the COVID-19 funding environment, will be designed for rescue financing and will be provided as a free service to qualified users during the project period.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PROAXSIS LTD	A novel multiplex cytokine respiratory panel to change the dynamics of COVID- 19 testing	£49,983	£49,983

There are a number of markers of inflammation which have been associated with various diseases. One group of such markers is the cytokines which are small proteins released by different cells in the body. These cytokines work as messengers and help co-ordinate the body's fight against infection and inflammation. Cytokines are often measured in the blood of patients with illnesses such as atherosclerosis and cancer.

Very recently, a number of cytokines, such as interleukin-6, have been measured in patients infected with the COVID-19 virus and have been found to be significantly increased in those who have suffered worse symptoms and unfortunately, increased death rates. This is due to a 'cytokine storm' when the person's immune system goes into overdrive and becomes out of control. This leads to very high levels of cytokines being released which in turn causes excessive inflammation and even multiple organ damage. Cytokine storms may explain why some people have severe reactions to coronaviruses whilst others end up with only mild symptoms.

For lung diseases such as COVID-19, it makes more sense to measure cytokine levels in sputum, as this will be more representative of what is occurring in the lungs themselves.

Therefore, the aim of this project is to adapt the existing blood-based tests for three of the key cytokines, including interleukin-6, so that they can be safely and effectively measured in sputum samples. The project will use the extensive expertise of ProAxsis in the development of sputum-based tests to create a new combination test, which enables the level of three key cytokines - Interleukin-6, Interleukin-8 and Tumour Necrosis Factor-alpha - to be measured in a small quantity of sputum. This will help healthcare professionals identify which patients infected with the COVID-19 virus are likely to suffer with the most severe symptoms. In the longer-term, it will also allow them to test the effectiveness of several of the new drugs being developed for the treatment of COVID-19\.

ProAxsis will use two of its most experienced scientists to create this new sputum-based combination test within six months, and quickly move to expand its availability to other laboratories throughout the World. The company believes that this will provide a significant new tool for healthcare professionals in the fight against the COVID-19 pandemic.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AQDOT LIMITED	Enabling Safe Air Quality Levels In The Transport Industry With Game-Changing Air Filtration	£50,000	£50,000

The transport industry has been significantly impacted by the Covid-19 pandemic. People fear that virus-containing bioaerosols cause infection on board which has contributed to the spread of the pandemic. This is also compounded by reports of air-quality issues arising from the often-unpleasant odorous volatile organic compounds (VOCs) and airborne particles. This problem is global, affecting all types of transport including airplanes, trains, buses, cars and even passenger ships. Air quality could be greatly improved by introducing filters that not only kill viruses but also capture VOCs and odours, thereby reducing risks of infection and health concerns while boosting the confidence of passengers and crew in post-pandemic travel. Unfortunately, existing airfiltration technologies are unable to deliver the performance required even when used in combination (i.e. HEPA with charcoal filters). Therefore, alternative and novel solutions are required.

Aqdot (a Cambridge-based SME) has a unique, proprietary VOC/malodour-capture technology (AqFresh) that is effective against a wide range of molecules that are unpleasant and/or harmful. The innovation is currently commercially available in home care, pet care and industrial cleaning products. This project aims to adapt the technology to meet the needs of the transport industry by developing scalable, ready-to-adopt air filters that bring together novel VOC/odour capture technology with antiviral capabilities, significantly improving air safety and quality in transport.

The innovative filters, generated by impregnating appropriate polyurethane foam substrates with a unique coating formulation, will be designed to fit into existing systems of global filter manufacturers. The filters will be formulated and tested for anti-viral and VOC-reduction capabilities. These filter prototypes will then be incorporated and tested in operational environments by commercial manufacturers with a view for global roll out. Addot will partner with customers to allow rapid adoption of this innovation in their filtration frameworks in aerospace, automotive and public transport.

Upon success, Aqdot's innovative air filters will bring major improvements in air quality for the transport industry worldwide to be free from viruses, VOCs and odours, minimising the risk of infections and health concerns onboard, helping to combat the immediate Covid-19 pandemic while reducing the impact of future potential pandemics. It will also assure safety and build confidence among passengers and crew to resume travelling following the pandemic, reinvigorating the transport industry and giving a much-needed boost to the economy. The project will demonstrate support for innovative UK-based SMEs, strengthen the UK technology portfolio and has significant export potential.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TFWX LIMITED	Pulse VR	£48,519	£48,519

It is important in today's uncertain world to look after yourself and protect your health and wellbeing. Pulse VR will provide users with an immersive virtual environment to practise mental and physical wellbeing. The aim of the project is to give users access to an engaging safe and inviting space even when real world limitations on social distancing are being encouraged by the UK government. Pulse VR will incorporate biometric data from wearable devices within a virtual reality setting to dynamically adapt the environment.

An initial version of Pulse VR will be made available for free to ensure a wide adoption of this app amongst our target market. We believe this acts in the social good. The app is designed to improve and help people manage their wellbeing.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SINGULAR INTELLIGENCE LIMITED	A real time prediction and scenario simulation software for Consumer preferences using agent-based modeling on COVID-19, retail market and consumer data	£49,733	£49,733

Singular Intelligence offers an AI platform for augmented decision making in Consumer goods & retail sector for marketing and supply planning.

The project aims to build a new software module that uses AI modelling techniques to learn from all relevant data from -- COVID-19, market and consumer data and generates a predictive view of emerging consumer preferences, for more accurate and granular forecasts that enable retailers and consumer goods companies to simulate various scenarios for getting the product in the hands of the consumer.

This is planned to be a 23 weeks project ending with a prototype software that can be used for customer pilots to develop further and roll out at scale.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INTELLEGENS LIMITED	Planning for a pandemic: a global disease modelling platform	£48,916	£48,916

The COVID-19 pandemic poses significant difficulties for the UK. Headlines are full of stories of the shortage of critical supplies that whip up a political whirlwind: personal protective equipment, critical drugs for patients in intensive care, ventilators, and sufficient hospital staff. The problem extends beyond the COVID-19 pandemic, with the same issues arising annually with diseases such as seasonal flu. More importantly, should we be faced with a similar pandemic in the future how can we manage it more efficiently.

The government and companies have to plan how to meet peak demand for critical supplies and care providers must ensure that sufficient staff are in place and are properly equipped. However, they fly blind with little guidance, and so cannot produce supplies in advance or plan how to deploy resources.

Over recent years AI and deep learning have become mainstream, delivering new insights and improvements across all parts of society. However, in most cases good quality data is needed to build these models, when there is little data, or it is not accurate, the models created will also be inaccurate and of little use. Intellegens, a spin out from Cambridge University, has developed a new type of machine learning to deal with these type of problems where data is limited and noisy. In these rapidly changing pandemic environments data quality and sparsity is making machine learning model development hard and unstable.

In this project, Intellegens will develop an accurate machine learning model to predict the progression of pandemics and other diseases. Using all available data as it becomes available, which could include:

- * Real time patient case metrics including number of infections, recoveries, and deaths
- * Population metrics such as age distribution, housing density, and connectedness
- * Fraction of the population believed to have been infected but not tested
- * Number of unreported deaths outside the hospital system
- * Statistics from limited testing facilities
- * Profiling of most at risk groups based on age, ethnicity, or other conditions
- * Environmental, geographical, and economic indicators

This tool will ultimately allow policy makers and companies to plan ahead for difficult times, ensuring that appropriate supplies and staffing levels are in place for the given rapidly changing environment



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ANIMAL VEGETABLE MINERAL LIMITED	The virtual publisher platform	£42,539	£42,539

The virtual publisher platform is a simple-to-use, low cost 3D exhibition publishing and marketing tool for the arts and culture sector. It is designed for individual artists, galleries and museums to create, publish and market art and cultural content, online. Unlike other virtual exhibition solutions currently on the market the virtual publisher enables bespoke and off the shelf spaces. It accommodates both 2D and 3D content at high quality and has built in marketing and sales tools designed to deliver a clear demonstrable ROI.

The application is browser-based, platform agnostic, low-cost, flexible, secure and easy-to-use.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CELLULAR SYSTEMS (GRANTHAM) LIMITED	PommeACE	£49,877	£49,877

The project addresses an identified healthcare need and commercial demand for high-quality, sustainably-produced bioactive polyphenolic compounds. Development of products derived from fruit and vegetables can support the recovery of individuals by enhancing their immune response, leading to faster recovery time or weakening future reinfection by mutated coronaviruses. A whole value-chain approach for capturing market-led business opportunities to reduce food wastage and increase availability of fruit and vegetable derived foods or supplements for consumers is proposed. Polyphenols are widely present in fruits and vegetables and consumption is known to provide a range of health benefits. Flavonoid polyphenols such as quercetin and derivatives, present in apple skin, have been shown to act as anti-oxidants; anti-viral and anti-inflammatory agents.

Coronaviruses infect cells by binding to the angiotensin-converting-enzyme-2 (ACE2) membrane protein. This can be inhibited by quercetin, increasing resistance to infection. Quercetin can reduce the severity of the immune-response to infection and shorten recovery times. Quercetin is safe for consumption and is available as a supplement. Presently, it is imported and of variable purity and quality which have significant implications for consumer health and business reputation. Furthermore, there are issues concerning both the security and availability of supply.

The objective of the project is to develop a sustainable and efficient biorefinery process, to enable secure, local production of quercetin. The by-products of apple juice production (apple pomace) available in the UK in large quantities, are not exploited and frequently disposed to landfill. The project combines recent advances in green-extraction techniques with highly-efficient separation methods, enabling quercetin recovery and purification. Additionally, the spent apple pomace can be further processed to provide a source of materials for applications such as sustainable biodegradable packaging.

The combination of technologies will be innovative; enabling creation of a biorefinery to scale-up production and supply in quantities required by UK industry, whilst reducing imports and creating employment. Increased competitiveness with current environmentally damaging and less sustainable chemical production methods will be achieved increasing the market share. This will grow the UK economy and create employment opportunities, whilst ensuring security of supply.

The availability of sustainable, high purity, quercetin for use in supplements and food products will be increased. The project focuses on production of high-purity quercetin for which there is a substantial market need. This will reduce the requirement for importation providing a source of additional income for apple growers, whilst reducing the quantity of waste food sent to landfill.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CONSEQUENTIAL ROBOTICS LIMITED	Cloud-based Robot E-learning Environment for Inclusive Home Education	£49,914	£49,914

This project will create a new e-learning environment for robotics, coding, and artificial intelligence (AI), using cloud computing, that is accessible to any student with a web browser. The environment will be low-cost and easy-to-use from home, school, college or university, and will promote STEM/digital education goals helping to prepare children, students, and people who have left full-time education, for current and future jobs in UK industry. Our project addresses the pressing need for new technologies for online/at home education created by the Covid-19 pandemic, and will help address the skills deficit in digital technologies that threatens the future success of UK industry. The UK already faces significant skills shortages in these domains, and these are likely to be amplified by long-term impacts of the Covid-19 pandemic on international worker mobility.

The key project objectives are: (1) to create an online learning environment for robotics accessible via cloud computing, and using accurate (full-physics) simulation, with interfaces suitable for both beginners and more advanced programmers; (2) to develop teaching materials that are tuned to UK education curricula, for home "kitchen-table" learning settings, and that are accessible and engaging for a diverse range of student groups; (3) to work with education partners to pilot, evaluate and improve the simulator and teaching materials; and (4) to explore remote control of physical robots, via the internet, to provide new ways of learning about coding, AI and robotics.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KALON BIOLOGICAL LIMITED	Development of a SARS-COV-2 ELISA In Vitro Diagnostic Immuno-Assay	£48,383	£48,383

Widespread testing to accurately track the spread of the COVID-19 virus will critically depends on accurate serological tests that can indirectly detect the presence of antibodies produced by the immune system in response to SARS-COV-2\. This approach is intended to identify patients who contracted the virus and have developed immunity against SARS-COV-2\. Most serological (antibody-capture) tests fall into 2 camps: a qualitative Yes/No rapid lateral flow point-of-care tests and a quantitative lab-based ELISA test that relies on accurately measuring the formation of a complex between the antibodies in the patient serum samples and unique structural proteins on the surface of the virus particle. ELISA assays remain a simple yet powerful, robust and trusted tool for the diagnosis of infectious disease.

Current calls for rapid diagnostic (POC) tests does not make the requirement for robust, scalable laboratory-based tests redundant. Laboratory-based tests are the method of choice for large-scale surveillance studies. For example the ELISA is ideal for testing hundreds of samples per day, and is yet versatile to test as few as 1 to 4 tests on the same simple equipment. In addition, POC serological tests have a tendency to be less reliable and less sensitive and therefore there will be an ongoing need for confirmatory testing.

It is clear, that at Kalon, we have a proven and established platform and technical expertise on which to build immunoassays for SARS-CoV2, the virus that causes Covid-19\.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
Cargill Meats Europe	Cargill Digital Auditing using Mixed Reality	£49,996	£49,996

This project will use for the first time a 'Mixed Reality' headset such as the Microsoft HoloLens 2 or in our case the Trimble XR10 to be worn and used on our production site to undertake a food safety and quality sample assessment using remote experts to support in the process. This will, for the first time enable a virtual home-based team from across the UK and across the world support the Cargill business to ensure that we are able to continue production during the Covid-19 lockdown.

We will design and develop an application with the support of the Manufacturing Technology Centre (MTC) a UK Catapult who are expert in the design and development of mixed reality applications that will enable the simple and seamless integration with our existing food safety and quality systems. We will also make use of the Microsoft Remote Assistant package through our existing relationship with Microsoft to enable experts from across the world to supplement our capability should we be further affected by the Covid-19 outbreak.

We would like to share this technology and approach with the rest of the food sector but we are aware that, without a working demonstrator we will be hardpressed to change the industry approach. Thus, as part of the programme we will have a dissemination event where we show the process and highlight where technology can be used in circumstances such as these to circumvent shortages of expert staff on-site.

We will also use this project to enable the connectivity of our production sites across Europe since we have product and process experts located across the continent whose remoteness has never been experience more than now.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMISSION SOLUTIONS LIMITED	Application to show compliance with Site Operating Procedures with contact tracing in the Construction Industry	£49,801	£49,801

EMSOL's mission is to help our customers take steps every day to make a lasting difference in reducing the impact on our health and well being. As such the EMSOL system empowers organisations to take specific actions for improving the local environment. This is through targeted air, noise pollution and contractor activity identification which benefits the communities our customers operate in.

In cooperation with two leading organisations in the Construction industry EMSOL is rapidly developing and testing a method for monitoring and managing all site-based workforce for social distancing evidence and infection tracing notifications.

The key benefits for the Construction industry include:

- * Getting team members back to work quickly and safely
- * Restarting paused projects
- * Providing clear evidence of adherence (or not) to Site Operating Procedures
- * Rapid actionable infection tracing
- * Improved employee acquisition and retention
- * Reduced risk for all companies associated with any site
- * As UK Government guidelines change the system can adapt to the new guidelines
- * Footfall traffic planning for reduced congestion at site pinch points
- * Focusing limited resources like cleaning teams on the highest traffic areas such as specific bathrooms, doorways, lifts, canteen etc
- * Increase worker productivity, especially as new social distance governance, applies



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TOUCHBYTE LTD	Contactless Access Control for Construction Sites	£48,420	£48,420

Construction sites require the physical input of access codes into a keypad and/or finger print recognition systems to record and monitor staff arriving on site. Since the arrival of Covid 19, construction companies are had to close sites due to the health and safety risks from these unacceptable access systems. Without an access system, the construction companies were not able to monitor who was on site, or the skills and qualifications of each worker.

To address this urgent need and ensure industries continue to grow, TouchByte has provided an alternative, safe solution - taking proven Face Recognition capabilities as used by Border and Passport control, and adapting it for safe and secure access to construction sites. TouchByte's solution is completely contactless and frictionless. Workers gain access to a site quickly and efficiently without the need to touch anything. Their face would be detected and checked automatically on arrival at the site, and if verified by the company's database, the worker would be allowed on site - without any need to touch a possibly contaminated entry pad.

The accuracy and speed of the technology has extensively increased and its cost reduced dramatically over the past few years, making it cost effective, safe, secure and efficient.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BAYS CONSULTING LIMITED	Predicting and Meeting Food Bank needs	£36,000	£36,000

COVID-19 has created a surge in demand for the services of food banks yet at the same time limited their ability to help. Food banks offer invaluable local community services: providing food aid; acting as a conduit to other local community services; advising on possible benefit entitlement and crucially offering the human touch -- the ability to sit and have a cup of tea, to talk and be heard. All of these services social and mental health of those in the community who need the help of food banks.

Yet when they are needed most, social distancing and shocks to the economy places a huge strain on food banks. Many local donation points, such as those at places of worship or in shops have been closed. Donation points at supermarkets are unavailable or used by those in desperation. Monetary donations have limited utility when the purchasing of tinned food is limited to ensure fair access. The uncertainty in the volume of donations received in turn limits a food bank's ability to assess how many food aid packages they will be able to provide in any given week, at a time when the need is increasing.

This project will use data science forecasting and predictive modelling techniques, to enable food banks to more accurately assess predicted demand from the local community alongside expected supply of donations. Using this, the food banks will be able to make informed requests to their supporters for specific shortage items before stock becomes critical; work with other food aid organisations in their area to ensure breadth of supplies.

The overall result will be to: reduce the volatility in donations received; increase capacity for the food banks to support local families; raise awareness of the food banks in the local community and crucially reduce the planning time for volunteers at food banks so they have more time for the critical human aspects of food banks -- a listening ear by someone who understands and wants to help


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KAPITALISE TECHNOLOGY LIMITED	Made.Simplr DIY: unlocking R&D funding for UK SMEs	£49,966	£49,966

Made.Simplr simplifies the R&D tax credit claim preparation by automating several tasks and eliminating the need for f2f collaboration between expert accountants and business owners/managers.

It is a Software-as-a-Service platform that introduces best practices from the R&D servicing and consulting worlds into a comprehensive set of features, usable even by non-experts.

The completeness of functionalities, the intuitive workflow design and the flexibility of the technology allows Made.Simplr to seamlessly address the needs of companies irrespectiveirrespective of size and claim complexitcomplexity, while guaranteeing accuracy of the produced result. Thus, guaranteeing successful claim evaluation and swift cash returns to the applicant beneficiaries.

We decided to pivot our technology as a response to the challenges posed by COVID-19 and the radical changes it has brought about when it comes to business making. We see the value of supporting the cashflows of small and medium companies ever-increasing and Made.Simplr can be an extra tool in this direction. Apart from the technical pivoting we will also alter our business and revenue models so as to make the service accessible to as many businesses as possible, reducing the cost barrier to unprecedented levels.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RAZORSECURE LIMITED	Real time measurement of UK Rail Passengers to enable social distancing during a pandemic	£49,854	£49,854

The UK is currently experiencing severe disruption due to the Covid-19 lockdown, and ending the lockdown in a controlled way is vital to the UK's economic future. Public transport is critical to getting key workers to their jobs as well as for the wider UK economy to function efficiently.

However, given the requirements under social distancing, the overcrowding of people on public transport could lead to faster transmission of Covid-19 leading to a potential second wave or aiding a future outbreak.

RazorSecure provides cyber security intrusion and anomaly detection using machine learning to give real time visibility of networks onboard UK trains.

We propose to extend the data we currently collect and produce new visualisations to give real time data regarding overcrowding of public transport to allow for more active management of social distancing while transiting the UK transport network. As a direct, actionable item, guards would be given an application that will allow them to inform passengers that a particular carriage is less crowded and operators would have a real-time dashboard to review crowding.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PZOC LTD	Zoggy - A Conversational Chatbot for the Third Sector	£48,632	£48,632

Due to the economic and social impact of Covid-19 pandemic, demand for advisory services from organisations such as Citizens Advice Bureau (CAB) has increased to unprecedented levels. As organisations served predominantly by volunteers, these organisations are understaffed and are unable to meet this demand. This not only impinges on staff fatigue but also results in increased waiting times resulting in inefficiencies. This is representative of many non-profit organisations across the UK and beyond. It is this problem that we wish to solve by using Conversational AI Chatbots.

Large volumes of information which is dynamic in nature due to constant changes in law and guidance, means that standard rule based Chatbots won't be a practical solution. Our Chatbot will use a hybrid approach of configured rules for forms or slot filling, combined with machine learnt stories from content. Our solution will evolve with training and be more effective in answering complex user queries.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HTZ LIMITED	Utility Robot For Laboratories	£49,366	£49,366

HTZ Limited ([www.htz.biz][0]) is a long established UK owned manufacturer of laboratory robots.

These robots are optimised for the laboratory environment, in application areas such as:

* Precise sampling and dispensing of fluids in immunoassays, immunofluorescence assays and blood grouping

* Liquid filling in batch production, for example of biological fluid standards

* Tube sorting, cherry picking, weighing, capping/uncapping and labelling

* Many special applications for which we have developed bespoke packages

This project is to design and bring to manufacture the first in a new range of robots, the "Utility Robots" optimised for the current social and economic circumstances. These robots will be simpler, cheaper and easier to set up than our existing systems. The name is inspired by the wartime "Utility Furniture" project, which optimised the design and production of furniture for the prevailing circumstances.

[0]: http://www.htz.biz/



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SENSEUTICS LIMITED	Cytokine Storm Tracker	£45,606	£45,606

According to the World Health Organisation (WHO), around 15% of people infected with COVID-19 become seriously unwell and require oxygen therapy and a further 5% must be treated in intensive care. In the UK at present, less than 50% of those patients in Intensive Care Units (ICU) survive. In order to combat this shocking survival rate, we must deliver innovative new prognostic tools to ICU clinicians to enable them to treat patients earlier and with precision. The leading predictor of fatalities in ICUs is a patient's levels of particular pro-inflammatory cytokines. In sufficient levels the release of specific cytokines can cause a "cytokine storm", a fatal hyperinflammation in the body's vital organs as the immune system undergoes a secretory chain reaction.

We are building a cytokine tracker to predict when COVID-19 infected ICU patients need life-saving therapies and stratify risk for the most vulnerable. By identifying cytokine levels hours faster and more regularly than any existing methods, we empower clinicians to make treatment decisions much earlier and more precisely based on each patient's immunological profile from the start.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MOTION CONTROL PRODUCTS LIMITED	Remote motor control, configuration and management of shower pumps to enable IIoT control and in-turn minimise engineer visits.	£49,920	£49,920

In response to new social distancing normalities and in consideration of occupational safety, industries must respond by implementing measures to standardise social distancing in working environments. This is achieved by promoting changed practices such as home-working, and in line with this, greater remote systems control to minimise physical interaction and increase occupational safety.

Today, the shower pump industry dispatches engineers to respond to unit faults that occur within warranty periods. Across the industry, this is around 12,000 visits per year. However, in over 50% of cases, it is found that the problem is not the responsibility of the pump engineer, rather there is an issue elsewhere in the water system such as trapped air or incorrect setting. A further 20% of cases are software issues that are resolved by an engineer connecting a diagnostics device to complete reprogramming. The final 30% of visits require replacement of parts or whole product which often require a parts order and return to the address at a later date.

The 'SmartPump' innovation delivers Internet of Things (IoT) advantages to our existing pump motors by incorporating a GPRS 3G/4G/WIFI controller chip. Should a fault occur, an engineer is able to remotely complete a diagnostics check to identify faults and carry out remote programming if necessary. If further sensors are fitted to the pump, wider system diagnostics are also possible such as for pressure, temperature and flow.

It is expected that the SmartPump diagnostics assessment functionality to reduce engineer visits by 50%+ by either: identifying whether the pump is fully operational; if the problem lies elsewhere in the water system; or if the motor requires a software update to resume normal operation.

Potential for a reduction of 6,000+ engineer visits per annum across the entire industry is possible with SmartPump meaning a vast reduction in the potential exposure of Covid-19\. Further to this, the decreased downtime of shower pumps benefits the end-user as well as the reduced travel of the engineer lowers CO2 emissions production.

In addition to the above engineer visits, there is an 8-10% return rate across the industry as "faulty product". However, with 60-70% of such returns, no faults are found. Diagnostic assessment would both minimise wastage of materials and reduce end-user returns.

Having already developed a prototype, during the project we plan to:

- * Develop the firmware, electrics and software.
- * Create customer system integration interfaces and apps.
- * Commercially demonstrate the integrated motor.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ADDITIVE INSTRUMENTS LIMITED	Alternative respirators for the COVID-19 pandemic	£26,250	£26,250

The COVID-19 pandemic has exposed the shortfalls of global supply chains. Demand for Personal Protective Equipment (PPE) has outstripped supply and the UK is struggling to provide front-line healthcare workers with the vital protection they need. This project aims to design and gain regulatory approval for a face mask that meets the standards for protection of healthcare workers against COVID-19 and can be manufactured at a rate of 2,500 masks per day. Our team will deliver a product in a highly compressed time scale by using innovative manufacturing techniques that remove the expensive and time consuming tooling stage necessary for mass production. UK based manufacturing will be used to ensure that the NHS is protected from the volatility of global markets and manufacturing streams.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HARU LTD	Haru Ltd - Innovating Charity Retail	£47,404	£47,404

Charity Shops have become an important part of both the high-street and communities across the UK since the 1950s. An easy way to recycle second-hand items, the charity retail sector directly diverts 337,000 tonnes of textile from landfill annually, saving the taxpayer £27 million in landfill tax, while raising over a £320 million pounds every year for charitable services in the UK and across the world, including essential work in the fight against the Covid-19 pandemic.

The Charity Retail Sector has very little online presence and relies heavily on being able to sell donated items through their physical shops. With the impact of Covid-19 shops have been forced to shut resulting in the sector losing 98.4% of its revenue.

At Haru, our vision is a thriving charity sector empowered by technology. Our mission is to deliver innovative services that revolutionise how the sector operates, creating a more efficient and effective sector. Over the last year, we have been working with charity shops to develop a solution that would allow any charity shop to easily sell items online. This is a physical service supported heavily by innovative technology.

Using our model, we have been able to empower a small number of shops to sell online and boost their fund-raising capacity. We intend to invest in and develop the software part of our existing service which will revolutionise how the charity sector sells second-hand donations.

This software is an innovative new approach to simplify and make online selling as easy as possible for users of any ability. Our in-store mobile application will allow users to find and price items suitable for online selling. Powered by a proprietary algorithm the application decides the most appropriate sales location, and price for an item, maximising the value of donations.

The mobile application will work in tandem with our unique inventory management system designed to easily process and sell high volumes of second-hand items across multiple online marketplaces.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SATOSHI SYSTEMS LIMITED	Mobile app for remote elderly care via local human assistance and financial incentives	£49,940	£49,940

Our mobile app allows children to find volunteers and informal-carers close to their parents to conduct simple tasks such as delivery of groceries, medicines, daily face-to-face interactions and emergency alerting of NHS, Police etc if required. The app is continuously and real time connected three-way between the kids, parents and volunteers to coordinate such activities. Volunteers can bid and plan for multiple tasks across multiple elderly households. The open-banking platform is used to approve payments from kids to volunteers in real time for the tasks. Both the kids and the parents can rate the volunteers for each task performed.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PYROGENESYS LTD	Virucidal Breathing Apparatus Filters (VBAF)	£50,000	£50,000

The Virucidal Breathing Apparatus Filters (VBAF) project will demonstrate proof of concept for a virucidal respirator filter cartridge insert, that will inactivate, "kill" airborne Coronavirus cells.

Viral filtration efficiency (VFE) and bacterial filtration efficiency (BFE) measure the effectiveness of filter respirators against viruses and bacteria. Manufacturers state that although their product tests demonstrated \>99.9% results, the results "do not constitute a guarantee" and describe their PPE as "only designed to filter and not to kill viruses."

Inactivation of virus cells MUST be incorporated as an essential feature of respirator filter cartridges. Our respirator cartridge inserts will be designed to remain viable for at least 12 hours i.e. during a single shift, to reduce consumables cost along with the risk of cross-contamination from frequent cartridge changes.

Improving the safety of respiratory PPE for 1st responders and frontline healthcare workers, is critical to safeguarding the ability of the NHS to provide effective care during the COVID-19 crisis.

Furthermore, as manufacturing capacity is scaled up, we will seek to incorporate our virucidal filters in high volume applications. Future product development will see our virucidal filters incorporated in face masks granting them superior safety performance to the incumbent N95 rated products which are "only designed to filter and not to kill viruses."



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HEARING DIAGNOSTICS LIMITED	Audimetroid, a tool for rapid delivery of hearing care and hearing aids	£49,897	£49,897

Social isolation during lockdown is putting 15.5 million elderly individuals at increased risk of premature frailty due to fostering mental health deterioration (Armitage 2020). It is absolutely crucial that elderly individuals have ready access to audiology services so they have the strongest possible opportunity of rapidly returning to a socially-active lifestyle following lifting of the lockdown.

Our vision is to increase access to care and eliminate waiting times by streamlining provision of hearing aids while simultaneously moving audiology services out of hospital departments and into the community, where the same quality of service can be delivered faster and with far reduced physical contact between patient and care provider, thereby reducing risk of audiology care contributing to continued COVID-19 circulation.

We propose delivering this vision by developing technology for "over-the-counter audiometry", wherein hearing assessments and fitting of hearing aids becomes an over-the-counter (OTC) service provided by pharmacies, with referral to specialist audiology departments reserved for patients with severe or complex needs. This vision leverages the recent availability of OTC hearing aids (OTC-HAs). In delivering this vision, we will be addressing three specific themes of the call: healthcare, wellbeing, and community support services.

During the project, we will develop an automated testing platform that: i) assesses patient hearing abilities, ii) rules out or responds with suitable referrals to other factors (sudden-onset hearing loss, cerumen impaction, etc), iii) assesses patient suitability for OTC-HAs, and iv) selects the most suitable pre-programmed OTC-HA or otherwise makes a referral to specialist audiology services if OTC care is contraindicated. The project work will be split between i) consolidation of our existing prototype hardware into a market-ready testing platform, ii) extending the software functionality of our existing hearing-screening paradigm to respond to the needs of OTC-audiometry, and iii) working with commercialisation partners to streamline commercialisation and roll-out. The outcomes of the project will take us to TRL 6, ready for regulatory approval and rapid piloting then roll-out with our commercialisation partners.

The project builds upon our existing technology for hearing screening assessments, which has received strong interest from researchers and clinicians due to its novel paradigm enabling accuracy advances over incumbent products. The project's innovation is in addressing unmet needs in the emerging OTC-HA market.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIMETOOLS LIMITED	The POWER Tool	£47,700	£47,700

LiMETOOLS is a specialist behaviour change company that uses psychological learning theory in the development of organisational behaviour change tools. The company combines feature film drama, comic-strips, animated quizzes and factual documentaries to generate user engagement and deliver habit change, measured through embedded data analytics.

LiMETOOLS are excited to be responding to the Government's call for innovation to assist the country in quickly re-establishing its economic resilience after the COVID-19 pandemic. In this response, LiMETOOLS have developed The POWER Tool \[TPT\] or Personally Optimising Work Environments & Routines.

With the enforced COVID-19 workplace adaptation, there is new market awareness that homeworkers require guidance in upgrading their many 'office' environments/routines, whilst supporting their operational well-being.

In this market innovation, TPT will alleviate security stress by recognising in the teaching and learning content the new COVID cyber risks, in addition to existing homeworking patterns. It will support those people who used to rely on office mentors and have little cyber experience, to personalise their home systems and grow in confidence.

TPT will also focus on individuals' well-being, acknowledging and addressing challenges faced by people for whom homeworking has never made up a significant part of their working life, and will also help regular homeworkers to benefit from ongoing training to optimise their home working environment.

The POWER Tool will be accessed by home working employees via their desktop using a protected URL. The interactive experience delivered over a three, fifteen-minute sessions, will enable the user to self-audit their physical working conditions and their virtual online security environment, whilst adapting their habits and routines to ensure their productivity is supported by more efficient and confident collaborative online techniques. The tool will also immerse the user within a short fictional drama serial that allows them to observe common homeworking experiences that are carefully designed to ensure that the employee's emotional and mental well-being remains positive.

The project team have support from the BCP Council, Bournemouth University Science & Technology Faculty, Dorset Police Cyber Unit and the Dorset Manufacturing and Engineering Cluster. These local advisors will support the development of the tool.

The Chancellor Rishi Sunak stated in a recent briefing: _"We need to connect as many businesses with their employees as efficiently as possible if we are to bounce back in the medium term"_ The POWER Tool is designed to support a quick response to the new norms of 'working from home'.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KHEIRON MEDICAL TECHNOLOGIES LTD	Adaptation of Mia® (Mammography Intelligence Assessment) to support breast screening programmes to address Covid- 19-related breast screening backlog	£49,806	£49,806

Due to the Covid-19 outbreak, multiple routine NHS services are on pause, including breast screening programmes. An estimated 3-9 month delay in women being screened will lead to more cancers being missed at the stage where they are easier to treat and immense pressure on an already overburdened system.

Our breast cancer screening AI solution Mia(r) (Mammography intelligent assessment) can help solve this impending crisis by automating some aspects of a screening programme whilst maintaining current screening performance standards.

We are proposing a six-month evaluation of Mia in a clinical setting with our partners to develop the prospective clinical evidence required for the accelerated adoption of Mia in time to tackle the impending crisis. The output of the project will be an AI solution that can be fast-tracked to reduce the backlogs caused by Covid-19 and give every woman in the UK a better fighting chance against breast cancer.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NONACUS LIMITED	Rapid WGS of SARS-CoV-2 and respiratory viruses for disease surveillance using nanopore sequencing	£49,591	£49,591

The current COVID-19 pandemic requires advanced diagnostics assays which can be rapidly deployed across many laboratories, globally and to allow for both diagnostic COVID-19 testing but additionally a for surveillance and monitoring of the disease within and between populations by public health institutions.

To date ourselves and others have developed and deployed multiple rapid antigen testing kits for diagnostic COVID-19 testing using both quantitiative real time PCR or indeed next generation sequencing (NGS).

Nonacus plan to test and validate a novel and highly rapid Whole Genome Sequencing library preparation approach for sequencing Viral genomes with nanopore sequencing.

With the continuous development of the pandemic, accurate real-time monitoring of virus mutations in close proximity (decentralised) to samples and obtaining effective information in a short period of time is critical. It is particularly important to understand the development and spread of the epidemic, guide prevention and control work, and vaccine research.

This method will provide the first commercially available method and a more rapid, lower cost and higher throughput advancement to current nanopore methods being used for whole genome sequencing (WGS) of SARS-CoV-2\.

Additionally as part of the technology validation we will validate the technology more broadly than just for SARS-CoV-2 and will develop the technology out as a Pan- Respiratory-Viral WGS screening technology, such that for any future viral outbreaks the technology could be used and also so that we can in the surveillance setting better understand using a single method what respiratory virus' are spreading in the population.

This grant will enable us to undertake final validation and optimisation work for the SARS-CoV-2 WGS library prep product within the Nonacus lab before validating this protocol within 2 clinical laboratories already undertaking SARS-CoV2 work.

Further to validating the method with SARS-CoV-2 we would then start the work up and early validation of a Pan-Respiratory-Viral product.

This project and the product which will be commercialised from its work is innovative as there is no existing commercially available rapid and low cost, highly multiplexed COVID-19 / respiratory virus WGS workflow or product ahead on nanopore sequencing. Further the existing open source protocols such as ARTIC while performing satisfactorily suffer with being longer, more complex and much more expensive than we have planned and also lack capacity for higher multiplexing.

We expect the outcome to be the first commercially available rapid and low cost whole genome sequencing methodology by nanopore sequencing for SAR-CoV-2\.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
HOTHOUSE MEDICAL LIMITED	Low-cost, Reusable, Fabric Mask with Virus Trapping and Inactivation Properties	£49,772	£49,772

The Coronavirus associated with the Covid-19 pandemic appears to be extremely contagious, forcing all health and care workers to take considerable precautions against being infected or passing the virus on. This has resulted in a huge demand for single-use Personal Protection Equipment, (PPE), particularly Face Masks. Such high demands from global healthcare systems are outstretching supply chains, leaving the general public unable to source suitable masks for their own use. This is particularly bad for the huge number of elderly and at-risk individuals who do not have access to appropriate PPE, effectively leaving them socially isolated until a vaccination becomes available.

Hothouse Medical aims to demonstrate feasibility of a low-cost, fabric mask with virus trapping and inactivation properties. A key differentiator between alternative masks with active sanitization properties is that our technology is expected to tolerate multiple, repeat, high temperature laundry cycles, thus creating a truly re-usable item.

Evaluations will confirm if such a mask technology can tolerate repeated high temperature washing whilst maintaining the ability to trap and inactivate Coronaviruses.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ATELERIX LIMITED	Extending the shelf life of viral swab samples for storage and shipment at room temperature	£49,147	£49,147

More than 380,000 people have been tested for COVID-19 in the UK, with less than 20,000 samples being collected daily. The government plans to escalate testing more than five-fold to 100,000 daily samples. However, a severe limitation of swab samples which collect infected cells from the upper respiratory tract is their short shelf-life of only 48-72 hours at 2-8°C. Cells are fragile and unable to survive outside their normal environment, limiting the amount of time they can be tested to detect the SARS-CoV-2 virus. Expired samples can no longer be used for reliable diagnostic purposes, and would lead to patients needing to be re-tested.

A technology has been developed that enables the safe storage of biological samples, extending their lifespan at room temperature. This technology has effectively preserved a wide range of cell types, such as stem cells, primary skin and blood products. Furthermore, the technology is being applied to pioneering therapies, currently undergoing clinical trials, that use live cells to treat diseases and conditions that cannot be successfully treated with conventional drugs. This project proposes to use this technology to design a novel and innovative storage appliance to preserve swab samples at **room temperature** to extend the viability of testing samples way beyond 72 hours (up to two weeks). This would contribute to the government's goal of increasing daily testing for COVID-19, by allowing more patient samples to be collected as they can be safely stored for longer, or transported further to centralised testing facilities. This new swab-storage product would consist of a kit that is simple and quick for healthcare professionals to use. A novel preservation kit such as this is essential to extend the shelf-life of patient samples for COVID-19 testing. More flexibility in the timeframe for swab samples to be tested would ultimately result in more samples being able to be collected and therefore more patients being diagnosed. Additionally, increased testing can help direct government policies on social and workplace policies, which would help the economy and wellbeing of UK residents. A product like this has the potential to optimise global disease testing for COVID-19, and in the future could be applied to other disease diagnostic kits.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DEEP RENDER LTD	AI-based Image-As-Video Streaming	£50,000	£50,000

Deep Render Ltd is a London based deep-tech start-up developing the next generation of AI-based media compression algorithms. Our proprietary and patented technology is at the forefront of machine learning research.

Deep Render is combining the fields of artificial intelligence, statistics and information theory to unlock the fundamental limits of image and video compression: The human eye is the best data compressor known to humanity - with compression ratios at least 2,000 times better than everything developed to date. Our Biological Compression approach approximates the neurological processes of the human eye through a non-linear, learning-based approach, thereby creating a novel class of highly efficient compression algorithms. We are world leaders in this domain, and our unique, AI-based image compression technology is already providing a 75% efficiency gain over the best previous compression standards.

As global data consumption is growing exponentially with more than 80% of traffic being Image/Video, Deep Render's AI-based compression technology is vital to bypass broadband constraints. The outbreak of COVID-19 has now accelerated this growth, as a result of the crisis, internet usage has increased significantly. In particular, the demand for live-streaming and video-chat services. Therefore we want to apply our already working image compression codec to live-video streaming.

The outcome of the project is to extend our image compression codec to an image-as-video live-streaming codec, at least 75% more efficient than the current state-of-the-art. Our target customers are the live video chat services (Zoom, Skype, Microsoft Teams), as well as the entertainment industry, including live streaming platforms (Twitch, Facebook, Instagram, YouTube).

Our value proposition is easy to understand. By making file sizes 75% smaller, we directly increase the bandwidth supply of the internet for live-streaming by a factor of 4\. Increasing the bandwidth supply by making file sizes smaller, is magnitudes more value- and time-efficient than increasing the bandwidth supply through rewiring the globe with progressively more fibre-cables. Deep Render is going to help create a new age in which bandwidth constraints are a problem of the past. As a result of COVID 19 solving this problem has gained more importance and Deep Render is determined to create a fast solution.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CLINIWASTE HEALTH SOUTH LIMITED	Development and Implementation of a Digital Tracking System for Clinical Waste	£49,115	£49,115

Waste producers have a duty of care responsibility to ensure their wastes are treated in an appropriate manner, reducing potential risk to public and/or any other persons potentially encountering it through its lifecycle.

Cliniwaste are planning the development and implementation of a unique sophisticated tracking solution, based on asset tracking software, to provide a cradle to grave solution for the tracking of clinical waste from the point of initial production within the NHS or alternative healthcare waste producer to its final disposal within a permitted treatment facility.

This tracking will allow full traceability without direct inspection as an alternative to waste auditing involving the manual sorting of bags and sharps, removing hazards associated with the handling and management of potentially infectious wastes along with providing detailed data for future analysis.

Data obtained will be used to strategically map the wastes lifecycle and establish where improvements can be made in their management including segregation and disposal relevant to the European Waste Hierarchy.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MODERN SYNTHESIS LIMITED	Reusable and high performance consumer face masks to protect against COVID-19	£49,954	£49,954

Alongside other measures, public use of personal protective equipment (PPE) and particularly face masks can help to reduce transmission of the COVID19 virus. Public use of face masks is increasingly being recommended by public health bodies around the world. It is important that certified medical masks and respirators are prioritised for medical workers however.

Current, non-medical face masks available for the public have limitations. Single use, surgical style masks, are not durable for reuse but using a new mask after each trip out would be expensive and create large amounts of waste. Cloth face masks that can be homemade or bought from textile and fashion companies are often better than no protection but these lack reliable testing and certification. They also must be used, removed and washed carefully. A consumer pollution mask can give better protection but is not specifically designed for infection control and may not be comfortable for long periods of use.

We are testing a reusable face mask prototype which could effectively reduce transmission and can be quickly tested and manufactured. The mask is sustainably produced, durable, washable, and comfortable whilst offering good filtration performance. In this project we are working to produce and test improved prototypes and to scale production.

In response to the COVID19 crisis, a huge new industry in consumer PPE is emerging. We are well positioned to help and to promote UK innovation in this field.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ALFORD FE LIMITED	Wearable technology to support social distancing	£48,794	£48,794

Overview

Our Workplace Social Distancing solution will allow people to safely return to work as the lockdown restrictions are lifted by tracking proximity to fellow workers using wearable technology that combines GPS with new indoor GPS and Bluetooth standards to, provide feedback to wearers when they are in each other space via vibration and alerts.

lssue:

Social distancing will prove a challenge to workers and employers alike as the pandemic enforces restrictions on social distancing.

In order to lift restrictions, it is likely controls and measures such as distancing will still need to be enforced.

These measures will likely be required for some time after any lockdown is partially / permanently removed.

Whilst in some industries it will be possible to implement home working, many other professions / jobs will require workers to be on site.

This will present challenges in tracking employee contact, movement and even workforce management.

Mobile technology for tracking on it's on won't provide instant feedback on distancing and may not be a suitable solution for many workforces based on:

* Phone signal challenges

- * HSSE rules preventing carrying use of a mobile device
- * Company or even government policies restricting the use of mobile devices in the workplace
- In addition, accuracy of current mobile solutions would not be sufficient to provide accuracy <2m.
- **Sectors that will be impacted by social distancing include:**

* Healthcare

- * Manufacturing
- * Construction

* Warehousing

* Food Preparation

* Community support

* Wellbeing (for example: public gym)

* Wholesale & Retail Trade

* Prison Service / MoD workers

An example of the problem:

The construction sector is one of the largest in the UK economy -- employing 3.1 million people or over 9% of the workforce. The construction sector contributes £117 billion to the UK economy, 6% of total economic output.

UK construction and civil engineering is one of the least prepared industries to work from home.

Leesman surveyed 19,906 people working in the UK construction and civil engineering space and identified 49% have no home working experience.

Our solution will provide highly accurate feedback on distancing and contact points making it safe for workers to resume roles where they need to be present at a work location and will provide additional information about infection and possible community transition.

The device will also help workers identify early signs of illness by monitoring key features such as temperature and other vital statistics such as heart rate.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NODENS MEDICAL LTD	MM-Wave at Home: Contextual Monitoring of Activities and Well-being	£49,556	£49,556

This project is aimed at introducing a new technology to allow close relatives or carers to remotely monitor the wellbeing of their loved-ones, without the need for inconvenient wearables or intrusive cameras.

Existing systems can monitor for falls, or track activities over the course of a day, but these require pendants, medallions, smart watches, or smart phones. These devices require charging, or may get lost or forgotten. To truly be reliable the system must be wearable-free.

NodeNs Medical will develop a sensor that is wearable free, safe, and does not require cameras or video. It will use harmless radio waves at powers lower than a Wi-Fi router or mobile phone, to create a map of activities in the home. While this map is not recognisable to humans (and thus will preserve one's privacy), an on-board artificial intelligence engine will be trained to understand what the map shows is happening. This will allow it to ask the resident if they are okay, call for help, or notify a relative or carer through an app. Wearable-free home care monitoring is ripe to disrupt the smart home market.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DECORTE FUTURE INDUSTRIES LTD	Remote Monitoring of Elderly, Vulnerable, and Enhancing their Mobility, through Adaptive Intelligent Clothing (Single Platform Wearable) for Care Homes, Assisted Living and Personal Health	£50,000	£50,000

Care homes do not presently have the resources to continuously monitor their residents' vitals. Research shows that such monitoring can lead to dramatically enhanced care and critical response, and a much more effective allocation of NHS and care resources (trials, even just of interval-based monitoring, have been associated with a 35% reduction in GP visits, 71% in hospital admissions, and 33% in emergency admissions). Yet for care workers, regularly monitoring vitals is a "time-consuming, new and potentially challenging task" (Barker _et al_. 2020, in _Age and Ageing_ 49, 142), generally unsustainable, and continuous monitoring simply impossible.

The existing technological landscape for monitoring in care is fractured, with individual metrics requiring individual devices - meaning any attempt at consistent or holistic practices implies rapidly scaling costs in an already struggling industry. Care home owners and administrators "all \[...\]seem to agree that the ideal solution is a single platform into which all stakeholders, sensors and individual devices can feed and access data, and which records and manages everything in a single environment" (Technology and Innovation in Care Homes - The SEHTA Review).

Decorte Future Industries seeks to offer such a single platform, enabling 24/7 remote care and monitoring of vitals for the elderly and vulnerable, adding mobility-enhancing capabilities, all through intelligent clothing. Designed originally in the context of Defence, in response to COVID19 the company aims to rapidly produce a basic version of its wearable IoT platform for the care sector, to help combat the effect of the virus.

The product is a low-cost, washable, intelligent shirt, worn by residents, that through a patent-pending non-intrusive exoskeleton adapts to any body-shape or size (thus allowing accuracy for embedded sensors), gathering, sending and remotely analysing biometric data. This includes early warning systems and distress detection. At the same time, the embedded hardware enhances the wearer's mobility and quality-of-life by allowing them to control surrounding devices with voice, gesture and touch, all through their clothing - more intuitive and simple than touching a screen/remote: a UI built on the human body.

The lack of continuous monitoring, combined with a condition that can rapidly worsen, means that the care sector is being hit extremely hard by the COVID19 virus. Critical rapid response often simply comes too late. Lack of long-term data-gathering means inability to undertake preventative or predictive care. With this project, we aim to test and rapidly deploy new technologies to change that narrative.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LAGONI ENGINEERING LIMITED	Digital Manufacturing Content Management System (DM-CMS)	£48,228	£48,228

The Covid-19 outbreak and the associated travel and isolation restrictions has presented the challenge of moving millions of workers rapidly from a manufacturing-based work environment to remote (home) working. In most cases this has been attempted simply by equipping workers with a lap-top to enable them to access files and servers, documents and emails from home in an apparently similar way to what they would usually do in the office or other permanent place of work. Some additional tools like Sharepoint or Dropbox have been provided but these are generic solutions not configurable to the needs of the manufacturing sector - the problem requires a new way of working, while up-holding the key objectives for the manufacturing businesses to avoid risk exposure.

This new way of working needs a solution which will provide remotely-located individuals with secure access to a system to facilitate document sharing, create auditable registration of change, provide evidence of document sign-off and approval whilst ensuring that trade secrets and commercially sensitive information are protected.

The manufacturing industry must adopt a strategy which both meets their working practices and be cyber secure to protect against malicious attacks and infiltration of private accounts and information. Moving too fast to the wrong solution has left many businesses exposed to security risk; however, not being able to move at all has caused major financial impact and the inevitable price being paid by employees as they lose their jobs.

Through this project, Lagoni intends to build a Digital Manufacturing Content Management System (DM-CMS) which will provide people working from home with the security and robustness to share and collaborate on documents and projects, allowing them to work in close co-operation as if they were based in the same manufacturing facility.

During Covid-19, working from home has become the new norm for many workers who would usually be located together. Our approach will create a whole new approach to business practice for collaborative working, facilitating remote working as "business-as-usual" for many companies, thus reducing the need for unnecessary travel to the office or site location every day.

Add to this the savings in cost, improvements in safety and environmental advantages of having people working efficiently from anywhere in the world in the future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIBERTINE FPE LIMITED	Care home BiPAP breathing aid for early stage intervention	£48,917	£48,917

A significant number of COVID-related deaths in the UK, EU and worldwide occur in care homes where elderly residents contract the disease but cannot be hospitalised due to a lack of capacity or poor expected clinical outcomes from later stage medical interventions such as invasive ventilation. Recent studies have shown that the application of bi-level positive airway pressure (BiPAP) respiratory support for patients at an early stage of influenza-type respiratory diseases reduces progression to ARDS for a significant proportion of patients.

A BiPAP device is similar to a user-operated continuous positive airway pressure device (e.g. a sleep apnea machine) but provides two pressure levels to reduce breathing effort and assist exhalation.

The objective of this project is to create a low cost BiPAP device suitable for deployment in UK care homes to reduce mortality due to COVID-19 infections during 2020, and to provide an effective early stage intervention to reduce mortality in subsequent annual flu seasons.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Nuki Health	Accelerate the launch of a telehealth solution targeting paediatric dietetics	£46,241	£36,283

As NHS resources are very limited and focused on severe issues, access to NHS paediatric dietitians through GPs is highly restrictive and does not allow parents to get qualified advice for all the nutrition-related concerns listed above. Due to the recent spread of COVID-19, many NHS dietetic appointments are being cancelled due to the redeployment effort and waiting times could reach up to a year.

NuKi Health (www.nuki.health) is a telehealth platform that provides families with easy, quick and affordable paediatric dietetic advice. Parents can get guidance and advice through a combination of video calls with a registered dietitian and virtual coaching by a dietetic coach that answers questions via inapp chat, and nutrition advice in the form of dietitian-written articles. NuKi aims to support parents with weaning, food allergies and intolerances, food refusal issues and weight management.

NuKi provides a platform that will allow dietitians to work remotely and flexible hours, allowing them to earn additional income. NuKi will also provide the technological tools to improve the efficiency and effectiveness of dietitians: NuKi will use automation, call transcription for reporting, artificial intelligence and voice recognition technologies to help dietitians to focus on the most value-add tasks.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PTML (Pilkington Technology Management Ltd)	Antiviral coatings for glass	£49,422	£49,422

Virus transmission is possible from contaminated surfaces for days. This project will evaluate the antiviral functionality of two products which are in late stages of development within Pilkington (NSG group) to actively reduce the viral load on glass surfaces, specifically SARS-CoV-2\. Currently there is no antiviral coated glass product available which has these desired properties. If successful a product with high durability will be available for immediate use in barriers, buildings and contactable surfaces in retail.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LETT TECHNOLOGIES LTD.	Community Response Platform	£49,345	£41,943

What we are doing

We firstly want to create the infrastructure to make it easy to get community-based assistance to those who need it. We know that many people are keen to help during this time and with many non-key businesses facing downtime, there is a volunteer workforce that is largely untapped. Facilitating a national response to this is challenging and can become fragmented. The project is about creating a standardized way of connecting hyperlocal volunteers with vulnerable individuals and those who are self-isolating to enable not-for-profit services such as essentials shopping and prescription delivery. We also want to assist supermarkets by crowd-sourcing food deliveries enabling people to stay home and save lives.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
3D METAL PRINTING LTD	VR surgery training	£48,324	£48,324

3D Metal Printing Ltd. is a MedTech engineering company based at the University of Bath Innovation Centre.

Our mission is to restore outstanding patient quality of life using custom-made treatments. We develop solutions for public health improvements by continually innovating and improving our product range to deliver superior patient outcomes. We additively manufacture a range of custom-made medical devices and digital applications for 3D surgical planning.

TOKA(r) HTO has been developed in collaboration with the University of Bath and supported by orthopaedic surgeons and NHS Trusts. This innovative surgical procedure is currently undergoing a multi-centre clinical trial in the NHS (lead by Oxford University Clinical Trial Research Unit) and in Europe (Rizzoli Orthopaedic Centre -- Bologna, Italy). Trials have been currently postponed as a consequence of the global pandemic, heavily constraining NHS and public resources.

The TOKA project has the real potential to unlock NHS resources particularly under this unprecedented situation and to provide benefits to patients currently suffering from knee OA.

The introduction of virtual training and planning would allow faster NHS adoption of the TOKA HTO procedure through rapid upskilling of surgeons and supporting a transition to greater remote engagement with elective patients. The TOKA VR technology will provide benefits to healthcare providers in terms of social distancing and reduced risk of infection through:

*Reducing the number of physical interactions between patients and surgeons through remote consultations;

*A virtual learning environment reducing travel time to and physical laboratory time in practising procedures

*Reducing surgery times

*Reducing staff numbers in theatres due to the simplified TOKA procedure

*Integration with the overall TOKA surgical platform could save the NHS up to £40M annually based on treating 3,000 HTO and 11,000 UKR cases in the UK annually (Health Enterprise East, 2019).

The TOKA VR surgery training will be developed by our software developers' team, experienced in delivering surgeons' planning and visualisation tools, with the support of the University of Bath and a number of NHS and clinicians currently involved in the clinical trials as in-kind contributors.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SEEAI LTD.	Supporting future radiologists' education during and after COVID-19 through an AI- supported training environment	£47,313	£47,313

Due to the COVID-19 pandemic, many trainees and students in radiology are reporting disruption to their education. Social distancing measures and travelling restrictions have limited the traditional trainee-faculty member workstation teaching, and face-to-face lectures have been replaced by live conferences, class recordings, or cancelled altogether. Radiology students have recognised that while various digital resources provide theoretical knowledge, alternatives to practice-based training are limited. To solve the problem, we propose an AI-supported high-fidelity virtual training environment for reporting x-rays.

The training system uses an interface of a real diagnostic environment and trainees can report x-ray images with an English free text, emulating the real reporting practice. The AI algorithm interprets the raw report and trainees receive instant feedback. As the system is web-based, it can reach trainees and students whose education has been affected by the global pandemic.

Furthermore, it can be of value to educational institutions by utilising the training system for practice-based examinations. Usually, assessors individually review and provide feedback to student's reports. Our system allows automated grading and real-time feedback simultaneously to multiple students.

We are a team of domain experts formed of technologists and doctors, focused on developing intelligent solutions to support radiologists.

The pandemic has widely disrupted lives, including that of radiology trainees, and forcing changes to how we deliver education. As the end to this pandemic is still unclear, we envision to create a sustainable solution that contributes to the future of radiology education and provide an ever-expanding content to support trainees and students in their life-long learning journey.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARALIA SYSTEMS LIMITED	PHOTOMETRIC STEREO IMAGING USING A SMART PHONE	£47,856	£47,856

The project provides a low cost photometric stereo illumination device and associated software that enables a smart phone to capture and process images revealing a high resolution 3D image of a surface. The images can be transmitted to a remote location for expert analysis. The method of surface reconstruction is protected by patents held by the University of Strathclyde Institute of Photonics.

The photometric stereo images aid diagnosis of dermatological conditions by means of tele-medicine. The same 3D technique is also used in non-destructive testing, security and surveying applications.

The simplicity and low cost of the device ensures that they may be readily distributed whenever necessary.

The project also includes facilities for archiving, displaying and processing images through the application of Machine Learning.

The illumination device and associated software will be available to the public by Q2 2021\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AUTSERA LTD	Remote Social Training for Autistic Children during Covid-19 Lockdown	£49,676	£49,676

Autism is a spectrum of developmental conditions that affects how people perceive the world and interact with others. Social skills challenges lie at the heart of autism and require social skills training. Covid-19 pandemic disrupted the provision of social training for autistic children in the UK, due to school closures and restrictions on movement and travel.

To address this problem, we provide an innovative product that helps children develop social skills while staying at home. The product is designed by autism and social experts, based on effective social training programmes. It uses intuitive, user-centred design; gamification; and responsive technology, to provide an accessible, engaging and safe product for autistic children.

The project will be conducted and delivered under Covid-19 lockdown restrictions. The project team will work and collaborate remotely. We will build on work and research we conducted previously, to fast-track the technical development process, and deliver our product before the end of 2020.

The project is beneficial for autistic children, their families and society at large. It enables autistic children to develop their social skills, under Covid-19 restrictions. It builds their confidence and improves their social inclusion, enrolment in formal education, employment prospects and quality of life. It fosters social inclusion and cohesion, and benefits the national economy.

The project responds to emerging challenges caused by the Covid-19 pandemic, and builds resilience to cope with any future lockdowns, due to the resurgence of Covid-19 or the potential emergence of new pandemics or other adverse events.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INSTRUCTOR GURU LTD.	Application of proprietary AI computer vision software to enable remote, digitised management of patient recovery from orthopaedic surgery	£40,816	£40,816

This project is designed to model and develop a digital application to facilitate the use of Instructor Guru Ltd's proprietary software for management of orthopaedic recovery remotely, and more cost-efficiently, whilst improving patient care.

The COVID-19 pandemic resulted in postponement of many orthopaedic surgeries, which has created a backlog. Working with the Life Sciences Hub Wales, Instructor Guru Ltd. is capable of developing a service which can aid healthcare providers in tackling this backlog by reducing the number of physical follow-ups needed, replacing them with a superior digital service. This project will make it possible for Instructor Guru Ltd. to develop a prototype and work with surgeons and healthcare providers such as NHS Local Health Boards to deliver early trials and gain clinical validation.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LEGENDARY GAMES LIMITED	Virtual 3D Gallery	£49,556	£49,556

The pandemic lockdown has exposed how many cultural sites are totally reliant on customers physically visiting for income. With travel restrictions expected to continue in one form or another for the foreseeable future, our innovation is aimed at enabling these sites to create and maintain a web-based Virtual 3D Museum or gallery. This would provide an online experience for users anywhere in the world, potentially unlocking an untapped new revenue stream from "virtual visitors".

Sites would upload 3D models of exhibits that have been previously digitised, and then use a simple online editor to create virtual 3D spaces where the exhibits can be positioned and then annotated with information, which could include text, images and links to relevant websites.

End-users would then be able to access these virtual environments from their browser (including using Google Cardboard style VR) and explore them in an immersive way that at least partially recreates the experience of visiting a museum. This would include links to the museum's online shop to make purchases.

Because the museum curators control the content it could be updated regularly without requiring commissioning developers, including repositioning the exhibits to create themed exhibitions as in a real museum.

In the longer term, the same technology could be extended to provide interactive guidebooks for physical visitors without requiring users to download an app (something we know from speaking with museums is a major sticking point).

The key innovations are:

* An online 3D museum experience delivered straight to the user's browser

* Museum curators being able to update exhibits just as they would in the real world

* An experience that can be used by both remote visitors and physical visitors to the museum



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIGHTWORKS POLY LIMITED	Overcoming a major technical barrier to global trade in fresh produce (horticulture) by exploiting light-induced crop resistance (SAFECROP).	£49,762	£49,762

Global use of pesticides has greatly improved crop yields but mounting evidence demonstrates multifaceted problems linked with long-term exposure to these chemicals; issues spanning society, economy, environment & human health. Even under normal operating conditions, maximum residue levels (MRL's) of pesticides on fresh produce (fruit and vegetables) are a significant supply chain issue leading to large-scale scrappage of valuable produce at international borders when it fails testing. With the emergence of COVID-19, suppliers warn that fresh fruit and vegetables will become increasingly scarce in Europe as the pandemic hampers the global movement of produce, the labor needed for crop harvest and technical barriers to trade; of which meeting strict MRL testing requirements is the highest priority. Governments and the global supply chains are now urgently looking at ways to ease any shortage, including "green lanes" to allow fresh produce to move guickly across borders but MRL testing procedures cannot be relaxed without risking consumer safety. We propose a possible solution to this problem by forcing crop plants to fight off economically important insect pests and disease themselves thereby reducing / or completely negating the requirement for pesticide usage in some circumstances. Our team at Lancaster University developed (and patented) such a technology over a decade ago now and licensed it to a global crop company. That technology relies upon crop seed being treated with a chemical that plants naturally produce to mount their equivalent of an immune response; not too dissimilar the type of vaccination now being developed for COVID-19\. Once the seed are treated the chemical breaks down within a few hours but the developing crop 'remembers' how to mount a faster and more intense response to future attack by economically important pests and diseases reducing the need for chemical pesticides. Whilst the technology has proved successful in some key agri-crops, limitations include the cost/stability of the active chemical and its need to go through normal pesticide registration processes which are rightly thorough and complex but also expensive/time consuming. In this project we propose to develop a highly-novel alternative approach that would be just as effective as our current technology, but use a simple light seed-treatment to duplicate its benefits allowing growers to reduce chemical pesticide use and thereby removing a major technical barrier (MRL's) to international trade in fresh produce.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LENTUS COMPOSITES LIMITED	MRI Band	£49,870	£49,870

Lentus Composites is a critical component supplier to manufacturers of MRI scanners of the components that support the heavy magnet surrounded by liquid helium. Due to the Coronavirus Covid-19 pandemic, MRI manufacturers have seen an increase in demand for MRI scanners both as a safe diagnosis and research tool for Covid-19 infection without the radiation hazard of X-rays used in CT scanners. The situation is complicated by the fact that demand has doubled for high-field MRI systems because they have higher resolution and these account for an increasing proportion of MRI scanners. High-field MRI utilise magnets (7T) that are particularly heavy and have a high specification in terms of mechanical properties.

Our objective is to develop both the materials and process to improve both productivity and product performance meeting or exceeding the specifications set by our customers. This project if successful will protect jobs at our Eynsham site and enable us to meet the increased demand from our customers both in the short, medium, and long term.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SUNDOG MEDIA TOOLKIT LTD	Addressing an urgent need of the film and television industry: Managing QC of film and television content remotely using SaaS	£49,069	£49,069
This project replaces the highly manual and equipment-intensive quality control checking process for film and television content with a cloud-based software solution.

This will enable the process to be carried out remotely, allowing continuation of the supply chain and safeguarding jobs that are currently at risk due to Covid-19 restrictions.

The new tool will also add value to the QC process by capturing and managing the huge number of data points created, resulting in increased data insight and a more efficient QC process.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IGNITE DATA LIMITED	IGNITE Data – mitigating disruption to clinical trial management	£50,000	£50,000

Clinical research has been severely impacted by the Covid-19 pandemic.

One of the key factors affecting doctors and researchers' ability to conduct clinical studies under Covid-19 conditions is the current need to manually review and transfer data between databases held by different providers. This situation has been worsened by the need to redeploy or isolate staff who'd normally perform this data transcription.

This has inhibited clinicians/researchers' ability to initiate and manage clinical studies effectively, including those seeking therapeutic or diagnostic approaches that could directly benefit Covid-19 patients.

IGNITE Data is a leading British business that specialises in helping organisations set-up and manage clinical trials effectively.

Its Archer platform is an innovative digital-health tool that uses advanced software to enable data to be transferred more easily between critical healthcare systems. The proposed project will help it to fulfil its potential to reduce the disruption currently affecting clinical research, helping new medicines and diagnostic tests to be developed more quickly for a variety of diseases and applications, including for Covid-19 itself.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NATIONAL CARE FORCE LTD	National Care Force	£49,052	£49,052

The social care sector has been especially hard-hit by the recent Covid-19 pandemic with around 250k staff currently sick or self-isolating; meanwhile the users of these services still need to receive the care and dignity they deserve.

Staffing in the social care sector will continue to be difficult for many structural reasons; hence, some of this shortfall must be met by bringing volunteers to the sector. This will have extensive benefits, not only for the social care providers and the individuals involved, but also for the wider communities they are part of.

Volunteers working in the social care sector must be suitably vetted (ID and background checks) and able to help. Finding such volunteers is traditionally inefficient and time consuming for all involved. These factors often deter organisations from accessing a potentially willing pool of volunteers to help support them in their care settings.

To address these needs, the National Care Force is applying for funding to develop an innovative Applicant Tracking System ("ATS") designed especially to support the social care sector in sourcing and communicating effectively with volunteers through the COVID-19 crisis and beyond. The system will incorporate:

- * Dynamic Volunteer ID Verification;
- * Management of volunteer compliance requirements to meet the Care Quality Commission (or equivalent) standards at scale
- * Validation of Covid-19 status of the social care provider and its users;
- * Validation of Covid-19 antibody status of volunteers;
- * Multi-site support for large scale care providers to manage volunteers at scale;
- * In-system messaging between providers and volunteers to increase efficiency and speed.

This system will help with:

- * Speed of recruitment of volunteers to the social care sector;
- * Attracting new groups of volunteers to the sector via tech-enabled solution;
- * Establishment of ongoing relationships between providers and volunteers;
- * Effectiveness of volunteer recruitment efforts for already-stretched teams;
- * Reduction in rates of transmission of Covid-19 within the social care sector;
- * Safety and protection for both volunteers and providers.

The National Care Force was created to connect volunteers wanting to support the social care sector with providers that need help. While it was established to meet the immediate staffing shortages of social care providers in the current crisis, we intend for it to become a sustainable and cost-effective solution to support social care providers in the long-term.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KNOWLEDGE OFFICER LTD	Using Data Science approaches to build Automated Job-role specific Skills Assessment to close the unemployment gap and handle applications surge post COVID-19 lockdown.	£47,661	£47,661

Knowledge Officer create personalised, dynamic e-learning paths to digital content for professionals based on their own career goals, to help them land jobs in tech-related roles. Our approach to career-oriented learning is based on real market-signals. At the core is skills and job titles taxonomy which provides a consistent way of helping users learn more about the skills they need and the value of those skills. We want our platform to reflect the exact and current market needs related to skills and requirements of the job roles of the highest demand. Based on this valuable data, our technology then recommends a personalised learning path, as unique to each learner as their own DNA, and also recommends job applications relevant to the career goal that they are after.

Knowledge Officer aim to create the shortest and most efficient path to employment and career progression. Our e-learning platform technology builds a personalised learning path, helping the user to learn with a purpose to achieve their career goals. Understanding the true capabilities of people as they are going through learning through ongoing assessment is really essential to measure the impact of the learning experience. Pairing that with recommendations for jobs that one can apply to based on the specific job needs and one's capability is truly innovative.

Our solution will measure the proficiency at the individual skill level grade and compare that with the skills needed for a certain job post of a given job role to measure the match score and the probability of someone's success on the job. Our scoring system will get smarter with more people going through assessments, applying to jobs, getting accepted/rejected and then measuring the duration they stay on the job as a true measure of the quality of the recommendation.

This project will conduct challenging research to extend our technology so that given a job post, we will be able to generate an adaptive assessment on the fly based on the skills required of the post and generate a match/fit score after a job candidate finishes the assessment.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAMPBELL COUTTS LIMITED	Design, prototype and testing of equipment for applying flock onto swab sticks for collection of biological specimens	£45,037	£45,037

On February 2nd, 2020, the Centre for Disease Control and Prevention (CDC) released guidelines for collecting clinical specimens when novel coronavirus infection is suspected in human subjects; these guidelines include the use of synthetic fibre swabs, with plastic shafts: these are know as "flocked" swabs. One of the major causes of the delays in coronavirus testing throughout the world is the huge demand for testing swabs far outstripping the existing production capacity available from only a very few manufacturers, with no production capacity in the UK.

Campbell Coutts Ltd (CCL) is the UK's leading and longest established supplier of flocking equipment and consumables; we design and manufacture small and large scale equipment for the application of flock fibres onto a variety of substrates, for numerous industrial uses.

On completion of this project CCL will have designed, concept tested and created a working prototype of an innovative piece of equipment capable of electrostatically applying flock fibres to swab sticks, creating effective diagnostic testing swabs for the collection and release of biological specimens.

We will develop the technology and design the machine capability for bulk-loaded test swab sticks to have nylon flock fibres applied and cured, at a production rate of 6,000 to 10,000 per hour in a clean environment,

We will complete the design and concept testing of a prototype within 3 months. Subsequently, finished production units can be produced within 10 weeks, for organisations who wish to produce and distribute flocked swabs for medical testing.

We will also be able to supply the adhesive and flock fibres required.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ETHERSEC INDUSTRIES LTD	Protecting the NHS' staff: AI medical surveillance to measure viral exposure.	£48,566	£48,566

We intend to develop an autonomous, AI based, medical surveillance system that measures and models the viral exposure of front line medical staff in real time. To capture this data we shall develop a novel wearable device, uniquely suited to a hospital environment, to provide IoT style data, captured by reliable, commercial off the shelf products that have been repurposed, again in a innovative way. In an operational innovation, the risk that the staff are exposed to, may then be measured and this risk minimised: a workflow successfully in operation in the nuclear industry. This information and technology will allow the country to prepare for the next infective wave, SARS-CoV-2 mutation or zoonotic disease to challenge the health service.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THAYAHT LIMITED	MotionRiver: Universal Mocap Streamer	£49,098	£49,098

Imagine immersing yourself in a VR experience in the UK where all the characters are animated by live actors from Australia, or a dance video game that features real dancers captured in Mumbai. _MotionRiver_ allows developers to create new types of responsive experience. From live immersive performances to interactive video games - the difference here is that instead of repeating the same programmatic or looping sequence, over and over, characters will be able to react and respond in a natural and realistic way - because they are controlled by real actors. _MotionRiver_ is an innovative open-source software toolkit that inputs and outputs a wide variety of mocap data which it converts into a 'universal' format. Just as Android and iOS work on different phones, there are also different types of mocap data - and this tool will solve the compatibility problem - allowing more interconnectivity. The application streams data over the internet to remote computers running the application which can receive and use the motion data in the desired format.

The innovation stems from research questions relating to how to capture and disseminate liveness across digital platforms. How do we create new spaces for immersive performance to be made? How do we bridge the gap of distance and work within the new context of dislocation and confinement? _MotionRiver_ is a new tool that will enable greater accessibility of motion capture and innovate new methods of cultural and creative collaboration.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WORKFINDER LIMITED	Platform solution to match University students with remote work experience placements in SMEs across the UK	£49,952	£49,952

Workfinder's mission is to democratise work experience by giving students, whatever their background, access to work experience at the UK's exciting growth companies. We believe that by mobilising this talented and bright population, we will help to bridge the skills gap that many of the UK's businesses are facing.

This summer, we face a unique situation. Many start-ups and scale-ups have seen a significant impact to their workforce as a result of COVID-19 and are not considering taking in-person interns this summer. The larger employers are reviewing their structured summer work experience programs and some are already cancelled with more cancellations expected.

According to [ISE -Institute of Student Employers][0] - 68% of 'in person' work experience this summer has been cancelled due to Covid-19\.

This is a problem because millions of students are stuck at home with the prospect of no work experience this summer. Recent graduates have seen their graduate placement schemes cancelled. They are faced with the prospect of COVID-19 impacting their future employment prospects as well as their academic study. As a result, they are available to do remote work experience and are extremely motivated to do so.

The UK's growth companies have an immediate need for talented, bright students to help them get them through this time when their resources and budgets are severely limited and they are more accustomed to working remotely.

The Workfinder app matches students with companies to do two-week remote work projects that are highly relevant to both sides. Projects include creating digital marketing content for social media channels, user testing, branding and mobile web design, competitor landscape analysis and many more. Our matching algorithm ensures we match the right students with the right companies.

We will be launching across the UK this summer.

[0]: https://ise.org.uk/default.aspx



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOLDER CREATIVE LIMITED	Solder	£45,947	£45,947

Here to Hear is a new online portal, proposed by Solder Creative, designed to give NHS front-line staff an urgently needed first-aid approach to their own mental health -- by connecting to, and utilising, the spare consultancy time of professional psychologists, which has become available because of Covid-19\.

To date the main focus of the Covid-19 effort has been on the physical health and protection of front-line staff and key workers, making sure the workforce can be present and hands-on with PPE and testing. But contracting Covid-19 is not the only issue. It's the _fear_ of catching the virus, what it will do to our families outside the hospitals, anxiety about what tomorrow holds, confusion over protocol changes, information changes, unfamiliar roles, whether patients will cough on us, whether that patient will even be there tomorrow are very real worries - the stress and anxiety is just as disabling as the illness itself. This issue is enormous and has so far been neglected.

"This is a traumatic stress mountain that is developing, and we should learn from experiences of our armed forces following conflicts, that the earlier intervention is offered, the lower the level of permanent mental damage."

From the other side of this coin, initial research reveals that many NHS psychologists are stranded at home, waiting for redeployment, whilst practising psychologists have lost 2-3 appointments per week following the impact of social distancing rules, and patients' inability to take part in virtual consultancy.

If we only count the c.12,000 Health and Care Professions Council registered psychologists we can potentially offer 24,000 one hour appointments every week.

The system will make it easy for psychologists to make their spare appointments available on the portal. Email reminders will be sent to front-line staff as patients and to the psychologists.

For speed of development, Solder Creative will use their existing digital frameworks (back-end) and technologies where possible to ensure maximum pace, efficiencies and security protocol. The online interface (front-end) will be designed to make appointment bookings easy and secure, then connecting to a secure two-way video chat platform.

In a very practical sense, Here to Hear is an innovative platform that will provide our brave NHS staff with easy access to valuable and unused mental help appointments, delivered in the most effective way.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CENTRONIC LIMITED	Ultraviolet Sensors to Enable and Enhance Non Contact germicidal sanitisation (UV- SEE-NoCo)	£49,720	£49,720

The worldwide lockdowns in response to the Covid-19 pandemic have saved lives but led to massive disruption to how we live, immense personal sacrifices and economic challenges for the UK and other countries. It is now becoming clear that we will need to develop strategies to relax or emerge from lockdown before a vaccine against coronavirus is widely available.

Resuming "normal" life and economic activity will require people to become confident that it is safe for them to return to shared spaces, public transport, social venues etc. and that they can safely handle objects which others have touched, used or prepared: parcels, clothing, meals, cutlery and so on.

In many settings it will not be practical or appropriate to use chemical disinfectants on a widespread and continuous basis: one cannot perpetually spray bleach within a bus or prove that no-one has coughed near your place setting in a restaurant. In many cases a non-chemical, non-contact disinfecting method will be required and fortunately one already exists. Deep ultraviolet light ("UV-C") is already known and used to disrupt the genetic material of germs including viruses, bacteria and fungi. Because of the way it works this does not depend on further detailed studies of coronavirus: with a strong enough dose it just kills the virus. UV-C disinfection is already used in some air conditioning and water purification systems, so it is almost ready-to-go against coronavirus but...

We anticipate that UV-C disinfection will become much more widely used and will be incorporated into many new and previously unimagined products. The key question will be: "how do we know it has worked?" There is no continuous real-time method for detecting coronavirus, so the only way of knowing that a UV-C disinfection can be trusted is to measure the dose of UV light.

In this project we will create a detector which is optimised for affordable deployment to validate the delivery of UV-C doses. This will be an electronic component which equipment manufacturers can build into the controls of their products to ensure that an effective "kill" dose is always applied when the equipment is used.

As an established detector manufacturer we have a team of experienced engineers who happen to have research backgrounds in designing this type of device, and a UK factory where we can't wait to start making them. To make all of us safer and get the economy back on its feet.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMC HYCAL LIMITED	Self-contained ozone controller for routine Covid-19 inactivation	£49,688	£49,688

Covid-19 has caused global devastation largely due to its capacity to remain highly infectious for long periods outside the human body. Early indications are that it can survive in air for up to 3 hours, on cardboard for 24 hours, and 2--3 days on plastic and steel surfaces. Whilst specific areas and objects may be manually de-contaminated by wiping with bleach or surgical spirit, this procedure is labour intensive, costly, and limited to easily accessible regions. The Covid-19 crisis has necessitated severe changes to the way humans interact, and a similar step change is needed in our approach to decontamination in order to maintain a safe environment. There is a pressing need for an aggressive, effective, decontamination solution that can easily and safely be applied to commercial, educational and medical areas, to enclosed spaces containing goods, equipment and food, to care homes, and to the transport industry.

Ozone gas is a powerful oxidant with well documented anti-microbial and anti-viral properties. Due to its gaseous nature, it is able to access and treat all regions including underneath surfaces of furniture, crevices, and fabrics. Unlike conventional cleaning methods (e.g. bleach), it leaves no residue, decomposing naturally back to oxygen. Ozone has been used to disinfect water on an industrial scale for decades, and has found niche applications such as medical instrument sterilisation, for which it has FDA approval. However, widespread adoption of ozone sterilisation has been precluded by the technical inadequacy of existing solutions, originating from their use of ambient air as a source of oxygen for ozone generation. The alternative to ambient air is to feed the generator with pure oxygen from a gas bottle or external gas line, making the final device heavy, cumbersome, with the additional cost and inconvenience of obtaining and re-filling oxygen cylinders.

Our proposal is to develop a precision ozone controller employing a generator fed by ultra-pure oxygen, obtained by pumping oxygen from the air across an oxygen-permeable zirconia ceramic membrane. This innovative approach overcomes the performance issues associated with generating ozone directly from air, because ultra-pure oxygen is generated in situ inside the analyser, and delivered immediately to the generator inlet. This solution has the potential to be highly technically effective, low cost, lightweight, silent and low power.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MEDPLAY LTD	'Navigator' - An innovative approach to mobilise our FiY1 doctors during this emergency crisis.	£49,784	£49,784

The COVID-19 pandemic has caused the NHS workforce to be stretched beyond reasonable demands. One method of relieving this workload was for the UK Medical School Council to fast-track final year graduated medical students to qualified doctors. These newly qualified Foundation Interim Year 1 (FiY1) doctors are a valuable resource and will be completing low-risk procedures and clerking.

The potential problem is effectively utilising this unprecedented FiY1 role in a way that truly alleviates the extra workload for current NHS staff. Maximising time and resources of experienced clinical staff is key to fighting this pandemic. The novelty of the FiY1 role invites inevitable uncertainty, worry and communication issues between current medical staff and FiY1 doctors. We predict this will potentially lead to an inherent inefficiency within the healthcare system that the NHS cannot afford during a pandemic (e.g. work flow, burden on supervision roles and coordination between staff). Our proposed mechanism addresses the current workload during this pandemic.

Our service will replace the need of face-to-face coordination of new FiY1s by supervisors; in real-time, FiY1 doctors can be requested to wards by other staff members for specific duties they are competent in. This not only frees-up time for experienced staff to focus on other work but also maximises the efficiency of the FiY1 doctor. For patients, this means faster diagnosis and treatment speeding up the patient pathway and less time in hospital; for staff this means a more productive workday. We envision FiY1 doctors flowing between wards across the hospital, meeting demand in clinical settings quicker than ever before - once one task is completed the FiY1 can simply open our application and move onto the next clinical duty. To enhance their performance with this technology, we will digitalise responsibility of work through weekly work reports that can be submitted to their clinical supervisors. There is no patient data transferred and staff details are anonymized, so there are no data protection or security issues. We are facilitating the paperless NHS agenda and reducing face-to-face communication which can be complicated during a pandemic.

The necessity to stream-line workflow is more vital than ever in the current healthcare climate. We have reinvented the way medical staff will liaise with FiY1 doctors during this difficult time, and we hope also doctors and students of the future. Patients will also be the beneficiaries of a more responsive NHS service.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AXIAL MEDICAL PRINTING LIMITED	Using AI to create 3D printed models to reduce a rapidly growing surgical procedure backlog caused by COVID19	£49,565	£49,565

Axial3D's vision is to transform the quantity and quality of surgeries that NHS Trusts can complete, as they start to recover from this COVID crisis, with the application of this vision for this project at the Belfast Trust, being to rapidly address the increasing backlog of critical surgeries. Since the start of the COVID crisis, all NHS Trusts have had to reduce the number of surgeries they are performing every week, in many cases stopping entirely. Every week this surgical capacity reduction continues, increases the burden on surgical teams, causing a life-threatening backlog in complex and critical care surgeries.

Professor Derek Alderson, President of the Royal College of Surgeons, said at the end of March 2019: _"The backlog of patients waiting to start treatment continues to grow. There are now over 100,000 more patients waiting longer than 18 weeks to start treatment when compared with the same time last year. There is an urgent need for a plan to deal with the increasing backlog of patients"._

Axial3D's focus for this project is to immediately provide surgeons with a game-changing new level of insight into their patient's anatomy - micro mm accurate 3D printed models. These models give surgeons a unique insight into the precise nature of the patient's condition that to date, they only will see when they have actually started the surgical procedure. Surgical teams in over 100 hospitals around the world already use our 3D models and every day provide us with quantified testimony as to the game-changing impact they have on planning surgeries. As part of this project Axial3D will develop an innovative solution using AI to help the NHS receive more of these models for patients during and after the COVID crisis. This unique approach of using artificial intelligence, allows us to automatically create 3D printed models of the orthopaedic or cardiac condition for each patient. We create these models automatically from the patient's own scans. By providing models for 75 patients, over the 5 month project, the orthopaedic and cardiac teams in the Belfast Trust believe we _can significantly reduce or even remove the backlog of surgeries due to COVID_. We will measure the benefits of the use of our models during this project on each patient, and then share the results with the wider NHS, offering the potential for a fundamental change to the way surgeries are planned.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EXPLAIN MY PROCEDURE LTD	Animation-Supported Communication in Intensive Care	£49,850	£49,850

The coronavirus pandemic has created new barriers to medical communication at the time it is needed most. Face-to-face explanation of medical treatments is no longer possible. Patient understanding of their illness and treatment is incomplete, with family denied hospital access and language services restricted. The usual doctor-patient-family relationship has been transformed.

ExplainmyProcedure is a multi-language online platform for digital animations that supports medical communication and has been shown to improve understanding of the benefits, risks and alternatives before cardiac and surgical procedures ([www.explainmyprocedure.com][0]). The technology is now being developed to serve healthcare workers, patients and their families in the challenging acute and Intensive care (ICU) environment that has become the frontline of the coronavirus pandemic.

Explain my procedure animations will facilitate understanding of the disease, procedures that may be needed such as ventilation and any specific treatments that emerge as useful in combating the virus. The animations will be freely available during the pandemic in languages that can be selected by the user on an online web-platform to bridge the communication gap between hospital staff, patients and their families during the outbreak.

[0]: http://www.explainmyprocedure.com/



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ELECTRONIC MEDIA SERVICES LIMITED	Conquering COVID in Construction – a safe, managed return to site for construction workers	£49,882	£49,882

The IHS Markit purchasing managers' index for UK construction dropped to 39.3 last month from 52.6 the previous month, the lowest reading in more than 10 years. The UK construction sector employs 2.4m workers many of whom are self-employed and are unable to benefit from the Treasury's Furlough Scheme. The sector is a significant contributor to the UK's economic activity producing about 6 per cent of the country's total economic output.

The vision for the project is an easy to use health check and tracking app that will give the worker and their employer a simple red/green check of their ability to work. This would enable the industry to end the lockdown, re-engage the predominately self-employed workforce and restart economic activity in a significant sector.

The red/green advice from the app would be based on:

1\. Daily self-declared monitoring of general health and especially of any symptoms specific to COVID-19\. These declarations will be performed even when the user is self-isolating.

2\. A tracking feature that would record the user's location while at work and who else they have been in contact with (e.g. < 5 metres separation).

- 3\. Alerting when there are too many people too close together.
- 4\. Occupancy of any welfare units, so they can self-time their breaks to minimise unnecessary contacts.

5\. Alerting of the user when a co-worker who they have been in contact with is developing symptoms or who has tested positive for COVID-19\.

6\. Machine Learning-based algorithm to track the development of symptoms in the workforce.

The app would have a dashboard for the employer showing who is currently on-site, real-time hot spots showing where workers are congregating so they can be instructed to disperse, a list of staff who have reported symptoms or have tested positive, a list of staff who should be self-isolating because they may have come into contact with another infected member of staff, potential return dates for self-isolating staff plus a list of staff who have tested positive for antibodies and may be immune to re-infection.

Both China and South Korea have demonstrated the benefit of using tracking and contact tracing to reduce the spread of COVID-19\. Therefore, the proposed system can be part of an industry-led approach that will help the global construction sector to safely return to work.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BASEMAP LIMITED	Prioritising public transport routes for key workers	£49,215	£49,215

Software development to prioritise public transport routes to meet demands of key workers.

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

Funders Panel Date: 01/05/2020



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KETKA LIMITED	Ketka + a platform for mental wellbeing using storytelling	£49,681	£49,681

Young people's mental wellbeing today is poorer than that of their parents' generation. Teen suicides have increased by 67% since 2010\. Young people and families need support that works. And that was _before_ the Covid19 crisis. The full psychological impact of the pandemic remains to be seen, but whether as a result of economic adversity, loneliness, anxiety over education, further reduced availability of mental health resources, or numerous other factors: the mental wellbeing of children and their families could be significantly at risk.

We have developed an innovative solution: **Ketka**. Ketka promotes better mental health in children through the magic of expertly crafted **interactive audio stories**, where children can choose what happens in their adventures, and families connect. It's not just about having fun; each interactive audio experience is underpinned by an **evidence-based approach,** including cognitive behavioural principles. Children learn positive life skills and explore different courses of action, while being entertained in a safe and fun environment. Parents get customised parenting support and audio experiences of their own. The content is crafted by world-leading experts in mental health and education. It is a powerful alternative to endless screen time.

Ketka currently supports kids aged 4-11\. The issues affecting young people at the transition between primary and secondary school, children reaching adolescence, and older teens are different. As will the approach needed to engage and support the families. We want to enable older children to **build and share their own content while learning positive life skills** . For Ketka to offer an effective approach to prevent mental health problems, and reduce distress, its development needs to be directly informed by young people and their families.

Our project will involve **three stages:**

1) In-depth interviews and understanding and crucially how young people engage with technology, including creating and sharing content, and coping with loneliness/isolation/stress and uncertainty in the current climate. We will explore potential barriers and facilitators to engagement learning through Ketka.

2) Working with young people and families to shape the adaptation of the technology and approach from the learnings of 1) above, building an interactive creative storytelling platform that delivers what children and families love while being evidence-based.

3) Piloting the newly adapted Ketka web app with families and children aged 11-18\. We will conduct a trial and assess impact on wellbeing, as well as establish how the adapted app is experienced in the 'real world' in diverse families.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
I5 HEALTH LIMITED	i5 Coronavirus Health Risk Calculator - Major Upgrade	£49,594	£49,594

i5 Health, on a 'pro bono' basis, has recently created the i5 Coronavirus Health Risk Calculator ("Calculator") accessible from [https://www.coronavirusrisk.org/][0]. It establishes whether a person falls into one of four health risk categories: Low, Medium, High and Very High. The i5 Calculator has already been used over 100,000 times and, on 9th April, the largest NHS Commissioning Support Unit for London, NEL CSU, successfully used the tool for 4.1 million Londoners.

The uses of the Calculator are many. These include individuals deciding their level of quarantine, the prioritising of care, improvement in bed management particularly in the ICU context, supporting remote consultations, planning for disease control and relaxation of restrictions.

With the prospect of Covid-19 wave extending, another wave following and re-occurrences happening each year, there is the additional need for authorities to source information on risk levels of individuals in every location to execute disease control and Social Isolation strategies. To fulfil better all these needs, the Calculator requires rapid upgrading.

The opportunity for so doing lies in the fact that that Covid-19 is a previously unheard of strain of Coronavirus - the characteristics of which are only really now being understood. Research behind the creation of the current Calculator had to rely on hospital secondary care data on two close relatives of the new disease - 'human' Coronavirus and Influenza. The data arising from hospital admitted Covid-19 patients will be released before the end of April 2020 and we must be prepared to analyse it for additional insights in order to ensure adjustments to the Calculator's algorithms as quickly as possible, to stratify and protect the population.

For the next iteration, we can, with the co-operation of the NHS, draw on additional GP primary care data about the patients. In addition, we can use the time and resources allotted to ensure the linking of outcomes for the High and Very High categories to providing forecasts on key factors like lengths of stay, bed days and ICU needs.

[0]: https://www.coronavirusrisk.org/



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LOCUMTAP LTD	London-wide ITU patient transfer digital bank for healthcare professionals	£49,784	£49,784
Staff working in bank arrangements are a clear source of additional capacity for the NHS during the COVID crisis. There is a very specific need for additional staff to manage the transfer of patients between Intensive Treatment Units (ITUs).

During the Covid-19 pandemic, the need for patient transfer is increased because many of these patients will go on to require ITU support. To optimise patient care, distribute pressure and better match patients to clinical services, both COVID-positive and COVID-negative patients need to be transferred between ITUs and accompanied by at least two suitably trained healthcare professionals. The coordination of these transfers is complicated. Critical Care Networks (CCNs) are managing logistics, but are struggling with the additional admin burden as demand increases.

Patchwork is a software solution for managing temporary staffing within NHS organisations. Patchwork is working with North West London Critical Care Network (NWL-CCN) to deliver an ITU patient transfer bank to support onboarding, logistical management and payroll in a scalable manner. This is an innovative application of our technology for an urgent need, but the product is not optimised for this use case.

This project aims to expand the coverage of our solution across London and enhance our software to create a London-wide ITU transfer bank. This would increase the pool of available clinicians and facilitate transfers between networks, which would further improve efficiency and patient safety during the ongoing crisis. The project would provide valuable infrastructure for managing ITU transfers that would prepare the healthcare system for future outbreaks.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PRECISION DECISIONS LIMITED	LoneStar	£49,939	£49,939

LoneStar is an innovative cloud platform that pulls disparate data together offering multiples devices the ability to connect to the LoneStar cloud based platform offering the user a definable safety and alarm escalation system for remote working people and vehicles.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VANGUARDIA LIMITED	Virtual Acoustic Audience Reality_Covid- 19	£47,904	£47,904

Virtual Audience Acoustic Reality (VAAR) is an innovative project that helps the entertainment industry quickly restart live events in the event of catastrophic events similar to Covid-19 and provides resilience for the future. It also offers an opportunity for a significant economic bounce back as lockdown is relaxed and physical audiences return, VAAR audiences provide a new stream of revenue.

Entertainment, whether music or sport, has the ability to change how we feel, and creates a sense of shared connection to the spectacle. Audiences to this point in time have enjoyed live entertainment in one of two ways: by either being physically at the venue or by passively watching a broadcast remotely. The concept of VAAR enables a real and active high quality two way connection between the live event and the remote audience. The unique feature is how this remote audience is fully connected with the content and the venue to become an integrated participant in the overall event and the atmosphere that is created.

The vision is that an individual at home can buy a virtual ticket and enjoy the full live atmosphere from a music or sporting event delivered via a direct link from the venues sound and vision systems to receive a high quality blended real time experience. This can also be connected with hospitality (including food, beverage, merchandise and hired technology), delivered to the door, for a more enhanced experienced. Partners and sponsorship are also a further form of revenue generation. The individuals connection is enhanced by their ability to provide their own input to the experience within the venue by way of a unique platform and App. The App and the interfaces at the audience and venue end provides a connection which other remote individuals can join and share the experience as a group, and also with the venue and performing artists or competing teams.

VAAR connects remote audiences with the live atmosphere being generated by the artist's/sports person's performance and the venue, bringing a new era in audience participation and immersive experience.

The collaboration to develop VAAR encompasses individuals and companies with a diverse range of skills from acoustic engineering, audio visual design, architect and talented singer songwriter.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THEATRE ROYAL BATH LIMITED(THE)	Egg Theatre Assembly	£49,975	£49,975

Egg Theatre Assembly is a digital platform that connects young people preparing for a future in theatre with professional theatremakers.

In this time of isolation, the thrill of live theatre has disappeared. Assembly brings this community back to life for young people aged 5+ and puts them in control of their creative futures. Professional actors, directors, lighting designers, costume designers and set designers, stage managers and theatre trainers will become personal tutors for the next generation. Groups of young people will collaborate on shared projects from their homes, learning key theatre making skills and forming a community of passionate, creative individuals.

Assembly supports young people to identify their own professional goals and match those with a wealth of theatre training resources, creative experiences, online theatre and like-minded peers. The interruption to creative learning, drama school applications, university preparation and early-career development opportunities stops here. Each trainee will be matched with an Assembly Mentor who will guide them through a tailored programme, creating pathways between lockdown and the future. Assembly participants will become part of a community filled with inspiration, professional connections and the tools to achieve their career goals - as well as offering them a virtual safe space.

Assembly is the natural next step for one of the country's leading children's theatres. The Egg Theatre has an unbeatable track record in making intelligent and surprising work for children and young people. After creating ground-breaking education programmes for twenty years, The Egg now directly delivers a Level 3 Performance and Production Arts course as well as The Incubator, a professional artist development programme that has delivered award-winning theatre with world-class artists.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LB PARSONS LIMITED	TutorHero - a revolution in primary tutoring	£47,149	£47,149

TutorHero is a Software as a Service (SaaS) product which automates the process of identifying knowledge gaps and developing individualised learning plans for tutees, guiding them to interactive video content which is most useful to them. Using machine learning to assess students, forms a consistent map of students' weak areas allowing the platform to automatically flag misconceptions that require 1-to-1 tutor-to-student intervention. This fully automated aspect of the system is referred to as "TutorBot". No other platform is able to provide consistently refined leaning plans and flag manual interventions at scale.

The COVID-19 pandemic has hit education hard across the globe with 1.53 billion learners out of school (UNESCO) and 184 country-wide school closures, impacting 87.6% of the world's total enrolled learners. If left unaddressed, interruptions to education can have long term implications -- especially for the most vulnerable. TutorHero aims to address this quickly and at scale.

In the short term, the platform will be tailored to helping UK students in Y5&6 fill knowledge gaps and re-join their level of competency as these students are in a critical stage of their education, due to transition from primary to secondary education, over 250 interactive videos will be available on launch.

TutorBot periodically assesses students, creating a feedback loop which constantly measures and directs learning efforts, adjusting the students learning path based on their current understanding. Human tutors are not redundant though, TutorHero acts predominantly as a force multiplier, students are expected to receive 1-to-1 'live' support online to get the unique input and reinforcement they require in order to learn effectively for 5% of their learning.

This 5 month project will develop and test TutorHero, ultimately producing an MVP to showcase its capabilities to target customers, parents and schools. After this project, the team intends to rapidly deploy the product to live environments and sign up the first users within 2-4 weeks.

By rethinking how tutoring is delivered and developing TutorBot, the platform is able to deliver high-quality individual tutoring 75% cheaper than traditional alternatives, directing 95% of learning to prerecorded reusable content, this opens the door to households who have previously been unable to afford tutoring, creating new demand.

Initially focussed on the UK educational system, the underlying technology has the potential to be integrated/adapted to suit any education system globally making global education more resilient to disruption and bringing tutoring into the 21st Century.



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Total available funding £34m.

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
2DTRONICS LIMITED	Novel anti-viral protective clothing for healthcare applications	£49,976	£49,976

2Dtronics will create protective clothing for front-line workers in the UK's battle against COVID-19 as well as for further virus outbreaks. The company will use textile engineering techniques to produce a robust and effective anti-viral coating which can be applied to a range of protective garments worn by medical and support staffs. We will use our background in textiles, and experience in advanced materials to combine known anti-viral materials in a novel formulation which will improve effectiveness and increase durability. We will use modern textile production techniques in the UK to produce a fabric which can be formed into high performance protective clothing rapidly and at a low cost.

Our mission is to reduce the rate of person to person transmission by providing front line healthcare workers with protective clothing that can kill viruses on contact in the dynamic healthcare setting in which front line workers must do their jobs.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CYANETICS LTD.	Discovering Anti-Viral Treatments for COVID-19 Infections	£50,000	£50,000

COVID-19, caused by a novel coronavirus, has presented mankind with unprecedented challenges. In order to tackle this ongoing crisis, we require solutions which both **prevent** and **treat** infections.

We propose a high-throughput screen to discover compounds which exhibit antiviral properties against SARS-CoV-2, the novel coronavirus behind the current pandemic. Our library of over 100 natural-product producing organisms have already been shown as powerhouses of anti-infective production, and our proposal puts these compounds against SARS-CoV-2 in order to identify promising treatments.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GROWTH FINANCE ANALYTICS LTD	The GFA Intelligence Exchange	£45,797	£45,797

The GFA Intelligence Exchange uses artificial intelligence technology, to help financial lenders come together and trade anonymised and unique insight on individual businesses seeking finance, within one single marketplace.

By disrupting the traditional silo and competitive lending model, they enable lenders to operate more efficiently and with more flexibility. This enables firms to not only reduce their own financial risk and operational cost, but also increases the opportunity for good performing SMEs to access the finance they need to grow.

They provide a truly innovative and ground-breaking product that is scalable, and will add sustainable value to both UK and international markets.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WYSA LTD	Artificial Intelligence as a tool to combat Adolescent Anxiety during Covid-19	£49,986	£49,986

THE direct physical impact of covid-19 on children seems to be less severe than on adults, but indirect and hidden consequences will have a lasting effect particularly for adolescents who have experienced many months of disruption to their education, social development and now their future career prospects as the UK faces economic downturn. In a survey by Young Minds 83% of adolescents said their anxiety had worsened as a result of Covid-19 whilst access to counselling support has all but stopped. The loss of relationships and social interaction at this age is also far more likely to have a long term impact on confidence and self esteem whilst changes to education grading has resulted in many young people worrying for their futures.

There is little research into the long-term mental health effects of large-scale disease outbreaks in adolescents and that there is a need to monitor young people's mental health status over the long term, and to study how prolonged school closures, strict social distancing measures, and the pandemic itself affect them.

We propose to build on our existing world leading work in AI mental health support to develop and scale a COVID specific anxiety tool for adolescents. This tool will be made available through schools and provide access to clinically written support dealing with uncertainty, worry, anxiety, relationships and future concerns as well as bespoke signposting to those services still offering onward support. We will offer access to the platform for free through schools online class access until the schools reopen ensuring that young people are supported throughout this outbreak. With built in analytics we will be able to use non-identifiable patient data to track and understand more about the impact of the pandemic on the mental health of young people. This will add to our growing understanding of adolescent mental health and could serve to improve our care pathways in Child and Adolescent Mental Health services which were struggling with demand prior to the outbreak.

WYSA are already global impact leaders in AI for mental health with the number one mental health AI bot on ORCHA. We will utilise this expert knowledge to ensure an adolescent product that can have a real and tangible effect for young people during this pandemic and beyond.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SEPSIS LIMITED	Rapid point of care detection technology of Coronavirus	£49,600	£49,600

Our vision is to provide healthcare professionals with a simple to use point of care device to regularly screen for Covid-19 coronavirus. In the current pandemic there is an urgent need for a simple, accurate and rapid diagnostic test to screen for Covid-19\. Tests currently are mostly molecular or serological. These tests will not provide an immediate answer since swab samples are sent off to labs for further testing. A further problem is that current tests suffer from a high degree of false negatives indicating they are not sensitive enough.

The plan is to develop a reader with proprietary electronics that can detect signals from a slide strip with a single drop of blood within 2 minutes of sampling. The objective to complete a small in-house pilot study on stored samples from patients admitted to ITU so that the parameters can be determined for sensitivity and specificity which will enable us to move towards a larger clinical study post this short project. We have already advanced a similar project for the rapid detection of sepsis and will follow a similar route to market path for this device.

The 6 months will enable the team to generate a large number of slide strips to test that will have been laser cut and manufactured by our sub-contracting partner. The equipment for this is already installed and has not been interrupted by the current pandemic. For the first 3 months several 1000 slide strips will be prepared and coated with reagent. The second 3 months, they will be tested using stored blood samples from coronavirus patients who have been admitted to intensive care at the hospital we already work with for sampling patients with suspected sepsis. The data will be used to plan a future clinical trial and prepare a data pack to engage a license partner.

Based on significant in house experience of diagnostics tests and devices together with expertise in electronic signatures specific to proteins and other molecules and biomarkers, our team has developed a unique and novel platform for detecting proteins interacting with other molecules. This has already been validated for our proprietary sepsis specific complex biomarker and is the next focus of innovation. The interaction of the surface of Covid-19 protein with blood cells has been elucidated by the team and is detectable by this method. A patent has recently been filed to protect this innovation.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
PHARM 2 FARM LIMITED	The development of a nanotechnology enabled anti-viral face mask (NanoMask)	£49,912	£49,912

A survey conducted by the British Medical Association found that half of doctors working in high risk environments do not have access to appropriate face masks. Also, the British Dental Association has lamented the typical UK dentist who can go through 250 face masks per week is now restricted to 100 no matter the practice size. A study by HSE and PHE on the use of PPE in health care settings published on the 27th of March recommended the use of FFP3 but if not available FFP2 and N95 masks can be used. However, there is no certified manufacturing of face masks in the UK and there is only one manufacturer of spunbond and meltblown nonwoven medical fabrics, a material used for FFP2/N95 disposable respirators.

Pharm2Farm (Lead) and Flexotronix (subcontractor) aim to combine their leading nanotechnology capabilities to produce a highly enhanced anti-viral face mask to meet N95/FFP2 and FFP3 specifications.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
KINSETSU LIMITED	KCARE (Kinsetsu Contact Automated Readiness for Equipment	£49,697	£49,697

We will use our extensive location proximity knowledge and software engineering expertise to deliver a secure and scalable contact tracing solution. The solution will be comprised of software application, digital mapping layer and IoT sensors and it will help protect Integrated Community Care delivery teams as they deliver vital care equipment packages to the elderly and infirm during COVID-19 and beyond. The solution will be built as a virtualised platform allowing it to be easily hosted locally or in a secure cloud environment.

Contact tracing is an essential part of infection management and by associating personnel, vehicles, equipment and client location, Integrated Community Care management teams can quickly determine what the service exposure is if a team member subsequently becomes infected or must self-isolate as a precaution. The data provided by the solution will enable rapid identification of other personnel, clients, vehicles and equipment that were in proximity through contact association during the specified infectious period. Being able to rapidly identify personnel at risk will enable tighter infection control and reduce the numbers of personnel having to self-isolate, keeping community services up and running during COVID-19 and helping to contain the spread of the virus.

Post-pandemic, the same solution will help Integrated Care Teams drive efficiency in their community operations, ensuring compliance, reducing risk, improving personnel utilisation and reducing service costs by providing automatic notifications to delivery teams about delivery readiness, helping to eliminate repeat visits to client homes.

The project can be delivered within the current COVID-19 restrictions and within the specified project timelines. The company can commence work earlier, within one week of award, to enable a working prototype to be delivered for service trialling before the next wave of the pandemic.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
HATCH APPS LTD	Xavier Resilience - A financial early warning system for SMEs	£49,250	£49,250

Small businesses have been particularly hard hit by the current crisis. To understand the impact and what that means for their future, they need clear, concise financial information at their fingertips. They need to know if they are financially resilient. Where this is not the case they need guidance on the best route forward that will ensure their survival and provide a strong foundation to rebound post-crisis. In this regard, accountants are uniquely positioned to help SMEs, acting for many businesses as their trusted advisor.

Xavier Analytics is a toolkit that links into Xero, a popular accounting platform for small businesses. Xavier helps hundreds of accountants advising thousands of UK businesses to clean up messy records, automate routine tasks, provide business insight and benchmark performance against similar companies.

Xavier's ethos of data quality and accuracy provides the ideal foundation to help SMEs adjust course successfully in the wake of the Covid-19 pandemic. A new "business resilience" system will be created within Xavier to act as an early warning system for business financial issues, then provide guidance on resolution steps and insights around managing outgoings.

This project will allow Xavier to further assist the financial services industry by enabling accountants to provide an efficient, valuable and relevant service to the huge number of SMEs encountering financial difficulty during this crisis and in the aftermath.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
GEO LIMITED	Healthcare Protective Air Filtration	£49,614	£49,614

The use of conventional disposable surgical masks or FFP2 or FFP3 masks in critical care situations such as needed when treating covid-19 patients have disadvantages in use and in protecting users effectively.

Correct fitting of disposable masks is a major issue, tests have shown efficiency of these types of masks can be reduced by over 30% due to facial hair or bad fitting around different face shapes.

Wearing of these masks create breathing resistance and the build up of heat and moisture within the mask making them uncomfortable and unpleasant to wear particularly over extended periods of time. Indeed feedback from doctors has been highlighted on TV interviews working in critical covid -19 care situations where they have found it difficult to work for longer than 2 hours.

Another issue highlighted by wearing these types of masks has made it difficult for doctors and nurses to communicate effectively, some reporting resorting to using walkie talkie radios to aid communication. Not being able to fully see the face makes recognition of the critical care worker difficult (hence the need to write the name and job function on PP gowns) and impossible to interpret facial expression and effective verbal communication.

The protective air filtration system we are proposing uses guided air flows over the face to create a protective barrier from respiration of harmful contaminant particles providing increased protection factor over typical FFP2 and FFP3 masks. The air screen (generated behind a clear face guard) does not cover the face so it is fully visible, does not impede verbal communication and does not hide the face from view making interaction between care professionals much more fluid and natural.

And the major benefit it does not cause discomfort from heat and moisture build up, but in fact creates a refreshing stream of air to breath keeping the user cool and calm.

GEO Itd have simulated and physically tested using industry standard inward leakage test protocols to validate the air stream technology they have developed and have had results confirming performance equal to or better than best performing disposable masks and results which do not degrade performance due to facial shape of hair.

GEO require funding to develop this technology into a viable commercial product. GEO are industrial design consultants that have worked on the successful design and development of many respiratory systems for clients delivering commercial PAPR and SCBA kit.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
Medical Intel Group	COVID-19 Social distancing application - "SPACER"	£38,414	£38,414

The UK faces a big challenge, COVID-19 confirmed cases are rising, affecting lives and challenging social norms. The strategy of slowing the spread of COVID-19 across the nation through social distancing amongst other methods needs the public to listen and act to limit the spread of the virus, thus relieving the burden on NHS services.

SPACER is a free to use app for the public designed to help combat COVID-19 and encourage people to follow government guidelines. The SPACER application aims to empower the public and support the Government's social distancing rules through building awareness and motivates users to maintain 2 metre distance from someone else outside of their household. Utilising Bluetooth modules within mobile phones, the application will determine accurate distance between individuals. As well as showing daily reports, the application whitelists devices so members belonging in the same household do not receive alerts. The app will detect when a user has returned to their "home" Wi-Fi, notifying the user to wash their hands. A key insights feature will provide tips to cope with anxieties with a focus on well-being. MIG's SPACER application prides itself on not storing or using any user's personal data, reassuring users that the application is designed to broaden awareness and help people adhere to government guidelines during this difficult time.

The goal is that it will help alert people if they are within 2 metres of each other which aids preventing the mode of transmission and breaking the chain of infection.

SPACER dose NOT record any personal data and can be used completely anonymously or you create a login. We know that as nation we can beat COVID 19 and 'MORE SPACE MEANS MORE LIVES'



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
HILDREY STUDIO LTD	ProxyAddress - Allowing socially-distanced access to support services for those facing homelessness.	£46,825	£46,825

ProxyAddress uses duplicated address data to connect those facing homelessness with support.

An address is no longer just a location - it's now a de facto means of identification. This means that if a person becomes homeless they are immediately cut off from the basic services they need to recover. The ability to apply for jobs, receive benefits, open a bank account, receive post: all are placed out of reach at the point they are needed most. Those who might have otherwise got back on their feet with a little early support are instead left to become entrenched in the situation and develop more complex and care-intensive needs over time.

ProxyAddress provides a stable address throughout this period of instability. Using existing data, we create and provide a consistent 'proxy' address that can be used to access services regardless of location or how often you move.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
TWO WORLDS CONSULTING LIMITED	udu: AI Platform for Pandemic Intelligence	£49,984	£49,984

The UK, amongst others, lacks a coherent infrastructure to support effective direct and timely collection and analysis of pandemic data, about both the progression of Covid-19 itself and the population response to public policy aimed at mitigating and profiling its progress.

Refining policy and informing the judgement calls required to navigate the balance between lockdown and economic damage requires both accurate data and the ability to rapidly model multiple, 'What if?' scenarios. Current data intelligence systems are partial, fragmented, incomplete, lag reality and, in most cases can only surface what they have specifically been asked to look for. All systems used to look for patterns are often constrained by the quality and range of data available to them.

Existing models tend to look at single factors in isolation, e.g. not taking into account multiple sources of mortality data or failing to take account factors such as population mobility and behaviour, the impact of events such as Cheltenham races, sunny bank holiday weather or other regional and seasonal variations. This can only be addressed through a more holistic approach to data collection and integration.

This project therefore uses an advanced data intelligence platform, udu, which is capable of integrating a wide range of data from multiple sources and of multiple types and of actively discovering new data online. It then uses software that can self-organise itself around a task to discover relationships between and patterns in the collected data to provide an inferential view of pandemic impact, policy effectiveness and population behaviour.

udu has been established for several years in niche markets. Here, we are building on previous experience by Two Worlds in using udu to create systems for the predictive analysis of environmental change to public health for the first time.

The resulting system is intended to be capable of supporting direct exploration by human users, providing an interface (API) to allow other teams to test their own analytic models against the datascape created by udu and supporting local and external machine learning systems with a wider range of high quality data and analysis.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BROWN & CO-PROPERTY AND BUSINESS CONSULTANTS LLP	Rural business support	£49,999	£49,999

By designing and deploying an innovative digital tool we can maintain engagement and provide dynamic support, based on real time needs, with rural businesses during a period where traditional engagement channels have been compromised due to Covid-19\. This engagement mechanism will benefit societal wellbeing, rural business survival and business preparedness for rebound.

This will bring positive benefits to food supply continuity and access, rural economics (income, spend, taxes, employment) as well as societal wellbeing across a broad sector of society (business owners, families, older and at risk categories) who are able to engage with functioning businesses to meet their needs.

The platform will deliver on 3 fronts. 1) Immediately support rural businesses to survive and function during Covid restrictions. 2) Immediately support rural societal wellbeing by providing channels for support and engagement 3) Support the maintenance of existing resilience building initiatives focused on the rural economy to minimize loss of progress to date and enable a faster bounce back after Covid passes.

Focus will be on rural businesses and business owners. The rural economy largely consists of businesses who process, supply, retail & manufacture food products. These businesses are often engaged in health, wellbeing and educational activities including tourism & biodiversity delivery as well as a key locator for small/medium business enterprises and as such are important rural employment hubs.

The technical innovation will work with a web based data platform blending 3 distinct channel approaches -- wellbeing, immediate support and resilience building.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SELECTION ASSESSMENT INSTRUMENTS INTERNATIONAL LTD	Quality-assured online selection for securing future health professionals	£46,336	£46,336
Health Service providers are under increasing pressure to secure a sustainable workforce during the COVID-19 crisis. But social distancing has prohibited personal contact and therefore traditional face-to-face interview methods for selection to job roles and training are no longer possible. The impact is potentially catastrophic for maintaining the workforce at 1.2 million NHS employees as well as for developing it through universities who interview over 100,000 applicants annually for medicine, nursing, midwifery and allied health professional education programmes.

NHS employers and universities have used a face-to-face (F2F) interview method called multiple mini interviews (MMIs) for healthcare selection processes for the last 15 years. MMIs offer a robust approach designed to minimise bias and increase diversity such that they are endorsed by Health Education England.

MMIs comprise a series of 6 to 12 stations each lasting 5 to 10-minutes with different interviewers, who have no prior knowledge of candidates, in a timed circuit. At each station, candidates answer scenarios based on real-life events that assess pre-defined attributes and values.

MMIs are not currently feasible with the need to remove personal contact resulting in forced acceptance of, and over-night adaptation to, online technologies like videoconferencing. Absent online MMIs, various improvised approaches have been necessarily adopted to ensure the essential continuity of candidate selection for NHS service provision and healthcare student training.

Sammi-Select are developing an automated version of MMIs in an existing Innovate UK project for leading enterprises. The proposed project would strengthen this activity, resulting in a brand new capability demonstrating key parts of the core Sammi-Select system integrated with online videoconferencing tools. The result will be a unique technology capable of addressing the current healthcare selection crisis.

To ensure fitness for purpose, the Sammi-Select team will engage through its extensive networks and contacts across healthcare professions including UK Medical Schools Council, Royal College of Midwives, European Midwives Association, Council of Deans for Nursing, Midwifery and Allied Health Professionals and Health Education England. Several test-bed sites are established across the UK and US are also committed to supporting Sammi-Select.

The proposed project would significantly leverage, and provide additionality to, prior public investment in the existing project. Maintaining essential health service provision has never been more pressing, and the proposed technology would enable candidate selection for the long term in a robust and quality assured way.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FRAMEGRAPH LTD	FrameGraph - Radically reducing the time and cost of processing video media content to empower remote working	£45,517	£45,517

In recent years there has been an exponential increase in the volume and file size of digital video content. This has been driven by advances in technology enabling online digital distribution, and growing video resolutions (from the current standard of HD, towards 4K, with 8K around the corner).

Currently, media content is predominantly processed by a single computer, per file. Traditionally organisations have relied upon ever increasing CPU speeds to address their throughput requirements, this yearly increase has now almost come to an end, as these improvements are providing diminishing returns due to the physical limitations of a single machine.

Clearly an alternative way forward is required. FrameGraph turns this problem on its head.

FrameGraph enables video media content to be processed faster and more efficiently than any product currently on the market. It does this by dividing files into chunks, which are simultaneously processed across multiple machines. This process can take place in-house on existing hardware, in the cloud, or in hybrid solutions. To put this into context, FrameGraph can process an hour of HD media in just minutes (it can potentially do this on your existing network, without incurring additional compute costs). Thus providing both significant cost and time savings.

Most significantly in the current climate it turbocharges remote working, as the time to ingest media content into a file format where it can be edited is significantly reduced.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMTEQ LIMITED	Front Line Access to Multi-sensory E- PTSD (FLAME) Digital Therapies to improve mental health	£49,288	£49,288

There is a high emotional cost of treating multiple severely ill patients, triaging those to save, whilst working under severe resource constraints. Health care workers are engaged in a prolonged battle against a deadly, highly contagious illness with no known cure. Following the 2003 SARS outbreak, many health care workers reported high levels of stress, anxiety, and depression symptoms, which had long-term psychological implications. Similarly, frontline healthcare workers directly involved in care of patients with COVID-19 are at risk of developing mental health symptoms including post-traumatic stress disorder (PTSD).?

PTSD is caused by witnessing or experiencing actual or threatened death, serious injury or violence. It causes tremendous suffering, is difficult to treat under normal circumstances, and is even more difficult to treat under pandemic situations. A cross-sectional research study published in March 2020 found that of 1257 health care workers managing Covid-19 in 34 hospitals, 50.4% reported symptoms of depression, 44.6% symptoms of anxiety, 34% insomnia, and 71.5% reported distress.?

Past research shows that over a **third** of front line responders experience symptoms of PTSD. It affects the individual (depression), their family (strained relationships), their colleagues (loss of effectiveness), the hospital (reduced resources) and has an economic cost.

Employers have an obligation to protect their employees from known threats to their physical and mental well being. Sadly, diagnostic practices for mental illnesses are poorly implemented and patient stratification is almost non- existent in the NHS. NHS-approved therapies for PTSD include cognitive behavioural therapy (CBT), and more recently Eye Movement Desensitisation and Reprocessing (EMDR). These are difficult to deliver and suboptimal via telemedicine, which reinforces the importance of prevention

Studies have supported the use of virtual reality for anxiety disorders including PTSD as it allows both the assessment of fear responses, and resilience training. However, traditionally-delivered VR therapy needs a therapist in the room to monitor the patient and ensure that there do not become overwhelmed.?

As pandemic circumstances preclude therapists from travelling to hospitals, our EmteqVR solution provides the best of both worlds: real-time sensing of emotional responses to negate the need for a therapist to be in the same room, and a range of graded life-like exposures without the need to travel. For this project, our app will allow earlier warning of when users are experiencing stress. Later this will be integrated into our VR therapy platform.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VIDYA HOLDINGS LTD	High-throughput saliva COVID-19 antibody test	£46,785	£43,510

The 2019-novel Corona virus (2019-nCoV) is a new _beta-coronavirus_ which can cause Severe Acute Respiratory Syndrome also called COVID-19\. According to recent reports, most COVID-19 patients have mild flu like symptoms, however, a fraction of those infected might rapidly progress to acute respiratory distress syndrome (ARDS), septic shock and further complications sometimes leading to death.

The U.K. currently has 6th highest number of cases and 5th highest death toll globally from Covid-19 infections. The U.K. government like many other health authorities in the world have put in place drastic social distancing measures as their main strategy to avoid the spread of the disease. According to World Health Organization (W.H.O.), a combination of measures such as rapid diagnosis and immediate isolation of cases are needed to stop the spread of the virus. However, due to lack of testing abilities even cases with clinical symptoms aren't tested.

Until a vaccine becomes available the only way to prevent the rapid spread of Covid-19 will be by mass testing, not only to detect those with active infections but also those who have recovered from the infection.

The current testing approach relies on detection of the viral genetic material using RT-qPCR. These tests are generally quite reliable, however, they need samples obtained from unpleasant nasopharyngeal swabs. Swabs can often miss the virus as it could either be present in very low amounts in a patient (in cases of early infection or after recovery from infection) or it could just be present in a different area of the throat where the swab couldn't reach. This can lead to false-negative results. This method of detection also needs expensive instruments and highly trained professionals. An alternative and reliable way of detecting Covid-19 is by measuring the antibodies produced by the individual in response to the infection. This detection can also work for those who have recovered from the infection. While such tests are often done using blood, Vidya's innovative technology uses saliva to reliably and accurately detect antibodies against Covid-19\. The tests requires the user to spit into a vial sent to them via post to be returned to Vidya's central testing lab also via post. Vidya's ultrasensitive, high-throughput technology can provide the user with their results within 24 hours of sample reception.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHYXERCISE LIMITED	Effective Facilitation of Remote Physiotherapy	£49,904	£49,904

Development of a smartphone App enabling remote physiotherapy treatment



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
OSLR LTD	Accelerated Social Care Training Platform	£48,813	£48,813

Social Care workers in care homes and home care visitors are facing an unprecedented challenge to continuously learn emerging practices to protect both themselves, their family and their _cared for_ lives, during the Covid-19 pandemic, whilst restrictions have halted face-to-face training.

Dedicated to medical education, OsIr, having already built a digital health platform for student doctor training, being piloted at leading UK teaching hospitals and are primed to rapidly innovate a training platform to accelerate the training of Social Care workers.

Unlike current methods used to arrange training such as emails, rotas, calendars and _Whatsapp_, an Accelerated Social Care Worker Training Platform would be dedicated to to meet Social Care sector training requirements, filtering and backing up online training with essential on the ground instruction.

Designed for both web and mobile, the platform would allow for Social Care training requirements to be quickly gathered and arranged, specific to staffing level, location and training categories for example assisting and moving people during isolation for care and support workers at individual care homes.

Training sessions plus feedback and attendance would be automatically logged to allow training gaps at specific Social Care staffing levels, locations and training categories to be quickly identified, alongside promoting best practice and group engaged learning, benefiting dedicated care workers, their cared for and ultimately all of us during this national and global time of challenge.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GOOD BOOST WELLBEING LIMITED	AI-boosting Physiotherapy home- rehabilitation for advanced arthritis conditions & postponed surgery	£40,953	£32,762

Good Boost is a medical technology social enterprise supporting people living with musculoskeletal (MSK) conditions in the UK. We positively impact users' health through the delivery of aquatic rehabilitation-exercise in public swimming pools via our artificial intelligence software on waterproof tablet-computers. In response to Covid-19, Good Boost will build upon it's existing technology to design, build and deliver AI-powered exercise software to be delivered in the safety and comfort of users' own homes. One-third of people living with an MSK condition are over 60-years old and a high proportion live with one or more long-term health condition such as diabetes or heart disease. As this population has an increased risk of health complications in the event of Covid-19 infection, it is essential digital Physiotherapy services are available at home.

The development and delivery of a Physiotherapy exercise app is designed to support the 6 million adults who are 60-years living with an MSK condition. Due to the alteration and cancellation of Physiotherapy and joint surgery services, the app will support users self-manage their pain and function due to their MSK condition. The app will also support people who are admitted to hospital intensive care units who develop a post-infection weakness to regain their strength and function in the safety and comfort of their own home.

Good Boost is an expert team of clinical and technology specialists with a successful track record of developing and delivery medical software and community health service on a national scale. With support from Good Boost's supporters, collaborators and partners, we have access to the existing communication channels engaging with 60+ year-olds adults living with a musculoskeletal condition. The app will be free to use for the first 3-months with a £4 monthly subscription charge thereafter to ensure the project generates a sustainable income.

This high-value project will support thousands of people in their own home to significantly improve their pain, function and quality of life. The project will generate health cost savings and reduce the overall burden on the NHS during the pandemic and provide a long-term community service indefinitely.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FIREFLY LEARNING LIMITED	The Firefly remote learning platform	£47,735	£47,735

The COVID-19 crisis has had a significant impact on schools nationally, which are facing unprecedented lengths of shutdown, creating a clear need for innovation, agility and technology-driven solutions to enable effective adaptation to vastly different ways of delivering teaching and learning. Given uncertain and potentially extended closure timescales, this is critical to ensure students are not disadvantaged or left behind, and parents and teachers are empowered with the tools necessary to deliver learning continuity.

As a globally leading educational technology provider, Firefly Learning is extremely well placed to assist schools during this time, with our existing virtual learning platform providing critical technological tools to assist schools, teachers, and students as they transition to entirely new methods of remote, blended learning, and the vastly different teaching pedagogies this requires. In addition to supporting our current customer base, we are currently providing our existing learning platform to new schools for free during this time of crisis.

The Firefly platform already represents the forefront of current technology with respect to connecting schools and homes. However, given the unprecedented nature of the current situation, further development and innovation is needed to tailor and adapt the platform and service ecosystem to effectively support a fully remote, blended learning environment, whilst also beginning to address the infrastructure and resource challenges inherent in scaling platform use to handle unprecedented demand, and ultimately extending reach to all schools currently in need.

Through this project, we will collaborate with up to 30 new schools, delivering free supply of our learning continuity platform, and providing assistance with integration and customisation. Additionally, we will provide training and consultancy advice for teachers on pedagogy and best-practice for enabling effective distance learning. In parallel, we will collaborate with them through a 3-month programme of iterative, agile development (over the coming term), seeking to adapt and tailor the platform to best facilitate distance learning - providing core functionality enhancements to enable effective learning continuity, parental support and visibility, school insight and critical teaching tools. In an environment where fully remote education has never been mainstreamed, these requirements are not yet fully understood. Therefore, whilst prioritising rapid delivery and enhancement during this time of need, our project will further identify longer-term development priorities for advanced facilitation of distance learning, and infrastructure improvements necessary to achieve stable, affordable and accessible technology solutions for all students.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WIZARDTHINK CONSULTING LIMITED	FREEDOM 2.0: COMPREHENSIVE ALCOHOL DIGITAL BEHAVIOURAL CHANGE INTERVENTION	£49,480	£49,480

THE NEED

The NHS estimates that around 9% of men in the UK and 3% of UK women show signs of alcohol dependence1\. COVID-19 has changed the landscape of society, but not the way alcohol abuse destroys the lives of individuals and families.

WHO has issued guidance highlighting the issues with alcohol with respect to COVID-19

* Alcohol use, especially heavy use, weakens the immune system and thus reduces the ability to cope with infectious diseases.

* Alcohol increases the risk, frequency and severity of perpetration of interpersonal violence such as domestic violence, child abuse

* Heavy use of alcohol increases the risk of acute respiratory distress syndrome (ARDS), one of the most severe complications of COVID-19\.

The current societal and economic impact of COVID-19 have exacerbated the dependency on alcohol for some patients with data from research company Kantar confirming Alcohol sales increased _22 per cent_ in March 2020\. Significant proportion of patients with mental health and psychosocial issues also abuse alcohol.

SOLUTION

A fully personalised DBCI Alcohol reduction service.

Our current unique digital programme (FREEDOM 1.0) supports people with 7-steps behavioural change programming to redefine personal life goals and sustain a reduction in the reliance on alcohol. The solution has supported nearly 600 users and enjoys 99% client satisfaction ratings.

This programme is based on successful wellness cognitive behaviour therapy (CBT), neurolinguistic programming (NLP) coaching programme and 'Sober in Seven' book written by the founder, Andy Smith.

Digital behaviour change interventions (DBCIs) offer the potential to increase long term behaviour change and sustained achievement for excessive drinkers receiving an alcohol brief intervention. There is urgent need for a **cost-effective alcohol specific full DBCI solution** that can be easily scaled and with the future use of AI can be developed to provide a more personalised intervention

Our project focuses on the development of tailored interventions to be incorporated into the development and deployment of **a fully personalised alcohol DBCI solution** (FREEDOM 2.0). This will be available via all digital platforms (web/smartphone app) and operating systems. We will utilise user feedback and Al/data analytics to increasingly develop a more personalised intervention

FREEDOM 2.0 will build on the unique, established and proven existing programme to develop a **cost-effective full DBCI solution** utilising the latest thinking in online support, motivation and coaching approaches. This reflects the NICE guidance and recent trials which suggest cognitive bias retraining, self-monitoring, feedback, and action planning intervention modules enable drinking reduction.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PARANIMO LIMITED	Tackling negative mental health and the economic implications arising from Covid- 19 through an online mental health therapy platform.	£49,920	£49,920

Paranimo is a Mental Health technology company on a mission to:

* Reduce the complexity of finding an appropriate UK Therapist by the use of innovative matching technology.

* Increase the accessibility to, and facilitate the delivery of, private online talking therapy to people with existing and emerging Mental Health issues.

* Support the availability and employment of private Mental Health talking Therapists across the UK.

This delivery is particularly needed during the Covid-19 pandemic due to increased demand for therapeutic support across a range of Mental Health and associated concerns including: Generalised Anxiety, Health Anxiety, OCD, Stress, Complex loss and grief, Bereavement, Trauma, PTSD, Depression, Self-Harm, Abuse and Domestic Violence.

The demands and limitations of self -- isolation and social distancing have made it practically impossible to access face to face therapy during these difficult times.

The existing pathways for Clients accessing private Mental Health therapy and support are both complex and confusing. It is difficult for people seeking support with limited knowledge to judge the competence of Therapists, whether by therapeutic approach, expertise, qualifications or professional memberships. This contributes stress and anxiety to existing distress. When combined with the limitations of location-based availability, the chance of finding an appropriate Therapist is dramatically reduced.

Private Mental Health Therapists experience professional challenges limiting opportunities to offer services to greater numbers of clients. Delivery is location dependent with Therapist selected by convenience to the client rather than by expertise. Therapists lack online marketing knowledge to differentiate their services, with Therapists all listing similar expertise, rather than particular experience and strengths. They also face exactly the same information complexity, accessibility and delivery challenges when seeking supervisors as part of continual professional support and development.

To solve these challenges, we have:

* Created an "all in one" Mental Health platform designed to match Clients' Mental Health circumstances, using a unique percentage matching system, to UK based private Therapists' areas of expertise.

* Built a secure and accessible Therapy environment delivered over video - location is never a hindrance to accessing the Mental Health support people need.

* Therapist qualifications are viewable, professional memberships verified.

- * 5 * Review system to help reduce adverse selection of under-performing therapists.
- * Therapists benefit from a Supervisor matching system ensuring they receive effective support throughout their practice.

We believe that through our platform, we can reduce complexity, increase accessibility and delivery as well as promoting a more equitable distribution of therapeutic expertise for Mental Health support.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
HAXNICKS INTERNATIONAL LTD	Rapid sterilisation using Electrox electrolysed water	£50,000	£50,000

Our proposal is to use novel electrolysed water technology for safe and rapid sterilisation in a wide range of situations such as ambulances that have carried Covid-19 patients, hospital wards, offices, public buildings, toilets, delivery vehicles, supermarkets, warehouses etc.

The Electrox water can be produced in Wiltshire using unique technology and patented machinery. This machinery can be run to produce PH neutral electrolysed water containing 0.03% hypochlorous acid, <0.02% sodium chloride & sodium hydroxide, and 99.95% water. This water has an ORP of around +900mv and kills 99.95% of all bacteria and viruses on contact, acting around 30 times faster than bleach. It is safe to use, is harmless to humans and the environment and requires no rinsing or washing off. It is currently being used in Italy for sanitising people in queues before allowing them to enter supermarkets. It is also certified for drinking water treatment in Norway.

The Electrox water can be applied using ulv fogging equipment (provided by us) and in the case of ambulances could be operated at hospitals by hospital staff, rather than at remote decontamination stations. This would dramatically reduce the time taken to get ambulances serviceable after use with Covid-19 patients, and would relieve pressure on staff and ambulance fleets.

Sterilising hospital wards, offices etc can be carried out in the same way using similar equipment and taking only minutes. Rooms can be re-occupied immediately after sanitisation.

We currently have limited supplies of Electrox water at our premises in Wiltshire and are preparing a production facility for the arrival of the machinery, which has the capacity to produce more than enough Electrox to keep all ambulance fleets in the UK fully sanitised.

Our mission is to be fully operational as soon as possible, in time to help with the current Covid-19 situation.

With funding, this could potentially be achieved within a few weeks.



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Total available funding £34m.

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
ONE ELEVEN CONSULTING LIMITED	Virtual Debt Support Assistant	£46,643	£46,643

As of 15 April 2020 There have been around 1.4 million new Universal Credit claims since mid-March and an ONS survey showed that around 30% of businesses reduced employment and/or hours for their workers during the second half of March.

As a result of the Coronovirus pandemic, customers across the country are feeling increased financial pressure as incomes are reduced and companies struggle to offer tailored debt support to customers during this difficult time.

A virtual debt support assistant focussed on helping customers experiencing difficulty to pay utility and other bills to verify their balance and agree a deferred, extended or tailored payment plan that reduces anxiety and increases access to help. A better solution for suppliers trying to balance increasing debtor days, reduced staff availability and with a duty of care to increasingly vulnerable customer bases.

As a result of the coronavirus pandemic, consumers are experiencing increased financial stress at a time when the suppliers of their essential services are furloughing staff and reducing service availability. As a result, companies need to retain control of cashflow and customers need additional support and new options to help them get through a difficult time. Our innovative Virtual Debt Support Assistant seeks to address this need, simultaneously reducing the load on suppliers while providing a better, more caring experience for customers.

Comprising of programmable SMS chat leading to a personalised landing page with explainer video (personalised to the individual, the account in question and balance outstanding) and a series of 'intelligent decision tree' led screens allowing the user to reject / query the balance, pay, defer or configure a tailored payment plan, the innovative assistant reduces the anxiety of discussing outstanding balances, provides optionality for the user and sign posts additional help for those experiencing difficulty to pay. Fully integrated with supplier and agency core systems, accounts are updated real time removing the need for manual handling and reducing the likelihood of inaccurate and distressing customer communication.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
VIVACITY LABS LIMITED	Improving automated collection of Social Distancing data from camera feeds	£49,481	£49,481

The Covid-19 Pandemic has brought about an unprecedented lockdown to global society. Data on the impact and effectiveness of the lockdown is critically important for the following reasons:

* Epidemiology modelling needs to know the number of interactions that there are in society, and the change in these interactions following each intervention. * The lockdown rules are new, unprecedented and hard to enforce. As a result, there is a lot of uncertainty around compliance, and the effectiveness of government messaging and enforcement strategies. Data is critical in determining what the next move should be.

* The police are under significant pressure, with many of their ranks in isolation. Being able to target lockdown enforcement to areas where there is a higher number of social interactions (<2m) is important.

Vivacity currently provides anonymous road usage data from our smart sensors. This is the only available multi-modal data source which provides accurate data on the volume of pedestrians, cyclists, cars and commercial vehicles across the UK. Our data is already forming a key part of the Governments analysis on the effectiveness of the lockdown.

In the first few weeks following the lockdown, we developed a new data output from the sensors, which measured the distance between pedestrians, and provided statistics on the number of <2m interactions. This current method does not give sufficient information to enable more detailed decisions to be made on the exact rules and enforcement of the lockdown.

In this project we will:

* Measurement of the duration of interactions - the longer people interact, the increased risk of infection

* Provide social distancing measurement for cyclists, and between cyclists and pedestrians, so that the government can understand which outdoor exercise modes are more effective for social distancing

* Look to classify the difference between "household groups" and interactions between "strangers", so that the data gathered is not used to discourage "household groups" who are currently allowed to go outside together from spending time together

We will apply these new analysis methods to our existing network of sensors to provide over 450 data feeds across 16 cities in the UK. This data will help the Government plan the removal of the lockdown measures, and monitor that social interactions do not grow too quickly as restrictions are lifted.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
20/30 LABS LIMITED	Investigate and validate if there is a method appropriate to safely re-process face masks for emergency use in hospitals	£44,639	£44,639

20/30 Labs Ltd is a privately owned [UKAS][0] accredited testing laboratory specialising in the decontamination of medical devices and environmental microbiology. We work with over 90 hospitals throughout the UK and actively support the NHS and the healthcare industry.

We hold accreditation for the microbiological research, validation and verification of Medical Devices. We are one of the few laboratories worldwide to hold this accreditation. Additionally, our CEO is the Research Director of the Institute of Decontamination Sciences (IDSc), the UK's biggest professional medical device reprocessing body as well as an Associate Lecturer in Biomedical Sciences at the University of Northampton.

In response to the current pandemic, the demand for PPE such as facemasks, gloves, protective coveralls, as well as medical devices such as surgical masks, exploration gloves and gowns, has seen exponential growth. Frontline Healthcare staff are struggling to access, and lack confidence in, the supply on face masks and other critical PPE. This issue goes beyond hospitals, affecting other sectors: care homes, in home carers and pharmacists.

Because of the global shortage of PPE resulting from Covid-19 it is critical that the UK understand if it is a possibility to reprocess PPE, and if it is possible, to have access to guidance on how to safely re-process facemasks for emergency use effectively to protect our healthcare workers and prevent infection spread. This urgently requires the investigation, and if appropriate, the validation and reporting of a method to re-process facemasks in hospitals for emergency use in order to relieve the demand on suitable PPE and futureproof our healthcare industry.

The project will have one of 2 outcomes:

1\. Knowledge that facemasks can be re-processed, and guidance on appropriate methods on how to safely re-process facemasks for emergency use in hospitals.

2\. Knowledge that facemasks cannot be re-processed, and therefore scientific evidence to prevent re-processing during the pandemic and beyond.

20/30 Labs have the skill set, equipment and facilities to undertake this study, rapidly. 20/30 Labs field calls daily regarding the reprocessing of PPE.

The project will ensure that our healthcare workers are kept as safe as possible during this pandemic and beyond.

[0]: http://www.ukas.com/ "UKAS"



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ISENSING LTD	COVID-19: Measuring the success of movement restrictions and targeting resources	£50,000	£50,000

The UK Government has placed unprecedented restrictions on UK citizens to reduce the spread of the COVID-19 virus. iSensing's vision is to create software that measures the success of those restrictions. If the restrictions are not being adhered to, our software will show this and allow for targeted responses such as police or digital advertising to be deployed rapidly.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
AKKA DEVELOPMENT UK LIMITED	Sustaining the Aviation Industry During Pandemics: Exploring the Concept of Independent Breathing System for Aircraft Passengers.	£49,708	£49,708

A fully loaded passenger aircraft has one of the smallest volumes of air per person compared to any enclosed public place. Airborne diseases can spread when an infected person's cough/sneeze droplets come in contact with people or surfaces---like airplane seats and tray tables. Hence, the public and government bodies have significantly reduced air travel during the COVID-19 pandemic. Due to this, the global airline industry is facing its gravest crisis. This also impacts the UK as it has the third-largest aviation network in the world, and the second-largest aerospace manufacturing sector.

This project explores a novel concept that may reduce the risk of an aircraft passenger contracting airborne diseases (like COVID-19 or common flu) during the flight. If feasible, in the short term, this concept might make flying safer and allow a speedy recovery of the aviation industry from the COVID-19 crisis (in the UK and across the globe). In the long term, this concept research will ensure that similar systems are considered for new aircraft designs to minimise future impacts of epidemics/pandemics on the aviation industry.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MACE LIMITED	Offsite Accelerator for SMEs	£46,502	£46,502

The project proposes an 'Offsite Accelerator' for SMEs

Supporting the UK construction SME supply chain to increase work offsite to meet the demands of the Construction Leadership Council's (CLC) 'Site Operating Procedures' for safe working amidst the COVID-19 pandemic.

In the case of the construction industry, the Covid-19 pandemic has highlighted how the usual way of construction work -- a highly transient, high population workforce that mobilises to sites, and moves between sites on a weekly basis - is largely unsustainable, especially for the SME supply chain. The reliance on site-based labour increases movements to and from sites and makes working whilst maintaining social distancing close to impossible.

With postponed operations likely to affect the workforce for months, SMEs are in an extremely vulnerable position, and unlikely to be able to support their workforces through this period.

This project creates a catalyst opportunity to drive innovation into SME supply chains and transform towards flexible, resilient, offsite focused delivery models which allow individuals or small teams within SMEs to progress works whilst keeping safe. However, cashflow, experience and expertise are still out of reach for SMEs

Our Offsite Accelerator will leverage Mace's highly experienced technical, design, delivery and commercial resources to help SMEs shift towards Modern Methods of Construction (MMC) business models through collaborative development and trial of offsite sub-assemblies.

In the short term, adopting offsite methods will enable SMEs to return to work faster and continue to work during Covid19 restrictions.

In both the short and long-term, the project aims to divert 30% of labour away from sites to maintain social distancing, and move towards a more resilient business model that meets both the needs of the industry and the wider needs of society.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ARR RAIL SOLUTIONS LTD	Safe & Comfy Medical Jacket	£33,314	£33,314
Although Covid-19 pandemic has posed many challenges for the country, a more specific challenge is the need to address the dangers of infection, unnecessary distress, fatigue, and mental anxiety that result from the demanding working environment of the frontline hospital and health care staff. Although basic personal protective equipment such as visors/goggles, masks and gowns are available, albeit in limited quantities, recent news in the media has clearly depicted visible signs of distress and extreme fatigue on the faces of these scarce specialist staff. Thus, the objective of the project is to bring together proven knowledge of medical fabrics and the science of controlled circulation of fresh air within enclosed fabric suits to provide a more comfortable environment for front-line staff and health care workers. Ensuring comfort while maintaining the highest level of safety will enable them to undertake their duties without avoidable fatigue and stress.

The proposers acknowledge that several small to large companies have or are adapting their manufacturing capabilities to produce PPE for health service but believe that the novelty of introducing user comfort into the design together with the highest level of protection against infection has an offering worthy of support. The project is based on a very modest level of support to build a prototype that can be submitted for critical assessment by front-line medical staff. Cost of any necessary modifications to prototype or further development will be the subject of a follow-up project while a move to commercial manufacturing and exploitation of the developed PPE will be justified by the appropriate business case.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
YOURTOUR VENTURES LIMITED	Heritage On-Demand: In-person visits without visiting in person	£40,202	£40,202

The public's right to access our rich cultural heritage sites has suddenly been lost and we are at risk of its longer term associated economic and social damages.

The devastating effects on the cultural and heritage sectors surfaced by Covid-19's indefinite social distancing regulations must be addressed with innovative thinking. Importantly, creative adopters are seeking innovative ways to continue to connect heritage sites with the public, and YourTour's Virtual Tours app is the solution to deliver the next best thing to real-life immersive experiences into every household and care home.

Imagine being able to 'experience' a place in its full splendour without needing to actually be there. In a fully immersive virtual tour experience with YourTour, you are guided on a walkthrough of a location supported by narrated storytelling that combines the best parts of 360 Experience and 2D video tours. The impressive 360 degree screen orientation technology allows the user to be immersed, to explore and interact with their environment, getting a realistic feel for the space on a mobile or tablet screen in the palm of their hand or VR headset.

YourTour is an award-winning company that specialises in the creation of immersive and interactive virtual tours, with clients including _The National Trust_, **The Wallace Collection** and _Invest in Nottingham_. Founded by a highly skilled team and led by the founder of the hugely successful Lovestruck dating app, Y**ourTour's mission is to revolutionise digital storytelling**, and give the public, regardless of age, physical health or geographic limitations, digital access to our rich cultural heritage.

Heritage sites are prime for immersive storytelling. Our cultural gatekeepers have such authentic, rich content at their fingertips. Together, we can further support the public's mental and social health by reconnecting it and providing access to our rich heritage which deserves to be experienced, appreciated and remembered -- albeit remotely -- but with the best and most future-proof remote technology available.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INDEX PARTNERS LIMITED	Digital Sandbox - Online Hackathon Platform for University Students	£49,485	£49,485

The **Digital Sandbox project** will develop a solution for universities and employers to organise online hackathons and competitions (e.g. business idea challenge, coding hackathons, etc.) for students.

Universities are increasingly using hackathons and competitions to help students acquire employability skills, develop employer networks as well as showcase their skills and ideas to academic and employer communities. Although no reliable statistics are available, estimates suggest ~10,000 hackathons take place in universities worldwide annually. US, UK, EU and Australia account for over 50% of events.

However, the onset of Covid-19 pandemic prompted many universities to cancel these programs, thereby, depriving students of critical learning opportunities. While most universities readily adapted existing platforms and tools (e.g. Zoom, MS Teams, etc) to launch online classes and internships, they have been less successful in migrating their hackathons and competitions online due to a lack of appropriate tools. The "Digital Sandbox" project intends to address this gap.

There is no existing tool or platform to help universities and employers conduct online hackathons for students, end-to-end. In the post Covid-19 era, our solution will help elevate the _scope_ and _impact_ of these programs (and the learning outcomes) to a higher level, by enabling:

* Employers to conduct cross-university and, even cross-border hackathons and competitions;

- * More than 10x students to participate in these events, without the inherent limitations (e.g. venue capacity, commute time, etc.) of the physical world;
- * Students to form cross-University and cross-border teams and thereby expanding exposure and network;

* Judges to offer clear and structured feedback to _all_ participants, thereby enhancing learning outcomes;

* Students from disadvantaged backgrounds (e.g. with financial problems, physical disabilities, etc.) to participate in these opportunities by eliminating barriers to access;

* Significant reduction of unit costs, and thereby making these programs more affordable and widespread.

In summary, our solution will help Universities to conduct _more hackathons_ with _more students_ in a _more inclusive_ way with _better learning outcomes_ at a _lower unit cost_. This, in turn, will help reduce the employability skills gap in the UK at a faster pace.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SANSIBLE WEARABLES LTD.	Digital aid for remote respiratory recovery and rehabilitation	£49,992	£49,992

A complete system including body sensors wirelessly linked to an app for reducing visits to the hospital or clinic for patients who are recovering from lungs damages or living with chronic obstructive pulmonary disease and needing pulmonary rehabilitation or management. The system will allow cost-effective remote care, improve quality of the care and reduce the risks of travel for the patients with respiratory complications.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIMINAL SPACE ASSOCIATES LTD	LIFE-SUPPORT	£49,970	£49,970

Covid-19 has changed both how we live, and how we die. Not only has the pandemic impacted every aspect of our life - how we behave, how we work, and how we socialise, it has brought death and dying into our daily reality. Further, the isolation conditions that this disease imposes means that our traditional rituals around death and dying - physical closeness, time with those that are ill, face to face contact with friends and support networks - are no longer possible. This is having a huge impact on society, on our wellbeing and mental health, and our community support services.

With up to 66,314 additional deaths expected due to Covid19, we now need to face difficult conversations with children worried about parents and grandparents, with loved ones about their care, fears and choices. For many, these conversations will have to happen unexpectedly, from afar and without physical contact. How will we be supported to discuss the end of life when it matters most?

The Liminal Space uses art and design to create ground-breaking experiences that transform what people think, feel and do. We are a unique organisation that brings together the rigour of a think tank with the creativity of a cross-disciplinary design studio to translate some of the toughest issues facing our society into tangible objects, spaces and experiences that people can relate to and interact with.

Building on knowledge from The Departure Lounge, our highly successful public engagement project to support conversations on death and dying in partnership with the Academy of Medical Sciences, Wellcome Trust and the Health Foundation, we will create LIFE-SUPPORT - a digital, accessible and highly designed and researched experience that supports people in having conversations about death.

Working in collaboration with academics, sector experts and those with lived experience, we will bring this support to public audiences by translating it into an experience people can use to scaffold conversations, gain deeper understanding, interact with, and share - all rigorously researched and tested prior to launch.

LIFE-SUPPORT will not only guide users through a process of a conversation around death, but offer both practical support, information and meaningful personal connection along the way.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VANTAGE DIAGNOSTICS LTD	Clinical Communicator to reduce unnecessary hospital attendances	£45,970	£45,970

A secure, quick and easy way to share clinical information.

Working with hospitals, GPs and Dentists to manage the demand for hospital services during the Covid-19 crisis.

The project is aimed at adapting and enhancing a proven, secure cloud-based IT platform to share clinical information between healthcare professional and to support the care of patients away from hospitals.

Up to 80% of visits to hospital outpatient clinics are unnecessary. But the advice of specialists in patient care is highly valuable. We aim to ensure that GPs and dentists have access to the best possible guidance in the treatment of their patients and where appropriate that patients get the right hospital care.

Our aim is to prevent deaths by allowing hospitals to focus all necessary resources on the Covid-19 crisis whilst ensuring that other patients in critical need of care are treated in a timely and appropriate manner.

The project requirements are informed by clinicians, healthcare managers, patients and technologist and transformation consultants._



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KIND CALL LTD	Automating Account Closure for the Bereaved	£46,634	£46,634

Kind Call: Automating end of-life **admin.**

Covid-19 means that hundreds of families each day are facing bereavement. With their tragic loss comes the arduous task of closing or updating the 10-15 accounts (utilities, TV, mobile, broadband, entertainment, subscriptions etc) that the deceased will have held.

The role is left to bereaved families, or an appointed Executor, who will need to seperately call, write or email each company, then wait for up to 10 business days for a reply. Accounts can take weeks to close down. It is consequently a stressful and time consuming task for many, and is considered an unwelcome distraction from the things that really matter.

Since service providers need the same key data points to close or update the deceased accounts, **we want to automate this process.** Our service allows users to contact multiple companies, in one go, in under 10 minutes. This works in a similar way to the Government's "Tell Us Once" service, but is for private sector suppliers (utilities, TV, mobile, broadband, entertainment subscriptions etc). Longer term, our ambition is to integrate with Tell Us Once, so that the public have **one, free, service, which they can turn to for support.**



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEXTUP COMEDY LTD	A Virtual Comedy Festival - Preserving Culture During COVID-19 and Beyond	£49,174	£44,257

Due to COVID-19, live comedy - one of the UK's most treasured cultural experiences - has been wiped out. Hugely popular comedy festivals including Brighton, Machynlleth, and the biggest arts festival in the world - Edinburgh, have been cancelled, not to mention the nightly comedy variety nights at local clubs all over the country. These events attracted over 3 million people every year. This cancellation of the comedy scene has impacted the lives of the public, comedians, venues and festivals who are suffering not only financially, but also from a dearth of live entertainment and the community that surrounds it. Comedy and laughter is proven to improve well-being and mental health and it is facing a shortage at a time when the general public need it the most.

NextUp are creating a Virtual Comedy Festival that re-connects the public with live comedy and the talented acts who create it, allowing them to earn revenue in the process.

Our aim is to bring laughter back into the nation's homes, and gain an audience of over a million through our month long festival.

Not only does this project amplify the power of comedy during the UK's lockdown, it lays the foundations for live comedy to _continue_ to reach more people than ever including those with physical disability, those facing social isolation, and those who are limited by their geographic or financial circumstances. None of these people should be deprived from enjoying live comedy and all its collateral benefits, and with this project - they won't be.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPEN BIONICS LTD	End-to-end digital service for upper limb amputees and clinicians	£49,991	£49,991

Prosthetic Clinics in the UK and abroad have closed during COVID-19 lockdowns. This is frustrating for people with upper limb differences who seek a prosthesis for work or daily living needs, or who were in the process of receiving their awaited device. It is catastrophic for clinics and clinical suppliers who, in response to losses have had to furlough, make redundancies, and pause operations.

It is also frustrating for clinicians and OTs who want to see and engage with their patients. Open Bionics proposes a feasibility study with a clinical partner in the UK and with UK upper-limb amputees that trials a new digital workflow.

Open Bionics proposes to demonstrate new digital processes and tools that empower clinicians and enables them to continue aspects of their work interrupted by clinic closures. This proposal affects upper-limb amputees, clinics, clinicians, and suppliers.

Open Bionics will build upon early lab R&D to take this new digital pathway into the field with patients and clinicians.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EVOLTECH LIMITED	Monitoring medical supplies storage temperature	£49,578	£49,578

This project aim is to research the requirements for vaccine cold storage and transportation toward developing a new low cost digital temperature logger which can be read with NFC smartphones. This allows the healthcare professional to assess the vaccine quality before administrating it or having to dispose of it. Great care is taken in logistics to ship vaccines at the required temperature, however this can go wrong.

Instances of improper vaccine storage, handling and administration are a significant concern for the national immunisation programme, with advice and guidance regularly being sought from Public Health England (PHE). The costs associated with loss and replacement of compromised vaccines should not be underestimated. During 2018, vaccine wastage had a list price value of around £6.3 million. In terms of doses, about half of the reported vaccine wastage incidents were avoidable, but in terms of cost, these accounted for 73% (£4.6 million) of the value of reported wastage in 2018\. This is likely to be under-reported and thus the true financial cost even greater. Vaccines are expensive and can be in short supply. Even when public health assurance has been given, large amounts of vaccines are being discarded as a result of perceived regulatory or licensing issues. Healthcare professionals have a responsibility to minimise financial risk and to help sustain supplies, whilst still ensuring the safety of patients and the continuing success of the national immunisation programme.

The 'cold chain' is a term used to describe the specific temperature conditions in which vaccines should be kept during storage and distribution to protect against loss of potency. The cold chain concept was first adopted in the 1970s by the World Health Organization (WHO) to protect the integrity and quality of vaccines in its worldwide immunisation programme. This standard practice is now universally recognised throughout the pharmaceutical industry and should be followed by everyone involved in the delivery of immunisation programmes. For licensure purposes, vaccine manufacturers are required to recommend an optimum storage temperature range. For virtually all currently used vaccines, the recommended range is between +2°C and +8°C. Maintaining vaccines within the cold chain between the recommended temperature range minimises the risk of compromising the effectiveness of the vaccine and ensures compliance with the manufacturer's product license.

Our invention is a thin flexible reusable NFC temperature logger label, incorporating printed rechargeable battery and antenna coil driving a temperature sensor and logging chip.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FILAMENT PD LTD	VapourSafe: Protecting front-line healthcare workers	£48,993	£48,993

On the 10th of April, the Health Secretary, Mr. Matt Hancock, said his goal was that everyone working in a critical role must get the Personal Protective Equipment (PPE) that they need. A cross-government UK-wide plan to ensure that critical PPE is delivered to those on the frontline responding to COVID-19 was published.

To help the NHS during this time of unprecedented global demand for PPE, Filament PD are leading the development of VapourSafe. The VapourSafe is a disposable protective device which covers the shoulders and head of the patient as they are being treated. The device surrounds the patient's face and contains vapor and particulate matter produced from the patient. This stops the spread of the virus beyond the enclosed volume. The VapourSafe creates an effective first line of defence against the spread of viral diseases in hospitals.

The VapourSafe is an easy-to-use protective barrier which medical staff in hospital wards can utilise while treating patients with COVID-19\. It has been designed as a mass-manufacturable, one component product so no set up of the VapourSafe is required. The design allows for high numbers of the VapourSafe units to be stored vertically over a relatively small surface area; this reduces storage space, shipping costs and improves human usability. Once fitted over the patient, the medical team can gain access to the patient through four access points positioned conveniently around the patient. These access points will produce a partial seal while in use and fully reseal when not in use. Furthermore, the transparent polymer material allows for communication and visual examination of the patient.

Advantages of the VapourSafe:

- * Fast-acting protective barrier which contains the spread of COVID-19\.
- * One, mass-manufacturable piece so no additional training is required.
- * Transparent material with multiple access points.
- * Minimal storage space required for transport and storage in hospital wards

Based in Glasgow, Filament PD is a Product Development Agency who has released over 100 products for companies which range from start-ups through to global corporations. The development of the VapourSafe will utilise Filament's Design Process and integrated digital Quality Management System (QMS), which is compliant to ISO 9001:2015\.

For more information about the VapourSafe, please visit: [www.filamentpd.com/vapoursafe][0]

[0]: http://www.filamentpd.com/vapoursafe



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EVC POWERTECH LTD	Temperature controlled and monitored distribution for vaccines and medicines	£49,941	£49,941

Working with a major pharmaceutical distribution company and with community nurses, we have identified a significant need for improving temperaturecontrolled and monitored distribution for medicines, test samples, blood transfusions and vaccines.

Most urgently, we have identified four COVID-19 specific issues that will impact the UK that must be addressed right now:

1. When vaccines become available, they will require temperature-controlled environments. The UK's infrastructure to distribute these vaccines in these volumes is stretched.

2. There is insufficient refrigeration capability at surgeries, pharmacies and hospitals to handle the anticipated volumes. Nor is there a central monitoring system for monitoring vaccines and medicines held in these refrigerators.

3. District and community nurses currently have no temperature-controlled facilities for delivering vaccines. Unused vaccines are therefore destroyed at the end of each day. This already costs the NHS an estimated £4M annually and significantly reduces the overall number of vaccines available.

4. To rapidly implement mass immunisation, drive through vaccination sites are likely to be required across the country. These will require refrigeration facilities where there is no guarantee of a reliable power supply.

eVc PowerTech are creating a low cost medical supply distribution system comprising of hand-held refrigerated tote boxes that incorporate real time temperature monitoring, and a docking system that will power the totes and act as a communications hub when the totes are in a distribution centre, in a vehicle or at a pharmacy, GP surgery or hospital.

Our vision is to create a system that can be used throughout the healthcare industry for the safe transportation and handling of temperature-controlled medicines.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HAND IN PAW LTD	Enhance pet wellness with telehealth platform and bespoke digital pet care during and following COVID-19 pandemic	£37,927	£36,231

***NEED*:** Due to the uncertainty of COVID-19, most of veterinary clinics across UK have been closed or remained open for emergencies only. As a result, millions of pet owners do not have access to veterinary advice or services for non-urgent conditions, including ongoing support on chronic conditions management.

***APPROACH*:** Having soft launched PetPanion App in March 2020, we propose the following enhancements which are over and above our existing product development plan to respond to the urgent needs during and following the Covid-19 pandemic: 1) Expand our current offerings under "Vet" function by developing a telehealth platform that enables pet owners to have access to online veterinary consultation with participating veterinary clinics and professionals via messaging, audio and video chat, and complete payments via the app; 2) Enhance PetPanion Wellness Programme in continuous collaboration with School of Veterinary Medicine of University of Surrey to identify the Top 10 chronic illnesses for dogs and cats, and develop a programme helping pet owners managing their pets with chronic conditions that requires ongoing support.

***IMPACT*:** The telehealth platform will empower pet owners to have access to digital veterinary services from the comfort of their own homes. Our enhanced wellness programme will help pet owners to manage their pets with chronic conditions that requires ongoing support. In the longer term, our platform will enable veterinary clinics to offer their clients a truly digital experience, as well as help pet insurers to mitigate risks and reduce claims costs.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GB ELECTRONICS (UK) LIMITED	Rapid Point-of-Care Diagnostic Device for COVID-19	£49,911	£49,911

GB Electronics (UK) ltd., (GBE), a design-led manufacturing UK based SME is working with Brunel University London (BUL) to help them bring to market their low-cost and portable smart molecular diagnostic platform for the detection of SARS-CoV-2 (Covid-19).

Prior to the Coronavirus Pandemic, an early stage version of the product was being developed by a research team led by BUL in collaboration with the University of Lancaster and the University of Surrey and intended to be used for detecting viral pathogens in poultry, funded by the Biotechnology and Biological Science Research Council (BBSRC). The research team established that with some modification their product could use a Loop Mediated Isothermal Amplification (LAMP) assay to detect COVID-19 directly from a patient sample (nasal or throat swabs) within 30 minutes. Another strength of their design was that it analysed six samples per cycle and was being specifically developed for low-cost deployment in the developing world.

A set of eight early stage products are currently undergoing laboratory and clinical validation studies at NHS Laboratories. The results of which will be used to further optimise the diagnostic algorithm and the physical design of the product.

GBE will then assist with the manufacture of a batch of beta products, which will be a design iteration based on the initial trial units. This increases the amount of clinical trial data available and will provide essential feedback on the functionality of the product.

The beta units will then undergo a significant 'cost-down' design for manufacture stage in order to prepare for mass production. This stage will involve refinement of the hardware, firmware and mechanical design plus development of a robust communications protocol. It will be manufactured in-house at GBE's Sussex based factory.

All work will be carried out in conjunction with Brunel and their team in order to optimise the efficacy of the product. Whilst gathering additional functional data we will also prepare detailed market analysis to maximise the global and industrial potential of the product. With a keen focus on the needs of the developing world, where product cost is vital.

GBE has over 30 years' experience of embedded product development and manufacturing. This includes a very successful track record within the healthcare market plus experience of working with innovative product launches and solutions.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ULTRAMED LIMITED	Patient entered online information to support video outpatient consultations	£43,363	£43,363

The Covid-19 crisis has led to the rapid implementation of outpatient appointments being conducted remotely by video or telephone. However, the doctor or nurse has limited information about the patient, the problem they have and their background medical history. If this is entered online by the person before the consultation, the remote consultation will be more efficient and more likely to avoid a subsequent face to face appointment.

Ultramed has developed a digital health platform delivering MyPreOp which is a part of the NHS Innovation Accelerator and is supported by NHS England for widespread adoption in the NHS. The vision is to develop the digital health platform to deliver online pre-appointment programs for a range of clinical specialties.

The key objective is to rapidly build and deploy these outpatient facing programs. It was anticipated this would take 2 years to deliver. However, the Covid-19 crisis and the need to deliver non face to face outpatient appointments means that there is an urgent need to bring forward the timeline. The Innovation Funding will allow this to happen.

A range of outpatient programs will be developed built on the existing digital health platform. This requires the clinical questions to be written and software code to be developed to deploy each program. A document upload functionality will be developed and deployed that will allow patients to upload documents or photos to share with the hospital consultant who is conducting the remote outpatient appointment. The programs will be available through the NHS patient login.

This is innovative in putting the patient in control of their information which they choose to share with their healthcare provider before their outpatient appointment. The person has time to consider carefully the questions they are asked and input their answers. They also have the opportunity to enter questions that they would like to be answered by the doctor or nurse as part of the outpatient appointment.

This is the basis of a Personal Health Record and Ultramed owns the trademark MyPHR. This approach has not previously been adopted in the outpatient setting to decrease the number of face to face appointments. It aligns with the NHS Long Term Plan to reduce face to face appointments by 1/3rd. This was the reason this suite of programs was going to be developed but the Covid-19 crisis has made this urgent.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FAMIIO LIMITED	Localgov Childcare Market Resilience Platform (post-COVID-19)	£49,270	£49,270

Vision:

Familo's long-term vision is to help deliver a UK family information ecosystem that matches the public's technological expectations (that have grown from modern tools provided by companies like Amazon, Booking.com and Expedia) whilst ensuring the delivery and data sits within the trusted governance of local authorities on behalf of citizens.

Key objectives:

To make this happen, we must first address the immediate shortfall in UK localgov data infrastructure. Like so many other areas, COVID-19 is exposing cracks and challenges in our society and supply chains, and both Childcare and localgov data infrastructure are no exceptions. Austerity's impact on LA technology innovation has meant we are ill-prepared to manage service markets and deliver fast-changing information in an efficient manner when needed, as we have seen with the coronavirus.

Main areas of focus:

Familo will address this need for resilience by developing an innovative Childcare Market Management tool as part of a wider ecosystem, focusing on:

1. **Enabling LAs** to access and share daily availability of Childcare places in their area and across LA borders.

2. **Supporting LAs and Childcare providers** by linking provider care management systems, LA systems and Regulator systems. This will increase market data available to LA Childcare managers and Family Information Services (FIS's), as well as Central Government.

3. **Empowering parents and key workers** to self-serve available Childcare, make informed choices and meet unique needs so that key worker services can be maintained and the wider workforce can access Childcare and return to work post-COVID.

4. **Joining-up legacy LA systems** to provide a low-cost, effective cross-border market network, compliant with new National Open Service Data Standards.

Innovation:

Familo's long-term roadmap includes twenty unique platform innovations, covering data permissions, case management, automated data quality, emerging technology application (ML & AI), etc. This will build on this early market management project, which is focused on establishing novel data infrastructure. We will be better placed then to address economic damage caused by COVID-19 and improve UK resilience for the future, at a fraction of the cost of most national technology initiatives.

Long-term goals:

* Increase national take-up of childcare, particularly a) 30-hour free childcare for 3-4 yr-olds, b) informal childcare (particularly for flexible or unsociable hours), c) out-of-hours/emergency childcare.

* Increase social mobility (parents able to return to work through easily-discoverable childcare availability).

- * Reduce child poverty (parents able to rotatin to work through cashy-discoverable of * Increase national productivity/GDP (more parents in work).
 * Reduce unemployment.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRIGHTLOBE LIMITED	Creation of an immersive, game-based and intelligent system to mitigate the impact of Covid-19 on children's mental health	£46,064	£46,064

An estimated 4.8M nursery and primary school-aged children across the UK are confined to their homes due to Covid-19\. Stressors associated with prolonged isolation are known to have a profound immediate and long-term impact on children's mental health. Before lockdown, 1/3 of children's mental health services were defunded. Referral rates are likely to increase post-lockdown, when they are already overburdened.

Our project is a mobile game that helps children understand and process their emotions. Children are incentivised to regularly self-report their emotions. Then, they play through intelligently curated and personalised training exercises. These exercises are based on evidence-backed techniques, like mindfulness-based cognitive behavioral therapy (MCBT), to address stress and trauma.

Each exercise is story-driven and enhanced by immersive technologies like augmented reality and haptic feedback. Through play, children will learn to cope with challenging emotions, build resilience and respond to emotions in others. Insight data is presented to parents through the app so that caregivers can better understand their child's emotional state and respond appropriately.

Our objectives are to:

* provide a low-cost, accessible solution to mitigate and improve children's mental health, where impacted by Covid-19-related stressors during and postlockdown;

* reduce parental stress associated with recent lifestyle changes, changing working patterns and family financial loss by providing insight into a child's wellbeing; and

* ease the burden on NHS children's mental health services following the lockdown by providing an inexpensive, accessible solution for unseen patients.

Long-term, the mobile game will undergo clinical validation so that it can be used reliably as part of clinical practice. The game could be used to more easily and inexpensively screen and track the long-term outcomes of paediatric mental health patients.

Innovations in this project include:

* the ability to curate a repertoire of mental health exercises, embedded in games, that adjust to a child's specific needs;

- * the application of immersive technologies to improve mental health techniques, to enhance children's likelihood to meaningfully engage; and
- * the provision of frequently-updated insights to assist parents (and ultimately doctors and teachers) in designing tailored interventions for children.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CORPORATION POP LTD	Xploro: using gamification to amplify the child patient's voice and monitor symptoms during times of crisis	£49,994	£49,994

Increased need due to Covid-19:

Children with chronic diseases (~1.8m in UK) are having a particularly difficult time during the current crisis, with heightened fears of infection, little or no contact with support workers, restrictions on visitors whilst in hospital and harder to access healthcare services. For those that are immuno-compromised (eg. cancer patients) the situation is especially difficult. With the need for self-isolation and an NHS pushed to breaking point, it is vitally important that mechanisms are developed to enhance remote patient reporting for children at home and minimise face-to-face interactions.

Capturing the child patient's voice at these times of crisis is crucial. Evidence from multiple pediatric cancer studies has demonstrated that clinicians and caregivers underreport the number and severity of symptoms compared with self?reports from children.

"If the child's voice is overlooked, the true impact of the therapies they are receiving cannot be fully and accurately known. The risk is that therapy decisions will be made, based on well-meaning but incomplete information, and that we will not learn the full impact of the treatments we are delivering to similarly diagnosed children. We need a streamlined, appealing way to collect the relevant subjective symptom and treatment toxicity reports from children in a systematic manner such that the ill child's voice will not be overlooked or forgotten. _We also need this way of collecting such essential data to be consistently available to the ill child, unaffected by the constraints of the pandemic." Pam Hinds, Executive Director of Nursing, Children's National Clinical Center.

Through the development of innovative additional functionalities that facilitate the capturing of patient feedback, Corporation Pop (a Manchester-based SME) will tailor their Xploro App (designed to empower young-patients with information) to the new challenges that the Covid-19 epidemic is presenting.

IMPACTS

Make UK healthcare delivery more resilient when faced with similar disruptions.

Benefits for patients (more engaged, better outcomes), their families/guardians (fewer hospital visits, happier children), and clinicians (time saving, improved understanding of therapeutic impact).


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
UFONIA LIMITED	Automated telephone conversations to triage and reassure patients whilst at home	£48,474	£48,474

With the NHS focusing its efforts on managing the frontlines of the Covid-19 crisis, vast numbers of clinical appointments have been delayed or rescheduled. As the country recovers, we face a large and increasing backlog of clinic visits and waiting lists for operations. Understandably, this will create tremendous anxiety for patients both about their conditions and also about being "lost in the system". Administrative teams and clinicians will be under pressure to make sure individuals are not put at risk, and that patients are kept informed about the constantly changing situation.

Our solution, Ufonia, delivers autonomous, natural language conversations with patients about their care over the telephone. Ufonia's artificial intelligence driven system can make calls to patients whose care has been postponed, to explain the current plans an organisation or team has for that patient, to answer common queries and to check in on how they're doing. The calls will provide an additional layer of reassurance to patients, whilst allowing teams to get up to date individualised information about each patient's situation and their specific concerns.

From the point of view of a patient, this is a normal conversation from any home or mobile phone. Patients will not need to receive any training, access websites, download apps or be given new devices. The system will verify the identity of the individual, and provide a route for questions and concerns to be fed back directly to the clinical team.

In contrast to human conducted telephone calls, Ufonia offers the ability to simultaneously and repeatedly contact large groups of patients. This replaces manual calls being made by skilled administrative and clinical staff with a new channel of two way communication. Despite the resource constraints faced by NHS organisations, care teams will have a tool to keep in touch with individuals who otherwise might feel abandoned. The content of the call is captured and analysed to allow care teams to more easily identify patients who may be at risk or who are particularly concerned for further review.

The technology will initially be trialled at Oxford University Hospitals Foundation Trust. Patients, clinicians and administrative professionals will be involved in the process of refining the conversations and developing the platform. Following a successful pilot it will be made available across the NHS in time to help manage the aftermath of the initial peak of Covid-19 infections.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
TOUCH FANTASTIC LIMITED	Live interactive online classes for schools	£49,899	£49,899

Schools are facing unprecedented challenges in education provision during Covid-19 lockdown. Our vision is to provide them with a cutting-edge, easy-touse, technical solution to deliver excellent remote teaching which will enhance continuity of education during the current lockdown and future restrictions on face-to-face contact. It will also permanently provide valuable new methods of education delivery beyond Covid-19 conditions.

Specifically, this project is for the creation of a video and audio system for delivering live interactive online educational classes which are safe, secure, and appropriate for a classroom context.

Many schools are currently experimenting with existing video conferencing software. There are numerous reasons why no existing software is fit-for-purpose for delivering online lessons in a school context, including potential for:

- * malicious attacks/access to lessons (as in recent press reports e.g. BBC 10/04/20, Sky News 10/04/20, TES 02/04/20 & 03/04/20, Guardian 02/04/20)
- * unsupervised video communication between children and teachers/malicious actors
- * lack of data security including out-of-EU transfers breaching GDPR
- * accidental/intentional user broadcast of inappropriate images (e.g. inappropriate attire or background)
- * amplification of socio-economic/home-life inequalities in students' video backgrounds
- * conference management controls not appropriate for school lessons context

Providing a genuinely context-appropriate solution designed specifically for schools will revolutionise delivery of remote education in this country.

We are already delivering a partial solution -- Sparkjar -- our world-leading, teacher-student communication and workflow platform, providing groundbreaking, timesaving and communication-enhancing tools. It is fully implemented in testbed schools and we have pre-existing, exciting and realistic plans to roll-out at scale.

Sparkjar was designed for standard teaching conditions, but is already adding great value for testbed schools during lockdown, improving communication with students, resource sharing, and setting and marking assignments. What it cannot currently provide is a platform for full delivery of live interactive online lessons. This project is to add that functionality in the form of a new Sparkjar Smart Classes system which will take Sparkjar from being a world-leading solution for face-to-face education, to also being so for the delivery of fully online lessons.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
9Q LTD	Employee Welfare & Business Risk Management - COVID & Beyond	£49,749	£49,749

The rail industry comprises of various companies with employees distributed over a wide geographic area.

Train based staff travel many 1,000s of miles everyday, others are required to service the public or work in large clustered groups (such as track side maintenance; operational control; ticket offices; etc). Each group potentially comes into contact with 100's / 1,000s of people each day across the breadth of the country. The very nature of the transport industry means that all front line employees are at high risk of contracting communicable diseases. There are no adequate systems for (i) monitoring & risk managing employees diagnosed with COVID from an employers perspective; (ii) providing decision makers with real-time situational data to support informed and timely responses.

We will produce a mobile phone & desktop tracking dashboard that provides real time tracking of employees, in accordance with GDPR and ensuring anonymity, until such time as a potential health and safety issue has been identified. The tracking provides real-time proximity tracking with any other employees using the system & being logged \[date, time, location & train journey data\]. This will deliver management information to rail business decision makers to facilitate more informed decision making, through pattern recognition and likely infection rate projections and in the event of any employee(s) succumbing to COVID. This is especially important in confined, mission critical, spaces such as operational control centres.

In the event of any employee(s) being diagnosed with COVID the system enables, accurate tracking of the impacted employee(s) prior, during & whilst recovering at home / self-isolating; accurate data on other employees that may be impacted & hence, help prioritise a response such as targeted COVID testing. Real-time data analysis & reporting is made available to all authorised personnel via a dashboard.

The system is standards based and designed for integration with other data feeds and / or business systems to provide better situational insight(s); promote collaboration between organisations; support more timely and informed decisions given the critical nature of COVID type incidents where time is of the essence.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HELIAQ UK LTD	Low-Cost Powered Respirators Allowing Service Businesses to Resume Operation	£49,845	£49,845

The ease with which COVID-19 spreads has caused most service businesses, which rely on person-to-person contact, to cease operation. This is causing massive economic damage in many sectors of the economy, including healthcare (e.g. dentists), personal services (e.g. hairdressers), small retailers, repair shops, etc. Furthermore, it is likely that many of these businesses will have to remain closed for many months, leading to many of them not surviving. The businesses that do survive will further face significant consumer fear, and therefore reduced income, for an extended duration after the lock-downs are lifted.

What is urgently needed is technology that will allow most of these businesses to re-open as soon as possible, even at reduced capacity, while simultaneously preventing the spread of COVID-19\. In this project we are rapidly developing a low-cost powered respirator system that will allow service deliverers to be in close proximity to customers with negligible risk of transmission.

Hospital experience has shown that simple face masks, even with face shields, are largely ineffective in close proximity and service providers have to wear full-face masks for effective protection. However, a new development is needed since, in addition to the worldwide shortage of respirators and consumables (i.e. filters), all current respirator systems exhaust the wearers exhaled air directly into the face of the customer. Clearly this only provides protection for the wearer, and not the customer.

The new respirator system would be far cheaper and more viable than distributing tens of millions of full-face respirators and a supply of filters to most businesses and members of the public.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BRITEYELLOW LIMITED	Remote Monintoring of People in Need	£49,948	£49,948

Concern for the wellbeing of vulnerable people in care homes or living in isolation is growing. Emerging data from care providers shows that the Covid-19 pandemic has had a devastating impact on the elderly and most frail in care homes. Falls can also lead to someone dying when they bang their head and suffer a bleed. Fall deaths rose by 105% between 2008 and 2016 whereas the number of over-85s went up by only 19%.

Currently there is no available, accurate, real-time, remote motion monitoring for isolated people living independently or in care homes. Existing approaches are not accurate or reliable.

Briteyellow's solution will overcome these shortcomings. Using new and more accurate wireless technologies, it will provide effective real-time monitoring and alert system for carers of isolated people, at home.

The system is based on a small wearable device linked to an application. The wearable device will use ultra-precision motion tracking technology developed by Briteyellow to detect the location and motion of individuals inside their homes. The product will be worn by people at home and send data to carers automatically. And through the application of sophisticated pattern recognition, the application will identify any anomalies and trigger urgent intervention that can save lives.

This solution will help carers of people in need living independently or in isolation as a result of Covid-19 to maintain high quality care provision. It will also improve resource efficiency for care providers by allowing care workers to monitor more patients remotely. Helping to alleviate the impact of the shortages of nurses and care workers. And giving carers more precise data that can improve the efficiency of the whole social care system. Whilst providing vulnerable people with the assurance that their well-being is being monitored always.

This solution is especially needed now with the growing requirement for self-isolation to protect the elderly from Covid-19\. It will be accessible through a smartphone app or web portal.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LOFT DIGITAL LIMITED	MyEyeSite phase 2: safe sharing of data between rare eye disease patients and clinicians under social distancing	£49,770	£49,770

MyEyeSite is a collaboration between Loft Digital, Moorfields Eye Hospital, and UCL Institute of Ophthalmology, that seeks to address critical issues in access and sharing of clinical rare disease data between patients, clinicians and medical researchers.

These issues have become more pressing because of Covid-19\. Virtual clinics are now the only way of interaction between specialists and patients. Limiting travel for vulnerable patients will remain important for some time, yet no suitable system is in place for rare disease specialists to access patients' detailed technical clinical data digitally for a virtual appointment. The current working processes are based around in-person clinics, which vulnerable, sight-impaired patients must travel to attend, often over long distances. Clinicians depend on patients bringing with them data from other appointments (that may have occurred many years ago) and which the patient is expected to have collected and curated at the time. It is worth noting that NHS internal efforts to link and distribute this data have failed, due to the logistics of patient consent.

MyEyeSite aims to resolve this issue by empowering patients, through their rights under GDPR, to request, access, collect, manage and share their clinical data as they wish, digitally. MyEyeSite will provide tools for patients to do this in a safe, structured and systematic way. It will also provide an interface for doctors to safely access shared data, for example ahead of a virtual appointment. In due course MyEyeSite will provide interfaces for medical research studies to access data - with appropriate patient consent - to accelerate discovery.

The first phase of MyEyeSite was a feasibility study and prototype funded by Health Data Research UK to research the problem space, design and test potential solutions, and carry out a market study. We engaged patients, doctors and researchers as collaborators, carried out extensive user research and collaborative design sprints, held public patient days to garner wider input into work in progress, and engaged industry to explore long term sustainability options.

For the second phase we now want to fast track elements of the MyEyeSite R&D programme that will respond to critical issues stemming from Covid-19, by progressing the patient and clinician interfaces from prototype to live production use.

In doing so we aim to enable clinicians to provide a better quality of care to this vulnerable group during the pandemic, and also progress an important long term innovation for UK rare disease capability.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE MAGSTIM COMPANY LIMITED	Phrenic Nerve Magnetic Stimulation in the ICU	£50,000	£50,000

The project is to design a housing mechanism for a electromagnetic coil. The coil is to stimulate the phrenic nerve which in turn will exercise the diaphragm in patients undergoing artificial ventilation in ICU.

Exercising the diaphragm is important for the recovery of patients undergoing ventilation. The diaphragm's role is to constantly inflate and deflate the lungs. Once its role is being taken up by the ventilator it quickly atrophies. When the patient no longer needs ventilation the diaphragm is not in a state to re enact its natural role causing the patient to spend longer under artificial ventilation and recover.

The project is to take an existing coil and place it in a housing that can be positioned precisely on the neck of a patient by ICU staff.

The project is to;

- $\$ design the housing mechanism for a coil
- $\$ develop a cooling mechanism for the coil

Initial trials have demonstrated that

The benefit

* Increasing the positive outcomes from ICU

* Increasing the capacity of ICU

- $\$ Reducing the demand in ICU by early intervention of stimulating the diaphragm
- * Enable UK self-sufficiency in the production of life saving equipment
- * Reduced patient time on a ventilator
- * Reduces patient time in ICU
- * Improved patient outcomes

* Reduce patients stay in hospital

* Free up ventilators quicker for incoming patients

* Reduce the number of required ICU beds

* Fast patient recovery /Reduce the need for aftercare



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RW CONSULTING SOLUTIONS LIMITED	Information management	£48,699	£48,699

Controlled Events are delivering an innovative, flexible tool which will enable organisations responding to COVID-19 to coordinate information for the response and recovery from COVID-19 including decisions, actions, message alerts.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
QUANTUM LEAP TECHNOLOGIES LIMITED	Pressure PowerPack - increasing oxygen supply for hospital ventilation	£49,658	£49,658

The QL Tech PowerPack is a compact device, designed to retrofit to ageing oxygen pipework infrastructure in UK hospitals. With increased demands on hospitals' oxygen supplies, many hospitals are facing pressure drops in some wards leading to insufficient oxygen supplies to support patient ventilation.

The PowerPack is a retrofit box (less than 300mm x 300mm x300mm) that would increase the pressure to within a specified range at the output. The box can be installed at any point in the system (e.g. at the Vacuum Insulated Evaporator or on a ward) and can be used in parallel to achieve the required flow rates.

The system would plug into a 240V socket and have a battery backup (with alarm). If power was lost it would alarm and continue to operate until plugged into a power source. If the system fails, flow bypasses the system, ensuring that oxygen was still present, albeit at lower pressures.

The system would be dual redundant allowing for any one failure to occur and the system to still be fully operational. Upon a failure occurring an alarm would sound. The modular design of the system would allow for the system to be hot swapped - without having to isolate the oxygen system first.

The system would be design for rapid installation by pneumatic system trained personnel and through online monitoring (via the cloud) calibration and commissioning could be supported remotely.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
INDOOR BIOTECHNOLOGIES LIMITED	Development and validation of a simple cellular immunity test (SCIT) for SARS- CoV-2 (Covid-19)	£49,930	£49,930

As the current Covid-19 coronavirus pandemic unfolds, we urgently require screening tools that determine who has been infected with the SARS-CoV-2 virus which causes the disease. To enable the population and the economy to return to normal it is important to know who has become immune to the virus. This includes individuals who have already been infected, in some cases without realising it.

In order to gain immunity to SARS-CoV-2, an individual must generate an adequate immune response that protects from future infection. This can be measured by looking for antibodies found in blood samples that bind specifically to the virus. A number of companies have attempted to manufacture a test that determines whether an individual has these antibodies present in their blood. However, as widely reported, all these tests have failed to meet reliability criteria and thus have not been approved for widespread use. Technical hurdles with this type of test may continue to hold up their use. We propose a different type of immunity test, utilising existing laboratory tests.

Long-term protection against viruses not only comes from antibodies, but from cells of the immune system called 'T cells', which play a critical role in controlling and eradicating viral infections. From a single tube of blood, we can identify the presence of T cells that respond to the SARS-CoV-2 virus. This approach is potentially more sensitive at determining immunity than antibody testing, but this needs verifying on patients that have recovered from Covid-19\. Patients will be recruited by our long-standing clinical colleagues at the University Hospital of Wales, Cardiff, (Prof Andrew Godkin and Prof Paul Morgan) to determine whether a laboratory test for the presence of these T cells is a feasible alternative to the antibody test. This alternative approach would provide the same information about whether an individual has been infected with the virus and generated immunity to it. In addition, when a vaccine does become available, results from the test developed here will yield critical additional information as to whether an adequate immune response that protects individuals from SARS-CoV-2 infection has been generated.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
STEVENSON ASTROSAT LIMITED	An innovative approach to tackling supply shortages in health and social care services	£47,010	£47,010

Covid-19 has indiscriminately exposed the fragile state of the Health and Social Care (HSC) services in the UK. On 16 April 2020, a leaked letter seen by the BBC has revealed an extensive list of concerns about how the social care sector is coping with the Covid-19 crisis. The letter raised fears about funding, testing, personal protective equipment (PPE) and the shielding scheme for vulnerable people. What is evident now is that there is a clear imbalance and disparity in the availability of, and access to critical resources across the HSC sector. This has forced them to rethink their supply chain models and evaluate sustainability levels to cope in times of emergency.

On the flip side however, a number of businesses and individuals have quickly adapted their services by responding to the pressing and urgent need to fulfil local supply-chain demands. For example, in Scotland, Leith Gin and BrewDog have suspended their distillery activities to focus on the production of hand sanitiser. Similarly, more restaurants and cafes are turning their severely disrupted dine-in services into (non-contact) deliveries. These adaptations demonstrate that there is potential for strong collaboration and support between society, public and private sectors to fulfil the supply demands of their local HSC services and provide mutual aid across the region.

In this project, Stevenson Astrosat Ltd. - an Earth Observation and data visualisation company from Scotland - will run a trial with Shropshire Council to identify the location and type of supplies that could fulfil the demands of the HSC services in Shropshire. The trial will aim to gather data from the community via an online survey to aid the link-up to local health and social care services through local risk resilience groups and the adult social care services charities. The expected impacts of this project on society are an improved health response to the Covid-19 crisis through improved supply chain resilience and the enablement of volunteers, public and private organisations to collaborate and deliver tangible and immediate benefits to the HSC sector at a time when it really matters. The economic impacts will be enabling local businesses to adapt and continue operating thus retaining jobs and, economic output. This will aid faster economic recovery from the crisis. The environmental impact is to reduce emissions by minimising supply transportation miles as local demands get fulfilled more readily through "buy local" during the crisis and long after it ends.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
FLEXOTRONIX LIMITED	NFC-4-COVID-19: High rate manufacture of printed NFC microcontroller circuits to transfer COVID-19 point of need antibody diagnostic test results to the Cloud	£49,996	£49,996

NFC-4-COVID-19 aims to increase the manufacturing rate of NFC flexible circuit boards from 10,000/hour to over 400,000/hr using advanced manufacturing processes which are typically used in the food packaging and printed label industry. The step change in manufacturing rate of NFC circuits and their inclusion in each COVID-19 antibody diagnostic device for home testing allows critically important pandemic mapping data to be available in the cloud for analysis within seconds. This is essential to establish a significant sample size for robust statistical analysis to allow governments to take the correct action quicker to control the spread of the disease throughout the population and to allow informed decision to be made on when lock-downs should be enforced or removed. NFC-4-COVID-19 provides one part of the solution to pandemic management, where antibody tests are distributed through postal services to every citizen and following simple instructions allows a test to run and the test data immediately sent to a secure cloud based data management and dash board system. Without NFC connectivity other forms of data transfer are needed to transfer data from the diagnostic to a SMART phone and then to the Cloud. Optical techniques suffer from poor signal to noise, whilst dierect electrical sensing is more robust. The later is the preferred approach for COVID-19 antibody tests.

The project builds on proprietary materials and manufacturing methods developed for long range RFID tags and labels and applies these to make smart phone readable labels and devices. The extreme production rate will enable point of need diagnostics to be developed which immediately transfers sensor data, geo-location and user information to the Cloud for analysis and display by artificial intelligence algorithms, distributed ledger, blockchain and other Cloud Computing platforms, such as Microsoft Azure.

In addition, the unique multi-layer process will be more sustainable allowing more complex circuitry to be produced on smaller circuit boards which use less material. Such advances will allow very compact distribution track and trace labels to be produced which may log the environmental temperatures and humidity seen by sensitive goods during storage and distribution.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LIFE SCIENCE GROUP LIMITED	Development of Viral Inactivation Buffer for the transportation of viral contaminated samples	£49,876	£49,876

Current Covid-19 testing of patient samples follows guidelines published by the World Health Organisation (WHO), which have been followed by health organisations in developed countries such as the National Health Service in the UK and Centre for Disease Control (CDC) in the USA.

These protocols all transport virus 'live' in a cell preservation media that must be kept cool (2 -- 8°C) and has a limited life due to degradation. These samples are potentially infective and necessitate handling as Class Level 3 pathogens from when they are collected from the patient, through shipping, to inactivation in the initial processing at analytical laboratories. This limits the number of laboratories that are able to perform sample testing.

During previous Ebola outbreaks (another RNA virus), methods were developed to allow sampling that denatured samples by immersion of swabs in a chemical denaturant that killed the virus and allowed processing by laboratories at a significant reduction in risk in the supply and analysis chain. This methodology of denaturation of swabs by immediate immersion in high molarity guanidine thiocyanate solutions has been shown to be effective in denaturation of both Ebola (with the addition of detergent) and Influenza A viruses and is compatible with high throughput processing in labs.

Validation of a viral inactivation buffer (VIB) for Covid-19 samples would not only reduce the risk throughout the analysis chain from sampling to analysis, but also increase the number of laboratories able to process these samples at the lower risk category, with a significant reduction in processing time and the ability to test larger volumes of samples at a local level. This methodology has also been shown to increase the stability of samples, reducing the need for cold shipping and improving sample consistency due to the denaturation of RNAses within the samples.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CARETEK MEDICAL LTD	Caretek Medical Market Research	£35,718	£35,718

A much wanted pregnancy can be a happy time, but can also be a time of anxiety and stress, especially when access to healthcare professionals is limited, such as during the current Covid 19 pandemic. Women need a way to monitor the health of their pregnancy, both of themselves and their baby, which is both reliable and gives them positive feedback when things are going well, and a warning when problems may be developing, so that they can seek professional help. Current hospital medical records systems are complex, vary from one maternity unit to another, are difficult for women to understand, and remain the property of the Secretary of State after the pregnancy. We will give women an app on their smartphone which will enable them to input data about their own pregnancy and receive immediate feedback that things are normal or if further investigation is required. It gives every woman reliable information from national guidelines as they apply to her as an individual, i.e. it is person specific and not just generalisations. Importantly, the data will be the woman's own property even after the pregnancy is over, and will be her own personal diary of events, which will also inform care in her next pregnancy. If something starts to go wrong with the pregnancy, this is highlighted in a way that she can show to her midwife/obstetrician, to stimulate appropriate care. This will help prevent problems being overlooked or managed incorrectly, which can sometimes happen. When access to professionals is limited, as in the Covid 19 pandemic, the app provides essential monitoring of the pregnancy, acts as a permanent record, and a source of reference in any emergency where the hospital records are not available.

Being in labour is not only hard work for the mother, it can pose a significant risk to the baby. It is therefore vital that risk factors which have developed during the pregnancy are made known to the woman's caregivers so they can be taken into account when deciding if a baby should be delivered immediately if there are problems. The App provides an effective summary of these risk factors, and can highlight further risk factors that can develop during labour such as meconium staining (baby's poo in the fluid around the baby), fever, and slow progress.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
RENT CHIEF LIMITED	Remote Property Management - Viewings, Inspections and Maintenance	£38,591	£30,873

In times of lock down ensuring tenants are safe and comfortable and landlord's properties are well maintained is currently impossible without the need for face to face contact.

Rent Chief are proposing to provide a mobile app that will be available free of charge for most landlords to enable them to carry out key property management activities remotely without the need for direct physical contact between the tenant and landlord. The application will support the remote handling of property inspections, virtual viewings and provide the ability to demonstrate any maintenance issues with the property.

* Are you a key worker or volunteer looking to move quickly for your location of work? Are you a tenant needing to find a new property quickly? Join a live tour with a landlord or existing tenant to view a property without leaving your current home. Ask questions, view in detail and ensure every aspect of the property is viewed both internally and externally for the perfect location.

* Are you a Landlord who cannot currently perform property inspections? Provide your tenant with the ability to conduct an inspection for you.

* Are you a Landlord or Tenant who has a maintenance problem in their property? Enable tradespersons to view the issue remotely to see if it can be resolved without the need for physical contact.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
FRANKLINS INTERNATIONAL LTD	New manufacturing system and strategy for Covid19 Era - Making Household PPE / Products Commercially in the Community	£49,832	£49,832

Post Covid 19 era household products, garments and barrier wear for the general public. Made in the community.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
INDO LIGHTING LIMITED	Covid-19 PPE - PeRSo Powered Air- Purifying Respirator (PAPR)	£49,905	£49,905

Our project aims to develop and manufacture at high volumes an affordable and reusable powered air-purified respirator with hood and integrated mask (the PeRSo) which will enable frontline NHS staff and healthcare workers to remain safe, work effectively and in comfort whilst treating patients. The idea is for the PeRSo to supplement and even replace the current use of surgical masks or respirator masks (N95/FFP3) which are in short supply globally and with significant challenges continuing in the supply chain.

The PeRSo will provide personal protection to the user when working in a contaminated environment. The PeRSo will provide clean air to the user via breathing tube and respirator hood so that the user can safely, confidently, comfortably and effectively look after patients in the current Covid-19 pandemic. Through this project we can scale to a high-volume manufacture of PeRSo so they become standard issue to staff on the frontline.

Our NHS & frontline staff are working incredibly hard to save lives during the Covid-19 pandemic and we believe this product can help them stay safe and resilient when we need them most.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LIMITLESS TRAVEL LTD	Limitless Virtual Tours	£46,459	£46,459
Limitless Travel is a specialist holiday provider for people with a wide range of mobility restrictions and disabilities. Our aim is to launch Virtual Interactive Tours, designed principally, but not exclusively, for those with limited mobility or other disabilities. These Interactive tours will complement our extensive range of physical tours and will differ from standard "virtual tours" by featuring live, 2-way communication between knowledgeable local guides and tour participants.

Our interactive tours will give those who may be restricted in their ability to travel (both in the current lockdown, and going forwards) a stimulating, engaging means to experience interesting visits and days out. By developing this service, it is envisaged that the current target audience for physical tours for those with disabilities, can be extended by a further 50% by incorporating those who previously were not able to join physical tours for reasons of affordability, confidence or mobility. They will also provide vital alternative income for tour guides and destinations, severely impacted by travel restrictions.

This is an ambitious, but deliverable concept, having been originally defined in 2017, before being superseded by the rapid growth of the physical travel business. The current Covid-19 pandemic has changed market dynamics however, making the virtual alternative more pressing than ever. We have access to over 20,000 people in the Limitless community, and regularly run over 50 physical tours per annum for 1,000 or more people, to over 30 destinations, hence we can move quickly and approach potential suppliers and consumers to put our plans into action.

Funding for our project will be used to move from concept to MVP, then into a sustained period of commercial operation, culminating in developing longer term plans for further scaling. From the competition award, we can start rapidly with feasibility discussions with tours, visitor attractions, potential consumers and trialling unattended test tours directly with selected guides. We will use this to develop an MVP by July. We plan to soft launch this within our community and commence initial public tours to gather feedback. This will inform refinements and technical changes, before we recruit a broad range of destinations and guides and launch a sustained marketing campaign. From late summer onwards we will be running regular tours, whilst preparing longer term plans for scaling and future growth, to be funded through revenue or private investment later in 2020/2021\.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIOTIP LTD	Automated Remote Outbreak Antibody Detection (A-Road)	£49,487	£49,487

The current Covid19-CoV2-SARS pandemic, as well as the preceding outbreaks of Ebola virus, SARS-CoV1 and MERS have shown how important it is to be able to track the infection, so that routes of transmission can be identified and closed off. Countries that have been able to test-and-track have been successful at minimising the effects of Covid-19 (e.g. South Korea), while countries lacking tests have suffered greatly (e.g. Italy, the US and indeed the UK).

Large scale, remote immunity testing has been proposed using a portable, paper-based device similar to a pregnancy test that users can perform themselves. Although these devices inform the user of the result, they suffer from poor performance and there is no immediate feedback to governmental bodies in case the user tests positive.

Our project aims to improve upon the existing platform for remote home tests. Our technology is based on electrical detection of the anti-viral antibodies. We will use the same technology that is currently being deployed, but using animal-free detection reagents instead of antibodies, and by adding to the existing products instead of trying to replace them. We will us the same paper test strips enclosed in a recyclable casing, but adding an electrical readout that will be automatically uploaded via a dedicated App on the user's phone. This will look, feel and perform just like a pregnancy test, but instead of seeing the positive blue line, an electrical signal will be read by the test connected to a smartphone App, which will transmit the data to Public Health bodies and made available to a governmental body, which can take active measures based on real time data. The App will also function as an immunity passport to allow individuals with immunity to return to work.

Current models on the transmission dynamics based on SARS-CoV-2 are proposing social distancing should be in place intermittently until 2022 if no effective therapeutic or vaccination is available, hence we propose further diagnostic development past the standard LFAs would greatly contribute to improved pandemic management, healthier society and economic measures such as employment levels.

Using this technology, real time remote monitoring of the pandemic is possible by detecting viral antigens or anti-viral antibodies. At the same time, using the dedicated App and smartphone-implemented secure identification of the user by fingerprint or facial recognition, the same platform can be used to produce an instantaneous immunity passport.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FUTURENOVA LIMITED	Mobile Covid Testing Accessory for iBioShield Case	£49,979	£49,979

The iBioShield, a medical-grade case for iPhones 9, 8, 7 and 6, launches in May 2020\. Healthcare workers can be on duty through very long shifts, 12 hours not being unusual, and the Battery Boost Pack for the case will enable the iPhone to operate for that time without the need for recharging.

The case also has the ability to attach medical-grade accessories. Our Apple Pathfinder product research indicated a demand for a blood spot testing accessory for diabetes monitoring. FutureNova has the capability to re-engineer the device to accept a COVID-19 blood spot test should it be created in the future.

There is a general demand for large scale testing. By enhancing the capabilities of the iPhone range and extending its use in all infection control environments FutureNova addresses this growing demand.

As this is a medical-grade iPhone case using FDA approved materials, it can be cleaned with harsh infection control materials and be operated by a nurse using surgical gloves and full PPE.

The case is fully compliant with AppleResearchKit. Currently there are over 120 Million iPhones in circulation across the USA and UK. This device gives public health agencies, universities and hospitals the ability to gather mass COVID-19 testing data. All of it geolocated and secure.

It can be deployed in drive-in test centres, care homes, COVID-19 wards and large-scale hospitals such as the Nightingale Hospital. The Battery Boost Pack enhances the iPhone+case for urgently needed and practical solutions for NHS and care workers.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
INDIGO CONSULTING SERVICES LIMITED	A personal, portable, air sterilisation respirator	£49,926	£49,926

There is a pressing need to help the public resume some form of normality. Balancing economic and health needs in the period between coming out of lockdown and having a vaccine for mass immunisation is necessary. Doing this safely and responsibly is hard when little is known for sure about the virus. Doing it for an unknown but extended period is even harder.

This 6 month project will confirm the key requirements for a reusable, personal, portable air sterilising respirator. The work will confirm the parameters for something near the size of a 500ml water bottle with a few hours use before recharging.

By designing it for personal use it is applicable across the whole of society and all industrial sectors.

The need for washing hands, not touching faces, no handshaking and surface cleaning will remain.

The respirator will consist of a good fitting mask connected to a steriliser unit and a power pack. The unit is portable as only limited volumes of air need to be sterilised

The work would enable a separately-supported programme to have product available to the public in a few months.

Mass produced \[smaller, cheaper but still as effective\] respirators could start to be available soon after. The vision is for a safe and easily usable consumer product.

Sterilising the mask and unit is expected to be using readily available equipment and familiar processes similar to sterilising a baby's bottle ie with a soak in sterilising solution.

Once established the concept can lead to different versions for different uses. If used in the workplace, healthcare workers may need different features than public transport workers. However, this project is aimed at a consumer level device for maximum economic and social impact.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SAGA ROBOTICS LIMITED	Minimal Viable Picker	£47,349	£47,349

The UK soft fruit industry employs about 30.000 seasonal workers. Most of these are migrant workers who stay during planting and harvesting season. Labour supply in the UK is already suffering due to Brexit, and this will get drastically worse with restrictions on mobility of workers due to COVID-19\. Growers are finding it extremely hard to get the necessary number of workers to be able to keep production at normal levels. Shortage of workers will put the entire soft fruit industry at risk. With COVID-19, this problem has become more imminent and has significantly increased the need for quick solutions. Robotic harvesters are seen as one of the most promising solutions, but it has taken a lot of effort to develop these, and they are still not market ready. To speed up the launch of this robot, this project proposes to provide an early version of this system to growers in smaller numbers this season and in larger number for the next season. The system will only pick single strawberries, and not berries in clusters, which accounts for 30-70% of the berries depending on the variety. This will mitigate some of the lack of migrant workers for strawberry growers over the next couple of years.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
500MORE DIGITAL LTD	DataGait: Gait as a Measure of Functional Mobility on Discharge	£49,314	£49,314

This project is developing a user friendly App, which measures walking using your own phone, which can be used by clinicians and patients in the community, following discharge and/or recovering from COVID-19, to objectively measure their walking-quality, a key health indicator.

A recent review of COVID-19 patients showed the main discriminatory factors between severe and non-severe cases are fatigue, and breathlessness during physical activity such as walking, as well as at rest. Patients with or recovering from COVID-19 adopt a walking style where they curb energy expenditure; this can be detected by gait analysis, by objectively measuring indirect cardio-respiratory functioning and fatigue. Walking is influenced by various complex interactions of the body's physical functioning, and can provide in-depth information on wellbeing and the general health status of an individual. NHS physiotherapists have identified the need for a system to monitor mobility alongside more specific individual assessments of breathlessness to guide their decision making in the treatment of these patients.

Currently, specific walking tests are used clinically in a subjective way; we propose a remote monitoring system that will allow end-users to monitor their own health status, by capturing objective data for analysis, reporting, and feedback to clinicians. The system will use clinically validated and accepted measures of endurance and movement ability, via standardised tests including 10 metre and 2-minute walks. By instrumenting these tests with existing smartphone sensors, they will be objective providing both temporal (timing) and spatial (distance and walking speed) walking outcomes which have clinical value and use.

This data will be shared with expert clinician therefore obtaining objective and longitudinal information which would support clinical decision making and risk assessments for people with suspected, confirmed or at risk of COVID-19\. With the demand on frontline NHS staff ever increasing, and with most nonurgent out-patient appointments postponed, physiotherapists have specifically requested an application like this to be developed and deployed.

We will work with key stakeholders, clinicians, end-users as well as world-renowned academics, to deliver a product which can be tested and deployed within six months from project start, and which can be adapted for other existing clinical conditions and recurring epidemics and pandemics to come. This gait technology was previously supported by InnovateUK ICURe26 ([https://icure.uk/][0]) to market validate, with contacts made with 100 health professionals and organisations and business leaders around the world.

[0]: https://icure.uk/



Competition Code: 2003_CRD_CO_COVID19_P1

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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
CITY SCIENCE CORPORATION LIMITED	Route & Scheduling Tool for Social Good	£44,911	£44,911

With the restriction of people's movement small businesses which previously relied on visiting customers now find themselves having to explore the option of delivering to the customer home address to survive. Small businesses do not have much in the way of staff resources nor the logistical support and tools of larger companies, at present they would be relying on consumer satnav which offer A to B routing. Similarly, the volunteer army for delivering supplies to vulnerable people will require local groups to coordinate shifts and area coverage. Suboptimal routing will increase staff time, fuel usage and emissions, costing money and reducing the number of customers businesses and volunteers can reach and support with their resources. With reduced public transport, coordinating staff access to hospital and critical care is also a key issue.

Our project develops an optimal routing and scheduling tool for localised deliveries to help businesses and volunteers efficiently and effectively serve their communities. The routing tool will also help understand which services need to be maintained to provide access to hospitals, and provide optimal car-pooling for key health-care staff.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DEVELOPING IT LIMITED	Retail Onboarding to Global Marketplaces(eBay)	£43,396	£43,396

This project will support businesses who are not currently trading on eBay, or who are selectively trading on eBay, but see a significant opportunity to increase revenues from the change to increased online trading and to mitigate any drop in retail volumes from the high street. This project will allow for a fast cost effective way of building resilience into retailers and brands and allow them to reach new customer served by online marketplaces.

Our project consists of supporting retailers, brand and distributors (sellers) on the end to end process of launching products on to eBay using our Optiseller tools to maximise the speed and quality of your selling potential.

The project is looking to automate this process and reduce the time & associated costs by 2/3rds and allow retailers, brands & manufacturers to have an ROI within 4 weeks of trading.

With the support of this project we will be able to accomplish the automation, offer scale, a significantly faster experience with significant cost reduction. Historically this type of support was only available 'manually' and delivered face to face to large enterprises seller therefore requiring significant time & investment.

This includes the following elements:

- * Self service interface to allow for signup and background questionnaire
- * Automate Enrichment & optimisation of product data
- * Connectivity Options to allow for the creation of items for sale

Pre-Launch Audit- Understand current capabilities in the following areas;

- * Product Information
- * Storage & Fulfilment
- * Customer Service
- * eBay Knowledge

Store set up

- * Optimising all product content
- * Stock Management

Pricing strategy

Marketing Tools

Trading - Support/Guidance on trading eBay

Promotional & Merchandising



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIMBIC LIMITED	Limbic: A Mobile App for Psychological Therapy Support and Remote Symptom Monitoring During COVID-19	£49,932	£49,932

Mental illness is the largest cause of disability in the UK. One in four adults experience a mental health problem each year (NHS-England), costing £105billion (Department-of-Health). The COVID-19 pandemic is causing a parallel outbreak of depression and anxiety, which governments must manage appropriately (Yao, The Lancet, 2020). Social isolation is known to worsen pre-existing mental health conditions and has the equivalent health impact of smoking 15 cigarettes per day (American-Psychological-Association,2019). Quarantine leads to three times the levels of psychological distress compared with non-quarantined populations during disease outbreaks (The Lancet,2020).

Unlike other areas of medicine, mental healthcare lacks quantifiable metrics and robust data-driven methodology. Clinicians obtain data they need through time-consuming qualitative procedures and questionnaires delivered during face-to-face meetings. Not only does this waste valuable in-session time, increasing wait lists (compounded by COVID-19), but clinicians must also address the problem of collecting high-quality patient data remotely during quarantine. Furthermore, care providers require new methods of supporting patients in-between appointments to combat psychologically damaging effects of social isolation during the current pandemic.

Limbic are a digital mental health company that augment cognitive behavioural therapy. We have already developed a friendly mobile chatbot that engages patients and can provide a level of companionship during COVID-19 isolation measures (\>50% of patients still active on the platform after 6 weeks). When Limbic detects a low mood, it prompts the patient to note down associated thoughts, and even offers personalized coping strategies, designed by the therapist. Limbic further collects validated clinical outcome measures (e.g. GAD-7 and PHQ-9).

In this Innovate UK project, we seek to (1) develop new CBT dialogues for COVID-19-associated mental health concerns, and (2) develop a clinician mobile app to 'close the loop' such that clinicians can easily review data, generate referrals, and create personalised content for their patients. The project will allow Limbic to deliver a fully mobile experience for patients and clinicians, and will augment remote therapy during and beyond COVID-19 quarantine measures. The impact of Innovate UK funding will be to improve access to therapeutic support, improved methods to identify at risk patients, reduce the need for inperson check-ups, and increase the efficiency of mental health care delivery generating significant savings to providers and improving the patient experience.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SPROUT DESIGN LIMITED	One-Piece Adjustable, Reusable, Washable, Biodegradeable, Face-Shield Visor Head Bands	£49,999	£49,999

One piece reusable visor head bands responding to the COVID-19 PPE shortages not just for clinical and care staff but wider adoption by transport, retail, and the general public. This project will scale up an efficient design currently made using 3D printing, to more practical commercial volumes with injection moulding in the UK. This new design avoids extra components such as absorbent materials, making it possible to sanitise and reuse. It will be made with bio-degradeable materials to minimise the environmental impact of PPE. These combined strategies mean the visor band can be reused multiple times and be disposed of responsibly, saving the cost of many disposable visors and the waste they'd cause. This project will not only create the tooling but manufacture a target an initial batch of 50,000 visor bands.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
MINIATURE LTD	SOAP: A Covid-19 Data Collection/Triage Tool for Refugee Camps	£50,000	£50,000

As the UK and the rest of the world shelters at home, there are some communities unable to do so. Around 70m people are forcibly displaced around the world, and the World Economic Forum have identified this group as some of the most vulnerable to the effects of Covid-19\. Reports on barriers to accessing healthcare services across displaced communities in Africa, the Middle East, and Asia nearly all report either insufficient access to functioning health services within walking distance, lack of facilities and resources, and a lack of medical personnel.

In order to address these concerns, innovative responses to help healthcare and humanitarian responders are required. This project proposes software that streamlines Covid-19 triage in refugee camps by standardising the clinical interview process, facilitating symptom monitoring and sorting questions according to the most probable prognostic outcome for the disease. These probabilities are determined by a proprietary algorithm that uses likelihood ratios based on current Covid-19 data to visualise and improve the process of medical documentation and decision-making. Most importantly, SOAP will also allow healthcare and relief workers to better track the health of their patients, alert them to possible early viral infection, as well as for signs of deterioration of subjects at increased risk. This will lead to more timely isolation and treatment and enable the management of an outbreak at the population level..

SOAP is a secure web application, which means it can be used by any registered device with a modern browser, i.e., smartphone, tablet, laptop, or desktop. SOAP doesn't mandate the sort of device it should be used on, that's for healthcare and relief workers and to decide. SOAP is open and flexible; when it comes to integration, SOAP is non-opinionated. It can output data in a number of common text formats, and features export customisation out-of-the-box. This is vitally important in combating Covid-19 since the more data (particularly longitudinal data) that can be acquired, the more targeted our research and development can be in terms of treatment or cure.

SOAP is being developed by researchers at the University of Cambridge with specialisations in the use of artificial intelligence in medicine, decision making in humanitarian response, and translational medicine.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HAT COMMUNITY FOUNDATION	HAT-LAB - SafeTrace	£44,055	£44,055

SafeTrace is a privacy-preserving contact tracing and infection risk scoring application with which to fight the spread of Covid-19\. SafeTrace is based on the Hub-of-All-Things (HAT) open source technology.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEREA ARTIFICIAL INTELLIGENCE SERVICES LTD	Improve video conference therapy for children and young adults presenting with Autistic Spectrum Disorder, by using augmented reality animations, driven by A.I.	£49,882	£49,882

By putting together a consortium of A.I. practitioners, an NHS therapist and a leading UK animator, we will build an augmented reality platform that helps therapists interact with children and young people presenting with Autistic Spectrum Disorder via video conference. Therapy sessions by video conference have become necessary because of the COVID-19 pandemic. However they present challenges to the therapist trying to engage their client, and pick up subtle and unusual social cues.

Our platform overlays the therapy session conducted by video conference with a cartoon character who responds constructively to the content, sentiment and tone of the conversation. We believe that this will engage the child or young person presenting with A.S.D., and improve clinical outcomes.

Our platform will provide the therapist and child or young person with a selection of animations that illustrate a key learning outcome such as "how to handle bullying" or "how to go on a play-date". The animation can then be discussed by the therapist and child, with the character from the animation overlaid into the chat. During the conversation, the A.I. detects the content, sentiment and tone of the interaction and causes the character to perform pre-determined animated responses.

With a combined total of 40+ years experience in A.I. and data science across academia and industry, 10 years of experience of practical work with autistic children, and 20 years of cutting edge animation, our team brings together an unrivalled combination of experience in science, engineering, healthcare and the creative industries. Our system will use a combination of internal tools and external A.P.I's to perform advanced Natural Language Processing and emotion detection to drive the movement of the animated characters.

There are over 100,000 children and young people presenting with with A.S.D. in the U.K. Provision of therapy services to these children has been disrupted due to the COVID-19 epidemic, as live interactive sessions are moved online. We aim to mitigate the disruption that this has caused with our platform.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VIRTUAL HEALTH LABS LIMITED	Mi Wellbeing Planner and Coach	£34,334	£34,334

This project involves the development of a self-help, automated wellbeing coach app to help volunteers take steps to protect and improve their psychological wellbeing and happiness. This builds on and improves an existing prototype which has been favourable tested with people with cancer in the north west.

The 'mi-wellbeing planner and coach' has a friendly conversational user interface and gently guides the user through a series of steps which generates a personalised, psychological health and wellbeing improvement plan, and then supports the individual in implementing their plan whilst tracking changes in their wellbeing levels using the WHO-5 item wellbeing scale.

So many people are and will be experiencing worsening mental health as a result of the Covid-19 pandemic -- for instance stress and anxiety disorders, depression, addictive behaviours, anger control issues, eating disorders, psychosis and even PTSD. Existing mental health support systems, like talking therapies and hot lines, are being and will be overstretched.

Our app will help protect and even improve the mental health and wellbeing of volunteers, whilst additionally helping them get better at helping other people take steps towards improved wellbeing over time.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ASEPTIKA LIMITED	Deployment of Active+me for remote patient support and cardiac rehabilitation for vulnerable patients in isolation, following heart surgery.	£49,999	£49,999

Prior to the Covid-19 pandemic, recovery after heart surgery was optimised by engaging the patient in a rehabilitation process, arranged in stages:

* Phase I at the bedside after the procedure.

* Phase II as an out-patient

* Phase III as a series of exercise workouts and lifestyle education classes over 6-8 weeks (conducted by nurses and/or physiotherapists). Some Phase III classes were in hospitals, others in leisure centres.

* Patients were then referred to Phase IV classes, usually in leisure centres. These are supervised by Personal Health Coaches (PHCs) trained to high standards by the British Association for Cardiovascular Prevention and Rehabilitation (BACPR).

Completing a Phase III programme has proven health benefits and is mandated by NICE. Even though the Phase III classes were free, only 50% of eligible patients enrolled. The National Audit of Cardiac Rehabilitation found that women, people from low-income backgrounds and those from ethnic groups were less likely to join these life-changing programmes.

Due to the pandemic, all face-to-face rehabilitation processes have ceased. Front-line care-staff have been diverted to support the treatment of patients with Covid-19 and there is no spare capacity for patients recovering from heart surgery or a heart procedure. Active+me can significantly enhance recovery of these vulnerable patients, who will otherwise have minimal support during their self-isolation. Active+me will provide remote and self-monitoring, remote education delivery, remote exercise classes and virtual chat rooms.

Following a heart procedure, Active+me will support patients who are vulnerable, currently self-isolated and often have multiple medical conditions. While the risk of a second heart attack is only 10%, the risks from other conditions affecting the health of the patient is high (50%). Active+me addresses the major challenge of replacing face-to-face rehabilitation programmes with a novel "activation" service which is delivered remotely, includes a remote monitoring service, delivers a sense of community and achieves this whilst releasing NHS staff to front-line duties.

121,500 patients in the UK each year are eligible for Cardiac Rehabilitation. Women, ethnic groups, patients on low-incomes and those in rural settings have not been fully engaged. Active+me can now be delivered remotely, applying "the six pillars of self-care" developed by Aseptika:

1. Education;

2. Physical exercise (cardiovascular/muscle strengthening/balance);

3. Tools to self-monitor symptoms/physiological signs with "light-touch" remote monitoring;

4. Medication adherence;

5. Learning triggers, and

6. Long-term behaviour change supported by family, peers and non-medical mentors ("light touch" Behaviour Change Theory).

Funding from Innovate UK is required to support roll-out of Active+me.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BLOOM-IN-BOX LTD	Production of affordable reusable face masks	£49,910	£49,910

Affordable FFP3 face mask with a reusable filter manufactured in the UK using modern production methods with mass production capability built into the design. Enabling better use if resources to enable both supply and sustainability.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PLACECHANGERS LTD	Towards a data-driven community needs appraisal to identify and address health inequalities in existing and future neighbourhoods	£49,735	£49,735

The COVID-19 crisis highlighted that access to sufficient green spaces and communal facilities in the neighbourhood is essential in promoting public health and individual wellbeing. This project creates an online needs appraisal toolkit that helps assess and discuss the health merits of urban spaces underpinned by metrics for public health impacts and helps to advocate the needs of local communities in new master plans.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CURTAIN CALL LIMITED	Dynamic Teaming Platform for Live Entertainment	£49,484	£49,484

The live entertainment industry employs more than 2 million people and has effectively been shut down overnight. While the whole world is watching Netflix and streaming content, the freelancers behind these projects have lost money, and future job security. Hundreds of thousands of freelance creatives and technicians are without work, and looking for ways to collaborate, and connect with audiences.

The proposed CurtainCall project is to build a talent booking marketplace that also enables creative and technical freelancers to collaborate and work remotely. A unique matching algorithm helps connect people to projects. This could be for full or part-digital productions, and will save time and money for producers while introducing more flexible career management for individuals.

Innovative search and match features allow employers and project managers to find the right project at the right time -- opening up the talent pool and enabling quick, easy booking. This feature helps to match the right creatives and technicians with the right projects, at the right time.

The system caters for both digital and physical productions by integrating secure video conferencing tools and communication systems. This provides lowcost alternatives to in-person meetings, auditions, interviews and rehearsals. The platform will also assist new entirely remote-produced work to be made and distributed.

As the world begins to pick up the pieces following the pandemic, original and responsive solutions need to be put in place in all sectors. We are focusing on live entertainment, where a trusted, accurate real-time system is required to source and book talent. Freelancers also desperately need a support framework that can incorporate real regulation and worker protection.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TAYLOR GARFIT LIMITED	Light Weight Face Visor (PPE); for use by front line services dealing with Covid-19	£46,439	£46,439

The Covid-19 pandemic has led to a desperate requirement to increase the supply of personal protective equipment (PPE) in the UK. Frontline staff in hospitals, GPs, the ambulance service, care homes, prisons and other public sector services are crying out for more PPE.

In the Covid-19 daily TV briefing session of 11/04/20, Government Health Secretary, Matt Hancock made a direct appeal to all UK industry to produce PPE, even if this is a product in which they had no previous experience.

This project is a response to that appeal by opening a new area of supply for one element of the required PPE, so that frontline staff fighting the virus can be given the protection they need.

The project brings together four established UK companies to provide innovation in the design, development, manufacture and supply of a face-visor to give eye protection, which is a critical element of the PPE set.

The design consultancy Taylor Garfit Ltd has developed a concept for a visor which uses innovative materials rather than plastic. Thus allowing it to be mass-produced using an established UK manufacturing sector that has hitherto not produced PPE. The project will support increased demand by supplementing existing sources of face visor production.

Four companies have agreed to cooperate in the development and production of this visor. A significant advantage of the proposed supply chain is that it is entirely UK based; whilst many of the current visors are sourced from overseas, with commensurate problems in product availability and long lead-times, as global demand escalates.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Interfurn Medical Systems	Self contained - Mobile "plug and play" isolation room	£50,001	£50,001

A recent (March 2020) article in the BMJ suggests that "the vast majority of NHS emergency departments in England do not have adequate isolation facilities for containing the spread of infectious diseases such as covid-19" (Source: [Covid-19: emergency departments lack proper isolation facilities, senior medic warns][0]). In fact, it has even been suggested that converting complex and expensive hospital operating theatres into negative pressure isolation wards, might be an acceptable solution, although we simply cannot see any benefit to that.

Interfurn identified the need to develop the first 'plug and play' modular, mobile neutral pressure isolation room suite, as a response to the current COVID-19 outbreak worldwide. These suites will be designed for use by patients thought to be carrying a High Consequence Infectious Disease (HCID) or indeed any patient needing basic isolation.

Our solution includes:

?Removing the requirement for large, costly and cumbersome plant rooms for each isolation room

?Improving the design of the mechanical and electrical (M&E) design, in order to design a system that is 'plug and play' and fully compliant to current healthcare technical memorandum (HTM) guidelines.

?The provision of a scalable solution to the fluctuating needs of the UK healthcare system, giving it the ability to respond quickly to changes in demand (eg. infectious illnesses or winter pressures), where patients require isolation facilities in order to prevent the spread.

The design principle for this project will be focused on creating standard mechanical and electrical solutions to increase the speed of delivery, offer flexibility and reduce on site construction and labour time. Above all, the project will focus on technical compliance with the DOH's guidance documents healthcare premises HBM, HTM and building regulations. This is not always the case in temporary modular or mobile facilities; this is what makes this solution truly innovative.

The solution has further reaching potential however. The principle will be suitable for roll out to other clinical departments, including operating theatres; simplifying the build process and providing high quality, cost effective modular healthcare solutions which easily fit together and scale up or down as required.

[0]: https://www.bmj.com/content/368/bmj.m953



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE TECHNOLOGY RESEARCH CENTRE LIMITED	Development of a Low-Cost, Small Footprint, Point-of use, Hand & Forearm Sanitisation Station utilising tap water.	£49,608	£49,608

Infection Prevention & Control (IPC) is an NHS high priority, further heightened by the Covid-19 pandemic. The main pillars of IPC are use of PPE and rigorous hand hygiene.

The preferred hand sanitisation method is handwashing (anti-microbial soap & water, rinse, dry with paper towels ~30 seconds total time) which achieves log 3 microbial inactivation.

Alcohol gels are fast and convenient, but frequent use leads to dry/cracked skin that increases infection risk. Effectiveness varies with alcohol content & types; less effective than hand washing achieving < log 2 inactivation. Covid-19 has rendered supplies scarce due to greater demand and reduced production.

Our proposed system uses activated water vapour to achieve sanitisation from tap water at point of need, generating water vapour entrained in a flowing airstream. This air-water vapour stream is then ducted to a delivery manifold to 'fog' user's hands/wrists/forearms -- providing effective disinfection within 15 seconds.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EDGE DIGITAL MANUFACTURING LIMITED	Online tools for targeted and rapid digital upskilling	£30,000	£30,000

Covid-19 is impacting the manufacturing sector in a number of ways:

- * Health and Safety requirements to comply with social distancing measures
- * Increased remote working
- * Requirement to access core data remotely
- * Changes in customer demand and disruption to supply chains
- * Staffing pressures due to illness and self-isolation

Manufacturers can benefit from digital technologies helping them access and optimise core data and production data remotely. Processes can be improved to facilitate remote working and team collaboration. However, many manufacturers have previously been reluctant to implement digital technologies and a key barrier has been the level of digital skills and confidence within an older workforce. Many employees are also impacted by shielding measures and use of furloughing and there will be a need to help them prepare to use digital technologies in the future.

This project will develop an affordable and scalable solution to help manufacturers overcome employee driven barriers to digitisation and adopt new technologies quickly and effectively through targeted upskilling, on-demand support to achieve rapid cultural change and employee feedback monitoring to address concerns and improve confidence. The project aligns with the priorities of the Manufacturing Made Smarter Industrial Strategy Challenge Fund Wave 3 Challenge.

Key elements within this project will include:

* Validating an end-to-end process for improving digital confidence for employees in the manufacturing sector

* Developing interactive wire-frames and a prototype application to support this process

* Testing this process and the prototype application with a cohort of manufacturing employees

* Analysing data captured to further develop our understanding of employee barriers to digital adoption

Employees will receive a personalised digital readiness assessment and ongoing training and mentoring support to improve their digital confidence. We will capture employee feedback throughout the project and use this to tailor the training provided.

EDGE Digital has provided digital strategy and planning support to hundreds of manufacturers through events, seminars, workshops, webinars, coaching and mentoring. EDGE Digital is a supplier to the Made Smarter North West Pilot and project lead for Digital Breakthrough South East, a Business Basics funded project delivering digital adoption support to manufacturers in the South East. EDGE Digital is a founding partner of the Digital Readiness Level Tool, a free-to-use secure online resource developed and maintained by a consortium of manufacturing and technology experts; and its directors were technical

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

authors of PAS 1040:2019 Digital Readiness -- Adopting digital technologies in manufacturing.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NUMERION SOFTWARE LIMITED	Face Mask Fit Virtual Simulation	£49,759	£49,759

April 2020 scientific study "Face Masks Against COVID-19: An Evidence Review" Recommended that public officials and governments strongly encourage the use of widespread face masks in public, including the use of appropriate regulation.

According to WHO Covid-19 spokesman David Nabarro - the virus is not going away and wearing facial protection will soon become normal, (Radio 4 Today programme Monday 13th April 2020).

"Wearing face masks while travelling in London should be compulsory", city mayor Sadiq Khan has told the government. (BBC News 16/4/2020)

Several US states require wearing of masks, when you can't social distance such as in stores and on public transport.

Data shows that wearing a well-fitting mask can reduce the risk of contaminating others by up to six times.

There is no easy way currently to know how well a mask will fit your face without trying it on, and of course it is then useless for anyone else to use.

There is a need for virtual simulation of face mask fitting, to allow you to try several virtual masks and understand how they fit you.

In this 6 month project we plan to develop a software-based 3D Face Mask Fitting Virtual Simulator. A tool that mask manufacturers, purchasing bodies, health professionals and consumers use to evaluate face masks on 3D scans of their or others faces.

We will make this simulation available in the cloud for easy access at a reasonable price.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
YORK ARCHAEOLOGICAL TRUST FOR EXCAVATION AND RESEARCH LIMITED	Virtual Vikings - 'Not Just Another On-line Museum'	£49,896	£49,896

At JORVIK Viking Centre visitors come 'face to face' with the Vikings, they tour the reconstructed Viking-age city and encounter the sights, sounds and smells of life over 1,000 years ago. Now, York Archaeological Trust (YAT), who discovered the remains of the Viking city and created the ground-breaking museum 36 years ago, are working to create the same interactive experience for on-line visitors. From discussing a lunch menu with a Viking, and learning useful Old Norse phrases, to being instructed on how to nålebind a sock and trim your hangerok with home-made tablet-weaving. These are just some of the interactive activities that JORVIK's new on-line museum wants to provide, alongside the opportunity to discuss with specialists in-depth and evolving research and discoveries, such as African influenced Viking casserole dishes or forensic investigations exploring fingerprints found on ancient pottery.

YAT wants to create a new style of online museum that is not just centred around images of objects, academic information, worksheets and lists of facts; live interaction will be at the core of the offer, as it is at the physical version of JORVIK. Virtual visitors will have the chance to engage fully with the smallest of objects (a frog skull for example) to ask and get answered 'how did that get there?', to the most unique of objects (a Viking coprolite) to find out what stomach complaints that Viking was suffering from. The physical JORVIK museum contains fascinating evidence of life in Viking-age England, 1,000 years ago, and YAT wants to find a way of bringing that excitement to everyone's computer screens, so that real virtual tourism can thrive, and be economically viable, in the future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PENNOG LIMITED	Virucidal Coatings	£50,001	£50,001

This project aims to address the future demand for single-use PPE and medical devices in a world impacted by the Covid-19 pandemic. In particular, it addresses the need for high risk locations and activities; hospitals, social care, hospitality, wellness and social centres to be more resilient and efficient in their handling and use of PPE and surfaces that have the potential for lethal exposure viruses during future pandemics.

This industry-led collaboration aims to prepare and evaluate the efficacy of highly innovative naturally-derived coatings with virucidal functionality. The aim is to render pandemic viruses immobile and destroyed on contact with the coated surface. This innovative coating solution will render materials that are in contact with the Covid-19 and other viruses safe and will convert PPE in active use from a potential virus transmitter into mobile virus-deactivating devices.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HARMONISE TECHNOLOGY LTD	(HTL) Real-time transparency solution for COVID-19 surveillance	£44,966	£44,966

Harmonise will develop an innovative approach to real-time transparency for companies and governments adopting COVID-19 surveillance. Helping organisations maintain public trust and confidence by ensuring citizens remain informed and in-control.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VERSANTUS IT SERVICES LIMITED	Chatterbox for Business	£48,374	£48,374

Overwhelmed by customer queries? Are your customers frustrated because they can't speak to a human?

Our Chatterbox for Business platform allows your business to scale up its front-line support at any time - day or night.

With an easy-to-use AI-powered chat builder, you can easily respond to up to 80% of front-line queries without needing to disturb your in-house team. The Chatterbox system responds quickly, accurately and 100% securely with on-brand, human-like responses.

Our ambition is to help 100,000 businesses within 12 months, and we want to help businesses that are struggling, and so the service is free to sign up and start using.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KAY PICTURES LIMITED	Amblyopia Tracker	£49,885	£49,885

The Amblyopia Tracker app is targeted at helping a small, but significant number of children and their parents who are undergoing treatment for a condition called amblyopia, which affects around 5% of the population. When left untreated, amblyopia is the most common cause of preventable vision loss in childhood.

Children with this condition must wear and eye patch and attend hospital eye clinic appointments regularly to monitor their vision and receive feedback and advice.

The Amblyopia Tracker aims to help in two ways:

Firstly, to improve patient understanding and compliance with patching treatment by them seeing changes and improvements in their condition in a chart every week and being alerted to a change that requires clinical intervention.

Secondly it allows the eye professional treating patients to, when appropriate, safely lengthen the time interval between hospital appointments by simply reviewing the patient's chart. This has the potential for significant NHS savings from fewer hospital appointments being needed.

The app measures vision using the same scientifically accurate letters and pictures used in professional eye charts, but in a way that simplifies the process sufficiently for home use.

The app includes a recording chart that is populated each week from measurements taken at home in a fun way suitable for children from 2 years old upwards. These measurements are not the same as a regular eyesight score, so parents will not try to make comparisons, or second-guess the professional opinion. Clinical vision tests are not suitable for home users as they require significant expertise to provide accurate and consistent results.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HAMMONDCARE INTERNATIONAL LIMITED	Dementia Support UK: Connect, Consult	£49,271	£49,271

Dementia Support UK: Connect, Consult is an accessible dementia consultancy service that builds a support infrastructure for the care of people with dementia across the care home sector during COVID-19\. Using videoconferencing, this non-pharmacological and person-centred model will provide care home staff with dedicated one-to-one time with a dementia consultant to:

- * Better understand the behaviour of the person living with dementia
- * Problem solve
- * Build capacity within the sector

This highly innovative approach was developed in Australia by Dementia Support Australia (DSA). Since its commencement in 2016, this Australian Government-funded programme led by HammondCare has supported over 14,000 people with dementia in care homes, domestic homes and hospitals. DSA builds sector capacity through consultancy. A KPMG analysis focused on carer distress, medication use, health resource utilisation and clinical outcomes reported that the model achieves significant reduction in clinical symptoms (without recourse to antipsychotic medication) and significant reduction in carer stress. KPMG's economic analysis revealed that the model is more effective and less costly than comparable programs and, importantly, there are also savings to downstream health service utilisation, e.g. hospitalisations.

There is no comparable service in the UK. As such, it adds value to the current system and does not require input from already stretched health and social care services. The innovation is unique in that it:

- * Offers a nationally consistent infrastructure;
- * Can be accessed by any care home;
- * Provides direct access to a dementia specialist consultant there is no reliance on third party authorisation;
- * There are no clinical restrictions on referral, other than confirmation that a person is living with dementia.

We know that the care sector has been severely impacted by COVID-19; services feel isolated and routines and taken-for-granted support networks have been interrupted. However, if people with dementia and care partners are **supported in times of disruption, helped to develop resilience,** have plans in place to **mobilise assets and resources**, and are **supported in times of stress and distress within their own care homes and communities**, we can reduce the need for more costly health resources, such as hospital care. By avoiding crisis responses in the lives of people with dementia, and seeing ageing with dementia as a task of understanding complexity, we believe we can significantly impact on the wellbeing and quality of life of the people we serve and reduce the inequalities that people with dementia presently face within the health and social care system.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PREDICTIVE BLACK LTD	AI powered financial simulation planning for SMEs	£46,400	£46,400

Artificial Intelligence and Machine Learning powered financial simulation modelling tool for businesses large and small. Combining for the first time macro economic and market data for any sector/industry with the business's banking and accounting data to create a powerful, fact based decision making tool for business.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WORKOUT ONLINE LTD	"Beam for Cancer" - research and development of an innovative online rehabilitation program and clinical package to support patients living with cancer through COVID and beyond	£49,974	£49,974

Beam is an online exercise platform created to support people with specific health conditions to engage with exercise long term. We have successfully built our product for people with cystic fibrosis (CF), postnatal women and women undergoing the menopause.

Following the huge disruption to healthcare provision worldwide during the Covid-19 pandemic and having been approached by a number of NHS and private healthcare practitioners, we are building out our platform in order to support thousands more people across the UK with health needs to engage in supervised exercise tailored to their needs. Our first offering will be to work with a world renowned cancer centre to provide cancer rehabilitation across the UK through our platform.

Community is important for everyone and our brand prides itself on focussing on this point. We will therefore be running live group classes hosted by a cancer physiotherapist running three times a week to provide the benefits of group exercise classes during this period of isolation. We understand that sometimes we are not able to make classes that we had planned to, or simply do not want to workout in a group - we will have this covered with a bank of specialist and verified on-demand videos to be accessed at any time and as often as required! To help with the difficult journey of undergoing cancer treatment we also have the option for you to join public groups through our platform where you can meet other people going through a similar journey.

That's not all though. We recognise that knowing what exercise to do is daunting and everyone's abilities or desires are different and that what we need is someone we trust helping us along the way. Therefore we will be pioneering "clinic support", not available through any other platform. In this brand new feature, your own oncology team will be able to deliver private exercise classes as often as they can to you and fellow patients from your clinic. _Clinic support_ will include a variety of ways to monitor your health and track activity levels and will include access to an encrypted private messaging system allowing you to seek advice from your team about exercise and rehabilitation so you never feel alone in your journey.

We aim to make a real difference to people with cancer during this difficult time in a way that has never been achieved before.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KERONITE INTERNATIONAL LIMITED	Antimicrobial coatings for the reduction of airborne pathogens	£47,634	£47,634

Photocatalytic antimicrobial coatings rapidly kill pathogens in their vicinity when exposed to the correct wavelengths of light. Key advantages of photocatalytic antimicrobials are their very long life, lack of requirement for any additional chemicals, and safety. They are therefore an extremely useful tool for limiting the spread of infectious diseases. There are a wide variety of photocatalytic materials, including silver, copper and zinc oxide, but one of the most commonly studied and utilised material is titanium dioxide (TiO2) due to its effectiveness, ease of coating, and low cost. TiO2 is already used in applications such as anti-microbial paints and fabrics, and self-cleaning glass.

Conventional photcatalysts, including TiO2, do have some disadvantages, however. Firstly, to obtain high efficiencies very high surface areas are needed, which is often difficult to achieve using conventional coating approaches. Secondly, usually very specific wavelengths of light, typically in the UV region, are needed to activate the photocatalyst, meaning that special light sources or other devices are required for indoor use. What is needed is a rapid, low cost, and scalable approach to forming ultra-high porosity photocatalyts with wide spectrum (i.e. including visible light) activation.

Keronite has been using its proprietary plasma electrolytic oxidation (PEO) technology for many years to produce oxide coatings on light metals. When deployed on Ti alloys, the surface of the alloy is converted predominately to active photocatalytic TiO2\. A great advantage of the PEO process is that the coatings formed are inherently porous. Further, by altering the electrical parameters of the process, the porosity can be controlled. We have shown that it is possible to form extremely porous structures on TiO2 with pore sizes ranging from micrometers to the nanometers. We have shown that the coatings are highly photoactive. Indeed, the recent highly successful Innovate UK supported "Pristine" project demonstrated a 10-fold improvement in the efficiency of removal of contaminants such as glycols from water.

The proposed projects seeks to enhance and deploy this technology for the destruction of airborne pathogens under ambient indoor conditions. To do so we propose further developing the PEO approach to form ultra-high surface area TiO2 "scaffolds" which also incorporate other active species (e.g. silver) to form a high activity, broad light-spectrum anti-microbial surface. The program targets rapid deployment of the technology with partners and downstream users and includes a significant element of value chain engagement.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENDLESSS LTD	Develop new revenue opportunities for musicians who use our live, remote collaborative music-making app	£39,000	£39,000

Endlesss is a live collaborative music-making app for iPhones and iPads. It allows multiple musicians in remote locations to 'jam' music together live.

Professional musicians rely heavily on live performances for their income. This revenue stream has been annihilated by the COVID-19 crisis.

Professional musicians have been using Endlesss to connect and perform live together remotely. Potential opportunities are emerging for musicians to generate revenue using our technology.

In this project we will trial and develop 2 new ways for artists to connect with their fans, provide value and generate revenue by using Endlesss.

* Stream live, remote collaborative performances with band members and other artists using Endlesss.

* Collaborate live with fans through exclusive ticketed jams on Endlesss



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AG EDUCATION LTD.	Developing a Covid-19 Support App for Junior Healthcare Professionals	£49,226	£49,226

The Covid-19 pandemic has placed considerable strain on junior healthcare professionals who are receiving reduced support from senior colleagues due to stretched NHS resources. They are also losing out on career progression opportunities due to lack of time and cancellation of training courses. With a vaccine unlikely to be available for at least 18 months, this disruption will persist for some time. Our project focuses on developing a mobile application which provides junior healthcare professionals with the guidances required to manage Covid-19 patients in the short-term, whilst ensuring they are able to access training to progress their careers in the longer-term.

Adequate senior support and potential for career progression are significant factors in boosting morale and job satisfaction amongst healthcare workers (Collins _et al_. 2000). Finding novel ways to support junior staff and ensure that mechanisms for career progression are still available will therefore be a key part of supporting healthcare worker's mental health during this crisis.

Current national Covid-19 guidance is targeted at senior clinicians and often has much assumed knowledge. This makes it particularly difficult for inexperienced staff to use. AG Education (medical education provider) propose to build a comprehensive educational mobile application, offering a solution to junior healthcare professionals which:

1. Provides the latest evidence-based guidance on the treatment of Covid-19 patients, in an appropriate format for junior healthcare professionals.

2. Provides remote access to career progression resources and training.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BODY ASPECT LTD	A virtual reality system for simulating social distancing in public places	£47,766	£47,766

This project will create a virtual reality tool for investigating how to minimise the spread of Covid19 and other diseases in public places. We will develop a virtual reality system that tracks the spread of the virus as an infected user moves through a particular environment. The system will enable the layout of the environment to be altered and rules for customer behaviour to be set.

We will focus on the specific activity of supermarket shopping, but the software will be designed so that it can be adapted to other relevant situations such as public transport, hospital settings and care homes.

Previous studies have attempted to model how a virus spreads; for example, a team at Aalto University modelled how aerosol particles can spread and dilute when an infected person coughs. Our approach will complement such studies by providing a practical tool to explore the effect of modifications to environmental layout and customer behaviour on transmission of the virus.

The system will allow customisation of store layout such as aisle spacing, and customer behaviour such as social distancing guidance.

Virtual Reality enables us to transport a user, in this case a shopper, into a particular environment in a way that is safe, controllable and more convenient than conducting actual research in store. We will invite supermarket representatives and public health experts to be involved defining user requirements at the start of the project. A user group will be recruited to assist with testing.

Each user will be given a shopping list and will simulate the shopping experience in several different store layouts using a first-person perspective. The store will be populated with other (biometrically accurate) avatars with pre-programmed paths around the store. Each shopping experience will be replayed in a 3rd person perspective with 'collisions' highlighted where people break the social distancing rule.

The Covid19 pandemic has increased pressure on supermarkets to acknowledge their responsibility to society. Whereas normally store layouts are designed to maximise profit, usually by making a customer's route as circuitous as possible, this technology will enable the effect on disease spread to be assessed.

Beyond this project, the system will be adapted for other retail stores, and other public environments, such as public transport. Ultimately it will enable Public Health England to assess, and communicate visually, the impacts of social distancing in public places which will improve public awareness and inform national guidelines.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARCHANGEL IMAGING LTD.	FeverScreen - standalone distributed edge-AI thermal cameras	£49,810	£49,810
Developed by Archangel Imaging Ltd, based at Harwell Innovation Centre near Oxford, FeverScreen is an AI-assisted, autonomous IR camera system that will demonstrate unobtrusive monitoring of high numbers of people through a transit point to report health alerts; tailored machine vision algorithms will automatically detect face skin temperature as an indicator of possible fever and provide variable alerts based on proximity. FeverScreen is intended to provide immediate feedback via TV screens to those people being scanned to increase trust in these innovate systems. The recent global health alert caused by COVID-19 has demonstrated how quickly a virus can spread and how little the UK Government can do to detect it. FeverScreen will demonstrate the importance of AI-enabled thermal cameras to monitor, detect and alert cases of risk (people exhibiting elevated skin temperature).

This autonomous system combining non-intrusive sensors, coupled to verification from AI powered cameras, will demonstrate how cutting-edge technology can be effectively used to increase public safety and increase the incidence of detection of fever. The FeverScreen standalone system is readily deployable to numerous locations, has the option to harvest power for its rechargeable batteries or use mains power and it will provide alert messages to appropriate staff to allow human intervention. This technology has previously found use in systems designed to detect and protect wildlife in remote settings and to prevent theft from public sector infrastructure.

Company description: Archangel Imaging specialises in advanced deployable machine vision systems, with power, communications and AI-enabled detection. Archangel Imaging is recognised for its expertise and focus on real, deployable capability for the end user. We take great pride in our work using AI cameras in development programmes to help protect wildlife in both Asia and Africa. The company is an established supplier and partner of UK Ministry of Defence and several defence primes and specialist SMEs. The company is active in infrastructure security and safety monitoring (cable theft, rail safety, oil and gas leakage detection etc.) with various bespoke equipment being deployed in the Middle East, South East Asia and Northern Europe. The company maintains capability in deployable devices (cameras and others), communications (various redundant means), visual AI and management user interfaces for command and control.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SLOAN WATER TECHNOLOGY LIMITED	An innovative faucet for cleaning hands, PPE, ventilator parts etc.	£48,628	£48,628

Since 2015 we have been popularising that we should handwash for 2-rounds of 'Happy-Birthday', by building games/science festival exhibits. We showed many children went from it and, for one day at least, sang 'Happy-Birthday' in the toilets. However, what will we do when soap/detergent/bleach gets scarce, as producers/warehouse staff and delivery-drivers fall sick, supply-chains break, and the local supplies in homes/hospitals/warehouses/cruise-ships run out? To prepare for that eventuality, we designed a faucet that can clean with unheated water, without soap. Moreover, when soap, bleach and other additives are available, this device makes them far more effective. Field hospitals need a minimum of water and electricity to run: with this, our device can clean hands/PPE/ventilator parts and food trays etc.

The faucet works by passing sound down the stream of water. It has been proven to remove all manner of contaminants. It is safe for skin, and highly effective at removing bacteria and fungi. It was scheduled for an NHS-pilot to clean the contaminant that causes variant-CJD ('mad cow disease'), one of the most difficult contaminants to eliminate. That pilot is now postponed because of COVID-19, and we wish to alter the device in one way, to allow its use more widely for removing Coronavirus. That amendment will prevent the small amount of water droplet-ejection at the nozzle exit: the ejected droplets are clean, uncontaminated water, but we cannot provide a product that ejects droplets, even with no risk of contamination, in an environment where everyone should be automatically avoiding droplets.

Our 6-month workplan will eliminate this droplet-ejection, removing an obstacle that is stopping us scaling-up production to supply the new-build hospitals (in the first instance) and the cruise ships to use these faucets, and for existing establishments to replace existing taps with them as needed. We then wish to further scale-up to supply homes, so that cleaning with warm soapy water can be made more effective; and so that those items we currently must clean in unheated water (salad, fruit) or mildly heated water with low concentrations of chemicals (the skin of babies) can be effectively cleaned. When such faucets are widely used, they will be equally effective from day one of the next pandemic, without the need to wait 12-months for vaccines and cures.

The average hand washing lasts 6s, not the recommended 20s: our faucets should make those 6s as effective as 20s under a traditional faucet.



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Total available funding £34m.

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
GAME DR LIMITED	Use of proven gaming technology to educate young people on COVID-19, promoting adherence to social distancing and providing a platform for trusted information dissemination	£49,959	£49,959

Multiple waves of infection transmission are anticipated for COVID-19 before a vaccine is developed. To flatten the curve and reduce deaths, governments have released guidance for general public focused on social distancing and hygiene behaviours. However, a standardised strategy to educate young people has not been established.

Our pilot research has indicated that young people feel invincible against coronavirus, with only 17% of participants believing they will catch coronavirus and 35% believing they would catch it, but it would not make them ill. However, 10% reported concerns over "when it would be over".

To this end, there is an urgent need to develop accessible resources for young people to ensure that government guidance is followed, and anxiety is alleviated. To meet this need, the project team aim to develop a mobile game to educate young people on COVID-19\. The video game will be developed on Unity game engine for mobile devices, allowing widespread uptake and dissemination. Backend game analytics will be used to map player knowledge gaps and attitudes towards COVID-19\. These data will be used to assess effectiveness of game and in combination with government data, to better understand barriers to government guidance, and social impacts of COVID-19\.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JJA PACK LTD	New Digital systems for food and pharmaceutical processing: from ketchup to Hand Sanitiser	£50,000	£50,000

The provision and supply of hand sanitiser has been in critically short supply during the Covid 19 crisis. This project proposes to convert underutilised food processing equipment, previously used to produce discretionary food and beverage products (condiments and sauces) to deliver 36000 litres per day of new capacity of hand sanitiser. The project will enable this change of product application by applying leading edge process control techniques to the machine control. The very different rheological properties of the food material and the hand sanitiser requires significant re-design and re-engineering of the equipment to deliver the new filling capability. The new control system will however have significant long-term benefits. The new control capability will provide a machine which has un-paralleled agility. The digitalisation of the whole system will enable the control system to re-configure the application to change autonomously from one diverse product to another, and also to monitor performance during the continuous operation of the machine to manage the performance and output quality with minimal interaction from operators. The changes will therefore deliver: Significant new capacity for hand sanitiser production; New design and digital operational capability for food and beverage filling equipment; Future system process agility for rapid changeover, remote fault monitoring and material property driven setup.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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

Participant organisation names	Project title	Proposed project costs	Proposed project grant
REDBITE SOLUTIONS LTD	Large scale tracking of Personal Protective Equipment (PPE) across hospitals and warehouses (TRAPPE)	£49,924	£49,924

It has recently become very evident that when responding to global disruption, systems must be in place and readily available that allow for the aggregation of available assets and inventory across nations and even between countries that allow for intelligent distribution of available equipment to those that need it.

The proposed solution will ensure that PPE supply and demand is managed effectively across the country, rather than being stockpiled in some areas, while others are struggling to cope with shortages. This project will create a cross-organisational solution for managing mass levels of personal protective equipment (PPE) initially, with extensions to other assets and inventory in future. The project will focus on extending the existing solution, itemit, currently designed to manage assets such as tools and equipment to allow for large-scale PPE management and distribution.

In immediate response to the current crisis, the usage of itemit has already been donated free of charge to those responding to the crisis, including to the University of Cambridge which is using the solution to track small-scale PPE distribution.

Further extensions to this project have already been identified and include extensions from managing PPE to include assets such as hospital beds, critical medical devices and equipment and ventilators.



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Total available funding £34m.

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
GLOBAL INHALATION EQUIPMENT T/A SOMNI SCIENTIFIC LIMITED	Unique Oxygen Concentrator for Improved Oxygen Delivery	£49,895	£49,895

The Unique Oxygen Concentrator Project will design, produce and manufacture a more efficient oxygen concentrator that better meets the oxygen needs of hospitals and care homes responding to the COVID-19 pandemic. The new design improves oxygen flow rates and increases pressure, allowing the storage of oxygen. Enabling 1 unit to distribute to multiple patients. Additionally, the project increases the control of supply and cost by manufacturing these oxygen concentrators in the UK.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LOW SULPHUR FUELS LIMITED	LSF Plastic Conversion Test Program	£49,472	£49,472

Low Sulphur Fuels small team of dedicated engineers and chemists have developed a new technology that is making significant changes to the way used oils, rubber tyres and plastics are recovered while substantially reducing their emissions to the environment.

The process uses advanced electrochemistry to modify the molecular structure of hydrocarbon-based used materials (oils, rubbers, plastics) by allowing unwanted contaminants (sulphur, metals, chlorine, etc.) to be extracted by a low cost, near zero emission process. The outputs are cleaner new fuels (that are required to be used by the shipping industry to meet current worldwide emission regulations as well meeting EU REDII regulations) for rail and road vehicles.

LSF successfully won a grant from Innovate UK in late 2018 and subsequently designed, assembled, commissioned and operated a, 1000T/Yr, Pilot Unit while overcoming a number of Brexit related resource and procurement challenges. LSF has proven that the technology can be scaled from laboratory to Pilot Unit.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMBERS THE DRAGON LTD	Getting school ready with the Keiki Island Kids	£49,673	£49,673

Following the school closures required to reduce the spread of Covid-19 we are facing an unprecedented difficultly in September when thousands of four year old's will start primary school without being school ready. Due to social distancing it is predicted that children will experience unusually high levels of attachment anxiety, lack of physical readiness such as coordination skills and toileting and an increased difficulty in pro-social and educational attainment skills like concentration and turn taking. This is of serious concern as School readiness is shown to provide the foundations for a child's education with the school readiness gap at five years old explaining 40 per cent of the attainment gap at the end of secondary school.

Due to the pandemic an innovative digital approach is needed to try and replace the school transition work that would have been completed during the build up to the summer and lessen the school readiness gap. We will create a high quality animation for children, explaining the process of transition and replacing the work that would have been completed in nursery settings as well as a number of downloadable resources for parents and which can be sent out by schools to consolidate the learning. These will sit as part of our innovative platform, Embers the Dragon, which uses a blend of creative expertise and clinical expertise to create child development programs that can scale at mass.

All of the resources included in the package are written by clinical and educational experts and underpinned by current best practice and evidence. With no digital school readiness program available in the UK this project will be essential to ensuring there is not a secondary crisis of childhood development as a result of Covid-19



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ANIMMERSION UK LTD	Virtual Interactive Events	£44,333	£44,333

Animmersion's Virtual Interactive Events (VIE) platform, unlocks the potential for organisations to run engaging remote events with large audiences using 3D technologies married perfectly with video presentation and chat.

The suite of powerful 3D presentation tools enable live product demonstrations onscreen or in Augmented and Virtual Reality, and ensure meaningful and highly bespoke engagements that cannot be achieved through traditional conferencing tools.

Physical spaces and environments can be replicated for exploration online with spaces unlimited by practical considerations such as price per square for and real-world physics. Meet your customers in these spaces, demonstrate products and discuss industry developments.

Talks and workshops can be streamed by video and further enhanced with interactive 3D content and material. Chat rooms allow more focussed engagements also including 3D demonstrator content.

Digital Asset Management tools allow upload of CAD data and conversion into various digital forms for delivery through different channels. Assets can be redeployed and used in presentations and in one to one customer engagements via whatever digital channel makes most sense for your use case. Helpful guidance and examples allow quick education as to different presentation options (3D/AR/VR) and how they can be used to greatest effect.

With digital asset management tools, CAD data and other product collateral can be uploaded to the system providing a consistent, streamlined sales and marketing platform.

Additionally the platform can be run in parallel with a physical event allowing greater engagement than physical foot fall alone. In this respect provides a level of insurance against further cancellation of events post covid-19 as well as reaching a broader audience and meeting a higher level of accessibility.

Events can be archived, engaged with in 'catch-up' mode or re-run at minimal cost. Digital asset base remains deployable in ongoing business development and audience engagement activities post-event and can continue to add value to physical engagements as a presentation resource.

Leveraging on computer game technology, Video conferencing, live chat facilities and also AR and VR, the VIE platform provides a genuine alternative to physical events and conferences.



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Total available funding £34m.

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
OXFORD MEDISTRESS LTD	COVID-19: Development of novel algorithm-driven digital platform for assessing the Leukocyte ImmunoTest(TM) as a clinical parameter in monitoring vulnerability to coronavirus	£49,878	£49,878

Oxford MediStress is developing the advanced Leukocyte ImmunoTest (LIT)(tm) as a rapid (10-minute) fingerprick _in vitro_ blood test to assess how well an individual's immune system is functioning. In previous studies involving patients with a variety of cancers, we have demonstrated the clinical potential of the technique. Results from the recent FORECAST clinical trial at UCLH showed strong correlation between the LIT score and eventual clinical outcome for 70 prostate cancer patients. Recently, OMS has been invited to participate in a COVID-19 study on health care workers and critically-ill coronavirus patients at a London research hospital. In that study the team hopes to demonstrate the potential for the technique for providing an early-warning indicator of poor immune function for frontline NHS healthcare workers in order to determine who is at greatest risk of contracting coronavirus. The study will also use the LIT(tm) to monitor patients critically ill with coronavirus. Eventually, the technique could be used in many other facets of COVID-19 treatment and clinical research, including providing a new and useful clinical parameter for monitoring COVID-19 patients in intensive care, providing a new clinical parameter for assessing immune status for use in developing new COVID-19 vaccines and therapies, and assessing impact of PTSD (which causes immunosuppression) on healthcare workers after the initial pandemic has passed.

In this project the team will develop a novel digital platform to support data analysis. The platform will enable individual assessment of risk/vulnerability based on a number of clinical parameters including the new clinical parameter (LIT) which we have developed. We will develop new mathematical tools and a new smartphone app as part of the project.

The key benefit of this project for the general public is the development of a new rapid test for assessing the strength of an individual's immune system.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CROPDESK TECHNOLOGIES LIMITED	Development of digital recruitment tool to match UK unemployed to farms experiencing labour shortage as a result of Covid 19	£49,845	£49,845

Specific need: T**he UK farming industry requires up to 90,000 seasonal workers** at peak, to grow and harvest its crops. The labour to grow our crops has, for the last 30 years, traditionally come from Eastern Europe, as seasonal migrant workers. COVID-19 restrictions on movement of people and global lockdown of transport infrastructure currently prevents them from returning. At the same time, claims for Universal Credit in the UK surged to 950,000 since the -COVID-19 lockdown. The UK is suffering job losses on a scale and speed un-precedented even after a global financial collapse. It is expected that the unemployment rate will rise from 3.9% pre pandemic to 5.2% in April, further in May and June. There is a significant potential UK workforce, likely to want to engage to resolve this key worker crisis. Providing the infrastructure needed to connect farmers with this resource is a sector priority.

Innovation:

A unique mobile recruitment app and cloud application which takes details of applicants, pre-checks them for suitability, and offers them to farm subscribers by matching answers to set questions. Employer selects which worker(s) to offer work to, using redacted data and supplies information on their farm and jobs offered. On acceptance, the worker's full details are passed directly to the employer and their contract begins. The app pushes a periodic satisfaction survey to both employee and employer which acts as a 2-way review. Employers notify the system when a contract ends.

Delivery: Cropdesk has been operating in the technology market for 5yrs, focussing on technology, with a CEO who is a soft fruit farmer himself of over 30 years.

Cropdesk will own the IP to this product but will sub-contract agriculture recruitment specialist, Agri-HR to consult and help commercialise it

We have multiple initial routes to market:

* Through Agri-HR, A European leader in agricultural recruitment (a Gangmasters Licenced Agency)

* Through Cropdesk's customers and contacts including Berry Gardens Ltd, the UK's largest soft fruit cooperative

* Through Enterprise Europe Network connections and overseas partners and the Knowledge Transfer Network, with potential sector support through the Knowledge Transfer Network

* To applicants through a national social media campaign and potentially the DWP (Department of work and pensions)



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TENSARC LIMITED	Novel face mask design for source control of viruses as a low-tech tool to enhance social distancing	£49,977	£49,977

This project is a proof of concept to study the efficacy of a new type of mask for community-based source control. If efficacy can be established, this form of Personal Protection Equipment (PPE) will be a new tool for enhancing social distancing and helping to get people back to work in a safe way. We will reframe the requirements analysis for source control PPE, validate emerging approaches, and assess various materials and design approaches.

The goal is to assess a new type of mask (face gaiter) and compare it to existing masks for suitability as source control for non-medical purposes, to meet government guidelines and the physical requirements of extended work hours, job duties, and related social interaction. The face gaiter resembles existing sport face coverings but is engineered specifically for source control. It is also durable, machine washable and can be reused hundreds of times.

One objective is to modernise the tools for source control; currently there is a reliance on masks designed for medical or hazardous materials environments, which may or may not be suitable for use by the general public over extended periods of time. Another objective is to help evolve reviews of source control options towards UK and international rating systems.

The project addresses a long-standing need surfaced by the COVID-19 pandemic. Source control has been used to reduce the transmission rate of bacteria and viruses, such as when sick patients present to hospital. Surgical masks may be issued for source control to a symptomatic patient and to those accompanying the patient to account for asymptomatic and pre-symptomatic cases. A key deficiency in such masks is the quality of the seal where the mask meets the face: the masks are poor-fitting; do not accommodate facial hair; lay in close proximity to the mouth; and have low breathability. Taken together, expelled air can escape around the sides of the mask and reduce the effectiveness of this type of source control. All of these issues are addressed by the novel design of the face gaiter.

When surgical masks are in short supply then a reusable alternative is advantageous. A source control tool suitable for extended use and re-use is timely due to the COVID-19 outbreak and it can support the Government's recovery from the pandemic by limiting the transmission of infection, e.g. in the delivery of essential services and more generally once restrictions on movement start to lift.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPYRAS LTD	Implementation of Paper-based Sensor into Disposible Masks for Continous Respiratory Monitoring for Telemonitoring	£49,960	£49,960

COVID-19 is a respiratory based pandemic. With breathlessness being a vital symptom, there is no quantitative method for monitoring essential workers or the most vulnerable individuals for early symptoms. Using Spyras technology incorporated into face masks, we aim to monitor breathing pattern distress and indicate possible deterioration from COVID-19\.

With the predicted production volumes of face masks reaching 10 Billion in 2020 only in China(Lai Lin Thomala, 2020) and the high risk of exposure of the people using these masks to COVID-19 a means to predict possible contagion through respiratory analysis embedded within the mask becomes attractive. The benefits of wearing face mask in the fight against the virus are understood and part of clinical practise to wear, countries like Czech Republic, Morocco, and New York are making masks mandatory for the public.

Personal protective equipment is a continuing limited resource. Spyras can integrate its highly accurate paper sensors into 3-ply and FFP2/3 respirator masks with minimal disruption to existing manufacturing practices. Spyras' reusable electronics would be contained within a small module that connects to the disposable mask and sensor. A mobile application would connect to the sensor in the mask providing respiratory analytics. This mobile app would not only gather respiratory data but also work as a symptoms tracker to monitor a cough, breathlessness and temperature when the user inputs qualitative data. Data collected through a remote app can be passed to a secure cloud platform and provide an interactive data dashboard for observation both holistically from a government viewpoint for disease spread per demographics down to a clearly detailed clinical need.

With funding from Innovate UK, Spyras will be able to redeploy and develop its platform from monitoring the breathing of individuals in sports and hospitals, to face masks at work or outside and take a more measured approach in their individual health profiles.

Spyras can extend app features for post virus support, such as implementation of rehabilitation instruction and measures. This is to reduce the possibility of a 'second wave' of infection when restrictive measures are lifted and to assure individuals with the aftermath of such a global event. Moreover, this would positively impact the recovery of people post COVID-19\. As seen from coronavirus outbreaks of the past such as SARS and MERS there will be a need for rehabilitation post healing not only for patients who have been hospitalised in ICU(Chan 2005).



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KRTS INTERNATIONAL LTD	KRTS Power to Support	£35,092	£35,092

KRTS Power to Support(TM) gives Team Leaders and Managers the tools to help support and protect the psychological wellbeing of their staff, and each other, through the coronavirus pandemic. This includes short digitally accessible educational resources that are tailored to each industry. They provide a safe, clear, simple and practical support model for managers and team leaders of key workers who have had to remain in work, and those who need to support their staff while working remotely.

As part of **the process, we will also provide our psychological first aid App KRTS Power to Respond(R)** that offers support for individuals following any kind of challenging situation or personal crisis. It consist of videos and audio and supports individuals in understanding their reactions and learning self-care strategies and offers guidance for colleagues on what to do and, importantly, what not to do to support those affected. It allows crisis mental health support to be accessed quickly wherever the individual is.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PAYME SYSTEMS LIMITED	Vending machine complete solution - Contactless selection, contactless payments and remote stock levels	£49,893	£49,893

Payme is a British start-up which develops innovative contactless payment solutions for unattended machines, such as pool tables, juke boxes and quiz machines. In response to the Covid-19 crisis it has identified the opportunity to expand its solution to vending machines to reduce the infection risk from payment and product selection keypads.

The solution takes advantage of the latest trends in mobile payments and will enable the end user to complete the product selection and payment on their smartphone quickly and anonymously, without the need to download an app, register or give away any personal information.

In addition, this easy to retrofit new solution will include remote stock taking and analytics for the machines' operators, enabling them to better manage their stock and reduce the number of site visits. Payme's flexible business model will translate into substantially lower fixed cost to machine operators, making them more resilient to sudden business loss in the future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TEAGLO LTD	new teacher resource hub (part of teaglo.com - the teacher social network)	£47,770	£47,770

the best teacher resources. in one place. for free

teaglo.com launched in 2018, as an innovative social network looking to change the way teachers and schools engage in a digital age. We are bonded by a common vision -- to elevate the teaching profession, and empower educators with the tools to drive their own success. We are the only global social network that gives teachers complete control over their professional profile, network, and career, and finally provides schools with an alternative to expensive recruitment agencies. Think LinkedIn but for education.

The fact that teachers are overworked and under-resourced has never sat well with the teaglo team and this is even more apparent during COVID-19\. We share their frustration and want to do something about it. So, we're creating a tool to help teachers spend more time teaching and less time trolling through websites trying to find quality teaching resources... and often having to pay for the privilege.

Our project goal is to build a free resource hub for teachers and schools to effortlessly find, create, and share everything they need to succeed in one place. That means attracting the very best classroom, extra-curricular, CPD, distance teaching, and wellbeing materials from across education and the wider working world to one site. No more tedious searching late into the night. No more lost weekends. Less time spent finding/creating resources, means more time improving student-outcomes, improved teacher-wellbeing, and more time for CPD.

The new teaglo Resources Hub offers teachers free, unlimited access to:

- * to the best teacher resources
- * quality assured and peer-rated
- * saving you time and money
- * supporting great teaching
- * improving student engagement and achievement



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NAVENIO LIMITED	Navenio: Intelligent Workforce Solution	£49,600	£49,600

Navenio is a pioneering UK business with a unique, "best-in-class" indoor geolocation technology that helps organisations to manage their people and equipment more effectively -- without the need to install new infrastructure.

This Innovate UK supported project will rapidly enhance Navenio's Intelligent Workforce Solution (IWS) feature-set across infection control rapid-response cleaning, porter tasking and workforce management, helping companies and healthcare providers to respond more effectively to the unique challenges presented by the Covid-19 pandemic.

In the short-term, this project's outputs will dramatically improve patient flow within hospitals, including patient discharge, which will free up beds for new patients and help make sure that scarce resources are available to those that need it most.

In the mid-to-long term, Navenio will use the improvements developed as a result of this project to rapidly expand the utility and benefits of its IWS system beyond healthcare organisations, including expansion to retail, government and education sectors.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LIOPA LTD	Use of automated lip reading to communicate with Tracheostomised Covid-19 patients	£48,366	£48,366

The COVID pandemic will result in large numbers of patients who need to be weaned off ventilators over several weeks. In order to do this, patients will need a tracheostomy. From experience with existing patients it is known that these patients will not be sedated, will be in an unfamiliar environment, confused, frightened, weak and unable to vocalise. By utilising AI technology the SRAVI app can lip read and then translate to written or verbalised language on a handheld device - allowing these patients to communicate effectively with carers and relatives. The App, when pointed towards the patient, will capture video of the patient mouthing phrases, decipher 'speech' from the lip movements and vocalise the result. This can be done both at the patient bedside or remotely if they continue to be infectious. This will help mental health, pain relief and early rehabilitation.

The project will deliver -

* A fully-featured, productised version of SRAVI capable of commercial use in ICUs/General Wards.

* A Feasibility study using the SRAVI App in two (or more) ICUs - Usability measures will be built into the app to capture feedback and allow ongoing development and evaluation of the app. A range of outcome measures will be collected from patients, families and staff to inform the healthcare impact and market potential of SRAVI.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BLUE GREEN BLACK LTD	COVOLEX - The Community Volunteer Exchange: Safe and trusted community circles facilitating payments and local connections	£49,792	£49,792
'Safer care needs to start in the community' (Academic Health Science Network), and safety and care in the community has never been more important than during the Covid-19 pandemic. The UK government's 'Stay at Home' policy have grounded us in our local communities like never before. There is also unprecedented demand for assistance in carrying out basic essential tasks such as securing food and medicines. Those 70+ and with underlying health conditions are affected most severely, but anyone could be unpredictably required to self-isolate at home at any time.

With mental health so closely tied to feelings of connectedness and at risk in periods of isolation, the Covid-19 pandemic has highlighted that we all require safe care, all of the time, including when at home in our local communities. Caring and volunteer service in our communities is vital, in the immediate crisis and in the long-term.

This project provides a new technology solution focused on helping volunteers and those in need to exchange payments and receive reimbursements in a safe and secure way, creating enhanced trust in local communities and neighbourhood groups. It provides identity verification, supporting trusted volunteer exchanges and encouraging safe community engagement. It is designed to provide options for those less digitally facile or disconnected altogether.

The volunteer response to the crisis has been overwhelming (500,000+ for the NHS/RVS's GoodSAM app, rapidly-formed local groups in communities) across the UK. There is now a step change in willingness to volunteer, yet payment and reimbursement processes are a barrier in maximising community exchanges. Safety, trust, and the prevention of exploitation are vital. Payment process guidance from government and community bodies varies widely: from using code words to phone in payments, to recommending PayPal or mobile banking, to cash.

Exchanging money involves risk: with cash, viral transmission and vulnerability to theft; with digital methods, trust the repayment will happen. Non-cash methods involves digital awareness. Without digital facility, many may be reluctant to ask for the help they need. Culturally, talking about money is often awkward. Awkwardness discourages connection and volunteer exchange. We address this pain point.

Covolex features include: grouping communities into local clusters (leveraging existing groups where possible); enhancing trust through verified ID and address checks; providing a seamless and auditable payment/reimbursement facility; and catering for digitally disconnected by allowing a trusted person to manage their account. It's scale is national, but the focus is local.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
STRI LTD.	National sports turf guidance for immediate and long term facility survival	£46,458	£46,458

STRI is offering fully funded access to business support for all sectors of sportsturf, parks and recreation businesses who are impacted by the COVID-19 pandemic in the UK. STRI is a global leader in sustainable sportsturf management, research, operation, planning/design, and a solutions provider for the industry.

The COVID-19 pandemic presents a clear and present risk to the management of sports clubs, particularly for venues managing natural sportsturf surfaces such as football, golf courses, rugby, cricket and bowls. These sports provide an important role in society, especially at a 'grass roots' level of sports and recreation and local authority green space provision. The health and mental wellbeing in addition to the environmental and ecological benefit of managed green space is huge, with a predicted value of over £34 billion in health and wellbeing benefits as well as direct savings of at least £111 million to the NHS from prevented GP visits.

This opportunity, funded by Innovation UK, offers successful applicants access to a 'best practice' roadmap for getting sports facilities back to business and how best to deal with necessary changes where maintenance and budget resources need urgent review due to lost income and the unplanned disruption. It will also deal with the practicalities of reopening facilities safely in the medium term and help with innovative future business models to ensure long term survival.

Applicants will be able to build their own interactive report using STRI's unique TurfSync platform and schedule remote consultation from a team of STRI Group consultants who will review current practices and offer impartial advice bespoke to each situation for the short and long term health of facilities.

In addition to our review of sportsturf, ecological, environmental and business management in the wake of the COVID-19 pandemic, applicants will be able to seek assistance with investigatory searches for additional funding.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENTIA LTD	Chronic Kidney Disease patient management during Covid-19	£49,841	£49,841

Entia in partnership with the NHS has developed a new approach to managing chronic kidney disease. This project seeks to ensure that the solution developed addresses the needs of NHS trusts and renal centres across the UK.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SELAZAR LIMITED	Return Robin, contactless retail returns consolidation platform	£49,986	£49,986

Return Robin is a software development project to consolidate the collection of returns from households and neighbourhoods across the country. This tool enables retailers, couriers and logistics companies to coordinate their return operations assuring a single courier and vehicle is being used for all the retail returns within a household or area. This will free up delivery drivers and vehicles to assure vital food and essentials reach those who need them most.

Round Robin also allows retailers, couriers, and consumers to streamline the management of returns, collections and tracking in one easy to use the platform without consumers having to leave their homes.

During the Covid-19 outbreak, there has been a dramatic increase in online shopping due to the limitations of operating at physical retail outlets. This online presence allows retail businesses to operate (at worst at a reduced level) but it is considerably difficult for consumers to return goods they have received. People cannot get too physical locations such as high street shops, Post Offices or courier drop off points because leaving the house would increase the risk to public health and many of these shops are now closed.

A phased delivery will see the consumer, retailer and courier registration and integrations created first, allowing consumers to register and for retailers to align collections with couriers. This will mean that retailers can provide pickup information to the consumer which the consumer gets from the Return Robin portal. The second phase will allow retailers to consolidate returned at a centralized warehouse. These returns can then be sent back in bulk to the retailers to reduce pressure on courier operations while also reducing costs for retailers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OVE ARUP & PARTNERS LIMITED	City Modelling Lab - Alpha Pandemic Activity Modelling to help our cities reopen safely	£49,272	£49,272

As the coronavirus descended on the UK, the initial focus of our city councils and transport agencies has been on coping with managing unprecedented changes to daily life and preparing to support healthcare workers. The next big focus for these decision makers will be planning services to support a managed transition out of the current lock-down. To that end, the modelling work which Arup has developed could help shed light on critical trade-offs between restarting economic activity and managing health risks.

We have developed agent based models (ABMs) to simulate how cities operate - using granular data that reflect collective decisions of individuals (description of agent based models here: [https://medium.com/arupcitymodelling/def-city-modelling-5f8be67c1c2][0]). With this modelling approach, we can help cities to plan for their economic recovery over the next weeks and months. Which transport services are most important to connect key-workers to their work? How will public transport operators maximise access to key work sites and potentially new schedules (e.g. staggered school days) while mitigating crowding? We have explored how ABMs can identify social networks: [https://medium.com/arupcitymodelling/lab-note-003-agent-to-agent-interactions-e013d594db7f][1]. Over the coming months, what might longer-term changes in transport demand mean for fare-based revenue? Traditional transport models are not designed to solve these challenges. They make use of aggregate data, which limits them in simulating these new scenarios and they are slow to build.

We have built agent based models with Transport for London, Melbourne, Transportation Infrastructure Ireland, and the Ministry of Transport in New Zealand (read about case studies here: [https://medium.com/arupcitymodelling/agent-based-models-in-action-f05010567c54][2]). To deliver these models, we built from robust tooling developed in academia. We are confident in the design, feasibility, and application of these models. What we have not tested is how we might incorporate radically different behaviours, for which there is no precedent.

This project would test these models in an unprecedented context.

We propose building an alpha model for one city, over 6 weeks. We will be able to assess the technical viability of agent based models as tools to support decision-makers in this unique time. We will also be able to explore how this modelling approach may fit within the organisational and governance structures of cities/transport authorities. We have been in conversation with Transport for London and Glasgow City Council - as potential partners for this testing - should this application be successful.

[0]: https://medium.com/arupcitymodelling/def-city-modelling-5f8be67c1c2

- [1]: https://medium.com/arupcitymodelling/lab-note-003-agent-to-agent-interactions-e013d594db7f
- [2]: https://medium.com/arupcitymodelling/agent-based-models-in-action-f05010567c54



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPENSPACE GROUP LIMITED	Real-time Social Distancing Monitoring and Prediction for St Pancras railway station	£49,820	£49,820

OpenSpace will upgrade the functionality of its existing station management platform as King Cross St Pancras to allow the station management team to monitor social-distancing throughout the station. The team already uses the OpenSpace platform as a data-driven support tool to inform day-to-day operations and forward planning. This new functionality will empower the team to understand and respond to the new challenges posed by the post-COVID19 world. The platform will enable them to better plan, monitor, predict and communicate station performance as government advice changes and passenger levels vary. As the team starts to use and understand the new social distancing metrics it will be able to share with the wider world and feed into a broader debate on applying the principles at a network level.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOFTWARE SOLVED LIMITED	SurveyorTech Connect - Remote property surveying for insurance on your mobile phone	£49,928	£49,928

The COVID-19 lock-down is causing disruption to the commercial Insurance Market. Brokers are unable to visit clients or prospects; insurance providers are unable to survey premises or assess losses. This makes it difficult for insurance providers to offer effective commercial insurance to SMEs, pushing up premiums and putting at risk long-standing insurance firms.

'SurveyorTech Connect' resolves this issue by enabling these activities to occur remotely, through a mobile phone, free of charge during COVID-19 recovery period. Its introduction will change working practices in the insurance industry making remote surveying an affordable option.

Integrating live video streaming, image and data capture, and data analysis technologies, SurveyorTech Connect uniquely enables an unskilled person to conduct a property survey alongside a remotely-based insurance professional using a smart phone.

With no previous surveying experience, a user is guided through a visual inspection of their property inventory, enabling an insurance professional to provide remote insurance and risk management advice or follow up a claim to investigate a loss. Using their phone, the client is prompted to take images, videos or upload documents through the app, which automatically uploads this information to a secure portal for an insurance professional to analyse.

Insurers operate a generally outdated traditional model and are already under pressure to survey more risks to manage exposure to financial loss and enrich the data they capture. SurveyorTech Connect will help the commercial insurance market get back on its feet during and after the lock-down and instil a new working habit that will enable insurance businesses to assess more SME's risks, while also realising environmental and economic benefits through reduced travel.

Software Solved has a proven track record of developing software solutions for the insurance industry, particularly risk consulting, having developed custom solutions for global insurers like AXA, RSA and QBE. Its specialist Insurance Practice is led by Rob Faulkner, a Chartered Insurance Practitioner with over 23 years' industry experience and a substantial network of both Insurance Brokers and Providers.

Software Solved intends to offer SurveyorTech Connect free of charge to enable maximum adoption during the insurance industry's time of need and will target SMEs that are feeling the most pain and have limited resources to develop this product themselves. This will enable Software Solved to learn from user experience allowing it to enhance the product into a commercial offering that will change the way SME risks are handled and surveyed in the long-term.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CONNECTED RESPONSE LIMITED	SHAPA Smart Heating and Poverty Alleviation	£49,711	£49,711

The award is to Connected Response who specialise in the retrofit smart-charging of electric storage heating and hot water systems, as found in 1.5m homes in GB, many of whom are disproportionately fuel poor.

Their technology has evolved over the last five years to serve social housing tower blocks and keep residents warm when they want to be warm. This is done by moving away from night-charging only and by making better use of renewable generation to charge heaters at multiple times through the day. This existing service is delivered collaboratively with major social housing landlords and energy suppliers.

The current technology has been developed for high and medium density housing applications, Funding will enable fast-track application of IoT radio and mobile phone (LoRa and GSM) technology to reach all household types regardless of geography and proximity to other homes. This is especially important for households in remote rural areas or dispersed suburban properties and will enable them post Covid-19 to enjoy improved comfort, reduced bills and better health. It is widely acknowledged that there is a direct correlation between warmth and wellbeing- better heat means better health -- especially important when households are experiencing a disruption in circumstances.

Household heaters will be charged according to individual resident comfort needs, local weather forecast and room temperature, rather than to suit historic electricity network needs. Each household will also be able to play its part in the wider climate change agenda by their heater charging being dynamically aligned with the availability of local renewable energy.

Households with electric heating are much more likely to be in fuel poverty due to their reliance on expensive On Peak electricity on winter nights when their stored heat has dissipated. It is anticipated that households will be able to enjoy considerable bill reductions, especially in colder areas. This innovation will add further value to the Smart Meter roll-out and demonstrate that a smart-charging retrofit storage heating solution can play a major part in the electrification of home heating.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PROSPECTIVE LABS LTD	FlowOS Bus Occupancy Estimation	£49,800	£49,800

The bus industry has been hit significantly by the COVID-19 crisis, with passenger numbers down by around 90%. However bus companies continue to provide a vital service, transporting key workers and supporting other essential trips. This means that 40-50% of services are still running and incurring significant costs to operators. A government support package will cover losses for three months, but also limits occupancy to 50% of vehicle capacity to maintain appropriate social distancing.

Once lockdown restrictions ease, bus operators will need to judge when and how to increase service levels. Different government policies could have different impacts on different people and different bus routes, creating a challenging situation for operators. There could also be long term behaviour change as a result of the crisis, making it difficult to predict when and how people will start using services again.

Operators will have to be much more responsive in adjusting supply levels based on predicted demand and vehicle occupancy to avoid building up heavy losses or exceeding occupancy limits.

FlowOS Bus Occupancy Estimator

We propose to build an occupancy estimator that predicts the occupancy on every bus, on every point of the route over the next seven days. The estimator will take into account the time of day, day of week, weather conditions, school and university holidays and changes in government restrictions - including the differing impact of these announcements on different socio-economic groups. The estimates will be updated daily and show estimates for the next seven days.

This will:

- * Enable operators to better align supply with demand;
- * Ensure occupancy remains below government maximums;
- * Improve service performance and safety during the recovery;
- * Build passenger confidence in public transport.

Operators will also be able to provide occupancy estimates to their passengers via their passenger apps, so passengers can choose when then travel. This will help increase passenger confidence in using the bus, supporting the bus industry and guarding against modal shift towards the private car.

Prospective

The solution will be developed by Prospective, a team of transport planners, data scientists and software engineers from Cambridge University and UCL's Centre for Advanced Spatial Analytics (CASA). We founded the company in 2016 and apply data science, simulation and modelling to real world mobility challenges.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FOODCHAIN TECHNOLOGIES LIMITED	Foodchain wholesale to consumer delivery	£49,828	£49,828

Before the crisis our food supply platform connected restaurants directly to independent British food suppliers. Overnight the hospitality industry shut down when lockdown was imposed, putting millions of jobs at risk and thousands of foodservice businesses facing ongoing costs with no opportunity for income.

At the same time, people in isolation were struggling to get food delivered. Supermarkets have failed to adapt quickly enough in meeting the increased demand required for home delivery, and 3 weeks in people still cannot book delivery slots for weeks in advance, and it is very difficult to maintain social distancing whilst shopping in store.

With lockdown being extended for 3 more weeks minimum and social distancing to last for several more months, this problem is not going away. The best approach is to enable accessible, affordable home delivery so people can stay in isolation and remove anxieties around accessing food as well as provide councils to fund food supplies for those who cannot afford it.

Our platform responded to the COVID19 crisis by switching to consumer delivery within one week of lockdown. People across the UK have been able to order their whole food shop, directly from independent suppliers for home delivery. This has provided a much needed lifeline to independent British businesses that would have otherwise struggled to survive.

Since launching, our suppliers have been able to hire back their staff as well creating more jobs for picking and packing staff and delivery drivers. 90% of the sales go straight into the food suppliers' pocket. We can provide them with the tools to be able to take orders, manage payment, coordinate deliveries and access customers nationwide.

Now more than ever, consumers want to support local SMBs and Foodchain makes this easy.

We now want to further invest in two key areas:

* Working with local authorities to give the vulnerable in their communities access to home delivery. Councils will use the profits from this service, to fund food supply for low income households in their borough.

* Nationwide scale-up: building out national and regional infrastructure to enable suppliers to deliver to homes nationally during, and after the crisis, providing a reliable secondary revenue stream whilst restaurants recover, and creating more jobs as the consumer market is significantly larger

This project will save jobs and businesses in the hospitality industry, with an innovative way for the general public to get British food delivered directly from suppliers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SEETHRU NETWORKS LTD	Bringing full-service IT support to remote workers and SMEs to fuel the post-crisis recovery	£49,258	£49,258

Small companies across all sectors of the economy are adapting to the current environment by deploying on-line alternatives to their core services - whether they are restaurants delivering food and meals, doctors providing on-line consultations, performers and artists delivering streamed content or solicitors delivering legal services. Meanwhile larger companies are dependent on dispersed home-workers to maintain business-critical activities.

Regardless of the precise timing or manner of the resolution to the Covid-19 crisis we know that on-line service delivery and dispersed teams will be a persistent feature. In a recent report on the BBC Professor Martin Marshall of the Royal College of GPs described the change from less than 15% of consultations carried out over the phone or online in 2019, compared to 90% during the 2020 lockdown.

"The big question is which elements do we want to embed in our practices in the future?" Prof Marshall said. _"I don't see us doing all of our consultations over the phone or online, but certainly up to 50% is possible."_

There were already 4.2m people working from home in 2015 (ONS). This rapidly growing cohort, together with 5.6m micro-SMEs, are poorly served when it comes to obtaining professional connectivity and on-line services. They are reliant on domestic-grade internet connections and ad-hoc IT support services to maintain key business operations.

Too often the end user is frustrated by a technology provider service desk who tells them their issue lies with another technology organisation. The service help desk has the expense of dealing with support calls that they can't resolve. Think of the ISP receiving a call because a banking app is slow, a video conferencing platform isn't working or an email service isn't working correctly. None of these services are provide by the ISP, and meanwhile their connectivity provision is working perfectly.

Our innovative platform enables the aggregation and communication of IT service data and facilitates easier co-operation between both the IT service providers themselves and their mutual end users. Our open platform will enable the UK's 750 ISP's and 135,000 digital service companies to access this market in a cost-effective manner.

Experience from previous economic shocks shows that small businesses will be in the vanguard of economic recovery. Our aim is to enable the £8bn technical services market to underpin the recovery and growth of the crucial pan-sector SME community.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHOTOCENTRIC LIMITED	Rapid Manufacturing	£49,989	£49,989

Imagine a full-sized metal container that can make any plastic part you want, instantly delivered to the point of need whether it be a factory or a hospital. That is the very ambitious aim of this project. To return manufacturing capabilities back to the UK and do it by using the high-tech new nature of 3D printing. It is based on recently invented technology invented here in the UK that makes 3D printing much faster and lower cost. It uses LCD screens that you use every day in your mobile, laptop or TV screen that creates a visual image that in turn hardens liquid to make a solid object by solidifying the specially made patented light sensitive resin.

This project will enable us, as a country, to make plastic items again in scale and at low cost- all created from this factory in a box. The factory can be delivered anywhere to manufacture any plastic items in scale at the point of need, as quickly as the 40ft container can be driven there. The factory will contain a 3D printer driven by an LCD screen-based 3D printer capable of producing plastics in the widest variety of properties (elastomeric, durable, hard and tough) with inline automatic post processing. These shipping containers will be pre-equipped, so they are ready to be moved to any location in the UK, loaded with different liquid resins, capable of providing an instant start up manufacturing solution to make any plastic item by just being transferred a digital file. This allows the UK to have an instant, on-demand source of manufactured items, but not subject to vagaries of supply from the Far East.

The patented concept of using LCD screens to print plastic was invented in the UK in 2014 and has been proven for many years now. There are now over half of million mobile phone sized LCD screen printers in use, nearly all of them made in China. Photocentric, who invented the technology, can make them in largest sizes yet commercialised and this is where the technology becomes an alternative to injection moulding. The recent crisis has for the first time enabled Photocentric to make tens of thousands of the same item and with it enabled us to have a vision of how the future of manufacturing in volume could look. Parts made instantly from digital files, not after months of expensive metal tooling fabrication.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HEALTHCARE TECHNOLOGIES LIMITED	Artificial Intelligence posture scanning app with exercise programme for people with back and neck pain, unable to visit their GP or physiotherapist because of COVID- 19.	£49,808	£49,808

Patients with back and neck pain are usually assessed and treated by their GP, physiotherapist, chiropractor or osteopath, in a clinic. COVID-19 prevents this. This means that vulnerable people are now stuck at home in pain.

This project is to develop an app to scan and measure your body at home, using Artificially Intelligent body recognition, then prescribe specific education and exercise treatments. It can help tens of thousands of people move away from pain during and after the pandemic.

The app will be a highly creative consumer tool, professionally designed to attract as many people as possible, created by award-winning digital marketers and animators, employing user-centric design.

The app scans, automatically and precisely measures, then assesses the patient's whole body using their smartphone.

Then, a unique 8-step programme progresses through each part of the body, e.g. neck from the side, ribs from the front, hips from the side etc. For each body part, the user sees:

1\. ANIMATED EDUCATIONAL VIDEOS

- * What good looks like
- * How that part can be distorted (bent, twisted, tilted etc)
- * How it got like that
- * How to fix it

2\. THE RESULTS OF THEIR SCAN

- * Showing their alignment (hips, lower back etc)
- **3\. THE RIGHT EXERCISES FOR THEM**
- * Selects and shows them exercise videos accordingly (already used in clinic)

Recent advances in Artificial Intelligence technology enable smartphones to detect body parts; a step on from facial recognition. Our scanner builds on this technology by using the points detected to:

- 1\. Measure the relative angles of alignment.
- 2\. Assess postural distortion.

3\. Prescribe specific exercises.

These points distinguish this technology and make it completely innovative.

Healthcare Technologies was created before the pandemic to solve healthcare issues using technology. We had already created exercise videos and a copyrighted educational programme for back pain.

Existing AI body scanning apps are for vanity photography, sports exercises or solely for professional use in clinics, only taking images. None have a programme that links measurements to assessment and the prescription of exercises and therefore cannot benefit people in lock-down.

We are creating unique technology for direct use by patients themselves, giving us freedom to operate.

Market

Millions of patients with back pain cannot access treatment because of COVID-19\. To focus efforts, social media advertising profiles can prioritise advertising to back pain sufferers who are comfortable with technology. We can then use reviews from these early adopters to broaden the reach.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SJR PRECISION (ENGINEERING) LTD	To Design and Manufacture a Mini Keg Filler, Closer & Rinser for Draught Carbonated Beer	£49,974	£49,974

This project will provide a UK designed, manufactured and improved modular solution to productively fill the now popular 5 Litre Mini Kegs which are appearing in supermarkets and beer shops. The project has been prioritised due to the Covid-19 virus which as closed pubs and bars which has in turn closed down breweries and brewery equipment manufacturers which previously produced draught beers and draught beer packaging equipment (large pack). In the UK a 45% of beer consumption is undertaken in pubs and bars which is known as the On Trade. This market is closed down and will take considerable time to recover. The Off Trade market 55% is currently unable to satisfy demand for take home beers as there is insufficient packaging facilities in the UK's craft brewing producers to deliver cans, bottles and mini kegs (small pack) to 100% of the beer market in the UK. Also nearly all the manufacturer's of small pack filling machines are imports from Europe, the USA and China. The unique and innovative solution now proposed by SJR Precision Eng Ltd is to utilise large pack technology for cask and keg filling in a small pack modular Mini Keg filler to meet the needs of small craft breweries in the UK decimated by the Covid-19 pandemic. In addition this project will enable the designers and skilled engineers of SJR Precision and its subcontractors and supplier to produce much needed new products for take home beers while pubs and bars remain closed.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NUDGE REALITY LIMITED	LessonSpark! - Home learning for children with ASD	£49,978	£49,978

The government's closure of schools during the coronavirus lockdown has brought home-schooling into focus, with children now using online classes and apps to continue their education. However, these do not cater for the complex learning requirements of the 1% of children with Autism Spectrum Disorder (ASD), severely disrupting their education. The effects of ASD are wide ranging but include varying social deficits, repetitive behaviours, communication difficulties and an inability to concentrate. Teaching this group is challenging with even small changes to their routine triggering stress and anxiety. Specialist classroom teaching enables them to function as well as possible in society with a chance to enter the workforce.

This project will develop LessonSpark!, an innovative Augmented Reality platform specifically designed for home schooling of children with ASD. We will create immersive environments that can capture and maintain their attention so education can be delivered in a more engaging and effective manner. Careful use of visual cues will encourage positive actions and behaviours, maintain concentration and enable educational benefits to be delivered. It can be used across the curriculum and for social and communication skill development.

The main deliverable from the project will be a home-schooling AR platform for primary-aged children with ASD. This will include applications designed to improve educational attainment, social and communication skills. A beta trial with parents will establish effectiveness, and a marketing plan developed for commercialisation.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPENGENIUS LIMITED	OpenGenius Limited - Ayoa Development	£49,198	£49,198

OpenGenius' ambition is to inspire collaboration, innovation and creativity. We do this through developing software, which we sell along with training and consulting services. Our latest product is Ayoa, a versatile cloud-based digital workspace which enables users to communicate and collaborate in their work, regardless of their locations, in a more innovative, engaging and productive fashion.

As a result of the COVID-19 outbreak, teams are working remotely for the first time. Video conference tools, whilst they appear to provide a virtual meeting setting, are simply not enough, they provide communication but no-where for teams and individuals to action those ideas and tasks, making most virtual meetings unproductive, leaving employees feeling isolated and their work undervalued.

This project will focus on developing Ayoa to specifically meet the needs of remote working to ensure the productivity and efficiency of companies can continue despite the change in workplace setting.

We will do this by integrating commonly used video conferencing tools into Ayoa and developing a new virtual whiteboard feature which will allow you to create a visual representation of what's important to you; the projects you are interested in at any given time, the people you are working with, the flow of ideas from one project to the next and the progress of key tasks.

By combining these new developments with the existing Ayoa product, Ayoa will become the first of its kind software perfectly developed to meet the current and future needs of remote workers. It will enable teams to generate and develop ideas, plan and action tasks, prioritise and review strategy whilst providing a variety of communication methods in which team members can communicate and collaborate.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GRANTA AUTOMATION LTD	Entrance System to Minimise Risk and Save Lives	£49,271	£49,271

Granta Automation are a bespoke automation company. This project will develop a system that will ensure that all persons entering your premises are unlikely to spread Covid-19\. Specifically we will achieve the following;

* Develop a system that ensures people entering the premises are unlikely to have Covid-19\.

* This system will also be able to be linked to an entry system that will stop a person from entering if they have not used the system or pose a risk of spreading Covid-19\.

An initial demonstrator system will be developed during this project and designs produced ready for production in quantity. This will have a significant benefit to the economy by slowing the spread of Covid-19 and increasing public confidence where they need to go into any building along with other members of the public.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
IOT STARS LIMITED	Mundus UV- Smart System for Protective Mask Access, Disinfection and Reuse	£49,618	£49,618

The availability of Personal Protection Equipment (PPE) is a not only a necessity for healthcare workers but public authorities worldwide have started to consider the use of face masks in public as a condition to gradually lift confinement. The critical shortage of such Face Filtering Respirators (FFR) is likely to worsen until a vaccine for Covid-19 is found.

Vending machines for face masks are starting to be deployed in China, Poland, Thailand and Turkey to name a few. The Mundus-UV project will provide the capacity to disinfect face masks in a few minutes, and more importantly to safely re-use the up to 10 times, enabling huge savings for citizens looking for optimal protection in every day life.

The positive impacts for its users will be:

- Peace of mind: Better individual protection and at affordable prices.
- No counterfeits: Vending machines will deliver only certified N95 respirators for initial purchase.
- Reduced reliance on imports from other countries (e.g. China, US).

- Scalability: Our 'decontamination as a service' business model approach will ensure that organisations implementing it will only incur operational expenses (Opex) rather than capital expenditures (Capex)

- reduced pressure on local government procurement services in times of budget strain, as our approach will lead to dramatically reduced up front cost.

- Environmental impact: Bringing confidence back for re-usable cups: in March 2020 Starbucks banned the use of re-usable cups because of Covid-19 pandemic.

The accompanying mobile app will:

- Enable users to order/buy certified N95 respirators for delivery and pick-up at lockers.
- Keep track of the frequency and number of times the masks have been disinfected.
- Provide advice wrt mask fitting to reduce leaking and minimize droplet/particle penetration.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INTO GAMES C.I.C.	Jam.Academy	£48,842	£48,842

Jam.academy is a remote training tool, marketplace and portfolio building solution for games and immersive (Augmented Reality/Virtual Reality). It's a platform that connects users with complementary skill sets into cohorts of remote game makers, providing them with varying briefs to complete in set amounts of time.

The platform provides direct guidance from industry professionals, learning pathway advice for multiple industry fields (concept art, programmer, etc) and promotes industry working frameworks, including sprints and daily stand-ups. It is a tool to build up skills, rapidly make lots of portfolio ready content, build networks and improve mindsets and behaviours that are essential for the workplace.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AFFIGO C.I.C.	Remote Symptom Monitoring for Schizophrenia - Speeding Up Deployment at Scale	£41,804	£41,804

Our company, Affigo CIC, a social enterprise, has developed technology to help people with schizophrenia manage their symptoms. Our solution is based around a smartphone app that is used to track symptoms over the course of the day, every day. The captured symptom data can then be viewed by users to track their symptoms over time and this helps them self-manage their condition. The symptom data can also be upload to a secure server accessible to the NHS staff responsible for looking after the service user. The NHS care team can use this to monitor a user's symptoms remotely if they see a pattern of deteriorating symptoms that could be harmful, they can make contact or intervene by stepping up care. We have conducted two randomised clinical trials of our technology and it is proven safe and reliable. Our technology is currently deployed in one NHS Mental Health Trust. In the Covid-19 pandemic our technology can help to address the issues of staff shortage and reducing face-to-face contact. The remote monitoring capability requires less face-to-face contact but also enables staff to continue to deliver assessment, as the care coordinators and clinicians can view the real time symptom data on a secure desktop at the clinical team base, or on their secure devices from any location. However, our solution requires some technical development to make it rapidly configurable and deployable into different NHS Mental Health Trusts. Currently this requires technical programming skills. In this project we will overcome these barriers and make deployment and configuration "self-service", thus enabling rapid roll-out across the whole of the NHS to help overcome staff shortages and to minimise the need for face-to-face contact. Deploying our solution at scale will help protect the NHS.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MANCHESTER CAMERATA LIMITED	Music in Mind Remote - award winning dementia music therapy programme	£49,912	£49,912

Glastonbury openers, UK Ensemble of the Year (RPS Music Awards 2017), Manchester Camerata is redefining what an orchestra can do. We make music that matters, and music for change in a wide variety of places, and in particular use music as a therapy through our programme - Music In Mind.

Music in Mind is our group music therapy project for people living with dementia and their carers, delivered by specialist music therapists and skilled professional musicians. We are already leading people across the North West of England and around the world through this programme. Since 2012, we have worked with close to 6,000 people living with dementia and our aim to to reach the same again by 2022\. Relationships with The University of Manchester, NHS trusts and national housing associations help us provide ongoing musical interventions for people living with dementia, and bespoke training for healtcare professionals to leave a legacy behind after our projects end. Commissions from the British Council, the UK's international organisation for cultural relations and educational opportunities, have enabled us to share our expertise with professional musicians in Taiwan, Japan and Montenegro.

Because of the current Covid-19 lockdown, Manchester Camerata's consultant music therapists and musicians are unable to continue delivering the core Music in Mind programme to people living with dementia across Greater Manchester. Our aim is to build an online platform to enable remote delivery of Music in Mind. This will primarily provide immediate support to people currently affected by the Covid-19 lock down across Greater Manchester.

Manchester Camerata will approach a global market with the online Music in Mind Remote training resources and digital music activities. The vision of Music in Mind is truly international as dementia knows no boundaries. Therefore, the training packages that will be developed will be translated into many different languages.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIOSUSPENSIONS LIMITED	SpheruLugol - repurposing Lugols lodine as an acceptable antiviral treatment	£46,572	£46,572

The use of lodine as an antiviral/antibiotic/antifungal treatment has been known for a long time, but has largely been ignored by pharmaceutical and biotech companies who tend not to develop older technologies where they have little or no financial interest. However, the ability of lodine to inhibit viral and associated opportunistic infections may prevent or reduce some of the debilitating symptoms of COVID-19 and other viral infections. Until now, oral use of lodine has been limited as iodine in alcohol-based preparations taste very unpleasant and can cause pain, skin irritation & staining and are often religiously unacceptable. At the heart of this proposal is an opportunity to facilitate oral cavity application of iodine to treat infections quickly and cheaply using a novel and effective water based suspension technology.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AEROCARE AVIATION SERVICES LIMITED	Far-UV Sanitisation of Working Spaces	£30,525	£30,525

Aerocare Aviation Services Ltd (AAS) have accessed new Far-UV Technology that will make a serious impact on mitigating the transmission of pathogens for almost EVERY facet of society. In the light of the financial loses being incurred, the number of businesses lost, the impact on society of complete lock-downs, the market for this type of technology will be vast, and it's positive impact on society will be significant and immediate. The Excimer Wave Sterilray(tm) which we intend to adapt significantly reduces pathogens (a bacterium, virus or other microorganism that can cause disease) in our living space. It is our goal to make the commercial airline industry a safer place by improving the environment to which people are exposed during their travels.

UV waveforms are not new, as UV-C they have been used to sanitise for some years now. UV is capable of eliminating 99.98% of the world's most harmful bacteria, viruses, and spores in an airstream with "Single-Pass Kill". EWS photons rupture sidewall of bacteria and spores, keeping airborne pathogen concentrations below infectivity level. With unmatched speed, convenience, effectiveness, and safety UV products are changing the world of air and surface disinfection.

One fifth of a second is all it takes for Excimer Wave Sterilray(tm) photons to destroy harmful bacteria, viruses, and spores. The technology is unique in that it works without threat of damage to humans in the same space (both skin and eye safe) as demonstrated in medical testing.

AAS are aiming to bring ground-breaking use of patented Excimer Wave Sterilray(tm) technology to Europe. Potential markets include:

*Hospitals

***Ambulance Services**

*Clinics

*Dentists

*Clean Rooms

***Operating Theatres**

*Laboratories

*Agriculture

*Ports & Airports

*Offices

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

AAS intend to develop a cleaning service initially for airlines, and airports, for civil areas and in-cabin sanitisation, and beyond that to manufacture under license for the European market. This Project will develop the system for use in confined spaces, and the processes to ensure rapid, non-chemical disinfection for transport modes using Far-UV technologies. AAS will work with Glyndwr University at Wrexham to understand the effect of the Far-UV in rapid cleaning operations and it's ability to provide a comprehensive solution to enable rapid re-start of air travel with enhanced confidence for passengers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACS CLOTHING LIMITED	The Sustainable Recovery of the Fashion Industry from COVID	£49,981	£49,981

We are the UK's No.1 men's formal-wear rental specialists and have been successfully providing rental services to High Street Retailers and Independent Stockists for over 20 years.

It is our opinion that business has changed, perhaps forever, due to the corona-virus. We seek to capitalise on this lull during lock-down to reinvent ourselves from a Traditional Men's Hire-wear Provider to the Global Centre of Expertise in Sustainable Fashion.

We consider ourselves Sustainability Fashionista and we have strong desire to address sustainability in the fashion industry. Our industry, in its current form, is unsustainable. It is the second biggest polluting industry - it is projected to use 25% of the world's carbon budget by 2050\.

We are reaching out to clothing retailers to help them reduce the losses in income they face due to covid-19\. Clothing Retailers are expecting a 20% reduction in annual revenue with 80% considering their future highly uncertain.

We also wish to help retailers reduce the costs from the return of clothing. UK Retailers loose £20B annually on returned clothing with more than 50% disposed of.

Our project will develop a Hire Service Model to provide a fully managed Clothing Hire Service to Retailers including consultancy support for customisation and implementation. It also includes a Returns Service Model that refurbishes Retailer's returned clothes.

The project provides us with a Circular Business Model that will minimise our impact on the environment and also create an Operational Excellence Model to make us the Global Centre of Expertise in Sustainable Clothing Hire.

We also seek to develop a Talent Pipeline Model to recruit and develop local disadvantaged job seekers to help resource our expansion. This also includes tasks to improve the quality of working lives of all our staff.

Lastly the project provides us with methods to compel our consumers to rent clothes.

Our project positive impacts society, the economy and the environment. Our ideas and energy will be channeled into delivering pro-environmentally sustainable changes within our company and to Society as a whole. We will secure the jobs of our existing ACS staff employment and recruit many more from disadvantaged backgrounds. We will improve our staff and their family's health and well-being. We intend to share our expertise with other organisations. Finally we will provide new revenue streams for Retailers by reducing the need for shop closures and securing jobs whilst saving them money by refurbishing their returned garments.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
I-D8 LIMITED	Dear Departed Celebration of Life	£27,692	£27,692

Dear Departed is a celebration of life and love. Where we remember our loved ones for the fun they were and the joy we shared together before they passed. We remember and pay tribute to the legacy they left behind.

Dear Departed is the place where friends and families privately share their precious memories to celebrate the life of someone special. Treasured photos, videos, music, comedy or poetry. Favourite places, pastimes, and possessions. All together in one Celebration, with timeless messages for you to remember, and for new generations to get acquainted.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FLOW TECHNOLOGIES LTD	Flow Technologies Concept Trial - COVID- 19 Action	£50,000	£50,000

In this time of social distancing, managing people's movements is vital. Flow is an app that tells people when places (any type of establishment) are quiet/busy in real-time with incredible accuracy.

During the COVID-19 pandemic, social distancing is crucial. Flow will greatly benefit consumers, allowing them to see when establishments are quiet/busy (getting notified with the best time to go) in real-time before they go, assisting with social distancing. Flow also greatly benefits the establishments (e.g. supermarkets/pharmacies/other essential outlets), allowing them to accurately track their footfall data in real-time. This data can be used to make informed decisions on staffing, let their customers know when it is too busy/the best time to go, and more. This type of real-time data is also extremely useful for the government when analysing people's movements and managing infection rates through social distancing. In short, during the pandemic, Flow is an essential tool for social distancing.

The project will involve developing the Flow app, installing the sensors into essential establishments such as supermarkets and pharmacies, and releasing the app for consumers to see when these outlets are quiet.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAPTAIN AI TECHNOLOGIES LTD	Fleet Sharing - Enabling restaurants and small businesses to effortlessly share their delivery drivers with each other	£49,638	£49,638

The world has dramatically changed with Covid-19\. Many small businesses, especially restaurants, have been financially affected with the lockdown. In order to keep afloat, many local businesses are now fully dependent on delivering goods to local customers. However, many are faced with the problem of not having their own drivers to deliver. This is especially true in rural areas or small towns where there is no access to third party delivery providers. At the same time, businesses who have hired their own delivery drivers are unable to use them as efficiently as possible. We want to enable local businesses to continue operating efficiently by building an online driver sharing marketplace.

The **Captain Driver Marketplace** would be an easy to use cloud-based website and mobile app where a local business can make a request for a driver from another business to perform a delivery. This request would be sent out to all nearby local businesses that have available drivers. These businesses would provide an instant quote to perform the delivery. Drivers would perform delivery jobs using a mobile app that has all the information needed to perform the delivery.

Our project aims to:

1) empower small local businesses, such as independent restaurants, convenience stores, pharmacies, groceries, local retailers who desperately need drivers to access them

2) increase utilisation of employed delivery drivers by enabling them to be shared with other businesses thus increasing their financial return

3) increase the overall ability of the market to perform deliveries of all types and even out peaks and troughs in demand by allowing delivery drivers of one industry to perform deliveries for another industry, eg. a pizza delivery driver to perform a grocery delivery.

Our project would be pioneering the first business-to-business driver marketplace in the UK. This will be specifically built for restaurants and businesses who perform on-demand deliveries. We hope to create revenue opportunities for small businesses, increase employment opportunities for drivers and prevent many small businesses from shutting down.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NOISE ORCHESTRA LIMITED	Multi peer web audio connectivities for musicians	£40,640	£40,640

Noise Orchestra plans to build a Networked Audio Device and Web App which combine very low latency web communication with high quality audio recording. It's become clear to us immediately in the wake of the Covid-19 lockdown that there is a potential to innovate something in this area as none of the existing well known platforms offer this combination of sevices. Opportunities for musicians to rehearse, develop ideas and stream performances when colleagues are in multiple locations are currently limited by latency, audio quality issues and access to specialist knowledge.

We will develop a web platform and prototype a raspberry pi (Single Board Computer) based system with built in microphone, sound-card and web connectivity to allow instant access to our communication infrastructure. Not having access to a quality home recording setup or relevant technical knowledge is a barrier for many. We believe this project will enable amateur and professional musicians alike to be able to collaborate remotely in real time and create studio quality recordings.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THOMSON SCREENING SOLUTIONS LTD	Covid-19 Test Manager	£48,628	£48,628

The vision is to utilise an existing product, SchoolScreener Imms to deliver (for all ages) automated, audible and scalable administration of large scale Covid-19 testing including patient feedback and outcome analytics.

The problem to solve is this:

Our current infrastructure is built for patient testing for specific pathways e.g testing cholesterol via a GP clinic. In this case the GP already has information about the patient, their needs and has the mechanism to feed the result back. Similarly in a hospital setting, a test is ordered for a specific purpose, following a patient pathways.

There has not been a need for a uniform test for everybody, where the same information needs to be collected, the same way in multiple settings and the results communicated back to the patient in a timely and uniform manner. Our current infrastructure based on patient pathways is unsuitable, partly because it is too complex, partly due to lack of inter-operability between systems. Also, no single system is designed to scale across a region or large area.

Thomson's Screening's SchoolScreener Imms product has the technology for this is already in place, but final adaptions and delivery to adapt the application for mass Covid-19 automated testing management requires the additional funding in this application.

The project will have 4 key parts

- 1. Work with NHS X and testing provider to finalise functionality required
- 2. Build and operate the adapted testing system, including load testing and scaling (6weeks)
- 3. Develop KPI analysis of data and methodology for operating
- 4. Adapt the application and prepare for scaling up

The innovation in this solution is in its adapting an existing system that meets all requirements. The solution is specific and focused to the need and therefore it is quick to implement.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
YOU TEACH ME LIMITED	You Teach Me	£50,000	£50,000

You Teach Me safely brings the work of UK teachers to any kitchen table and transforms the way in which our children are taught and learn. Combating school closures due to the pandemic lock-down of Covid-19, You Teach Me ensures continuation of learning from any location -- school or home.

Teachers working in mainstream, special and deaf schools create teaching videos that they send to their pupils to access in any location. Using technology in this way supports their learning before, during and after lessons. The videos are shared with other schools. For the first time, schools of all phases and types can watch and learn from each other, and then improve their own teaching by selecting and sharing teaching videos with those pupils who will benefit from them.

"_Using You Teach Me, all staff are able to communicate with pupils in the method that matches their needs. Staff video themselves teaching the lesson and this can be differentiated to match pupil needs. All pupils and parents can access this and respond to staff. This clearly visual resource has allowed pupils and parents to not only learn at home but to remain in contact with staff and their peers. As many of our parents are also deaf, the explanations in BSL help them to support learning too"._ H Shepherd, Head, Royal School for the Deaf Derby

Schools already utilising You Teach Me pre Covid-19 have been able to respond positively to the lock-down, reducing negative impact upon the learning of their pupils.

"_You Teach Me has proven a powerful vehicle for transferring learning effectively into pupil's homes. No single tool has had a greater impact on reducing the inevitable repercussions of current school closures on pupil learning. If every school had You Teach Me, the impact of coronavirus closures would be massively reduced_." Abi Steady, Deputy Head and Specialist Leader of Education, Ashmount School, National Teaching School and Regional Advisory School.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
UNIPART LOGISTICS LIMITED	Made in the UK	£49,579	£49,579

Unipart Logistics have a cross-sector, nationwide presence in the UK with a portfolio of global blue chip brands it provides logistics and supply chain services for.

'Made in the UK' will conduct a feasibility study and form a proposal to prove the value and benefits of bringing key elements of industries' supply chains back to the UK. Reviewing the concept of 'reshoring' through an innovative lens, as well as identifying further gaps for innovation, it will consider the key components needed for this to make compelling business sense in greater volumes in light of the pandemic.

The benefits of increased reshoring activity in the UK are expected to be, but not limited to:

- * Increased investment and employment in the UK
- * Reduce CO2 emissions and impact on the environment from supply chains
- * Provide more secure and resilient supply chains across the UK
- * Improve the capacity for the UK to become more self-sustainable in a post Covid-19 world

The project will focus on the following in parallel:

* Industry wide review of the impact of Covid-19 on supply chains, specifically the differences felt by those supply chains that heavily rely on either 'off' or 'on' shore activity to successfully maintain them

* A study to define which types of components and production processes can be brought back effectively to the UK in greater volumes

* A study on the latest innovations in manufacturing processes, including additive manufacturing and how these could support the 'Made in the UK' vision, specifically within consumer electronics and automotive component manufacture

* Design a solution and compile a proposal, (based on two UK major businesses that currently rely on offshoring to maintain their supply chains) that will meet the needs to effectively reshore some of this activity

* Produce a final report defining best practices and impact of reshoring more supply chain activity for UK businesses, including but not limited to, a cost/benefit evaluation.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HYGIARA LIMITED	Novel Antimicrobial Coatings for Medical Surfaces	£49,970	£49,970

The project aims to develop a novel antimicrobial coating formulations for continual 'real-time' disinfection of high touch hospital surfaces.

The formulations are readily adoptable in hospitals and clinics because they are: 1) easily spray-able, 2) low cost per use, 3) hypoallergenic, 4) non reactive/non furning and 5) maintenance free.

The funding will accelerate the technological and commercial development from preliminary to advanced proof of concept in 6 months.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
QUALITY COMPLIANCE SYSTEMS LTD	Augmented Intelligence Guidance System for Carers	£49,475	£49,475

QCS is passionate about empowering those in the care sector. Experts in artificial intelligence agree that the future lies in augmented intelligence; intelligence that augments the human mind, not intelligence that replaces it. We are already market leaders in providing guidance and support to the care sector, we want to be able to make that expertise far more accessible to carers in every role in their organisation wherever they find themselves.

Everyone deserves outstanding care at all times. Making the right decisions to ensure that can be a challenge at the best of times, but the current Covid-19 pandemic has the care sector facing its biggest ever challenge.

The current rapidly changing environment has meant that carers often don't have the latest knowledge on what safety measures to take, what care to provide or what best practice protocols are.

Imagine a world where a carer has an assistant in their smartphone which automatically keeps them up to date with relevant changes to policy and procedure in their native language guided by historical use, the specific needs of those that they care for and other carers with a similar profile.

This will vastly increase carers' ability to make safer decisions and to dispense care with less time spent digging for information and more time spent caring. Carers will be assisted by a never sleeping, never tiring, never frustrated intelligence that empowers them to make better, safer, life-saving decisions. Critical information will reach these critical people at a critical time.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SURGEASE INNOVATIONS LIMITED	Remote community-based digital rectoscopy for patients with rectal disease during Covid-19 Pandemic	£49,792	£49,792

The COVID-19 pandemic has exerted significant pressure on all elective and emergency NHS resources and capacity. This has been so significant that operations and treatments for planned care have been cancelled and it is now likely that many millions of patients will come to harm as a direct result of delayed diagnoses. New technologies may present a range of flexible and adaptable solutions that can also help widen accessibility to care and alleviate physician burden during and after the pandemic. Indeed, the need for rapid innovation and new ways of increasing capacity within the NHS have been identified as key to tackling the COVID-19 challenge.

Each year the NHS sees nearly 6.7 million patients with gastrointestinal complaints as outpatients, and it performed over 900,000 telescopic procedures of the gut. Nearly all of this activity has stopped during the pandemic. Endoscopy in particular is thought to pose a risk of covid-19 transmission to doctors and nurses. This means that during the pandemic many patients with chronic conditions are not able to receive care and rates of new cancer diagnoses are falling. This will cause a large and second "peak" of deaths from covid 19\.

This project will deploy a new, state of the art tele-endoscopy platform into the primary care setting so that patients are able to undergo endoscopic procedures during the pandemic and access specialist opinions. This will also serve to reduce the demand for formal endoscopy in hospitals after the pandemic. We will target two types of patients: 1) Patients with rectal bleeding or symptoms of bowel cancer presenting to primary care. 2) Patients with inflammatory bowel disease. The goal is to commence treatment in the community and protect patients from exposure to Covid-19 by keeping them out of hospital. This highly innovative project will establish and pilot a novel primary care service that uses this platform at the point of care supported by specialist "virtual" clinics in secondary care hospitals. This pilot will be run in two sites in London. Primary end-points will be completion of 100 appointments using the platform and digital endoscope. Secondary end-points will be patient and user satisfaction, safety, utility and identify barriers to support the scaling up of the technology throughout the UK.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MACNAMARA ICT LIMITED	Cyber Security for Employees Required to Work from Home	£49,992	£49,992

A project to address the security risk to company resources such as files and databases when accessed from unmanaged devices, such as PCs and tablets. During the Coronavirus emergency many organisations are keeping going by having their staff work from home. While VPNs and Cloud storage eliminate many risks they introduce others, the most important being that the devices now being used to access company resources are not owned or managed by the company and it is very difficult to determine if they have been properly patched, have anti-virus software and meet minimum security specifications. The devices are also likely to use networks shared with other users (family members, partners etc.) who may be unconcerned with security. The home network is also likely to include multiple instances of 'Internet of Things' devices with minimal or no security. Our project aims to address this issue by providing a mechanism to protect company resources from dangerously configured machines while at the same time respecting the privacy requirements of the home user and other people and devices on the same network. While primarily focused on security requirement the device we are preparing can help the home user to maximise their resources by analysing both the reliability of their broadband connection and the volume of traffic on their wireless connection. In the longer term, we envisage that more organisations are likely to ask their staff to work from home and our project aims to make it easy to maintain security and optimise productivity, without the need to compromise user privacy by extending company technical management into their homes.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENVIRONMENTAL CONTROL COATINGS LTD	Anti Viral and Air Pollution Cleaning Flow Controlled Technology - PCO Reactor	£50,000	£50,000
A technology like no other, our air cleaning technology addresses airborne forms of covid 19 and other airborne pathogens, reducing the risk of infection for all.

The technology also addresses airborne pollutants like climate change causing CO2, asthma inducing gases like NOx, SOx, particulate matter of all sizes and other and other harmful gases, such as formaldehyde & ammonia, rendering them benign.

Our technology accentuates natural process and uses the power of light energy to activate a novel coating covering a very high surface area matrix with a controllable air flow. Accompanying our tech are sensors that confirm the amount of pollution being removed from the air, which can be environmentally verified by suitably qualified professionals.

It kills airborne viruses, bacteria, mould & fungus through a 'double whammy' of using a certain type of light and the reaction of our novel coating.

The technology can be scaled from in car to very large external fans, particularly useful in high traffic areas. It uses no filters and the fail safe maintenance is a simple bulb and matrix replacement every two years with these parts provided by us.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIGHTRICITY LIMITED	Self-powered (mantenance-free) wireless asset-tracking and monitoring system for hospitals, healthcare and logistics	£50,000	£50,000

As evidenced in the Covid-19 pandemic, it is crucial that nurses and doctors' time is productively spent on patient care rather than wasted on finding missing equipment such as pumps, ventilators, beds, wheelchairs, blood pressure and ECG monitors. Studies have shown that medical staff can spend up to two hours-per-work shift searching for equipment. Multiple industry sources estimate that between 10% and 20% of hospital inventory is stolen or lost each year.

Current solutions for tracking of assets in hospitals are based on battery-operated RFID or Bluetooth technologies. Such Real-Time Location System (RTLS) can show equipment location data. However, they suffer a large total Cost-of-Ownership (due to limited device lifetime and significant maintenance required), a lack of device interoperability and modularity (no possibility to easily upgrade the system).

There is thus still reluctance within healthcare to deploy asset tracking solutions, despite the potential to save both money and lives. Installation expenses can indeed be high if the solution is not compatible with the hospital's already-existing network infrastructure and regulations. Operational costs will be also prohibitive if medical staff have to replace batteries in thousands of IoT devices.

In this project, Lightricity (Oxford-based SME, spun-out from SHARP Labs) will focus on reducing overall cost-of-ownership by developing a completely autonomous (self-powered with indoor Photovoltaic cells) and modular wireless hardware solution for asset tracking and monitoring. Lightricity will demonstrate a standards-based systems which can support interoperability features with existing IoT cloud software and network infrastructures.

The objectives of this project will be focussed on the development of 2 key demonstrators:

* A prototype of self-powered indoor asset tracking device with general purpose real-time tracking capability.

* An advanced self-powered indoor wireless monitoring device for detection of asset movements and monitoring of sensitive equipment.

In the future, the developed technology will also find applicability in patient monitoring and tracing for the fight of spreading infections in hospitals and carehomes, transportation, and supply-chain management (logistics and retail).



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JAMES BARR DESIGN LTD	inexo - Breathing resistance device for improved aerobic performance and restoration of lung function.	£48,699	£48,699

Inspired by seeing patients struggling to breathe due to Covid-19, I am proposing the design and manufacture of (an economic) breathing resistance device which through use will increase lung strength/capacity in a well subject (to make them better prepared to fight the virus' effects on the lungs). After treatment for Covid-19 the same device can then be used to help train the lungs back up to full or improved health.

I will deliver one 'standard device' for patients to use, with an accompanying website which has standardised training exercises and methodology for recording progress. As all elements of the design and training are standardised it will provide an easy and consistent vehicle for medical staff to remotely monitor patients improvement. By creating a standard device which is used nationally/globally anonymous patient data can be shared to give a broader sample base for researchers.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
4WARD TESTING LTD	Medical Mask testing to EN 14683 (PPE)	£28,241	£28,241

We are developing equipment and techniques to test Medical face masks to EN 14683\. The setup and procedures will be assessed by UKAS to validate our competencies and the equipment used.

The EC has identified a lack of test facilities as a barrier to getting sufficient surgical masks onto the market [https://www.ukas.com/news/testing-of-surgical-masks-in-eu/][0]

There a no laboratories accredited for this testing in the UK. We intend to get accredited and support the new manufacturers entering the market, allowing them to produce more medical masks for NHS staff.

[0]: https://www.ukas.com/news/testing-of-surgical-masks-in-eu/



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MULTICARE MEDICAL LIMITED	Development of profiling bed for community care use	£42,047	£42,047

Multicare Medical Ltd developed an existing community profiling bed design to overcome the unique challenges posed by COVID-19\.

The project looked at the design of the bed, and reworked the construction of the bed, incorporating innovative mechanisms that allowed the bed to be folded instead of needing to be disassembled, cutting installation time from 20 minutes to 5 minutes. Not only did this increase capacity by allowing more beds to be installed on a daily basis, but also reduced risk to frontline operatives as they spent less time in patients houses. Furthermore the redesign also meant that installer of the bed could assemble the bed in a safer manner with reduced risk of manual handling injuries.

Every component was also examined for ways to make the bed more hygienic and easier to clean with the goal of ensuring that the bed could be cleaned easily and thoroughly, reducing the risk of passing infection from one patient to another.

The bed was designed to be built and assembled in the UK to avoid global shortages caused by the COVID-19 pandemic. Alternative raising and lowering mechanisms were sourced and UK manufacturers engaged to ensure that the NHS and Local Authorities could have the equipment it needs, when they needed it.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CLH ENGINEERING LTD	Self Powered Door Opening System Removing Contact & Transmission Points for Both Covid-19 & Infectious Diseases / Harmful Bacteria In Food & Drink, Healthcare & Hospitality	£46,800	£46,800

A solution to avoid contact with door handles and push plates in high traffic areas, reducing transmission of infectious diseases and harmful bacteria in light of problems facing health care, food and drink manufactures and other key businesses during Covid-19 Pandemic along with pre-existing hygiene challenges.

Mechanical opening and self closing of doors. No external power supply or batteries and is easily and quickly retrofitted to existing doors with minimal modifications and simple DIY skills.

Our aim is to maintain the physical barriers that only a solid door can provide while offering the quick opening convenience of automatic doors at significant reduction in cost and complexity.

Our objectives and outcomes for the project are as follows:

- Simple installation to any type of pedestrian swing door by a person with basic DIY skills.

- Using known technology where possible to enable rapid prototype and launch to market, realising the benefits during the current pandemic. Also offering continued reduction in contact points for a safer future

- Minimal environmental impact through power free operation, sustainable material selection and adaptable design requiring no site surveys. This reduces load on environment in the long term and reduces people interaction for the immediate future during pandemic.

- Full design manufacture and installation document pack should the product be required to be produced under license to meet rapid demand.

- Identify areas of use for future development to improve health and safety through manual handling improvements.

- Identify and adapt for use in ease of access areas which removes need for power and large installation costs currently experienced.

- Product produced with minimal risk to staff and public during this difficult period.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LEESMAN LIMITED	Leesman Home Working Survey and Analysis	£49,203	£49,203

In response to the COVID-19 global outbreak, economists estimate that UK GDP will fall by up to 30%. Forecasting the impacts of such an unprecedented pandemic is near impossible due to the ambiguity around the demise of the virus, and the ability to measure its societal and economic impact is years if not decades off. We are able to measure the impact from an employee / employer perspective. As a result of the country-wide lockdown, organisations have been forced into the world's largest ever home working experiment. What may be common practice for some is an entirely new way of working for the majority.

52% of Leesman's global database of employee workplace experience, comprising of more than 740,000 respondents, have little or no experience working from home in their present roles. When looking at only the UK, this figure increases to 55%.

As the world's leading authority on employee experience, Leesman's deployment of a rapid response survey and subsequent academic insight allows the UK to take the lead in understanding the impact of home working on the economy and society. In addition, it will also aid individual organisational exit strategies from lockdown, enabling employers to make data-led decisions on who can return to existing working environments first, based on the measured effectiveness of working from home.

On a micro level, Leesman provides a depth of analysis that will show an organisation exactly how its workforce has coped and been supported while working from home, while on a macro level, Leesman's front line empirical data can benchmark this against global statistics relating to workplace effectiveness, experience and productivity.

As a nation, the UK has been told it is lagging behind other European countries' productivity levels for years. As we eventually enter the winter of this discontent and move into a united recovery, we will be looking to up these socio-economic levels like never before. By understanding how effective we have been, we are able to look at how effective we can be by benchmarking data from home working against office-based work.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VIA TRANSPORTATION UK LTD.	Intelligent Critical Supplies Delivery	£32,897	£32,897

In response to the COVID-19 pandemic, local councils across the U.K. are ramping up their efforts to ensure the successful delivery of food and essential goods parcels to an extremely vulnerable population of up to 1.5 million, whom the Government has asked to self-isolate for 12 weeks. ViaVan, the leader in public mobility solutions in Europe, will use its technology and operational expertise in the transportation sector to introduce a solution that addresses two primary needs of the local councils: optimisation of parcel delivery to those in need, and increased efficiency of scarce driver and vehicle resources.

Our approach will trial technology, originally developed for demand-responsive public transport, in at least one UK district as a solution that will introduce an intelligent delivery platform that automates parcel distribution operations at scale, used to reliably deliver emergency parcels to those in need.

ViaVan's use of AI-powered route optimisation algorithms will efficiently group parcel deliveries into smart delivery routes, making the best use of available resources. Its existing mobile application for demand-responsive transport will be used as a tool to support volunteer drivers handling delivery. The ViaVan mobile app will present a list of delivery tasks for individual volunteers and will provide navigation instructions to each destination along a unique route. Parcel recipients will be able to receive real-time updates on the status of deliveries based on the driver's real-time location.

ViaVan, and its parent company Via, are actively working with dozens of partners across the globe during the COVID-19 pandemic to use technology to introduce solutions for the transport of essential workers and goods, enabling partners to rapidly and efficiently transform fixed route public transit infrastructure into dynamic and flexible systems.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE CODE ZONE LTD	The Code Zone Online	£44,914	£44,914

The Code Zone was launched 2 years ago as a volunteer led pilot to make a contribution toward the coding skills shortages in the UK. It's an innovative club for children (ages 6 to 14) that increases interest, engagement and skills in coding in a fun and socially engaging way. The clubs offer programming of robots, drones and computer games through delivering fun coding challenges. From the first volunteer led club, The Code Zone formed as a business in 2019 and now has 11 clubs at 4 locations; employs 4 staff (2 FTE) including 2 Code Zone Leaders who support 100 to 120 children a week from a variety of backgrounds.

The vision for the project is to develop The Code Zone Online. This will harnesses the latest digital technologies to develop an innovative and commercially viable model for children centric online clubs that support fun skills development with social interaction. This development will be focussed on coding skills for children, but it will be ultimately transferrable to other children club models in other skill areas.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JOHNSON FELLOWES LIMITED	Early Years Education Portal	£37,153	£37,153

VISION: A resource portal for educational content. Imagine "Trip Advisor" for educational resources. "Your child, age X was interested in Y, they may also be interested in Z".

There are "lists" of (some amazing) resources for "educating / stimulating children at home" but I haven't seen any good "categorisation".

KEY OBJECTIVES: This "portal" will enable a parent to search based on age and interests, and over time will be able to make recommendations of other things that may be of interest. It will enable parents to enable their child(ren) to pursue interests and EASILY find available resources. The internet is crammed full of resources - but finding the right one for your child can be a challenge.

MAIN AREA OF FOCUS: The initial focus area would be for the PARENTS of PRIMARY aged children. Although this could be expanded for any age group.

HOW IT'S INNOVATIVE:

1. This portal enables from an early age for children to take more control of their learning / activities.

2. It turns "lists" of resources into targeted learning that enables a child to pursue their interest. If they're interested in a topic they're more likely to be engaged. It will be based on reviews (think Trip Advisor for educational resources).

3. This is for the parent and child. There are portal sites aimed at schools - but none that I've seen are aimed at the parent. Even after children are able to attend schools - this will be a great place for children to pursue their own interests.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MVINE LIMITED	Covid-19 test status digital passport, with privacy protection for adults and children	£49,376	£49,376

Mvine Limited, a British technology company, is working with Innovation Funding Service in the national interest to deliver a working demonstrator which applies leading digital technologies to solve a fundamental problem in both public health and citizen privacy in the context the Covid-19 pandemic and afterwards.

The problem we are solving together is the ability to associate Government-approved tests for Covid-19 with you, and all other members of the public, in a way that shows the test has been performed and which allows you to easily prove it, all without you having to give away personally identifiable information.

The objective is to facilitate a highly efficient process whether Government decides on a strategy of testing in the community, for example tests performed at drive-thru testing stations or tests performed at pharmacies or other approved environments where there is a trusted person to oversee the test.

We can do this by using digital technologies which already exist to help adults and children in three main ways:

First, without having to give away any private information to people you don't know, to ensure the test you have done for Covid-19 is associated with you and nobody else. There is no room for error so we will ask you to agree to let the person doing the test to use the technology to make an abstract mathematical model of your face. It doesn't take a photo, it doesn't even scan what you look like. It uses AI to work out a set of numbers which represent you and which cannot be mistaken for anyone else. Remember, this is all about not giving away information about you to people you don't know.

Second, the technology helps the person doing the test, who might be a NHS keyworker or another trusted person, to match the test to you, and ensure your test belongs to you and only you.

Third, you do not need any technology at all to be able to use the results of the Covid-19 test to prove to other people that you have done the test and what the result is.

Once the demonstrator receives Government approval we will make it available to everyone who needs it. We really want to help the country get back on its feet as a soon as possible and help you to get on with your life in the way you want to live it.



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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
SPOOKFISH INNOVATIONS LTD	Next Generation Thermal Fever Screening	£48,397	£48,397

Limiting the spread of any virus is an extremely complex challenge and early detection of infected individuals is crucial to its success.

Our revolutionary solution will help to get businesses, transport and the economy moving fast, effectively and safely using robust 'next generation' thermal fever detection technology with smart data analytics.

The systems will be installed at entry points to commercial sites and public buildings (such as train/bus stations, libraries and hospitals), detecting and tracking people at risk of infection before they enter crowded areas, where the probability of passing the virus onto others is significantly higher.

Fever is one of the earliest symptoms of COVID-19 to appear and also the most common, reported in 98.6% of cases. This was also true in many previous viral outbreaks such as Bird Flu, Swine Flu and SARS. As such, fever screening is recommended by the WHO as the most effective and practical non-contact method to screen for the majority of viruses, including COVID-19\. Fever symptoms also indicate that an individual is currently infectious, making early detection very important.

There is also widespread expectation of a recession due to the effects of COVID-19 so businesses are exploring ways in which to reduce the impact - getting back to work quickly and maintaining a healthy workforce are critical to this. This is of particular importance in sectors hardest hit by the virus, where remote working is not possible e.g. manufacturing, health and sport.

Unlike other fever scanning systems, the system will be able to operate accurately outdoors, accounting for changes in ambient temperature throughout the day and reducing the chances of false readings. This will be particularly valuable to the locations where indoor installation is impossible, including many commercial security gates and stations.

Critically, screening data will also be monitored in real time (within GDPR) by security personnel and public bodies. This will provide crucial insight into the live spread of the virus across individual sites and the country as a whole, as well as analysis on how to prevent future outbreaks.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OnMyMobile (a trading name of YTKO Ltd)	Digital Midsummer Interactive Theatre App	£29,431	£29,431

Engaging audiences in an alternative theatre experience from their own homes. Using CGI artwork, Mixed-Reality and Augmented-Reality techniques the new "Immersive Theatre App" will allow audiences to engage and interact with theatre during lockdown. Rather than just watching recorded theatre on a screen, the Immersive Theatre App will allow audiences to learn backstage secrets, the process of theatre making and also engaged them with the play in a whole new way. It was also have an educational resource to help entertain and educate young people during isolation.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AINOSTICS LIMITED	Rapid triaging, treatment response assessment and outcome prediction in COVID-19 patients	£49,766	£49,766

In healthcare, timely and personalised interventions have a crucial role in the ultimate effectiveness of both current and future treatments for a wide range of diseases. This is also true for COVID-19, where early detection would result in a significantly improved patient prognosis. AINOSTICS' technology represents a breakthrough that would provide an automated, extensible, and personalised healthcare platform for assisting the clinical diagnosis and management of patients suffering from COVID-19, using multi-modal clinical imaging and non-imaging data; useful for both the treatment of patients, and importantly, in the development of novel therapeutics.

We intend for AINOSTICS' software to become a routine part of clinical practice and drug development as the results of our intelligent analysis will provide clinicians, researchers, and imaging centres a convenient and cost-effective means to get reliable, quantitative and objective diagnostic data.

For serious global diseases, AINOSTICS' technology has the potential to save time during patient assessments, accelerate clinical pathways, standardise the quality of care and improve patient outcomes, in addition to making important contributions to the development of disease modifying therapeutics.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VALKYRIE INDUSTRIES LIMITED	A virtual classroom for remote education	£27,000	£27,000

Education has been severely disrupted by the current Covid-19 health crisis, with opportunity for direct student-teacher interaction limited. Current solutions to the problem include the use of corporate teleconferencing tools, which are not entirely appropriate for the task of educating minors. There are numerous privacy issues and it is difficult for teachers to directly interact with students, or to monitor their engagement and progress over the course of a lesson.

Valkyrie Industries proposes a virtual classroom, a digital tool enabling teachers to provide interactive remote education. The classroom will mirror it's real world counterpart, providing a familiar environment for continued learning amongst Covid-19 disrupted schoolchildren and university students. It will provide all of the tools expected by teachers in a real teaching environment, and enable students to join using devices ranging from mobile and smart tv to VR-ready computers.

Building on our expertise in natural, embodied interaction and years of developing virtual environments, Valkyrie Industries are creating a ubiquitous tool appropriate for teaching remotely. In the short-term, this would hugely benefit students whose education is currently on hold with fragmented government oversight on remote learning solutions. In the long-term it would provide a teaching resource that leverages the full potential of virtual learning, enhancing classrooms by offering students and distance learners access to group lessons anytime and anywhere. It can boost engagement, immersing teachers and students in new experiences and defying physical limitations with virtual trips into space, inside a virtual human body or exploring atoms.

Ultimately, it could also leverage Valkyrie Industries' patented haptic technology to touch and feel the virtual, such as handling moon rocks, for a truly immersive learning experience. However, for the scope of this project we are focussing on the major issues of specificity and security that curtail the use of current available teleconferencing tools.

Our virtual classroom will mirror the performance of a real classroom, enabling teachers to hold their own unique classes or full VR lectures. Virtual environments and objects help to simulate a classroom environment, improving learning retention and class interaction. Teachers will be able to gauge student engagement and to test their progression through mini quizzes, questions and built in monitoring. The simple act of looking at a student in a classroom improves how they will respond to the teacher; it is this embodiment that we intend to simulate.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIG SKY SCIENCE LTD	A Low Cost, Portable, Biologically Active Sub-Micron Particle Detector	£47,619	£47,619

Big Sky Science Ltd has assembled a team to develop an innovative device to solve challenges in measuring biologically active particles. Rapid prototyping, aerosol and optical expertise, coupled with microengineering and manufacturing upscaling, will allow such a device to be commercially available within a short period of time.

We anticipate this device will be of benefit to the healthcare industry and border patrol officials, and will enhance the ability of users of the device (and the data it generates), to more accurately assess levels of contamination of both COVID19 and other airborne viral infections within the community. This is especially valuable in infections where viral shedding occurs prior to other detectable symptoms. This will have the effect on reducing the scale and duration of required lockdown conditions, ultimately benefiting individuals and the wider economy.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IXC UK LIMITED	INNOVATE.HOW – a powerful collaborative online innovation toolkit.	£47,681	£47,681

INNOVATE.HOW is a unique team collaboration platform aimed at boosting the ability and efficiency of SME businesses in delivering sustainability and growth through innovation. It will enable SMEs of any size to be more effective in identifying and implementing solutions to the specific challenges they face as they emerge from the pandemic crisis. The platform guides businesses through a proven process which, in addition to helping inexperienced organisations navigate their innovation journey, provides hands-on training and experience, whilst constructing robust and validated innovation projects.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VEELOOP LIMITED	Seamless payments for volunteers supporting vulnerable people in times of crisis	£48,538	£48,538

VeeLoop is building an app to connect vulnerable people, volunteers and volunteer organisations by enabling safe and secure payment flow from the vulnerable person to the volunteer and providing a full audit trail of the volunteer activities to voluntary organisations.

When the Covid-19 lockdown started and we tried to help our neighbours with shopping but we found the payment a problem. We found evidence that most volunteer groups are encouraging volunteers to shop using their own money and get reimbursed when they deliver the shopping. Considering volunteers are busy and dealing with their own challenges, including financial, struggling to get paid could discourage people from volunteering. Also there is no audit trail or central records of what activities have taken place between volunteers and vulnerable people. There isn't a solution that provides a seamless payment coupled with transparent audit trail.

Our project proposal is for payment app that will:

*safeguard vulnerable people in isolation and build trust with the people helping them -- by ensuring cash is only transferred to volunteers after making a purchase

*safeguards and help lighten the load for volunteers by being an app they use to pay for shopping and get paid, keep receipts and record activities.

*provide insight and full audit trail of activities for volunteer organisers



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CROSS DIGITAL LTD	Al-powered Gateway for UK Care Industry	£46,331	£46,331
The care sector (residential/domiciliary) is in the frontline due to COVID-19\. There is unprecedented pressure to maintain safety for staff and residents. Those accessing care have been stripped of their ability to see family and enjoy leisure activities. The need to access alternative care solutions either for yourself or for a loved one is more prevalent than ever before. In the short term, people are not able to visit help centres and care homes due to COVID-19\.

Cross Digital Ltd will develop a web gateway which harnesses AI (Machine learning) to assess and predict/detect the health needs of care users. Our AIpowered solutions will tackle the emerging societal healthcare and social care needs as well as improving people's wellbeing and giving improved personalised access to support services.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OBJECTIVE ASSOCIATES LIMITED	Crowd based manufacturing	£49,559	£49,559

An online resource for the sourcing of designs and manufacturing capabilities linked to the use of 3D Printers.

Connecting designers, manufacturers and government agencies to speed the sourcing of critical components.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Amba Connected Care	An Early Warning and Emergency Response Service to Keep Older People Safe and Healthy at Home	£48,634	£48,634

Amba is a care and health monitoring system to help older people to stay safe and well in their homes. Amba automatically provides early warnings and emergency alerts to carers and family members if something seems amiss. In the event of a possible emergency, a qualified professional carer is immediately despatched to their home.

?Older people are vulnerable to illnesses and accidents which can have a life changing impact if they are not detected quickly enough. Early detection of a fall or an infection can be the difference between a simple treatment, a long stay in hospital, or death. Unfortunately, older people are often reluctant or unable to ask for help, even in an emergency, as both formal research and anecdotal evidence show.

Amba continuously and passively monitors a wide range of indicators and automatically provides early warnings and emergency alerts if something is amiss. They simply go about their daily life as usual. There is nothing to wear or carry. Nothing to learn or remember. The only difference they will notice is an occasional call from a relative or a care professional if something isn't right - and a specialist emergency carer appearing on site if they don't respond.

The connected devices which are used by Amba are leading high-quality products, in use by millions of discerning consumers worldwide. Once integrated into the Amba Platform they enable the Amba Carer App to support a wide and growing range of both emergency and predictive alerts:

* passive, fail safe, in-home fall detection

- * possible infection/fever
- * predictive fire hazard warning
- * nutrition and hydration problems
- * poor or irregular sleep difficulties
- * respiratory and cardiovascular health problems

In live testing, the Amba prototype was implemented alongside three of the market leading TEC systems (of the kind used by hundreds of thousands of people in the UK). Over the course of the live test, Amba detected two real, life threatening emergencies and raised the alarm, whereas the market leading systems failed to detect any problem or raise any kind of alert.

Our project will pilot the Amba system in the homes of 100 older people in order to:

- * Discover if these results can be reproduced at scale;
- * Confirm we can set up the system without visiting the users home;
- * Develop and test the most useful settings to protect self-isolating older people;
- * Gather feedback from carers, older people and relatives;
- * Integrate additional devices as necessary.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ISABEL HEALTHCARE LIMITED	Isabel EPIFFANY medical eLearning platform	£48,672	£48,672

The impact of the Covid-19 pandemic and enforced social distancing in the UK has substantially cut the amount of training time in the workplace for healthcare professionals in training. Without enough training, new doctors and nurses risk entering work unprepared and lacking core skills. Whilst our project addresses this problem now, our vision also provides a new solution for rapidly upskilling away from the workplace.

Our solution is to create a virtual patient platform with cases - made by combining data from three different sources: 1) the very symptoms and signs reported by real patients themselves; 2) artificial intelligence in the form of a clinical decision-support technology and 3) the expertise of clinicians. The result is a new way of delivering online learning at scale allowing healthcare professionals in training exposure to a far greater number of clinical case problems available in any one workplace setting. The advantage of online eLearning is that platforms can automate the creation of thousands of virtual patients, as well as automate the assessment of performance of healthcare professionals on those cases as well.

The project brings together a clinical decision-support technology company - Isabel Healthcare, with a UK University - Nottingham - supported by stakeholders - other UK Universities, Health Education England (responsible for healthcare professionals in training) and NHS England's Academic Health Science Networks (responsible for spreading innovation across the NHS) in order to work on this challenge.

An existing 'proof-of-concept' beta-version of the eLearning platform without clinical decision support technology was developed by Isabel, and enhanced in 2019 following the award of an internal fellowship grant by University of Nottingham.

The project will consolidate that partnership, and transform the previous beta version into a fully functioning working prototype of the eLearning platform embedded with the clinical decision support technology and capable of generating virtual patient cases.

This funding would be used to:

1\. Embed Isabel's clinical decision support technology into the authoring process for generating virtual patient cases so all cases are evidence-based and include relevant 'never miss' diagnoses

2\. Streamline the authoring process and optimise the process by which multimedia (anonymised digital audio, images or video) is integrated into virtual patient cases

3\. Integrate an assessment system that evaluates the performance of users on cases and their development over time can be easily seen, with areas in need of strengthening identified to them and their teachers



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ONKOLYZE LTD	with artificial intelligence to detect covid-19 in 2D lung ultrasound scans and quantify the severity of the disease	£46,792	£46,792

Public overview

This project is to augment ultrasound as a screening tool with artificial intelligence to detect covid-19 symptoms in lung ultrasound scans and help doctors understand how risky patients are. It can also be used to monitor the progression of a patients' disease.

CT scanning has been shown to outperform some of the other diagnostic tests to diagnoses corona virus but when a patient needs to be taken for an X-ray or CT scan, they are at risk for spreading the disease to other patients and the other doctors who look after them.

Doctors in Italy found that corona virus can be detected using lung ultrasound.

Ultrasound is a very portable way of checking patients' lungs and it can also be operated easily by nurses when a patient first comes into the hospital to decide how risky the patient is. Ultrasound can also be used next to the patient's bedside. This means decisions can be made quickly whilst the patient is not as exposed to other patients and / or doctors and so helps with both treatment for the individual patient and infection control.

The current issue with lung ultrasound is that the image must still be analysed by a person, and people make mistakes, take time to do things, and get tired. If an algorithm can work alongside the doctors and nurses, it will improve the speed and quality of their work.

This project has three objectives:

- 1. To prove that corona virus can be automatically detected in lung ultrasound images
- 2. To find a way to market this product
- 3. To find a hospital to help supply data and demonstrate the algorithm works

If this project is successful, this can potentially be a very useful tool to help doctors and nurses do a lot more with less resources. Making lung ultrasound more useful for doctors can be very helpful in the fight against this corona virus pandemic. As this project is software based, it will be very easy for other hospitals and care providers to take advantage of the benefits. This is also potentially very useful for more rural healthcare settings where the expertise to interpret these images may not be easy to access.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BAKER PERKINS LIMITED	Baker Perkins: New technology for the production of meat substitutes from whole grain pulses	£47,520	£47,520

There is increasing demand in the UK and elsewhere for protein-rich meat substitutes that have the appearance, texture and taste of real meat products. This growth in demand is driven primarily by consumer concerns about the impact of meat production on the environment, leading many to look for ways of reducing meat consumption without compromising on nutrition or the gastronomic experience of eating meat. Health concerns and animal welfare are other reasons cited for adopting a plant-based diet.

This has seen UK sales of plant-based meat substitutes increasing 18% to £475m1 in 2019 while between 2015 and 2019 worldwide sales grew at a CAGR of 7.1% to £3.2bn2

Texturised vegetable protein (TVP) is one of the ways of making plant-based meat substitutes and a number of products are already on the market. Lowmoisture TVP has a slightly spongy texture and is used in a range of meat products, primarily by the food industry, where it is rehydrated before being incorporated into burgers, sausages and ready meals. High moisture TVP is ready to use and gives a firmer, more meat-like texture to the products and could be sold to foodservice outlets or consumers as an ingredient for their own dishes.

Current technology uses highly-processed protein isolates to make TVP. However, many of these products contain unfamiliar ingredients such as methyl cellulose to modify the texture and could be categorised as ultra-processed, two things that could hinder further growth.

This project will investigate new processes using twin-screw extruder technology that will enable either high-or low-moisture TVP to be manufactured using flours obtained by processing the whole bean, rather than an isolate. It will also investigate ways of achieving the desired range of textures using purely processing techniques or label-friendly ingredients.

The UK food industry will benefit from this project by being able to respond to demand for environmentally-friendly and clean-label meat substitutes using ingredients that could be grown and/or processed in the UK. This will build resilience into the food supply chain and address concerns about food security in the event of future disruption to imports or domestic production of meat. Also, as the demand for these products is increasing worldwide, UK food processing and equipment companies will benefit from export opportunities.

1 Kantar World Panel via The Grocer

2 Innova Market Insights -- Meat Substitutes Trends Analysis Dec 2019



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ICENI LABS LIMITED	SafeCare: non contact respiration trend monitoring	£49,961	£34,973

SPARTA is a non-contact breathing rate monitor that will give medical staff and carers early indication that an individual suffering from a respiratory illness (or other illnesses requiring bed monitoring) is in need of more urgent care.

The device achieves this by continuous respiratory rate monitoring, determination of respiratory rate change, whether increasing or decreasing from the norm, with the ability to give warnings of deterioration up to an hour in advance of when intervention is needed The device allows data-driven medical decisions and has the potential to save lives.

SPARTA will enable community, home and other remote setting monitoring of people with respiratory disease and provide a reliable measure of the progression of the disease and indication of when medical intervention is required.

The early indication of the need for medical intervention has been shown to be a significant factor in improving survival rates from respiratory diseases such as CV-19\.

SPARTA is non-contact. It only needs to be placed near to the patient, typically next to or under the bed, allowing remote monitoring of infectious patients with reduced risk to healthcare workers.

Our vision is that SPARTA can reduce morbidity and mortality during respiratory disease and other disease occurrences requiring bed monitoring. In particular, by ensuring timely admission to hospital and thus reducing the burden on hospital services.

Our plan for the project is to develop, from our in-hospital system, a prototype "community and home use" version.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MATHS WITH PARENTS LTD	Maths with Parents COVID-19 support	£49,905	£49,905

"Daddy, what's a number bond?"

Parents across the country, balancing a host of other things, are now suddenly being hit by questions like these from their children.

Maths education has developed significantly since we were at school. New techniques and manipulatives are used in class and children enjoy solving problems and exploring concepts to a greater depth. Unfortunately, many of these children's parents have not been brought along with these developments. Without effective support at this time, parents will find it hard to support and children will struggle to develop their maths.

The problem is greatest in disadvantaged communities, where parental engagement occurs less frequently, is less targeted and is overall less effective that in more affluent communities (Kalil, 2016). As our CEO Tom Harbour wrote recently in an article for the Times Education Supplement, resources to solve this problem "have to be carefully designed if they are to reach disadvantaged families. It is all too easy to half-bake support for parents, potentially helping to widen the disadvantage gap."

Maths with Parents has been designed to motivate and empower parents in disadvantaged communities to have enjoyable learning experiences together with their children. We are working to ensure that every child is supported at home to fulfil their academic potential.

Our platform enables teachers to assign topics to align with the curriculum they are teaching. Based on this, we provide a tailored package of support to each family, accessible on their phones. Parents receive a short video, presented by children, about the method their child is learning. The video is followed by fun games and activities to play together. These games connect the maths that the child is learning at school to real life activities at home, such as cooking, shopping and having dinner. Parents and children rate and leave comments about each activity that they complete, which give teachers valuable insight into pupils' learning at home. We work with the teachers to provide extra support for the disadvantaged families that need it.

A month ago we were working with 85 schools. To support during Covid-19, we announced that we would offer our programme of support for free to schools during the school closures. We have had teachers from over 700 new schools register to join our programme. We now need to accelerate our product roadmap to ensure that we can respond to this huge demand and support disadvantaged families nationwide.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RAIQC LTD	Report and Image Quality Control	£50,000	£50,000

Studies from around the world have shown that medical imaging studies such as Chest X-ray and CT scans have a high accuracy in detecting lung changes related to Covid-19\. Unlike the lab based diagnostic techniques which are in shortage world-wide and require at least a few hours to process, imaging investigations are widely available and provide immediate results.

In addition to aiding diagnosis, imaging is also used to assess disease severity, identify other underlying lung conditions and monitor disease progression. It also plays a key in providing alternative causes for the patient's symptoms such as pneumonia, heart failure or pulmonary embolism (blood clot in the lung) which are potentially life-threatening conditions that would require a different treatment.

However, the accuracy of the diagnosis relies on the ability of the image interpreter to be able to recognise the features of Covid-19 on the imaging study. We propose creating a web-based training and simulation tools that can be used to quickly train a large number of individuals including physicians, junior doctors, radiographers and nurses to recognise the imaging features of Covid-19 to aid with its diagnosis and management.

Beyond the current pandemic, the platform will have the ability to host educational material related to other diagnoses such as cancer, stroke and trauma. Therefore it will act as a standardised quality assessment tool reducing variation in practice and potential for patient harm. It will provide benchmarking at a national level to help address concerns over standards. Additionally, the tool will allow a wider workforce to be trained allowing quicker diagnosis of time critical diseases such as cancer while saving outsourcing costs for NHS which totalled £165milion in 2018\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ETEXSENSE LIMITED	E-textiles based wearable electrode garment for rehabilitation and active living	£49,939	£49,939

Inactivity can result when people suffer pain and physical functional disability. Lack of exercise often worsens the symptoms of existing health conditions (e.g. the pain and stiffness associated with musculoskeletal disease) and increase the risk of falls, obesity and critical illness (e.g. cardiovascular and respiratory disease). Public Health England estimates that lack of physical activity costs the UK £7.4 billion a year. This number will increase with the current change in lifestyle due to Covid 19 lockdown and the aging population since nearly 25% will be 65 and above by 2046\.

Electrical stimulation (ES) is a type of electrotherapy device which sends a mild current through electrodes placed on the skin resulting in pain relief and muscle exercise. It can stimulate the sensory nerve to block pain signals from travelling to the brain. It can also stimulate the motor nerves and muscles to enable muscle contraction to assist functional movement and regain lost functions.

This project will develop a wearable electrode garment (sleeve/cuff) that can replace the traditional disposable hydrogel electrodes used in electrotherapy devices. The novel electrode is a soft and skin-like material that is comfortable to wear. The sleeve/cuff garment design will enable users to use it on different parts of the body (arms/legs/joints). The garment is easy to use and durable lasting for over one year. It will allow people to undertake regular exercise independently leading to improved physical function, increased wellbeing and reducing strain on families, communities and the society.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PXD LIMITED	Development of an algorithm to stratify risk to Covid-19 by MHC haplotype.	£49,930	£49,930

Major histocompatibility complex (MHC) genes underpin host response to pathogens, including Covid-19\.

MHC proteins have a functional peptide binding groove (PBG) that binds foreign peptides (antigens) within a cell. Once bound, the MHC-antigen complex translocates to the surface of the cell, which then stimulate an immune response. MHC genes thus play a critical role in the the overall immune response.

The three-dimensional structure of the PBG determines which regions of antigens are bound by MHC proteins. Thus, MHC haplotypes, and subsequent variability within the PBG, can change how the antigen is presented externally, thus directly impacting the shape of the antibody produced during an immune response.

Recent work has identified marked variation in MHC haplotype distribution between geographical areas affected more or less severely by COVID-19, and within different ethnic populations. Not only might these haplotype differences underpin stronger or weaker host immune responses to Covid-19, they could also undermine serological testing - certain MHC haplotypes may present antigens in such a way that the host antibodies raised are weakly or not detectable by mass-produced serological tests.

PXD is currently developing algorithms to predict likelihood of developing an immune response to implanted materials, based upon MHC haplotypes. PXD will leverage this expertise to create an MHC-based diagnostic tool with utility for:

* identifying individuals that may be at heightened risk for a dysregulated (overly aggressive) response to Covid-19\.

* identifying which commercial serological tests will give the most accurate results for their MHC haplotype.

* use as a companion diagnostic by the pharmaceutical industry during therapeutic development.

INNOVATION: Diagnostic algorithm for predicting immune response to Covid-19 antigens based on MHC haplotyping assay data combined with 3-D protein modelling.

TEAM:

- * Carlos Echevarria, Respiratory Consultant, Royal Victoria Infirmary, Newcastle upon Tyne.
- * Stephen Wright, Clinical Director Research and Development, Consultant in Anaesthesia and Intensive Care, Newcastle Hospitals.
- * Dr Anthony Poles, Consultant Clinical Scientist and Head of the NHSBT Histocompatibility & Immunogenetics laboratory, Bristol.
- * Heather Cordell, Professor of Statistical Genetics, Institute of Human Genetics, Newcastle University.
- * Rebecca Darlay, Research Associate, Institute of Human Genetics, Newcastle University.
- * Pravin Khalia. Consultant Anaesthetist and intensivist, University Hospital of North Tees.
- * Shonali Natu. Consultant Pathologist, University Hospital of North Tees

(Some are funded as subcontractors; most are providing in-kind support).



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PLAYLA.BZ COMMUNITY INTEREST COMPANY	GenieMo4CV	£49,818	£49,818

The "GenieMo4CV" project is a rapid development venture aiming to overcome the emotional distress inflicted upon patients, front-line NHS staff and their families, caused by the required isolation and distancing during the Coronavirus pandemic. The project will integrate a range of video and 'mixed reality' imaging tools into an easy to use 'computer-generated image (CGI) processing package' called "GenieMo". GenieMo will enable non-expert users to communicate effectively, quickly create video messages and produce unique and personalised video content for their families, friends and colleagues. It will be convenient also for use by medical staff for remote diagnostics, video-conference meetings and other related video applications.

The GenieMo platform will support not only simple video from familiar devices like smart phones, but will also (for the more high-tech generations and users) enable the production of 'mixed reality' 3D video communications with personalised 3D video clips and games, and special effect messages which can be stored and saved securely on the system ... bringing to reality communications like Star War's holographic messaging by Princess Leia. Good quality "real" 3D imaging significantly increases the value and meaningfulness of the message and the user experience.

The over-arching and most urgent objective for the Team is to rapidly re-develop the powerful GenieMo package for the specific application of improving personalisation and intimacy of communications between patients, NHS staff and loved ones - helping in the recovery process, and maintaining morale and emotional well-being in hospitals and the home.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SUNAMP LIMITED	Development of temporary high-volume hand-wash facilities to suppress re- infection rates in a staged lockdown phase-out	£49,989	£49,989

Stringent hand hygiene prevents the spread of coronavirus and washing correctly with soap and water is proven more effective than hand sanitisers. Easy access to facilities at the point of need is essential to encourage frequent handwashing and removes the need to move around buildings unnecessarily to find clean running water. This is critical in the temporary field hospitals set up to treat Covid 19 patients, as well as workplaces of other essential workers. As the country emerges from lockdown, it will be vital that people continue to be diligent about cleanliness.

Sunamp's mobile handwash units will use RAL certified heat battery technology aimed at cutting carbon emissions to provide large amounts of hot water when and, crucially, where it is needed most, whether on temporary wards, in the workplace or out in the field.

The mobile handwash units will not require any plumbing or electrical expertise to become operational. On arrival on site, they can simply be plugged in for 2 -- 3 hours to charge the battery, then the unit can be moved into position where the stored energy will be released as heat providing instant hot water on demand. Multiple units will be smartly controlled to be charged by a standard wall plug. There will be no trailing wires. The water supply will either be held in a storage container concealed as part of the unit, or from a pipe attached to cold mains water where it is readily available. Wastewater will be collected in a container to be safely disposed of.

Sunamp's mobile hand washing units will be developed to:

- * Provide instant hot water for improved comfort and efficacy for hand sanitisation, or for cleaning implements and utensils at the point where it is needed
- * Be fully mobile suitable for use with and without either a plumbed-in water supply or nearby energy supply
- * Be easy to use by dispensing with the need for plumbing or electrical expertise
- * Minimise the risk of legionella disease -- water is stored at cold temperature and is heated instantly and only as required

* Meet demand -- the units will supply enough clean hot water to allow one person per minute per basin to thoroughly wash their hands in hot water without the need for connection to an energy supply

* Require minimum maintenance - heat batteries have a proven lifecycle of over 40,000 cycles, more than 50 years of normal use



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRAINPATCH LTD	Non-invasive safe electrical stimulation using AI to save lives	£49,956	£49,956

The COVID-19 disease has taken the world over by storm and everyone is doing what they can and what they never imagined they could to help stop the spread of the disease and save lives. The virus is like a spy in the body, being silent for weeks and then suddenly triggering an air raid alarm. Such overreaction leads to lung damage and death.

We believe that managing immune system response is critical for tackling the disease, particularly in elderly patients. There are a variety of pharmaceutical and natural/alternative solutions for the immune system, but the medicines give you very little control and can have severe side effects, while natural remedies are modestly effective at best.

Wouldn't it be great if we could control the immune system at a touch of a button and save lives by careful personalised monitoring and management of the immune response as the disease progresses?

At BrainPatch we are a team of scientists and experienced entrepreneurs backed by world-class expert advisors. Our aim is to develop a platform technology of safe and effective brain stimulation for a range of applications. We know that the immune system can be driven by the nervous system and that we believe we can deliver a tool to stimulate specific parts of the nervous system system to help regulate the immune response of COVID-19 patients at a touch of a button.

This project aims to bring the company closer to putting this solution in the hands of doctors on the front lines and in intensive care units and that it would help prevent deterioration of lungs and death saving hundreds of lives each day.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
POURIT LTD	Enabling the hospitality industry to deliver contact free in-premises service	£38,400	£38,400

pour makes contact free smartphone ordering accessible for pubs, bars and restaurants of all sizes, through one consumer facing app.

Customers can view the digital menu of the premises they're in, add items of food/drink to their cart, pay through the app and place a contact free order through their smartphone.

The order is sent to premises staff who prepare and deliver it to the consumers table or a collection point - the delivery method can be altered to suit Government regulations and ensure safe social distancing is maintained during this pandemic or a future outbreak.

Consumers spend time with the people they came with, not queuing at a bar or vying for someones attention. Bars and restaurants benefit through reduced order administration, improved efficiencies and first class contact free, pandemic and outbreak safe service.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENDOSCOPE-I LTD	SNAPe-i - Safe Nasendoscopy Assisted Procedure, by endoscope-i	£49,999	£49,999

Nasendoscopy is an endoscopic procedure where an ENT surgeon examines a patient's nose, throat and voice box with a small camera. It is used principally to diagnose medical conditions (often cancer) and to assess the success of therapeutic interventions -- Approx 500,000 nasendoscopy procedures are performed annually in the UK.

The procedure is carried out in the out-patient clinic with the patient awake. It often induces mild coughing or sneezing, which prior to COVID-19 was not thought to be a problem. It has been demonstrated that any procedure that causes coughing, sneezing or creates a direct access to the respiratory mucosa (lining of the mouth, throat and lungs) is a significant risk factor for clinicians contracting COVID-19\. Any procedure that puts the clinician at this increased risk is now called an aerosol generating procedure. This is thought to be the principal reason why ENT surgeons have a high chance of contracting the condition (with one tragic death already and two clinicians on intensive care in the UK alone).

ENT surgeons around the world are now approaching nasendoscopies with extreme caution, using appropriate PPE. But despite this there is a reluctance to perform the procedure and as a result there will be missed diagnoses.

SNAPe-i has been conceived to overcome these problems. It is a plastic device that fits onto a conventional surgical mask and creates a resealable port within the surgical mask. The patient then wears the mask and aligns the SNAPe-i with their nostril. This enables the surgeon to perform the procedure and minimize their risk of infection should the patient cough or splutter.

This grant will allow our team to produce the SNAPe-i and distribute it, free of charge initially, to NHS services in the UK.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SHOWER IN A CAN LIMITED	Shower in a Can as an Efficient Alternative to Traditional Bed Baths in Health & Social Care	£49,910	£49,910

Pressures within Health & Social care is forcing us to look at alternative ways to deliver the same or similar service in a more cost and time effective manner - something that the COVID19 pandemic has magnified. The traditional bed-bath in hospitals, long-term care homes and social care are important not only for patient hygiene, but also provide an opportunity for assessment. But, they have remained much the same for decades. They are effective, but time consuming, resource heavy and therefore expensive.

Shower in a Can is an innovative water & detergent-based foam that is applied to the hands & body that does not require rinsing or toweling. It also has antibacterial properties. Launched in December 2018 after 18 months of development, Shower in a Can removes the need for additional water to wash, and the laundry of towels. It would also enable those patients able to, to wash themselves more easily and maintain some level of dignity, further reducing the demand on nurses and support staff.

Shower in a Can was initially designed for use in the Youth Sport Market, but has grown in popularity in the camping, festival, outdoor sports and recreational markets as an effective alternative to hand-washing and showering. Our project will undertake testing to ensure Shower in a Can's foaming soap formula is sufficiently anti-viral, and the antibacterial properties are also sufficient for the Health & Social Care environment. Results from these tests may result in tweaks to the formula to meet those requirements. Once it is proven the formula meets those requirements we will undertake all additional stability and dermatological testing before a sufficient order to fulfill requirements in the Health & Social Care sectors.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EASTPOINT SOFTWARE LTD	DeliveryDay	£49,772	£49,772

DeliveryDay revolutionises how the needs of rural communities are served. At a time where mobility is limited, we face an uncertain future whereby electing to leave home to shop becomes less desirable. Our belief is that independent retailers should have the same infrastructure supermarkets have available and consumers should have the freedom of choice wherever they live. In our view no one should be left behind.

DeliveryDay is a marketplace where named, reputable retailers are connected with consumers. Consumers have a platform with the convenience of an Online supermarket, being able to shop for household essentials and food from specialist retailers arriving in a single delivery. Choice and quality remain but with the positive societal impact of shopping local.

We envisage hospitality businesses, such as restaurants and café's that are currently unable to open would be able to repurpose their kitchens. Through creating restaurant quality ready meals for home delivery, they can pivot to see out the crisis securing jobs and venues for when social mobility returns.

DeliveryDay is unique in prioritising the needs of rural residents. Playing to the strengths of community, our ambition is that neighbourhoods and villages coordinate delivery slots to reduce the number of vehicles required to service demand. The requirements of less able neighbours, the elderly for example are looked after by engaged members of the community. We're seeing this happen organically during these difficult times, there is no reason this shouldn't become a new standard.

Delivery is made by a named, vetted, and graded community of drivers. We will mobilise currently underutilised couriers and taxis, creating new jobs in the rural communities we serve. Efficiency and cost control create a more viable business model. Deliveries are optimised to reduce both the number of stops being made and the distance covered between stops.

DeliveryDay is the sustainable alternative to big box retail. DeliveryDay puts the convenience and variety currently limited to urban areas in a rural context. DeliveryDay brings communities together and makes them more liveable:

* The convenience of online supermarket shopping with the variety of shopping local;

- * Reduces the pressure on scarce resources while increasing utilisation where capacity is available;
- * Brings communities together and creates a healthier environment by reducing the number of delivery vehicles in residential areas.


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
LIMINA IMMERSIVE LTD	Lost in Song	£49,936	£49,936

Throughout history, in times of crisis humans have sung together to keep their spirits up. Lost in Song invites socially isolated people throughout the COVID-19 pandemic to experience a joyful choral immersion through 360 video, with the option of using a cardboard virtual reality visor. Through this accessible web app, participants can sing well-loved songs with one of the UK's leading choirs, Ex Cathedra.

The web app tackles loneliness and anxiety for those who need to be isolated for longer periods of time, including the 1.3 million people that Public Health England have identified as in the 'shielded' category. The need for this product is clear. According to the Office of National Statistics on April 16th, 58% of people with underlying health conditions had not left their house in the past 7 days. Almost half of people with underlying conditions reported high levels of anxiety and a quarter of the group had felt lonely.

Singing is known to help: many studies have shown that singing reduces anxiety. Singing together is powerful. It stimulates every area of the brain, releases feel-good hormones, reduces stress; it can excite and can calm. It touches our deepest emotions. It transforms individuals into a community. Singing builds confidence, shared understanding and empathy. It teaches us to express ourselves with confidence.

360 video has been proven to be able to elicit a feeling of a person's physical 'presence' -- it can simulate the feeling of being with others. Lost in Song combines the two to create a fun, joyful experience for hundreds of thousands of people.

The project will be delivered by UK leaders in cultural virtual reality, Limina Immersive. Limina have brought VR to broader audiences since 2016, making virtual reality accessible for people who probably wouldn't consider themselves 'early adopters'. Our choir partner is the world renowned Ex Cathedra, who have a 20-year track record of working with the NHS to provide patients with the powerful benefits of song. Crucially, the project will draw on the expertise of NHS Arden and Greater East Midlands CSU, who'll also deliver the project evaluation ready for phase two.

This first project phase includes testing, refinement, production, marketing, distribution, building the web app and populating it with five 360 singalongs of well-loved songs.

Our ultimate objective is to help keep isolated people's spirits up by providing an accessible way for them to experience the joy of group singing.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
IBI GROUP (UK) LIMITED	A public journey planning platform and mobile application for accessing and travelling to Covid-19 test centres	£48,780	£48,780

Over the next few months many Covid-19 test sites will be set up across the UK. Indeed, there are already many appearing. These sites are being established in a range of locations including park and ride sites, hospitals, universities and at theme parks. It is estimated that hundreds will be created. Many of these sites may be unusual locations for receiving medical attention and may certainly only be accessible by private car. Equally some road operations and access/egress points to these sites will be altered to accommodate the unique situation.

In addition, many of these sites may have certain restrictions at certain times for population cohorts or groups. Demand may sometimes be very high resulting in traffic queues and congestion. If these challenges are managed well it will improve the efficiency and resilience of the test sites whilst increasing efficiency and ensuring more people get tested in a timely manner, helping support the UKs recovery.

Our vision is to assist through the development of a platform that helps to manage the operation and public access to these test sites by providing tools to plan the right journeys, at the right times based on the best information and data collected and provided by the test site operational teams.

At its simplest the platform will consist of a multimodal journey planning app, a system to create and a manage testing site data and information on the journey planning app and an API to provide test site data to third parties.

Our Platform, delivered as a mobile application, will provide the user with the ability to confidently plan a journey to test sites. It will also provide information about each site, the eligibility of test recipients at each location, specific information about each site, help manage demand, allow users to subscribe to receive real-time updates regarding the status of their local test site, provide parking and other transport related information. It can also be used to provide levels of busyness at test sites helping to smooth the demand curve.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
POTENTIALLY LIMITED	Class of 2020 - Using novel peer accreditation processes of professional skills to upskill graduates	£43,983	£43,983

University and college graduates are severely negatively impacted by Covid-19 and face a difficult job market ahead in a challenging economic environment. To prevent a 'lost generation', the classof2020 project enables a community-led response. Businesses, organisations and furloughed professionals and workers will be able to share training and development/ materials/opportunities with graduates, unlocking knowledge that is otherwise not productively used. Graduates will be able to access learning for free and exercise their current skills/ upskill further in a self-directed and highly scalable way. Through a peer-accreditation process that draw in professionals, they can prequalify/ accredit their skills development. When the economy bounces back, this shortens time to hiring and shortens post-hiring training time, allowing graduates to reach enhanced productivity faster. The project leverages existing contacts with colleges and universities to reach ca 600,000 graduates.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
GENETRAINER LIMITED	Preventing injuries from unsupervised physical exercise during and beyond COVID-19 lockdown	£44,155	£44,155

Staying healthy during the COVID-19 pandemic is essential, and physical exercise is a key part of this. Regular exercise brings a wide range of health benefits for every age group. However sport and exercise comes with its own risks, which are increased where there is no professional supervision or strategy in place. The goal of this project is to make workouts for those who are exercising on their own, due to COVID-19 social distancing safer, and more effective. To do this we take the same AI technology that is currently used to protect elite athletes from injury, and make it widely available to the public via a smartphone app. The proposed app processes existing data logged with consumer fitness devices and apps, such as Fitbit, Strava or Apple Watch, along with some basic information such as age and body weight. From this it establishes each individual's changing level of fitness, and provides insights and ongoing workout suggestions or recovery strategies each day.

The overall aim is that by improving the guidance and safety of physical exercise such as running which is currently experiencing a surge in popularity due to social distancing measures, which are likely to be continued for an extended period of time. We will reduce the number of sports injuries expected in the coming months, thus relieving pressure on the NHS at a critical time, and keeping healthy people away from hospitals and zones where COVID-19 could be easily spread.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
IMIN LTD	Democratising Livestreamed Fitness: supporting user's health and the leisure industry	£49,964	£49,964

In the UK, it has been previously reported that physical inactivity is responsible for one in six of all preventable deaths, with an estimated cost of £7.4bn/year (PHE). COVID-19 is creating fatal health problems that are an immediate and obvious concern; but what cannot be overlooked is that a sustained lockdown period will result in lower rates of wellbeing across society - lower levels of physical health, and deteriorating mental health that come from being isolated and limited in out-of-home pursuits.

The leisure sector, together with public health, is on-hand to help fight against the rising tide of inactivity in usual circumstances; but because of new regulations forcing leisure businesses to close and outdoor groups to be banned, overnight we have removed almost all extrinsic support that exists to support people to continue to be physically active. For example, early evidence suggests that the long government struggle against childhood obesity will be exacerbated by the pandemic (Columbia University).

Not only that, but leisure business cannot earn revenue using existing routes, and current trends indicate many will not be able to re-open after a lockdown is lifted, meaning we won't have these organisations there to continue to fight against inactivity once society becomes to return to normalcy.

Without any intervention, physical activity levels will plummet, and the UK (and the rest of the world) will face the next huge health challenge of widespread, chronic unchecked health issues associated with isolation and physical inactivity.

imin, the middleware platform for the leisure sector leaders, will rapidly develop a new API to deliver live information about live-streamed virtual exercise classes to existing and new B2B customers. By working in close collaboration with OpenActive and partners, this will be delivered across a number of local authorities and health bodies, to help those types of organisations to continue to support citizens to stay physically active whilst self-isolating, ensuring mental health and overall wellness is sustained in these most testing of times, as well as supporting fitness businesses to continue to deliver to their target users.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CDS NEW VENTURES LTD	Rapid digitised staff on boarding for the care sector	£48,991	£48,991

SureCert's vision is to facilitate a frictionless "future of work". As Covid exacerbates existing problems in the care sector, this project has the following objectives:

1. The connection of such a platform to a candidate database, enabling the care sector to search for candidates, interview and assess them remotely and to move successful applicants to the background checking system seamlessly;

2. The completion of one digital platform that incorporates a full digitised background checking system, which supports all of the safeguarding checks required to recruit a new staff member into the care sector in one place;

3. The ability to provide a compliance system that can be checked by regulators in a way that does not compromise the personally identifiable information (PII) (e.g. Identity documents) of candidates and which summarises the extent of a person's background by way of a score similar to a credit score - a SureScore; and

4. The assessment of impact of SureCert on the care sector in terms of the administration time reduced and how that time was then spent more effectively by finding and verifying candidates quicker and enabling the auditing of candidate information by the regulator to also be provided seamlessly, in one place (and potentially remotely).

Over the last year, SureCert has developed its digital platform in a way that is particularly suited to the health and care sector, although it is used across a range of sectors as well. SureCert had the approach endorsed by the regulators in Scotland (Care Inspectorate and the Scottish Social Sector Council), who were positive about the Care Sector's ability to "save time and effort" using the system and we are also Preferred Suppliers to Scottish Care and Care England. In addition, the proposed "SureScore" approach was endorsed by the www.lorca.co.uk London cyber accelerator, (SureCert are on the programme), for the potential to reduce fraud and identity theft online. This project would focus initially on the care sector in Scotland and England in partnership with the two care home associations and it can be developed beyond that sector post-project.

It will also complement SureCert's recent financial award through the TechForce 19 project on behalf of NHSx, which is focused on developing a national system and service for the recruitment and triaging of volunteers into the care sector.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IS-INSTRUMENTS LIMITED	FLuorescent Imaging of Critical Cleanliness Areas – FLICCA	£49,786	£49,786

A major issue occurring during the COVID-19 pandemic is a global shortage in Personal Protection Equipment (PPE). This has mostly been due to the sudden nature of the onset and rapid progression to pandemic status, coupled with a supply chain prepared to accommodate the requirements for industry and healthcare, rather than mass public panic buying. There are several solutions to this global shortage going forwards; increase the supply chain, but this must be sustainable, produce different products for the mass market or make better use of the available PPE, either through re-use or better understanding of how often PPE needs replacing. The latter also helps combat another global threat, climate change, by reducing waste and encouraging increased re-use.

Whilst front line healthcare professionals obviously require appropriate PPE to ensure their own and their patient's safety, accurately assessing the state of certain PPE could make a substantial difference to the availability as a whole. Whilst close contact PPE, such as gloves, must obviously be changed with extreme regularity, the guidance is less proscribed for other forms of PPE, such as face shields or reusable respirators. Here the advice is clear, but only qualitative (e.g. damaged, soiled, difficult to use). If the state of in-use PPE could be assessed quickly and reliably, waste could be reduced and contamination further minimised. Current CDC guidelines state it is preferable to use PPE beyond its lifetime rather than go without. Similarly, simple cleaning procedures may be sufficient to allow continued use of PPE that would previously have been discarded.

We propose to assess the feasibility of producing a simple device based on fluorescent imaging to measure the state of in-use PPE and PPE after simple cleaning processes that could be carried out in a healthcare setting. We further propose that the same technology could be used to assess the cleanliness of in-situ equipment/facilities after decontamination (e.g. monitors, beds). This device could also have applications in the food production industry to ensure that food preparation areas and packaging produces no onward contamination through the food supply chain.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MEDICINE COLLECTION LIMITED	Medpoint - Stand Alone Prescription Collection Machine	£35,458	£15,956

Medpoint Solo is a standalone prescription collection machine designed in response to the challenges we are facing in pharmacy as a result of Corona Virus. Specifically, Medpoint will allow the safe and secure collection of prescription only medication without the need for physical interaction.

Medpoint Solo will allow Pharmacists and trained pharmacy health care staff to deal only with the patients that really need their help. Delivering reassurance and guidance and information that will reduce anxiety. It is possible the pharmacy could perform an important part in the management of the pandemic via identification of Corona virus sufferers by performing much needed testing. All done whilst patients without complex needs or serious worries can fulfil their repeat medication requirements safely.

Patients will be able to order their medication and request collection from the Medpoint 24/7\. They will receive a code to unlock the Medpoint via text or email or through an app and will have 72 hours to come to the machine and recover their medication.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CONKER LIVING LIMITED	Protective Face Shield mounted to the frame of glasses (PFS-G)	£49,900	£49,900

Beyond the obvious and immediate need for face shields for the National Health Service, there is a longer-term requirement for face shields that can be easily manufactured cheaply and in large numbers for the duration and post the current pandemic. This project tackles both these needs. It begins by scaling up production of our existing prototype for the face shield, to address the immediate shortfall for the NHS. It then refines the design of that prototype to make it more user-centred, and more suitable to large scale production and distribution.

Conker Living has already distributed 300 self assembly shields to the NHS in Cheshire East (100 to Leighton Hospital, 100 to Rope Lane Medical Centre, 100 to Primrose House Care Centre, Crewe) and has made them available to other local care homes, supermarkets and general front line staff. We anticipate producing patentable IP via the more sophisticated versions of the face shield described in this application.

We will use this project to lay the groundwork for a longer term development programme in which we aim to design an integrated facial protection system, using our expertise in engineering and in User Centred Design.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KUANO LTD	Combined AI and modelling service for rapid response drug design	£49,546	£49,546

When new diseases such as COVID-19 emerge, it is not known whether existing drugs could be effective or new drugs need to be designed. The lack of information on an emerging disease makes these problems hard to solve, and it is made worse by the fact that subtle differences between diseases can have a large impact on which medicines are effective. In this project, we are using AI and computer simulations of drug and virus interactions for a known disease to find treatments for an emerging one, which shares similarities to the known disease. Additionally, when there is not enough data to decide this, our models will suggest the best potential drugs to be made and tested in order to quickly understand the different requirements of treating the new disease. Making the best choices is important as testing is both time consuming and expensive.

In this project, we will focus on adapting models based on the SARS outbreak in 2002-2004 to search for drugs which might be effective against COVID-19\. This approach is made possible because not only is there significant data from the related disease, but UK scientists rapidly conducted experiments showing how bits of drugs (known as 'fragments') bound to their targets within the new COVID virus. This early information provides an excellent starting point for comparing the two viruses, enabling the use of existing data to find new treatments.

This work will build on Kuano's existing AI and simulation platform which was developed to design new cancer treatments. The technology developed will be applicable to future disease outbreaks as well as being able to inform more long term drug discovery projects.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HRV FIT LIMITED	Using daily heart rate variability measures to identify the onset & severity of COVID-19	£27,682	£27,682

This project will assess whether app-based products used by sportspeople and others to measure their fatigue and tiredness can be used to detect the onset and severity of coronavirus, COVID-19\. We will undertake analysis of existing app-user databases to assess whether information, such as average heart rate and the beat-to-beat changes in heart rate, so-called heart rate variability (HRV), change before the onset of COVID-19 symptoms.

We will recruit existing app-users who have had COVID-19 (or symptoms of COVID-19) to volunteer their data for analysis. Volunteers will also complete a questionnaire about their COVID-19 symptoms. We will analyse the data to see if heart rate and/or HRV could be used to improve detection of COVID-19\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MAGGROW U.K. LIMITED	Disruptive innovation in disinfection of Community Spaces, Health-Care and Food Security	£49,998	£49,998

During the current Covid-19 pandemic there has naturally been a significant increase in the use of disinfectant products for surface decontamination, culminating in significant associated costs whenever attempting to cover large surfaces and with frequent repeated applications. Recognising too that coronaviruses, including Covid-19, can remain infectious for days or even longer in sewage and drinking water, needs can be seen in tackling both water treatment and complementary disinfection problems. While it can be argued that dilute bleach or soapy-water are all that is needed, particularly in a domestic situation, for treating contaminated surfaces, there are situations in which these agents are inappropriate, notably in washing fresh produce, including fruit, vegetables and fresh meat. Moreover, concerns can be encountered in handling bleach even in dilute solutions, requiring in the process of using them, the need to wipe following application to remove bleach residues.

While alcohol-based sprays and wipes have a role in disinfection, they too are not appropriate to all situations. A water-based alternative, or complement, to even bleach and soap-based chemical agents, would be a welcome addition to the armoury of solutions for combating virus, and other pathogen-based infections. Just such an approach is provided by a category of nanobubbles that contain activated oxygen as the agency for killing bacteria, viruses and other pathogens, and result in residue free water and the release of oxygen! The nanobubbles concerned are very small bubbles of gas, typically well below a thousandth of a millimetre in diameter (the thickness of a thick human hair is about a tenth of a millimetre), allowing large numbers to be accommodated in a small volume of water.

Ozone is currently attracting attention as an effective alternative antiseptic, characterised by its strong antimicrobial action upon bacteria, fungi, protozoa and viruses. Ozonated water has been used for such purposes, but the dissolved gas quickly dissociating into oxygen and reducing potency to no more than 5 to 10 minutes. Water containing ozone-nanobubbles on the other hand, dramatically changes the potency to periods extending to days and even months.

The aim of the project is to produce a versatile system demonstrator that can be directed at a range of applications by simply changing the formulation and delivery mode of the activated nanobubble-water, initially directed at domestic uses for surface disinfecting and washing of fresh produce, and following on with wider health-care applications in the fight to combat the Covid-19 virus.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CARD PROCESSING ADVISORY SERVICE LIMITED	Direct Credit Reliable Payments	£48,407	£48,407

The Covid-19 crisis brought into stark relief the fragility of many people's finances, and their ability to cope with even the slightest financial shock.

* As businesses closed, all but essential travel stopped, income for many, especially the already financially-vulnerable stopped completely. Those lucky enough to be furloughed are taking a 20% cut in income.

* This has a massive impact on every section of our economy, as money has stopped moving, and with the main exceptions of supermarkets and public service, few of us are getting paid for anything.

* As a result, the confidence that we all have, _and need to have_, in our financial systems has been rocked.

* **We need that confidence to return, and quickly**. We need money to move now, whilst we're in the depths of lockdown, but also as the restrictions start to loosen, and people start to return to some new form of normality, we need different, better financial systems to support them and their budgeting.

* Our project turns the way that we think about making regular financial payments - Direct Debits and Standing Orders - on its head. In doing so, it restores _power_ to the individual making the payment and _confidence_ to the payee that they will get paid; no more bounced Direct Debits.

* Our solution is to replace Direct _Debits_ with Direct _Credits_. Using established Blockchain (Smart Contract) technology to ringfence _Direct Credits_ in a user's account as soon as income (salary or state benefits) is received.

* By doing so, the money is available to meet the due amount, when it is due, providing that much-needed confidence to the payee that the money will be paid.

* It provides power to the payee by decreasing the potential for default. This has the additional consequence of reducing collection costs. In doing so, it reduces financial exclusion - enabling individuals and small businesses to get themselves back on track and participating in the UK economy as **service providers have the payment collection confidence that they need in order to supply their products / services.**

* The Direct Credits solution can be delivered as a spur to economic activity and revival within a very short period. This project requires just four months to produce a working, tested solution integrated into Pilot applications.

* Post Covid-19 recovery, Direct Credits will be a more resilient payment mechanism to help guard against new threats to economic activity & confidence.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BONFIRE CREATIVE INTELLIGENCE LIMITED	Piece of Kind	£32,294	£24,220

Imagine someone vulnerable at home isolating because they have no choice in order to stay safe. Everyone in the community would want to look after them, but how do they do it efficiently, quickly and with relevance to specific needs? Offer their time to a charity? Speak to the council? Find a Facebook group?

PieceofKind is a simple cloud-based platform allowing people who require support to connect quickly and easily with community support services, and volunteer networks, via a simple SMS.

PieceofKind is a cloud-based platform to help community support services and volunteer organisations capture, manage and deliver support effectively using their network of volunteers. It's been achieved by listening to those on the frontline delivering support, a process of creative problem solving and then building out a working MVP on the latest enterprise level low-code technology.

PieceofKind focusses on automating what can be automated, intelligent use of mobile communication, use of a configurable rules engine, SLA and process timers and a database infrastructure that is fully GDPR compliant.

PieceofKind delivers meaningful real-time insights into the levels of service provided, by Recipients of support, via customisable dashboards for: 1\. The volunteer 2\. community support services and volunteer organisations 3\. And where required, Local Authorities and any other stakeholders with a vested interest.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPIRIT LIGHTING LIMITED	Digital Theatre for Performers in Isolation	£49,986	£49,986

Bringing theatre into peoples homes has never been so important, but theatre companies and communities can't get together to create productions as we know them. However, by using technology, we can bring groups together to continue to create pieces of theatre, music and performance whilst in isolation.

The aim of this project is to build a platform which allows anyone, but particularly community theatre groups and choirs, to easily navigate through technology to create sharable content from their favourite shows and composers. It is designed so that anyone can use it, with a selection of pre-configured music available.

Whilst it has applications for the professional theatre industry, it is targetting the amateur dramatics and community theatre industry who provide social interaction and a sense of community as well as giving people access to the arts. Without it, many people are lacking a hobby and vocation that provided them with a place to socialise and entertain themselves and others.

Saving the professional theatre industry also requires saving the amateur and community theatres who will introduce the next generation of performers, artists and technicians and audiences.

They are assigned scenes to sing or act, then follow the backing track and the words on the screen and record themselves performing it whilst wearing headphones. This is then merged with other performances and combined into a single piece of theatre which an audience at home can watch either through the same platform or through social media. Directors have review and approve options along with group commenting to develop someones performance.

It allows small theatre groups to produce for a global audience, using social media to share their work with the world.

The content created by communities across the world will entertain people who don't wish to perform but are self-isolating and in need of social interaction. With collaboration from professional theatre producers, you can choose to sing songs from your favourite musicals, with the potential of sharing the platform with a special guest star or celebrity who has uploaded their own video.

Professionals can offer support and advice to performers in training and agents can spot new talent showing off their performance skills.

Whilst the early product will have a limited feature set, the longer life of this project will open up an enriched user experience including monetisation options that can allow theatre and music producers to license their music and advertise their productions.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AMEC FOSTER WHEELER NUCLEAR UK LIMITED	Social Distancing for Industry	£50,000	£50,000

The need for social distancing to reduce the potential spread of COVID19 will continue. This is a problem in the workplace, particularly operational and construction sites where the workforce is large and the site is compact, but could extend to agriculture, schools and beyond. Any workplace where social distancing is difficult.

Jacobs and PA Consulting are working together to develop a unique solution to support social distancing for highly regulated industrial sites. They propose to develop a device to identify and minimise workplace hazards through real-time data and analytics. This device can keep the workforce safe in environments where social distancing is necessary. This device can underpin onsite risk assessments, project planning, and operations to maintain the health, wellbeing and safety of a workforce. This is particularly important for sites critical to the UK's national infrastructure such as nuclear power plants and nuclear decommissioning sites.

Jacobs and PA will develop, and site-test a portable device, which will warn wearers if they are less than 2m away from another person. One which can be incrementally developed to meet emerging requirements such as those from a regulator.

The key objective of this project is to develop a reliable, mass deployable device which can alert an individual when too close to another person. To enable mass deployment across several industries, the device needs to be:

a) low cost

b) built on a technology platform which enables incremental improvements - this is key as the device can be altered to suit specific site hazards

c) have a short development time to enable quicker market entry.

The initial half of the project will focus on designing, prototyping and lab testing a device which can reliably detect another similar device within a 2m proximity. The second half of the project will focus on field testing and identifying additional functionality required for specific industry segments.

An approach of incremental development will be deployed, initially warning the wearer they are less than 2m away from another person and then include the ability to capture a the wearer's movements, integrating technologies to address additional hazards such as equipment proximity (overhead loads, radiation dose monitoring, slips/trips/falls detection, noise, Hydrogen sulphide, etc.).

Jacobs bring their global industry and regulatory expertise in supporting critical missions, supporting nuclear power plants and nuclear decommissioning. PA bring product development experience and expertise, for example using technologies they have used to create personal air quality sensors



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TUTORFAIR LIMITED	Online Study Groups	£49,279	£49,279

Online Study Groups is a project to help the tutoring market adapt to the changing needs of students in a world where most pupils are socially distanced at home and do not have public exams in the summer as a focus for their studies. The idea is to allow students to share online lessons with a Study Group.

Research has shown that small group tuition is an effective way to learn. Working with friends and other students will also enable interaction and social engagement during the lockdown whilst being more affordable and accessible throughout the country than one-to-one tuition.

Clients and tutors will access the latest technology in online learning as an alternative to face-to-face tuition on the Tutorfair website, and with every lesson including a donation to our charitable Foundation, give back to students who can't afford it. Students will be able to access expert tutors from across the UK in a budget-friendly and interactive way to replace the learning they have lost out on during the shutdown.

Make sure the syllabus has been covered, get ahead for next year or start a project with friends.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PERSONAL INFORMATION BROKERAGE- DEVELOPMENT LIMITED	User Control of trustworthy personal Data (UCD)	£49,474	£49,474

This project covers preparatory work for the creation of new infrastructure to enable individuals to convey trustworthy personal data ('credentials') to and between counterparties, both organisations and other individuals.

Applications include: (i) a portable personal achievement record, to be used as a point in the cloud from which a learner can interact (and communicate) with learning providers and transition between them, and into employment, sharing trustworthy qualification data at each step; (ii) sharing of proof of identity held by one bank to another to open a new account, or to DWP when claiming Universal Credit; (iii) sharing of a 'key-worker' credential, to be used to claim priority in the booking of a slot for home delivery of groceries; and (iv) the sharing of a covid-19 immunity certificate from a test lab to an employer (should society decided to follow that route).

Note there are quicker ways to achieve (iii) and (iv): this is an infrastructure project to address a broad class of applications, not a quick fix.


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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NOAH CREATIVE LTD	SUMAPP	£47,600	£47,600

SUMAPP is a revision and drilling tool for students studying for Foundation GCSE maths, providing an infinite number of examples for each problem type contained within the national curriculum, and delivered through a smartphone app, this allows students to revise independently, and learn entirely at their own pace. With a unique instruction mechanism, an inbuilt scoring mechanism and a system that tailors language to individual learning styles, SUMAPP delivers a truly inclusive learning experience with a very low barrier to entry.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THIRDEYE LABS LIMITED	Computer vision to help enforce social distancing & predict local virus hotspots	£49,284	£49,284

ThirdEye is modfying their theft prevention software to help businesses better enforce and track social distancing and covid-19 hotspots in their spaces using their existing CCTV cameras. Better social distancing enforcement, will allow businesses to reduce risk of disease transmission in their spaces, ultimately allowing them to potentially reopen faster, with more confidence and reduce risk (hence save lives) if there is to be a second wave/lockdown.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LEAN LUNCH LTD	Good Box - online platform for fresh produce from wholesalers direct to communities & food-insecure groups.	£47,200	£47,200

Good Box is an innovative new model for affordable delivery of fresh fruit and vegetable produce to local communities.

By ordering as a group, customers will take delivery of fresh fruit and vegetable boxes at discounted prices, with the additional opportunity to donate produce to food charities and non-profits.

Combining efficient ordering and logistics with group buying power, the service will link communities directly to local producers and wholesalers, creating more efficient and affordable access to fresh, healthy food.

Through delivery to a single point in the community, either a local independent business or a nominated individual, we will enable more efficient delivery and greater scale, minimising delivery vehicle usage. The model will encourage community cohesion whilst securing trade for wholesalers and contributing to those most in need.

The service will leverage the existing community and wholesaler relationships, and delivery infrastructure of _Lean Lunch_; an independent Leeds-based healthy food delivery business who recently pivoted from a B2B model to home produce delivery, during Covid-19\.

The project will be delivered by an experienced team comprising Lean Lunch resources and external technology & innovation specialists, and will include the following workstreams:

- * Development of a web platform which enables community groups to organise and make group orders
- * Development of order and supplier (wholesaler) management technology
- * Community mobilisation & marketing promotion of the service in Leeds
- * Establishment of relationships with local charity organisations
- * Establishment of relationships & operations with wholesalers
- * Improvements to delivery optimisation



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CIRCUL8TE LTD	Safe Sanitising	£48,109	£48,109

Development of a safer battery operated sanitising unit.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WILL DAVIS DESIGN LIMITED	Safety Visors for front-line staff	£45,000	£45,000

Studio Davis (a well-regarded product design company based in Bath UK) is seeking funding to scale up production of a full face ECS certified protective visor for donation to health and social care workers at risk of infection from Covid-19\.

The initial impetus leading us to design the visor using non-specialist materials and a low cost/ low-skill assembly process came from approaches by healthcare professionals working in local NHS Trusts where supplies of PPE were inadequate. However there is clearly a need for PPE in other contexts where workers are at risk of potential Covid-19 contagion such as social care (care homes/ hospices). Our aim is to meet that need locally by gaining ECS certification for the visor and producing/ distributing 20,000 units by the end of 2020\.

Initial design and field testing of the visor is complete with informal approval from healthcare professionals. The visor represents demonstrably high standards of protection, comfort, and time to market at a fraction of the cost (£2.25 per unit) of most certified visors currently available; finished visors will be donated to health and social care institutions. Whilst the visor uses some plastics in its manufacture, negative environmental impacts are considered in the proposal (for example using different materials/ modularity of some parts).

Supplier networks are already in place and assembly and packing processes designed: 500 units have already been produced. All of the costs of initial design work, parts, and facilities overhead for the first batch of visors have been underwritten by Studio Davis. The funding sought for the six month period from May to November 2020 will enable us to improve quality by gaining ECS certification in partnership with UL International; to free up staff and estates resource to scale up production to 1000 units per week in order to reach a production volume of 20,000; and to open source and publicise our design/supply/assembly process to enable other small businesses to produce visors for their localities.

In doing so the project seeks to contribute to the creation of a more agile, distributed and resilient production network for PPE. This will help to slow the transmission of Covid-19 in key areas, saving lives and enabling economic activity to resume as quickly as possible.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENSURE CARE LTD	Inherently Viricidal PPE	£48,455	£48,455

The aim of the Project is to produce a range of PPE products made from material that possesses inherent anti-viral properties. More specifically, PPE that is inimical to the Covid-19 virus on point of contact.

This will provide an enhanced level of personal protection to the wearer and greatly decrease the transmission of pathogens to the general public, as incorrect use and disposal of contaminated PPE by healthcare workers can often increase the risk of pathogen transmission rather than reduce it. (Especially when PPE is used by non-professionals and lay public, as with the current Covid-19 pandemic).



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GRIPABLE LIMITED	Supporting Home-Based Stroke Care with Hybrid Self-Directed and Supervised Tele- Rehabilitation	£49,833	£49,833

Over 100,000 people are affected by stroke in the UK annually, resulting in long-term disability /and dependency. The Covid-19 pandemic is expected to compound this healthcare challenge even further, placing significant additional strain on healthcare resource both during the crisis and in the period that follows as social-isolation restrictions are relaxed. Many new stroke cases are now reluctant to access emergency-care because of fear of infection, resulting in worse stroke outcomes. Conversely, hospitalized stroke patients are currently facing reduced length-of-stay, with rehabilitation curtailed, due to the need to prioritise beds and therapists for critically-ill patients; and to prevent stroke inpatients catching infection given their high risk of complications. As a result, standard in-patient rehabilitation: the current standard of care, is both more difficult to resource and more dangerous to deliver.

GripAble comprises of a portable handheld device and interactive software enabling self-directed arm therapy in disabled people. Since arm disability is the commonest impediment caused by stroke (affecting ~70%); and arm- exercises account for ~50% of in-patient physiotherapy sessions, GripAble can provide a cost-effective, home-based therapy substitute in place of a significant fraction of in-hospital therapy time.

A broader package of rehabilitation care is now required, to cover multiple physical and psychological needs of stroke patients, which can facilitate early supported discharge. This can be achieved by combining self-directed therapy offered by GripAble, with remote supervised therapy, (via video-streaming). This 'hybrid telerehabilitation' will offer significantly greater opportunities for home-therapy than conventional telerehabilitation (i.e. video alone).

With Innovate UK support, a 6-month programme of work will be delivered to develop, and trial, a holistic, home-therapy package that combines GripAble (allowing independent arm exercises); with an approved video-consultation software (allowing specialists to supervise patients where necessary). This combination package will allow a wide range of disabled stroke patients to be discharged from hospital earlier than is currently achieved; and be more effective than video-consultations alone, that lacks features such as interactive-exercise games, or personalised feedback.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BEACON FAMILY SERVICES CIC	Stay and Sound with Play	£33,116	£33,116

Theraplay is a proven means of supporting vulnerable children and families. The restrictions imposed in response to Covid19 make face to face delivery of Theraplay impossible, at the same time as magnifying the anxiety experienced by the children in need of support.

This project will develop innovative means of expanding access to Theraplay to children, families and schools within the current context. This is not as simple as moving current materials online. Theraplay is dependent on building strong relationships between the therapeutic team and the children and families in support, and creating an environment that allows children to suspend their anxieties and engage in the therapy. Both are more problematic when therapy is provided online.

The project will bridge this gap. We will do this in three ways:

- **readiness to engage.** We will adopt the Safe and Sound protocol, a tool developed by psychologists that uses sound to calm children's nervousness and and improves their ability to engage in therapy, learning and parental engagement.

- **direct provision of Theraplay**. We will provide small group Theraplay sessions via Zoom to provide both ongoing support for individual families but also their ability to maintain connectedness with other families experiencing similar challenges.

- **self service, therapeutic materials.** We will develop a curriculum of podcasts, videos and other tools for parents and schools to use with children in their own time. This has the advantage of providing a mean by which parents can help introduce more of a regular daily structure for children while socially isolated.

The project will deliver Therapeutic support to over 450 children, a research base for the effectiveness of remote therapeutic support and a body of free to access online materials for families and schools across the country.

This project will help children and families live happier lives in extraordinary times.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DUNCLYDE LIMITED	Open Sign Initiative	£42,197	£42,197

Open Sign is an online hub connecting businesses and customers in communities during and beyond COVID-19 related disruption.

Open Sign brings the most up to date & relevant info to customers looking to support their favourite local businesses, and helps those businesses get relevant information out to new and existing customers quickly and easily.

With different businesses using myriad different social platforms, finding up-to-the-minute information can be very difficult. As a society we have become too dependant on social media for the distribution of important information. A large percentage of the elderly don't have access to social media. Additionally there is a growing percentage of users from all ages groups who choose not to participate in in social media for their own reasons. So if members of the public are only active on one or two (or zero) social platforms, they risk losing visibility of essential updates on local businesses. Open Sign breaks down this barrier. No membership is required, and the site has been built with COVID-19 specifically in mind.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE ROYAL NATIONAL THEATRE	Universal Performance Space	£49,999	£49,999

The Universal Performance Space is a revolutionary platform that allows live or prerecorded performance to be staged in a digital environment for audiences to simultaneously consume in VR headsets, with Augmented Reality on phones and tablets, on computers, broadcast to screen and web and directly into physical performance spaces once audiences are allowed to return.

A performance can be delivered to any combination of these formats depending on the intended audience, the technology available to them and type of performance the director wants to stage.

The intention of the Universal Performance Space is to democratise existing and new forms of performance by bringing it to people's living rooms and their own devices allowing new performative work to be staged at a time when audiences and performers are not able to come together. Specifically intended to bring performance to audiences at home in response to Covid-19 this platform will also have significant purpose beyond the current period of lockdown and will allow for the development of new performance models moving forward. As we move beyond the period of isolation and can integrate the platform into physical performance spaces we will expand the format out to include Location Based Entertainment venues where communal audiences are free to roam staged environments in Virtual Reality headsets.

One household could have different people engaging with the same live performance in different ways: one upstairs having a completely immersive performance in VR with all the agency that allows whilst the rest of the family watch on TV as one of them also brings the performance onto the coffee table in Augmented Reality via their phone.

This is a new format for performance and entertainment standing on the shoulders of the existing craft of theatre, performance and staging.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GRADLIST LTD	Pool Your Learning	£49,966	£49,966

We are a recruitment marketplace specialising in junior job seekers and graduates. Our project idea is to create a bridge for job seekers who are struggling to start a promising career in the present climate. We will deliver a unique range of study courses for graduates, developed in collaboration with employers, targeting the "soft learning" that graduates experience on their first job. Task-oriented, technical training programs exist already, but graduate trainees struggle with problems like communication style, interpreting instructions and anticipating the needs of their colleagues. We will offer assessed coursework focussing on these "soft skills". Rather than charging for the training, we will offer it free, and we will profit from the goodwill and value that it adds to our recruitment marketplace in the longer term. Graduates who participate will have their work scored by us and by our community of employers.

While we hope to see the extinction of the coronavirus soon, the lingering economic effects of the virus are likely to hurt graduates more than most. During these difficult times, we want to give satisfying and meaningful opportunities to graduates and to support them on the first steps of their careers.

We will deliver novel, practical courses to "simulate" the soft-learning that graduates and junior staff experience during their first job. For the duration of the COVID-19 crisis, our platform [TalentPool.com][0] will be refocussed on connecting junior-level job seekers with online training opportunities. The nature of this training would be practical tasks, carried out online and relevant to the job areas in which the candidate is interested in working in.

The aims of this project are two-fold:

1. To equip job seekers with the skills and knowledge they need to increase their chances of getting hired both during the crisis and after.

1. To support businesses (especially our traditional subscriber base of SMEs) who are hiring during the crisis by helping them to train their new starters in tasks that they would otherwise, in more normal circumstances, learn on the job. This could help maintain employment levels if remote working continues indefinitely.

The societal impact of the project would be to keep UK job seekers engaged and competitive while hiring remains on hiatus. Up-skilling junior-level job seekers not only increases their long-term employability, but it also puts UK business in a stronger position to bounce back from the crisis.

[0]: http://talentpool.com/



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DRISK.AI LTD	Real-time High-resolution Measure of Social Distancing	£37,336	£37,336

By now, everyone knows about the need to "flatten the curve," i.e. slow COVID-19 enough to spread out healthcare utilisation over a longer timescale and prevent a catastrophic capacity overrun. We realise that our best hope to flatten the curve is to engage in social distancing, but how effective are our efforts, how long will we need them, and will we be able to gradually transition back to normal life while maintaining safe levels distancing?

To help answer these questions, dRISK.ai have developed a real-time measure of the effectiveness of social distancing based on directly observable, publicly available, but totally anonymised CCTV data. Using specialised object detection technology on London's huge collection of public CCTVs, our system can determine the level overall human density, its hour-by-hour change, any hotspots of activity within London, and how well people are doing at keeping the mandated 2m separation from one another.

This system allows

* epidemiologists to better predict the timecourse of the virus,

- * policymakers to fine-tune guidelines for social distancing and travel directives to better guide the course of public response, and
- * the public to directly visualise the general state of social distancing and understand the need to abide by issued policies.

Because of our preexisting mandate to characterize transportation risks, dRISK have been compiling data from these cameras since February and monitoring the statistics of distancing behavior. Despite the dire situation imposed on us all by COVID-19, our team has felt a sense of hope and increased resolve as we have seen Londoners adapt, learning to change their behavior in public to keep the 2m separation in a great number of cases. We now hope to help aid the transition back to a growing economy and thriving city, all whilst still keeping ourselves safe with measurable adherence to social distancing norms.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HEALTHY KIDZ CIC	Healthy Kidz Virtual Buddy	£48,716	£48,716

Healthy Kidz is a unique and innovative physical education and data analytics business. Founded in 2018, the company began by providing a four strand physical education programme in Northern Ireland primary schools that sought to get every child active, fit and healthy.

In the wake of COVID-19, lack of routine, structure, motivation and / or nudges to exercise, coupled with increased calorie intakes mean that children in low income households are at significant risk of obesity and associated metabolic diseases.

In response to the public health crisis, Healthy Kidz has already expedited the development of its mobile application and initiated a 'Global Challenge' which has been widely promoted by Healthy Kidz ambassadors (local sporting heroes including Ireland Rugby's Stephen Ferris) [https://healthy-kidz.com/healthy-kidz-global-challenge/][0]. More than 2,000 children have signed up to the Challenge across Ireland, the UK and internationally. However, given the significant risks posed to vulnerable children and their families, Healthy Kidz is now seeking investment to engage expertise in technology integration and machine learning to scale its offer, increase the breadth of metrics it captures, and develop tailored, automated motivation and physical activity advice via virtual reality to vulnerable children at home.

[0]: https://healthy-kidz.com/healthy-kidz-global-challenge/



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BN ALGORITHMS LIMITED	Improved COVID-19 contact tracing through wearable sensors	£40,208	£40,208

The only currently available strategy for dealing with the COVID-19 pandemic is to physically interrupt the human chain of infection and, for the seriously sick, supportive hospital treatment. Currently this is implemented in the UK through enforced partial isolation of the whole population ("lock-down") which is effective but has a very high social and economic cost.

One potential way of reducing these costs ("exit-strategy") is to only isolate people who are likely to be infectious. Testing is inevitably a key part of this, but so is contact tracing, i.e., identifying people likely to have been exposed to the virus and isolating them in advance of any tests or confirmation of symptoms. Digital technology based on mobile phones already plays a key role in contact tracing in China and South Korea, and Apple and Google are rolling-out their contact tracing protocol worldwide in the coming months. Here in the UK, the NHS is working on a mobile-phone based contact tracing app.

All of these work by estimating geometric distance between individuals based on radio wave technology (either GPS or Bluetooth). But the COVID-19 virus is transmitted primarily through droplets or aerosols, and so they are missing a key piece information: are droplets/aerosol able to travel from the infectious person to the contact? For example a person standing next to a stationary vehicle is geometrically very close to persons in the vehicle but they can not infect each others as the air is not mixed between the two environments.

Discrete, wearable, commercially available, sensors can provide key additional information which can augment the geometric information to significantly improve accuracy of contact-tracing. In particular, relative humidity and air pressure sensors can help determine:

1. If the infectious person and their prospective contact are in an environment where air is well mixed between them (e.g., there are no windows or or other barriers separating them)

2. If the room they are in is well ventilated or not

3. Physical parameters of air which may influence transmissibility of the virus, in particular temperature and relative humidity

We are developing the technology to use such sensors to improve contact tracing for COVID-19 and allow all of us to return to our normal lives sooner and with more confidence.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DIGITAL CONCEPTS ENGINEERING LIMITED	Project Helios - Self-moving hospital beds to reduce staff exposure to infected patients	£48,587	£48,587

Project Helios will deliver a solution which allows a single caregiver to move a patient and their hospital bed around a hospital thereby removing the need for a hospital porter's assistance and reducing their risk of exposure to sources of infection.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EYN LIMITED	Novel Immunity Passports for Covid-19	£49,261	£46,798

Governments around the globe are currently using/trialing proximity tracking apps to trace people infected with Covid-19\. Apple and Google collaboratively developed tracing techniques that shall be soon available and is expected to cover 99% of smartphone users.

Due to the sensitive nature of tracing apps, preserving a user's privacy is essential. As a consequence, the PEPP-PT project (a partnership of 130 scientists, technologists, and experts of institutions and companies across eight EU countries) is developing techniques to ensure an individual's privacy.

While tracing is an important step (to detect and inform) members of the public of the virus spread (and if they should self-isolate), another, equally important step is the possibility of proving one's immunity status -- via vaccination or antibody test -- once they have surpassed the disease.

To ensure the safe return of anyone infected with Covid-19 into public spaces (and/or crowded spaces such as public transport, schools, workplaces, airports), it is therefore of utmost importance to securely, accurately and in a privacy-preserving manner to allow someone to prove their immunity status.

A generic way of achieving such a purpose is to link one's identity via existing identity documents (eg. passports, residence permits, driving licenses) to their immunity status (issued by a certified provider such as the NHS). Such 'immunity certificates' must ascertain the identity of its holder and their immunity status. 'Immunity certificates' are already in wide discussion within the UK government (and, other governments around the globe, as well as other providers).

A much simpler (and, more accurate and privacy preserving way) is to use face biometrics instead of linking to identity documents (e.g. passport, driving license) or patient records. We simply aim to link face-biometry with immunity status. Such a system resolves four core issues: \[a\] fraud (ie. nobody can steal your face and your face is not a secret); \[b\] asserts the identity of an individual (ie. removes the intermediary step of an id document); \[c\] available offline (ie. does not need to be connected to the Internet); and \[d\] preserve's one's privacy (ie. storage of encrypted face biometry without linkage to other personally identifiable information).

In the UK alone, it is estimated that over 1.5 million vulnerable people will be the worst affected by this crisis (with recent news suggesting lockdown procedures until 2022). In order to protect them and other members of the public, let's take a step towards proving immunity.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LANTERNE LTD	Crowdless	£49,972	£49,972

Crowdless is a free mobile application to help people practice social distancing.

Crowdless provides real-time information on how busy locations of interest are, such as supermarkets and pharmacies. This allows people to choose less busy times and less crowded stores to visit, adhere to government social distancing guidelines, and help to mitigate the spread of COVID-19\.

The app is built by Lanterne, an award-winning social enterprise that specialises in crisis-technology. Our mission is to use data to improve safety and promote economic development. We've been supported by the European Space Agency's Business Incubation Centre UK, which is managed by the Science and Technology Facilities Council (part of UK Research and Innovation), the University of Oxford, the London School of Economics, and Santander Universities.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARVIA TECHNOLOGY LIMITED	Disinfectant on demand	£49,588	£49,588

The Covid19 crisis has increased significantly the need for organisations to provide deep cleaning of premises and surfaces to minimise the potential spread of the virus. This has led to shortages of suitable disinfectants, in medical establishments and public/private organisations, increasing the potential spread of this virus. Arvia believe that their existing electrochemical water treatment technology could be re-purposed for the production of a suitable disinfectant when required. This would be produced from a solution containing common salt, producing disinfectant at the required strength for destroying the Covid19 virus.

Arvia have an electrochemical product that is used in the water industry to oxidise organic compounds in water. Instead of treating wastewaters, a brine solution is electrochemically oxidised to produce a sodium hypochlorite disinfectant. Using just electricity and sodium chloride it would be possible to produce this disinfectant on demand. This is significant in the current crisis as there have been shortages of disinfectants.

The key output of this project will be the production of a prototype unit to prove the concept of "on-demand" disinfectant production. Whilst a simple "on-demand" system is proposed to meet the immediate needs of the Covid19 crisis, a range of future products could be produced from the research undertaken.

A potential further vector of transmission of the Coronaviruses is via effluents treated in sewage works. Andrew Singer (Senior Scientist at the UK Centre for Ecology and Hydrology) has noted that Coronaviruses have been recovered in faeces and have been shown to be infectious" and it is believed that they can survive is sewage for weeks, passing through existing sewage treatment plants. As the number of infectious people grow, the potential of this vector could grow. This research will allow Arvia to continue development of a process for the disinfection of treated sewage effluent.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ADAPT INTERNATIONAL LTD	Adaptive-media: Perceptive digital tools to help people learn and adapt in times of self-isolation	£48,712	£48,712

Adaptation based upon facial analysis is as old as humanity. Adaptive-media is digital media that adapts naturally to the viewer in real-time based upon how they appear and react, just as humans instinctively adapt to each other. Adaptive-media reads facial inputs through the device camera using browser-based artificial intelligence to analyse the person and serve appropriate content, usually in the form of digital tools or video content.

To use an analogy, when we meet someone for the first time and if we don't know their name, their date of birth, where they are from, and not seen their social media profiles, we actually have most of the data we need just by looking at their face. We simply adjust, based upon factors such as demographic information, whether they are young or old, their emotions, if they are happy, sad, surprised and whether they are paying attention or not. Adaptive-media uses artificial intelligence running in your device browser, camera and a media player to achieve something very similar, without the need for App, plug-in and all less than 1MB.

Personal privacy and data rights are fundamental to our technology which fully conforms to GDPR. Users must always first allow their camera and there is no recording or storing of biometric data.

This project will be the first adaptive-media pilot designed for a world that suddenly finds itself in self-isolation. It will address two key challenges presented by the current crisis:

1. A useful browser-based tool that analyses when we touch our face and helps us to reduce this unconscious behaviour, which is the primary way we contract viruses. It's a very difficult habit to break because we all do it, and oftentimes we're not even aware we're doing it. Our tool will alert you and let you know how often and help you adapt whilst looking at your screen.

2. A simple attention monitoring tool that helps school children maintain their attention during screen-based home learning.

In the longer term our adaptive video format will offer alternativessolutions for face-to-face health training, adaptive learning content that changes based upon student understanding of tasks and even new entertainment formats such as music videos, that change based upon the attention and emotional reaction of the fan.

In summary, this project will lead the way to a future where our perceptive media format can help people feel less isolated and aid their well-being whilst at home.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ALCHEMIE TECHNOLOGY LIMITED	Technical Textile Coatings for Facemask Technology to Reduce COVID-19 Transmission	£49,989	£49,989

Facemasks play an essential role in protecting the public from the risks of COVID-19 transmission. Unfortunately, facemasks are either ineffective or complex and expensive items that are only suitable for use in a hospital. There is limited evidence that they are effective for use by the general public, despite the obvious potential to reduce transmission rates if effective. A key reason that current consumer facemasks are ineffective is their inability in activate viruses and prevent the build-up of liquid droplets in the fabric - which is primarily due to the current materials of construction.

The aim of this project is to demonstrate the effectiveness of a two-sided coating for fabrics that can enable design of simple, low-cost, single layer facemasks that reduces the transmission of viruses such as COVID-19\.

The coatings we have identified are designed to provide water-resistance and anti-viral functionalities to a single fabric; enabling low-cost single-layer facemasks to be produced at scale. There are currently no alternative technologies that are able to deliver convenient single-pass two-sided coating of fabrics. The global demand is expected to be high and rapidly growing, with an urgent need for at least 20 million masks per day to address the current COVID-19 pandemic .



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ORBITAL ASTRONAUTICS LTD	Project Eurus: COVID19 Breathalyser	£50,000	£50,000

Breathalyser utilising neural networks to identify COVID19 virus in otherwise pre-symptomatic individuals.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TIME TO ACT LIMITED	Feasibility Study for a Multi-MW Ferrite Based Permanent Magnet Generator for Wind Turbines	£50,000	£50,000

Covid-19 has shown that global wind supply chains are vulnerable to significant disruption. This is particularly relevant to the supply of critical raw materials, such as rare-earth magnets, which are used in multi-MW wind turbines. The current crisis has highlighted the need for the UK to develop its own wind energy supply chain and UK-based key component production. In addition, the UK government has made its low carbon ambitions very clear. It plans to deploy 40GW of offshore wind by 2030 and to be carbon-zero by 2050\. These goals have certainly become much harder to achieve as a result of the international disruption caused by Covid-19\.

GreenSpur Wind, a 100% subsidiary of Time To Act Limited, has invented and patented a new and highly innovative Permanent Magnet Generator (PMG), which can form part of the UK's response to the problems caused by Covid-19\. The Company's PMG substitutes scarce and expensive rare earth magnets (£45/kg) for cheap and highly abundant ferrite magnets (£1/kg). The global wind turbine market requires large rare-earth magnet volumes, which are sourced almost exclusively from China (\>80%). In addition, supply chain shortages are forecast from the mid-2020s onwards (Roskill). GreenSpur's innovation will enable its UK based engineering and manufacturing partners to help the UK wind sector reduce and very possibly eliminate it heightened exposure to a risky and volatile global supply chain.

GreenSpur's long-term vision is to stimulate the development of the UK's wind energy supply chain and manufacturing network so that new multi-MW generators can be built in the UK to meet the country's future needs. This project will build on the three successful machines built by GreenSpur, with the most recent a 250kW generator tested at the Offshore Renewable Energy Catapult in Blyth (August 2019). This testing proved the accuracy of the Company's computer models, giving strong confidence they can be used to design, rare-earth free, multi-MW generator configurations.

This project will focus on improving GreenSpur's modelling tools and feed into a feasibility study for the design of a multi-MW generator for the UK onshore wind turbine market. This will support commercial conversations with potential co-development partners enabling GreenSpur to submit a strong grant application into the future Driving the Electric Revolution challenge funding call.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SECURETHEFILE LIMITED	Helping individuals and families to prepare and plan during challenging times.	£49,980	£49,980

We started out in 2018 with a simple mission - to make a real difference in easing the pain and emotional turmoil that accompanies the loss of a loved one.

A family bereavement is one of the most challenging and sensitive times of an individual's life and we would like to help make sure the aftermath is more manageable by helping individuals and families plan before this event takes place.

SecureTheFile is a complete digital archive of everything your loved ones will need should something happen to you. Securely store wills, passwords, funeral wishes, pet information and more in your own secure and shareable digital vault. From remembering your childhood to planning your funeral, SecureTheFile allows you to store your life and legacy and share this with family members so once you've gone, they have a clear view of your important documents, files, wishes and memories.

Having successfully started as a value-added product offered through professional advisers, we would now like to offer our service direct to all individuals and families in the UK, complementary, during these challenging times. By developing this capability, we will be able to help many individuals and families navigate the most difficult and sensitive time of their lives.

The digital tool encourages hard conversations to take place before it's too late and offers a digital solution to store and share the outcomes of these conversations, in addition to any other information. The online vault is innovative, user-friendly and has dozens of pre-organised categories.

We would like to create an 'Sharing After Death' feature to allow users to keep the more sensitive parts of their vault private until after they have passed away. The family and trusted friends will be notified of the existence of the digital vault, creating a trail to follow in the event of death.

We would also like to develop functionality to allow users to select someone to act on their behalf, should they become incapacitated, hospitalised or are not computer literate.

Knowing one's affairs are in order will provide peace of mind during what is already an incredibly challenging and painful time, leaving an invaluable gift for one's family.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
Versed AI	Identification of Alternative Suppliers to Improve Supply Chain Resilience using AI	£49,768	£49,768

Versed AI is an award-winning Artificial Intelligence company which has recently spun out of post-doctoral research at Cambridge University. Our mission is to transform supply chain visibility using ground-breaking new technology to automate the gathering, processing and mapping of supply chains information from externally available data.

Building on the Versed AI's capabilities to identify and map complex multi-tiered supply chains, this project will create a new tool which identifies alternative suppliers of a component based on products produced and capabilities. The tool will also be able to map the locations of suppliers, such that buyers can risk manage the geographical exposures in their supply chains.

The tool will be improve UK companies' resilience to supply chain shocks by helping them find alternative suppliers, as well as increasing the discoverability of UK suppliers, and reducing costs.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
HIVE COMPOSITES LIMITED	Anti-viral hand protection - water soluble healthcare gloves	£49,543	£49,543

COVID-19 and other viruses and diseases are spread from person-to-person through small droplets from the nose or mouth which are spread when a person coughs or exhales and the droplets land on objects and surfaces. Others can catch the highly infectious virus by directly inhaling the droplets or touching these objects or surfaces, then touching their eyes, nose or mouth.

The World Health Organisation (WHO) and UK Government advice is to wash hands frequently for 20 seconds using soap and warm water to inhibit the spread of the virus. Soap breaks the fat membrane of the virus and the virus then becomes inactive.

Wearing gloves is a convenient way to minimise contamination from viruses, diseases and germs and keep hands clean, but they are only useful when handwashing is either not possible or is insufficient to prevent contamination. If they are worn, they need to be changed frequently. Even if gloves are worn for protection, virus transfer can still occur through touching of face, when taking gloves on and off and cross-contamination from touching multiple items. It only takes one mistake and the virus can be transmitted into the body.

In this unique project, we will develop materials for gloves that are biodegradable, dissolvable in water and contain anti-viral & soap additives. Anyone wearing the gloves would wash them off in warm water at 40-50C instead of taking them off. The materials will be stable under normal use but the application of water at 40-50C will trigger the dissolution of the material, release the soap/foaming agents and all will be washed down the drain under the hand-washing action in the recommended 20 seconds. Use of such dissolvable gloves will significantly reduce the risk of virus and infectious disease transfer.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE SMART ACTUATOR COMPANY LTD	An Industry 4.0 focused, remote control configuration for smart actuators to enable social distancing practices.	£49,945	£49,945

In response to new social distancing normalities and in consideration of occupational safety, industries must respond by implementing measures to standardise social distancing in working environments. This is achieved by promoting changed practices such as home-working, and in line with this, greater remote systems control to minimise physical interaction and increase occupational safety.

Today, the actuator industry operates on a model for the provision of continual support and engineers on-site to carry out calibration, reconfiguration, and diagnosis of faults within a closed system. In response to this expected growth demand for 'Industrial Internet of Things' solutions, the 'SARCC' project makes game-changing advancements, by integrating GPRS/3G/4G capability and developing the relevant user interfaces to enable remote-control access.

SARCC provides a market unique proposition that enables our customer segments of installers/service suppliers and end-user operators, throughout many industries, to:

- 1. Rapidly reconfigure actuators within processes to maximise efficiency and improve accuracy.
- 2. Remotely diagnose faults resulting in fewer engineer visits required.
- 3. Adjust business models to react to market needs rapidly by adjusting process operations in real-time.
- 4. Installation/commissioning is made more efficient by enhanced access to diagnostics data.

These benefits result in reduced capital costs and operating costs as well as improving process efficiency.

By way of example, in the instance of food production irrigation systems, actuator valves are often remotely located. If manual operation is too labour intensive, remote control results in high capital costs for energy supply and control access infrastructure. With SARCC project enhancements to our actuators, on-site control, configuration and diagnostics are completed remotely (with energy supply from a small solar panel). Remote control minimises costs while increasing control access.

In the case of a building fire, a gas pipeline could be shut-off remotely thus reducing risk and damage potential.

SARCC also responds to the needs of next-generation water networks, where leaks are detected on the water supply network in remote locations -- a current manual operation can be performed remotely and rapidly to switch supply lines to maintain water supply and reduce leak impact.

Our solution is beneficial for many industries, notably: food production/processing, healthcare, gas/water supply, office/apartment buildings.

Having already developed a prototype, during the project we plan to:

- * build-in additional software features;
- * develop customer front-end and access;
- * create customer system integration interfaces and apps;

* commercially demonstrate the integrated system.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MICHELE SCATAGLINI LTD	Domestic Energy Assessor back to work. Remote EPC assessment –proof of concept and business model development programme.	£49,345	£49,345

Currently, domestic Energy Assessors (DEA) carry out 110,000 Energy Performance Certificate (EPC) inspections on average per month, these assessments are carried out at the property. In the UK, EPCs range in price from £45 -- 165, generating over £60,000,000 revenues a year for 10,000 plus DEAs. An EPC is a requirement for selling and renting houses.

The government instructions to DEAs has resulted in the number of EPCs being conducted dropping in April by 80% according to the Ministry of Housing Communities & local government figures on April 13th. There are approximately 10,000+ DEA's across the UK who as a result have seen their income drop by 80%. This has inspired the industry to consider remote energy performance certificate assessments.

Remote EPC assessments would address three challenges in the UK built environment: (1) reduce the time assessors spend travelling to and from homes thereby increase productivity, in some case by 100%; (2) increase resilience of the EPC process by allowing remote assessments during future waves of COVID19; (3) Reduce the CO2 of transport to and from homes by more than 1000 tonnes of CO2\.

This ambitious project aims to test the feasibility of conducting accurate remote EPCs that are embraced by domestic energy accessors, tenants and owneroccupiers. The project looks to get thousands of accessors working remotely and thereby accelerate the modernisation of the UK and European property and energy sector aligned to the UK's Industrial Strategy Challenge Fund (ISCF) - prospering from the energy revolution.

We have a top-class UK industry consortium that is experienced in EPCs, building businesses, products and services with a track record of delivering for business and governments worldwide.

The technical solution we aim to develop is a survey capability for EPCs to be conducted by the DEAs remotely and be highly automated. The remote capability would be a combination of open-source data, a process for gathering the required evidence within the homes (via questionnaire, photos, video, telephone call or combination of), and the software to support the data gathering process.

Bringing new technical competencies to an existing market would be considered 'radical innovation' according to G. P. Pisano' The Innovation Landscape Map' 2015\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
C.BRANDAUER & CO. LIMITED	A low cost, high productivity alternate solution to manufacture a wide range of the nose clips for use in protective face mask applications - "Face Mask Quick Clip Tool"	£49,937	£49,937

Brandauer, a 2019 Queens Award for Enterprise Winner for International Trade, already provides over 24,000,000 nose clips per year, supplying into the European, African and South East Asia regions, with a single nose clip design. We have seen increased requirements for other designs since the outbreak of Covid-19 and this project will capture a route to market with existing customers while providing manufacturing solutions for other models of masks, thus opening up very high-volume supply prospects in the USA and other regions worldwide.

Our versatile tooling, which would be solely Brandauer owned, would provide multiple platforms and customers with a range nose clips, delivered in a short period of time, in multiple materials outputting up to 500,000 clips per day.

The tooling solution will be precision engineered inhouse in our toolroom, allowing high speed production to fulfil demand of more than 100,000,000 face masks per year. Made in Birmingham, these clips can fulfil all demands throughout the UK, Europe, and the rest of the world as we have already demonstrated with our supply to the 3M group. Any shape, for home application or on a large scale for face mask manufacturers, fitting children or adults can be catered for in a low-cost method once the novel quick turn base tooling and auxiliaries are in place.

The innovative way that the clips can be handled from the high-speed pressing environment to support the application on to the masks, demonstrates that any requirement from 20mm to 150mm wide, can be achieved with low investment cost and short lead times.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
3D REPO LTD	BIM for Remote Working	£49,990	£49,990

Despite being one of the main contributors to the UK economy, the majority of construction output has stopped entirely due to the ongoing pandemic. Those projects that are still operational ordered all of their non-essential staff to work from home wherever possible. However, attempting to work on complex architectural and infrastructure 3D designs over the Internet while trying to collaborate with colleagues remotely poses unique challenges not seen in other industries.

A major issue experienced by everyone is choppy audio and video while teleconferencing. Adding 3D rendering into the mix makes screen sharing in architecture, engineering and construction (AEC) virtually impossible. Even popular service providers such as Netflix were forced to reduce their streaming resolution in order to free up much needed capacity within the network.

We, therefore, aim to devise a new solution for remote working and collaboration specific to AEC. Instead of relying on screen sharing which effectively sends a stream of images over the Internet, our solution will rely on remote 3D rendering and navigation sharing. Each user will be able to instantly become a presenter in 3D space with avatars denoting, in real-time, who is working on what at any given location. This will significantly improve remote working experience for AEC professionals while at the same time speeding up the Internet for the rest of us.

This solution is being made open source and free to use for the benefit of the entire construction industry in response to the COVID-19 pandemic.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ATTENSI LIMITED	Detecting abusive relationships for children though gamified 3D simulations	£49,880	£49,880

An estimate of 2.2 million children in the UK has experienced abuse that only they and the perpetrator know about, and reports indicate that the number has massively increased in the COVID-19 lockdown.

In total, the UK has more than 1.5 million adults who systematically interact with children, either in a professional or on a voluntarily basis, but few are specifically trained on how to best get a child to disclose a potentially abusive relationship.

In 2018, Attensi created an innovative, gamified 3D simulation that allows grown-ups to train in a virtual, yet realistic environment on how these difficult discovery conversations can unfold, building knowledge, confidence and a feeling of mastery for those who use it. The solution has received considerable traction in Norway, and 98% of users state that this solution has made them more confident in having these conversations in real-life.

Attensi will now, funded by Innovate UK, make the next and improved iteration of this training tool, specific for the UK, and let schools, sports clubs, the NHS and others use the training tool free-of-charge.

The ultimate goal, though, is not only to increase the level of mastery for grown-ups, but to fundamentally change the destiny of thousands of affected children who are currently suffering in silence.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OKEO LIMITED	OKEO - COVID-19 financial modelling	£49,815	£49,815

OKEO is a London-based challenger credit card company that uses Open Banking data and machine learning to provide young adults with access to affordable credit.

OKEO proposes to develop innovative affordability and credit risk models using current "crisis data" to help OKEO lend money to financially excluded young adults (aged between 20 to 30 years old), self-employed contractors and gig economy workers at low rates during the pandemic. By utilising innovative data modelling and lending to critical sectors of the economy, OKEO's vision is to help meet the needs of financially excluded individuals and help stimulate the UK economy.

OKEO is innovating now to respond to the financial needs of individuals brought on by COVID-19 and a weakened economy.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MWS TECHNOLOGY LTD	Technology for efficient and scalable vocational training and transition to employment	£46,532	£46,532

This project will result in the availability of a secure, scalable national resource to assist with both job search and retraining the potentially millions of people who will lose their jobs as a result of Covid-19\. It will function entirely as a self-service resource or can be provided in conjunction with the many services where a job-coach supports the person with advice and encouragement.

MyWorkSearch and Aptem are two sector leading technology solutions developed by MWS Technology over many person years and at significant cost. MyWorkSearch has helped tens of thousands of jobseekers into employment and Aptem has enabled training providers to deliver remote vocational training to tens of thousands of apprentices and other learners.

Although a single platform, the two services were aimed at different markets and weren't designed to inter-operate. This project proposal is to create a seamless bridge so that by the Autumn MWS can offer a single joined up technology portal that organisations providing assistance to the unemployed can use to provide remote jobseeker and vocational training support with great efficiency and at low cost.

The project directly links to Covid-19 needs and the themes of this competition. It enables community support and wellbeing at scale as it will help large numbers of citizens receive vocational training and secure employment. It links to education due to the proven and effective way Aptem can deliver training. It links to remote working as the service is entirely available online.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LEVERCLIFF ASSOCIATES LIMITED	Repurposing Excess UK Milk	£48,937	£48,937

This is a project to help use the excess milk that will occur as a result of a likely recessionary downturn in UK and other world markets which will impact "out of home" consumption of dairy products.

Rather than starting with the milk and trying to find a new home for it, this project starts with the ordinary consumers who use it. We have created a process that begins with understanding how people's habits will change as a result of Covid-19\. We analyse these changes and work out what new family needs will occur. These needs are then exposed to a team of experts from different disciplines who brainstorm many possible solutions in an ideas workshop.

The ideas will imagine how milk could be altered to be a new food, a new type of ingredient, a new form of liquid -- all aimed to reflect what new needs people will have in the future from dairy products.

These ideas are then turned into clear descriptions with explanatory pictures and shown to consumers who rate their interest in them. We take the best ones and build them into reality with technologists and engineers and assess their commercial viability and long-term growth potential.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEW HEALTHCARE SOLUTIONS LTD	Centralising Recruitment in the Care Sector	£49,978	£49,978

Netli - an innovator of services for the care sector - would like to propose a method of utilising the available job-seeker market to aid the staffing crisis in care.

Our proposal is to develop and launch a _job board specific to the care sector_ and support this with _marketing activities to promote a career in care_ which would drive applicants directly to care providers.

Our vision of the job board is to offer all care providers in the UK ** free** advertising of their vacancies to make the most of the workforce that has become available during the current climate.

This would be supported by marketing campaigns to raise awareness of the recruitment needs of the sector, drive traffic to the job board, but most importantly, drive **applications** directly to care providers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
STREETS SYSTEMS LTD	Rapid Deployment People Counting & Physical Distancing Survey Device	£38,052	£38,052

The project will develop and test a rapid deployment survey device which is capable of measuring the density and physical distancing of people in public spaces. The new product will be compatible with existing Streets Systems equipment and will deliver a new dataset to inform the management of public spaces.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRAINWAVEBANK LTD.	Accelerating Value to an EEG-based solution for Remote Trials, during COVID-19 (AVERT COVID-19)	£49,602	£49,602
The global crisis caused by the COVID-19 pandemic has had a profound and widespread effect on healthcare. Priorities have necessarily shifted, and resources have been diverted to assist with the crisis. For many thousands of patients enrolled in ongoing or planned clinical trials, it is vital to maintain safety but also minimise, where possible, disruption to ongoing therapy and preserve their valuable scientific contribution towards drug or biomedical device development.

BrainWaveBank's platform is suitable for use across a range of neuropsychiatric and neurodegenerative disorders, designed to track measurement of basic drug mechanisms, stratification of treatment groups, and early detection of response to therapies.

It consists of an easy-to-use, wearable headset, accompanied by games presented on a tablet that test different aspects of cognition, yielding brain-based biomarkers of neurophysiological mechanisms and cognitive function.

In this project, BrainWaveBank will accelerate the pathway to deliver their platform in a manner that means participants will not have to leave the safety and comfort of their own home, enabling continuing data collection and providing a dependable, user friendly solution during the working restrictions of COVID-19 and beyond.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MUC-OFF LIMITED	Deployable Sanitiser Mini-Bottling Plant	£49,601	£49,601

With the manufacture of World Health Organisation sanitiser formulations now being undertaken around the world by a huge variety of different businesses, ranging from Gin manufacturers to chemical companies and individuals, the problem is often how to bottle the sanitiser after it has been produced. The project is to design, build and test a simple, reliable, and flexible mini-bottling plant that is deployable to the place of sanitiser manufacture. Once deployed it removes the need for sanitiser to be shipped in bulk for bottling and allowing quicker direct distribution to the local area.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRIGHT IDEA EDUCATION LIMITED	Curriculum aligned Game based learning V.1.1	£50,001	£50,001

Project Description

Bright Idea Education is a teaching, learning and supporting app that deepens and accelerates children's learning, regardless of their starting point, which moves on at each user's own pace. We are developing an interactive gaming platform, using our Learning Matrix System powered by AI and enabled by big data, that provides a systematic insight into the learning strengths and weaknesses of each user. Individual learning profiles are matched through innovative lessons and activities designed to maximise progress while having fun. BIE have not made a choice between entertainment or learning; we have integrated them!



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ITERIGN LTD	Portable dry heat sterilizer for FFP3/ N95 respirator reuse	£49,555	£49,555

Portable dry heat sterilizer system, for point of use storage and sterilization for mobile care workers and health care service providers to people in their own homes.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MINDSPIRE LIMITED	Early detection of coronavirus infection using Heart Rate Variability	£48,945	£48,945

MindSpire proposes an easy to adopt early biomarker of the Coronavirus infection that can be detected days before symptoms appear.

The use of Heart Rate Variability (HRV), a measure of the variation in time between each heartbeat, reflects the ability of the heart to respond to different situations and can react to stress or illness before any changes in resting heart rate are seen. This makes it a very powerful signal providing insights into stress and recovery status; early data has already suggested its sensitivity to infection from the Coronavirus.

In this highly innovative project, collaborating with an international scientific team, we will be assessing the use of existing phone based apps and fitness trackers for measuring HRV, demonstrating the change (decrease) in HRV, preparing a rapid peer based clinical review and setting out proposals for global roll out and integration within existing NHS screening tools.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MAGICTAB LTD	Smart Menus to enable Social Distancing in Hospitality	£49,921	£49,921

Smart Menus to enable Social Distancing in Hospitality: Extension of touchscreen smartmenus previously developed by Magictab to include features enabling social distancing in full service UK restaurants.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PERSONA EDUCATION LTD	Life skills wellbeing edtech for secondary students	£49,694	£49,694

Wellbeing among UK children falls sharply from age 12, and is 21% lower at 16 than at age 8\. Loss of agency among UK teenagers is rising alarmingly, life skills are lacking and the UK scores lowest on pupil life satisfaction among all OECD countries. The Covid-19 crisis is exacerbating these problems for our teenagers as their normal routines and social interactions have been lost or greatly disrupted, and they are facing a very uncertain future.

Schools need frameworks and tools to help them address these issues, as well as to meet the new Ofsted 'Personal Development' targets introduced in Sep-19\. This has now become much more urgent due to Covid-19, and these tools will need to be available and effective online, not only in the classroom.

Persona Education Ltd will develop and roll out a life skills wellbeing app for secondary schools to utilise in a PSHE setting. Our Theory of Change research conducted in Dec/Jan 2020 found that headteachers and PSHE teachers across both state and private sector schools believe developing life skills helps pupils to improve wellbeing.

The Persona Life Skills app will provide teenagers with insights strongly grounded in well-established psychology, improving wellbeing and empowering selfgrowth through a programme of life skills matched to their stage of development. These life skills will be focused on self-management and effective communication with other people - both online and in person.

Our main focus is to improve wellbeing for UK teenagers by providing tools to help secondary schools address issues exacerbated by Covid-19, using a pedagogical approach applicable when learning from home and when back in school, and helping as many teenagers as possible with a technology-led approach.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WALKTRUE LTD	Virtual Events	£49,138	£49,138

True Events is a 3D virtual events platform. The package can be broken down into four elements as follows:

Item: Website/Application

Features:

- 1\. Provides host platform for all features
- 2\. Bespoke interface to fit aesthetic of event brand
- 3\. Live chat with stand exhibitors and live Q&A with webinar
- 3\. User approval and tracking -- make the event public or keep it private
- 4\. Forum for related discussion, key contacts and online meeting plug ins
- 5\. Can integrate with existing CRM and networking applications for maximum impact
- 6\. Live Data feeds across the site for insight into the event as a whole or specific feedback to exhibitors on their reach

Item: Virtual Reality 3D modelling

Features:

- 1.Creates exhibition feeling to assimilate online experience with real event
- 2.Immersive way to convey exhibitors content
- 3.Interactive floor plan
- 4. Interactive exhibition stands with live video feeds or text chat to engage with sales teams
- 5.Each stand can be given to an exhibitor as an iFrame to host on their site thus creating a legacy product for value add

6.Works on any device

7\. Can cross over to live events with a full interactive model later -- the same modelling can be used again when events go back to normal making this investment pay twice

Item: Webinar hosting

Features:

1.Live stream and legacy hosting. (Like BBC Iplayer either select a live feed or catch up with the days events)

- 2.Can be video or podcasts
- 3.Live Q+A with or without users data attached
- 4.Legacy Q+A to send questions as email to speaker
- 5\. Polling and feedback plug ins
- **Item: Content creation and on-site support**
- **Features:**

1.Camera and lighting set up either in events or at speakers homes' to create webinar or conference content

2\. Video and graphic design packages for event promotion, conversion of exhibitor information into digital formats and bespoke user interface.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AIPATIENT LTD.	Design and development of COVID-19 Virtual Standardised Patients for medical training	£47,968	£47,968

China have outlined healthcare simulation as an effective response in their hour of need, _"After identifying the need for training, simulation has become a powerful weapon fighting against the virus, as it can not only ensure patient safety but also provide a safe learning and training environment for HCWs to develop practical skills to deal with the COVID-19" (Li-et-al-2020)._

The global pandemic has already had a profound impact on the training of healthcare practitioners (HCPs):

• For infection control reasons, face-to-face teaching in both the clinical setting and in universities has been cancelled.

• Semesters have been postponed-potentially leaving young HCPs unable to graduate and practice, ultimately relieving pressure on the system.

• Many medical educators are also working clinicians, who have now been deployed to deliver care on the front-line. These individuals are at maximum capacity, unable to provide training and feedback.

Prior to the pandemic, the Institute-of-Medicine reported,"It is likely that most people will experience at least one diagnostic error in their lifetime, sometimes with devastating consequences", with 1 in 10 patients admitted to hospital suffering harm. In addition, unnecessary tests and treatments have been reported to cost the NHS-£2.3Bn and directly linked to training. At the same time, in 2018-2019, the NHS paid a total of £2.4Bn in clinical negligence payments to cover patient damages and legal costs (NHS Resolution-2019).

In the UK, there is now an urgent need for medical training beyond the traditional "see one, do one, teach one" model (Rodriguez-Paz-2009), while globally there is an increasing shortage of skilled HCPs, particularly in resource-poor settings (WHO-2013).

Artificial intelligence (AI), defined as computer systems performing tasks without receiving instructions directly from humans, has the potential to revolutionise both healthcare and education (AoMRC-2019). Similarly to the "virtual doctor" that provides patients with remote diagnosis/advice, evidence shows that "virtual (AI) patients" can effectively support medical practitioners and students by providing an opportunity to train diagnostic and communication skills through conversational interactions, using voice recognition. Such simulations are engaging for learners, safe for patients and learners, and provide an opportunity for effective feedback (So-2019).

AiPatient are experts in artificial intelligence (AI) and medical training/practice, founded to improve the quality, accessibility, and affordability of medical education worldwide.

With a team composed predominantly of University of Manchester graduates, Recourse are building on University alumnus Alan Turing's legacy as the "Father of AI", ensuring the UK remains world leading in this field.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
THE LIGHTERMEN COMPANY LTD	Hand-Hygiene Enforcing Access Control	£49,770	£49,770

Our project is a 'smart' hand-sanitiser that enforces its use to gain access to a building or space within a building.

There is a huge focus on hand-hygiene due to the COVID-19 pandemic, but of course, that concern has always been present in the medical industry. Everybody who has visited a hospital has seen and used the hand-sanitiser dispensers, but may not have understood the upmost importance these bottles on the wall serve. The staff within hospitals across the globe often have their usage of hand-sanitiser tracked and measured in an effort to move usage towards 100%. This is due to the effectiveness of hand-sanitiser usage on stopping the spread of infection between patients; however there is a break in the chain. Visitors to the building are not tracked in any way, and although staff may be tracked, there is nothing enforcing the usage of the hand-sanitiser. This is what our solution addresses.

Our system works simply - if you use the hand-sanitiser, you can gain access, if you don't use it - you can't. This system can be applied to every part of a building, from the main access, movement throughout the building - such as between wards, and for compartmentalising larger rooms or sections of the building for isolation. This means it doesn't matter who you are, or why you're in a hospital - you will never be able to forgo the usage of hand-sanitiser, and thus will do your part to reduce the spread of infectious diseases.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SST TECHNOLOGY LIMITED	MRI Supply Chain Acceleration MSCALE	£49,680	£49,680

The Coronavirus (COVID-19) pandemic is driving clinical demand for medical imaging techniques including Magnetic Resonance Imaging (MRI); MRI scanner manufacturers are experiencing a significant increase in demand.

SST Technology is a key supplier to MRI Scanner manufacturers for a complex component assembly. This project proposes an innovative new method of assembly joining for this component, helping address the risks-to-supply of diagnostic medical equipment that the COVID-19 outbreak presents, whilst enabling UK industry to keep pace with growing demand from this high-value medical equipment sector.

Additional supplier partners will be qualified by SST to ensure uninterrupted supply of the assembly from the UK supply-chain into their customer. The project brings forward design-for-manufacture in with rigorous process and hardware-assembly inspections and tests by a third-party test house and by the end customer.

By de-risking supply and increasing capacity through qualifying the new assembly process, the project will bring the business opportunity for SST Technology (both with existing and into new prospect customer systems), whilst continuing to secure UK jobs and the UK supply chain for this high-value medical equipment.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VIVO SMART MEDICAL DEVICES LTD	FlexionFit-Active: Home-Based Biomechanical Rehabilitation Device & Personalised Digital Health App.	£49,769	£49,769

Surviving critical illness such as Covid-19 can affect multiple organs in the body and also increases the risk of further illness such as heart attack, stroke, and kidney disease, adding to overstretched NHS and global healthcare systems. Impact is greatest in older people, as hospitals are under pressure to discharge patients early to maintain hospital capacity and minimise infection risks.

The FlexionFit-Active innovative solution combines a biomechanical device enabling users to undertake specialised physiotherapy exercises of their breathing muscles and upper body. The muscle activation exercises help with the function of the user's limbs and endurance enabling them to remain at home and living independently. The digital health App empowers the patient with self-management, cognitive support and also empowers clinicians with optional remote monitoring and personalisation.

The FlexionFit-Active innovation ensures the usability and motivation to engage patients with intensive home therapy. Developed in co-creation with patients, clinicians and academics ensuring the FlexionFit-Active technology can improve rehabilitation clinical pathways in the NHS and globally and provide patients with 24/7 access to home-based rehabilitation care that will improve patient outcomes and wellbeing.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FERNHAY LIMITED	Delivering van free logistics in urban areas through Covid-19 compliant operations	£49,743	£49,743

The objective of this project is to provide third party logistics companies with van free last mile technology that is safe to operate in a Covid-19 environment. The project will deliver a mix of new hardware, adaptations to existing hardware and business processes that respond to the need for social distancing.

The opportunities for trial and roll out of this innovation, exist immediately post project completion, making this a real and deliverable Innovate UK project by the end of 2020, in this time of global disruption.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THINK CYBER SECURITY LTD	Behaviour change for SMEs in a crisis	£28,280	£28,280

The core problem that our proposed project addresses is the emerging and increasing needs of SMEs/Micro Enterprises, during and following the Covid-19 pandemic, to communicate with and educate employees in order to rapidly change business practices (e.g. to align with remote working, transitions back into the office, stop-start lockdown measures, and associated business threats).

Computer-based tools currently available are not fit-for-purpose. They tend to offer 'once-a-year' rhythm, require long periods of engagement and are simply not up to the significant changes in work patterns, and rapid need to do things differently, currently being experienced. Noting that failure to address these risks leads to operational ineffectiveness, security business risk and business failure; there are realistic and significant societal and economic benefits in an ambitious innovation to:

- * Push education, guidance, business communications directly to users.
- * Measure delivery and engagement.
- * Rapidly change content/guidance with emerging situations.
- * Deliver guidance to computer users aligned with time or context-based events (e.g. time of day, duration of use, current application in use etc).
- * Allow for rapid deployment to a distributed and remote workforce.

We propose to deliver **_immediate impact_**, solving this problem with a COMMERCIAL REFOCUS of our cyber-security behavioural-change platform, **_towards_** **_SMEs/Micro enterprises_** (99% of all UK businesses) addressing their **_rapidly emerging communication needs in the wake of the Covid-19 pandemic_** - from working at home security, to health and safety challenges, to business continuity communications. As well as through a TECHNICAL REFOCUS, **_aligning content with SME needs_**, and **_reducing barriers to adoption_** through rapid Click-to-run technology **_allowing immediate impact through a Freemium delivery model_**.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ETIC LAB LLP	Secure Integrated Communications Suite	£49,648	£49,648

For this project, Etic Lab will develop a Secure Integrated Communications Suite (SICS) for the not-for-profit legal advice sector, a community of charities dedicated to ensuring that people with limited means receive the support they need to access the UK justice system. Our platform will allow advice providers to chat with clients and leave messages via video, audio or text, to securely transfer important documents and to set appointments with accompanying email and text notifications. It will also support peer-to-peer discovery and communication between advice providers, as well as providing a portal for client feedback.

The work of this sector has never been more vital than it is now. Due to the COVID-19 crisis, unprecedented numbers of people are seeking aid with legal issues involving housing, debt, welfare and employment, to name just a few. Advice providers are attempting to address this surge in demand whilst also protecting their staff, clients and the general public by pivoting to remote working. In many cases, this means they have had no choice but to adopt proprietary audio-visual messaging platforms such as Skype, Zoom or Facebook Messenger as a means of providing services to clients. However, these programs do not have the full range of functions required by legal advice providers; nor do they meet the privacy and security requirements of a sector which routinely works with vulnerable individuals and sensitive personal information. As things stand, the sector is being forced to compromise on its values in order to continue serving its clients.

SICS would address these concerns by placing the data it produces solely in the hands of the advice sector and its clients. Not only would this ensure the security of sensitive information, it would also enable the sector to use the meta-data generated by the platform (for instance, the length, frequency and purpose of conversations with clients) to systematically evaluate its working practices, supporting charities in their efforts to develop sustainable models for service delivery equal to the challenges of the present. By bringing all legal advice providers together onto a single communications platform, SICS would provide a basis for the sector as a whole to share resources, build community, and come together to ensure that it is able to continue its social mission throughout this crisis and into the years ahead.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Glanadair Ltd	Practical healthcare application of ozone in disinfection of surfaces	£36,434	£36,434

We propose to create a device for harnessing ozone for infection control during the Covid-19 emergency. Our device will have a dual application: (1) introducing ozone into damp microfibre cloths on demand, to convert the cloth to an actively disinfecting wipe; and (2) decontaminating PPE kit for reuse in emergency situations. A rechargeable battery or mains electricity powered plasma discharge in a chamber acts as the ozone source, capable of creating ozone from the air inside the chamber. This same source can also generate ozone inside sealed packages, using on the trapped air in the package, and without breaking the seal (our patented process). Hence introducing pre-packaged PPE or cloths into the device will make ozonation of the target material possible, reducing contamination and providing a layer of ozonated water on the cloth that can be used for environmental disinfection.

This proposed approach is an emergency response to the covid-19 pandemic, and potentially could alleviate supply-chain limitations under peak load,but also reduce the cost and waste of disposable items during the long period of infection control following the peak, estimated to be up to 12-18 months.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IF DESIGN OFFICE LTD	Coronavirus Spatial Design Guides	£30,202	£30,202

Since the emergence of the Coronavirus pandemic significant restrictions on people's movements have been enacted by governments around the world in an effort to limit the spread of infection. Half the world's population -- some 3.9 billion people -- are living under lockdown as of early April. In the UK, shops, cafes, libraries, community centres, offices and other shared spaces have been forced to close indefinitely.

Our publicly shared spaces need to be able to return to use, both for the sake of the economy and for our collective wellbeing. According to research published in _Science_, prolonged or intermittent social distancing may be necessary into 2022\. It is therefore essential that existing buildings and spaces can be temporarily adapted to enable their operation in a way that mitigates the risk of transmission.

This project will create a series of free-to-use Coronavirus Spatial Design Guides, that will support the operators of publicly shared spaces to adapt and manage those spaces in a way that mitigates the risk of Coronavirus transmission. The guides will act as clear and straightforward instruction manuals for the effective adaptations of shops, community centres, libraries and other shared facilities, in response to public health requirements.

As architects, we have the skills necessary to support and advise on these adaptations. We are experts in spatial design, and in how people occupy and use space. Architectural services are typically bespoke however, and while there are many architects working in the public sector, it is rare for architectural guidance to be offered in a diffuse manner on a micro scale, particularly in response to public health requirements. That is what makes this project both innovative and of potentially wide-ranging social value.

The guides will be developed as a series of simple and easy-to-use black-and-white instruction manuals, with guidelines for differing spatial layouts, enabling people to enact them according to their own specific needs. They will be produced as individual A4 sheets for easy download and printing from a free online database. This free-to-use web-based dissemination will enable wide access to the design guides, with the potential for them to be of benefit not just within the UK but around the world.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ORGANATURAL LTD	Safe & healthy hand protection for all with satellite production of hand gels	£45,315	£45,315

Alcoholic hand gels are a necessity for everybody, especially frontline workers as part of their protection routine. Their demand has increased 6 folds since the outbreak. Unfortunately there is not enough hand gel available at present and the repetitive use damages the skin causing dryness and cracks, a potential entry point for the virus. The idea is to produce effective innovative formulas that take care of the hands and are very easy to make with low cost ingredients. The simplicity and low cost innovation is in view of licensing the formula to large contract manufacturers and even hospitals to make their own hand gel. In the case of satellite production like in hospitals for example, a set kit with training and instructions will be provided to manufacture at least 200 litres (40 gallons) of hand gel in less than an hour. As this crisis is here to stay for a while, setting up local, resilient and innovative supply chains, that are easy and safe is key for the benefit of the all community and public health.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HBXL GROUP LIMITED	Improving Construction Productivity and Health & Safety on Small Construction Sites in a Covid-19 environment	£49,891	£49,891

The funding sought aligns with the grant themes of remote-working or working at socially safe distances in the construction sector as it emerges progressively from the Covid-19 pandemic. Supporting the government's Industrial Strategy Challenge Fund Construction Sector Deal, the project focuses on digital approaches to design, construction and management to improve productivity in construction.

Covid-19's impact on construction has been devastating, shutting-down sites, creating significant unemployment with many SME firms facing bankruptcy. SME's represent 90% of the construction industry which itself provides 9% of GDP. Therefore SME builders urgently need to recommence work, adopting disease control procedures whilst improving overall operational efficiencies.

The project will assist SME building firms to restart work using remote communications, arm's-length management of projects, implement improved health and safety measures, and carefully organise and schedule teams to provide separation and social distancing on site.

On receipt of funding, the team will deliver a brand-new, multi-tiered, cloud-based communications and job-management toolset integrated with HBXL's existing desktop software, facilitating remote collaboration across the construction team, supply chain and clients. The toolset will;

1) provide clients and authorities with assurance that Covid-19 mitigation is in place

- 2) minimise contact with vulnerable customers
- 3) minimise contact between individual trades teams
- 4) equip site managers with appropriate H&S documentation to train personnel including Toolbox Talks, Risk Assessments, Site Rules
- 5) minimise inter-site manager visits to limit cross contamination
- 6) minimise visits to builders merchants through advance preparation of fully-detailed orders for click-and-collect or site delivery
- 7) enable regular client meetings and updates remotely

Both ambitious and innovative the toolset targets a sector of industry often neglected, enabling thousands of firms to return to work safely, operating in a manner different to pre-Covid-19, and offering a mass-market commercial opportunity.

HBXL's existing portfolio of CAD, estimating and health and safety systems are already used by thousands of UK SME building firms working on new homes, extensions and renovation works and offer a direct route to market/commercialisation for the launch-ready proto-type.

Transformations often fail because new technology detracts from rather than enhances the user experience. Using the 'Jobs-to-be-Done' Framework, the

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

project will examine how users used to work and how they would like to work, to ensure positive project outcomes.

The project commences on 1/6/2020\. All R&D will be conducted remotely as the team already operate from home. HBXL have previously completed and commercialised several IUK projects. Project deliverables can be phase-released throughout.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DAMIBU LTD	Damibu Feeds	£48,624	£48,624

Innovate UK are working with Damibu, a Liverpool based technology development team to create Damibu Feeds, a unique technology to improve management and syndication of online content.

Damibu's vision is to transform the way that information is published and consumed online, improving transparency, validity and trust.

Damibu is passionate about giving end users better information. Feeds allows organisations to curate their own unique resource by aggregating "trusted" data sources into custom information Feeds. These Feeds can then be delivered via any online technology: websites, mobile apps, voice (Alexa, Siri, etc) or IoT devices.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AMPERSAND HEALTH LIMITED	Improving Out of Hospital Care, In Crisis and After: A digital approach to improving supported self management and remote monitoring for the at risk.	£49,866	£49,866

This project seeks to develop a novel behavioural science based self-care intervention for people living with inflammatory arthritis. The intervention has three components - an (existing) technology stack, a behavioural science framework and evidence-based content modules developed with leading experts from the NHS.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OUTCOMES BASED HEALTHCARE LTD	Outcomes Risk Scores for Covid-19 Vulnerable Populations	£49,363	£49,363

Background: Outcomes Based Healthcare (OBH) is currently working on **COVID-19 'vulnerable' population analysis**, identifying cohorts 'at risk' of severe illness. This includes two key groups identified by the CMO/NHS Digital: those 'At High Risk' (c.1.5 million) on the 'Shielded Patient List', and those normally 'At Risk' of flu (c.19 million). This project builds on a programme of work undertaken for a different purpose (**'Bridges to Health' national population segmentation**), over the past 12 months, in conjunction with NHS England (NHSE), Public Health England (PHE) and Arden & GEM Commissioning Support Unit (AGEM). Using linked, longitudinal, nationally held data (less opt-outs), those 'At risk' of severe illness from COVID-19 can be identified and quantified, at local, regional and national levels, using relevant conditions in the existing segmentation model.

Project: OBH will evaluate relative risk of different conditions/risk factors on a) admission to hospital b) admission to ITU and c) mortality relating to COVID-19\. Development of a COVID-19 Mortality Risk Score (CMRS) and COVID-19 Admission Risk Score (CARS) will enable the risk profile of local areas to be accurately assessed according to the latest emerging evidence. This analysis would also support understanding of the effect of age on COVID-19 complications independent of comorbidities, thus providing insight into genuine risk factors versus confounding variables. Given time needed to develop a vaccine, this work will also inform interim management of, and exit from, lockdown restrictions. It may also be used to track indirect health outcomes arising from the pandemic.

Innovation: Rapidly repurposing the robust foundations of an existing national person-centred data model developed over a number of years, this work reflects an innovative approach to supporting the COVID-19 response, enabling rapid analysis within the bounds of OBH's existing data access arrangements and privacy safeguards. Development of COVID-19 Risk Scores would inform predictions of future patterns and trends of infection, whilst also providing insights to inform the exit strategy from the current lockdown restrictions in the UK. The flexibility of the model allows new risk factors and conditions to be incorporated in real-time as new evidence emerges. The outputs of the model can be rapidly circulated via several different methods, including the COVID-19 Health Data Research UK Slack Channel, as well as via the FutureNHS Platform. As this work is built on standard international coding terminology (ICD-10 and OPCS), this work could be translated internationally to support other digitised health systems.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
STOK.LY LIMITED	Community eCommerce facilitated home food delivery	£49,526	£49,526

Introducing the Stok.ly "community eCommerce" platform.

This innovative solution will enable local retailers such as butchers, bakers, cafes, delis and grocers to sell their goods online to local communities from a community website e.g. "Cheltenham Traders."

Selling on one localised, own branded website (which is automatically generated from within the Stok.ly software at no extra cost), for local customers to create and pay for one basket of goods and receive one delivery of all items ordered to their home.

Stok.ly delivers UK retailers with electronic point of sale (ePos), stock control, eCommerce integrations, automated order fulfilment and courier integrations to collect, distribute and dispatch sales orders.

The objectives are:

- * * Offer a viable, scalable, alternative to supermarket home food delivery
- * Reduce the need for people to visit supermarkets and risk spreading/contracting Covid19
- * Support the delivery of food to the homes of keyworkers in the NHS
- * Reduce pressure on NHS and save lives
- * Keep retailers trading through these difficult times and maintain income to keep their business a viable ongoing proposition
- * Support those retailers whose products are not classified as essential, but would not survive a prolonged shutdown
- * Reduce pressure on the treasury by reducing the number of furloughed workers on the Job Retention Scheme

If you are a retailer in a local community, please contact us at [letstalk@stok.ly][0] or call 01432 371974 to discuss how we can help you and your local community.

[0]: mailto:letstalk@stok.ly



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
STYLEMANIA LTD	A new data pipeline & critical data models to ensure clothing retailers can rapidly predict & forecast customer, inventory & marketing needs in the fast-changing environment of COVID19 and its aftermath	£49,992	£49,992

COVID19 is disrupting the UK's clothing industry to an unprecedented extent. To survive, companies must make faster decisions in a rapidly changing landscape. Retailers agree on which decisions are a priority but don't have the adequate data, models & processes to respond in a timely manner. Their data sits in siloed systems, is slow to access and is missing essential attributes. This project sets out to create a new knowledge pipeline & set of data models, currently not available or possible using generic modelling. The objective is to give retailers more certainty and precision in their decision making, creating greater liquidity and operational stability. Ultimately this project delivers on mitigating the damage impact of COVID19, as best as possible. It also gives retailers a new tool set which moves them closer towards demand-driven/predictive forecasting, which will help optimise their supply chains in the future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE PANAMA BUREAU LIMITED	Askd.io: Digital Parliament Media Platform	£48,950	£48,950

[Askd.io][0] is a new Digital Parliament developed in collaboration with the UK Parliament to bring together all official media related to the current Coronavirus crisis.

Video is an important medium in times where it is difficult to know which source to trust. Unlike a tweet or news-article, video lets you hear directly from the decision makers. There is never a more critical time to develop communication functionality to speed messages into the world.

[Askd.io][0] will also use advanced Machine Learning tools from Speech Recognition to Natural Language Processing letting you find the specific information you are looking for fast.

Developed in collaboration with the UK Parliament [Askd.io][0] is not another social network or media platform, it is a single source of reliable, factual media connecting the organisations that matter, from government departments to councils to influential organisations to each-other and to the wider public. The Covid-19 pandemic has shown the urgent requirement for a platform such as this.

[Askd.io][0] will not be funded by advertisers, so there will be no ulterior motives at play - it's sole purpose will be to improve communication, highlight problems, surface solutions, and ensure that however we work and wherever we work from, the UK will have the best information infrastructure of any country globally.

[Askd.io][0] was developed in collaboration with the UK Parliament and is currently being updated to focus solely on being a part of the solution to this crisis and, with the support of UK Innovate funding will be going live in the coming weeks.

[0]: http://askd.io/



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CALEDONIAN INDUSTRIES LIMITED	Medical transit packaging using Biodegradable foams	£48,966	£48,966

Our Biosystems project is to provide and identify a solution that combines a mix of sustainable technology, thermal performance and shock protection for Insulated Medical Shipping Coolers. This cold chain solution is used in the medical testing environment to protect frozen and perishable testing samples during shipment between the client and the laboratory. These shipping coolers will aim to have thermal protection equal to polystyrene inch-for-inch. There is also are requirement to prove performance with dry ice and/or cold packs for pharmaceutical testing standards.

The innovation is to make a medical packaging foam with 100% all-natural, non-GM grown corn, helping to reduce Greenhouse Gases, landfill disposals, reliance on fossil fuel, and uses less energy to produce overall.

Starch Foam aims to provide significantly better protection from shock and vibration - decrease damage rates caused by integrity-robbing breaking or cracking as demonstrated by EPS shippers.

Medical applications

Medical cool boxes. With protection and temperature regulation, along with shock absorption to enable safe damage free transit.

The customers will demand details and proof of concept on the key attributes of the product:

Visual Aesthetics -- Does the product look and feel like the existing products

Price -- Whilst there may some premium acceptable for a biodegradable option a value for money offering will be a key consideration. As volume demands from across the UK increases then the material price will be driven by a competitive UK supply base.

Material features - the features of the material regarding its physical qualities or its performance in testing will be key. The customers will expect that the compostable foam material to perform to the same level for their products as traditional foam materials. Market feedback will identify the key performance requirements for product protection and the material's flexibility to support the products during transit.

Decision factors - Main decision factor for medical companies to switch from traditional foam materials to alternative materials, such as compostable foam, will be environmental and performance concerns. These concerns will be a mixture of internal business decisions being made to decrease their environmental footprint, pressure from customers, and value for money. Caledonian must fully understand the implications on the environment between the traditional and alternative materials, and, investigates the life cycle of the product to ensure to disposal it is more sustainable than conventional foam medical packaging.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BUILT ENVIRONMENT SUPPORT AND TRAINING LIMITED	Construction company resilience assessment tool and peer-to-peer platform	£49,728	£49,728

The design and build of a construction company resilience assessment tool and peer-to-peer engagement. The platform comprises:

* User profile containing number of employees, main business activities and turnover

* Simple resilience assessment which maps onto a radar chart showing starting map, current map, average of other similar companies and the minimum standard required

* Area to upload content (case studies, information about useful digital tools, blogs, articles). Readers rate or like content so most useful content is viewed more often.

* Peer-to-peer forum

* The 'Resilient Constructors' pledge form where companies commit to strive for or maintain a minimum level of resilience in order to protect their employees, supply chain and Clients.

The key objectives are to:

* Improve resilience and quick emergency response capabilities of construction companies in the event of a crisis such as COVID-19, natural disaster or terrorist attack

- * Allow construction SMEs to assess their preparedness for future disruption
- * Increase the uptake of digital solutions by construction companies across the whole supply chain
- * Benchmark their resilience against similar companies
- * Enable peer-to-peer support for construction companies in the context of resilience and digital transformation

The benefits of digital transformation of the construction industry reach much further than the industry itself. It is in the interest of society and the economy for the construction industry to be more resilient, efficient, productive, safer and more people-oriented. Benefits include:

- * Improved resilience and emergency response capabilities of construction companies
- * A reduced bill to the tax-payer of large infrastructure and construction projects
- * Better diversity and inclusion in an industry which has traditionally struggled with this
- * Reduced environmental impact in terms of consumption of natural resources, emissions and land fill
- * Better safety, wellbeing and mental health of the workers in the construction industry, many of whom are low-paid workers

Our proposed solution offers the following features which currently to do not exist elsewhere. It:

* Gathers vital data about the resilience levels of construction companies which can inform government, providers of technology and construction companies.

- * Allows companies to measure their resilience starting point and improve on it.
- * Measures the industry average which companies can benchmark themselves against.
- * Exploits the 'pain' of the COVID-19 crisis as an opportunity to capture the attention of decision makers.

* Highlights the corporate and social responsibility of companies to ensure their resilience, and encourages a publicly made commitment to improvement. * Could be used in the procurement process to drive a raise in standards across the industry.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DKNTEC LIMITED	Anti-viral Heated Smart Textile for Reusable Face Mask (AVID)	£49,928	£49,928

Development of a smart textile material that enables face masks and other PPE to be used for extended periods of time and enable multiple and safe re-use.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LUMINNO LTD	Me2GP - Improving efficiencies in General Practice	£50,000	£50,000

Every time a doctor makes a decision, it is based on a number of basic observations/measurements to get an overall view of the person's condition before deciding on an intervention e.g Blood pressure, heart rate, temperature, glucose level, urine test, oxygen saturation level (if need be).

The Covid 19 Pandemic and the resulting lock-down and social distancing measures have meant that GPs are frequently unable to see patients considered non-urgent or who may have experienced a change in their condition e.g. needs a change in a drug treatment (lower/higher dose of a drug) and needs a decision from the doctor.

Our solution is an App to enable users to get more involved in managing their own health working directly with their GP using readily available basic monitoring equipment prior to consultation. Our research has not identified a product that delivers this service. The minimum viable product App will:

1) educate users in the use of measurement devices using multimedia tutorials

2) capture readings for transfer directly to GPs to make timely interventions at a distance

The benefits of this approach are:

1)Saves time, and therefore costs - a significant benefit for improving efficiencies in GP services for the future

2) Provides a more convenient and healthier solution for users to access GP services without unnecessary visits to surgeries and reducing contact with infection risks

3)Allows patients to be treated at a distance



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MAPIX TECHNOLOGIES LTD.	Enabling remote site visits	£49,999	£49,999

Our vision is to radically change the world of work by visualising the real world virtually through the use of 3D point cloud and Virtual Reality (VR) technologies. We aim to transform the traditional approach of undertaking physical site visits to perform tasks. As a result of the COVID-19 pandemic there will be more emphasis on remote working, less travel to reduce the risk of future pandemics, and an increased appetite to embrace new technology to enable new ways of working. Our key objective is to deliver a user friendly way to view, inspect and analyse sites remotely and improve the speed at which outputs are delivered, enabling timely and/or more frequent decisions to be made. This will enable rapid recovery from the lockdown disruption and longer term will ensure the target sectors are more resilient.

Our project fuses Light Detection and Ranging (LiDAR), imaging and Virtual Reality technologies. We will improve the functionality and productivity of our existing software, originally developed to post-process high resolution LiDAR data, to develop a unique application which generates a VR experience. Sectors benefiting from the innovation would include those requiring site inspections, particularly hazardous or difficult to access sites, during the course of a project or for routine work, such as construction, highways and nuclear industries.

LiDAR is a remote sensing technology that uses multiple lasers to create a 3D point cloud of the surroundings. Known for it's use on autonomous vehicles to detect objects, LiDAR is also an emerging technology for creating 3D terrain and building models.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FERGUSSON'S ADVANCED COMPOSITE TECHNOLOGY LIMITED	Rapid design and high volume supply of face visor PPE	£48,414	£48,414

The project entitled _"_Rapid design and high-volume supply of face visor PPE_"_ aims at establishing an indigenous supply chain for medical visors. FAC Technology will design and test the production process, which will remove any procurement risk from the NHS. The visors will be certified with the CE trademark, and tested to BSI specifications, making them readily usable by health workers in the UK. --The visors will also be developed using engineered materials that will allow them to be cleaned and sterilised allowing reuse. This is in stark contrast to the current scenario of single use disposable visors

At the time of writing, FAC Technology has produced multiple designs. Initial designs were home-made which could be manufactured and assembled using typical materials found in supermarkets. Subsequently, over 300 face visors were then 3D printed, trialled, and approved by Imperial College Healthcare NHS trust. However, this solution cannot satisfy NHS demand during the current pandemic; 3D printing is quick to implement, but slow and inefficient to manufacture at high volume.

For mass production of plastic products, injection moulding is the preferred method. These can be produced at a rate of many thousands per day. However, in-order to produce thousands of units a day, bespoke multi-cavity automatic moulds are needed. Those moulds are expensive, £6,000-£10,000 each, and time-consuming to design and manufacture. This has led to delays in setting up a domestic supply chain as both contract manufacturers and the NHS do not want to commit to the moulding cost. FAC Technology's approach is the following:

* Optimise the face visor design for user comfort and easy assemble. Ensure it meets BSI standards and get it CE marked .

* Design and test a high volume production mould.

* Demonstrate demand and acceptance by providing NHS Trusts with a face visor design and production method that can be approved by the Board.

* Allow any manufacturer to produce the face visor on the condition that they report the selling price to prevent the exploitation of the IP for financial profit

This project represents the UK's best opportunity to pursue our efforts on building an indigenous, reliable supply chain for manufacturing medical visors in the UK, for our health workers that deserve maximum protection.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SMART VIDEO & SENSING LTD	Traffic data collection using smart radar	£47,429	£47,429

Utilisation of high definition smart traffic radar to collect traffic data on single or multi lane urban traffic routes thus allowing traffic engineers to ascertain road usage during events such as lockdowns, special events and in normal traffic flows. The data collected will include 6 vehicle classifications as well as speed, density, heading, length and other data simultaneously. The radar can also be interfaced to traffic signal controllers to emulate 'virtual' road detection loops to trigger traffic signal demands without the need for burying such loops within the road surface. This has the longer term benefit of reducing installation costs, increased reliability and ease of installation. In essence the utilisation of smart radar gives a 'two for one' solution for traffic engineers with collection of traffic data in real-time coupled with the associated demand usage at traffic signals all in one product.

Traffic data statistics will be recorded and also displayed in real-time via a hosted web based server and presented in a clear data dashboard with graphical and other representations. There will be a facility to download site specific .CSV or .XLS files for greater analysis if required. The historical data can be used by traffic engineers for future demand planning and route control.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IQLUSTER LIMITED	Food Intelligent Trading Ecosystem (FITE)	£49,993	£49,993

Covid-19 is significantly disrupting food supply chains across all sectors:

- * stockpiling impact on food supply chains
- * operational pressures due to extreme peaks (on-line supermarkets) or troughs of demand (local food markets)
- * lockdown impact on food manufacturing workforce capacity
- * acute cashflow challenges on food manufacturing SME sub-tiers

To prevent disruption to these important supply chains it is critical that Government and Industry bodies as well as primes / supermarket chains can visualise potential future risks and mitigate accordingly.

However, multi-tier visibility and collaboration is minimal, (especially for SMEs) mainly due to a lack of supply chain intelligence and digital technologies that simplify how companies can find each other, engage (especially during lockdown) and start trading.

This project will mitigate these immediate Covid-19 related challenges by deploying our supply chain intelligence and collaboration platform, and building on successful supply chain mapping pilots for BEIS, Made Smarter and Sheffield LEP, and supply chain clustering pilots with the MTC, West of England Aerospace Forum and North East Automotive Alliance.

FITE will combine big data analytics and machine learning with social networking and e-commerce technology to establish intelligent and collaborative ecosystems for food manufacturing in the UK.

UK citizens will experience less disruption as improved visibility will enable proactive mitigation actions.

Food manufacturing SMEs will be able to raise their profiles.

Government can view consolidated data to support food supply chain policy decisions.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SIMCENTRIC LIMITED	Tether-less, Low-cost Virtual Reality Framework for Remote Education, Training and Collaboration	£49,270	£49,270

This project looks to transform the way that remote education and training is conducted. It utilises cutting edge Commercial-Off-The-Shelf (COTS) Virtual Reality technology alongside a Learning Management Framework to provide a low-cost learning delivery system for remote learning, training and collaboration. The project will develop a number of specific technology modules aimed at maximising the learning experience when using the system.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LOCATION WORKS LIMITED	Locascope - Virtual Filming	£48,790	£48,790

To explore the use of new technology to facilitate the return of the UK television and film industries into production:

* make use of existing and new technologies to enable remote working;

* exploit new technologies to permit a _virtual_ recce (reconnaissance);

* exploit new technologies to create a _virtual_ set;

* use existing motion-control technology to film action in the virtual set.

Remote working:

* established filming practices require a production team to be present in the studio or on location. This can be replaced by a marriage of existing and new conferencing technologies to enable group decision-making.

A virtual recce:

* traditional production methods rely upon a "technical recce" to decide on a location, attended by heads of department. This can effectively be replaced using new techniques to create a 360-degree controllable walk-through that can be remotely viewed simultaneously by department heads.

A virtual set:

* LiDAR photography can be used to "capture" a location interior in high definition. This capture (a "Locascope") exists in the digital world as a full 3-D representation of the location interior.

Film action in the virtual set:

* existing motion-control rigs can then be set up - _in any studio anywhere in the world_ - to film actors and action that will appear to be within the location interior.

Each camera motion around the foreground action will appear to have been shot in the location itself. Thus a movie star may be filmed in a Hollywood (or Bollywood) studio but the action appears to be taking place in, for example, an English stately home.

Location Works has the connections and affiliations to quickly access historic and sensitive locations in the UK, enable Locascope scanning, restart production to get crews working again, and open vital revenue streams to location owners.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NOBACZ HEALTHCARE LIMITED	Antimicrobial	£49,000	£49,000

NoBACZ Ltd, a spin-out company of the University of Cambridge, is developing an environmentally friendly antimicrobial, antiviral coating that prevents common-touch surfaces from harbouring viruses during and beyond the COVID-19 outbreak.

The Company has developed an innovative, customisable antimicrobial coating that has a multitude of applications across industries. The coating is effective against pathogenic bacteria through a contact-killing mechanism. The active agents in these materials are copper compounds and there is strong evidence that copper reduces the viability of the virus strain that causes COVID-19 \[DOI: 10.1056/NEJMc2004973\]

We now intend to test the coating against a range of viruses, including the COVID-19 virus. If successful, the coating will be applicable to a wide variety of materials---from wood, to cloth, to metal and steel-- that are located in areas where the public congregates, such as public transport, office buildings, hospitals, gyms, care-homes, supermarkets etc. Such an invention would prove to be invaluable as countries emerge from lockdown by helping to minimize virus transmission through surfaces.

Applied as a liquid, the NoBACZ products are adhesive and water repellent and they rapidly form solid but flexible barriers that are robust enough to form semi-permanent coatings on any surface. Lifetime (anticipated to be months) is easily visualised through their distinct colour (deep green) and top up coating can be applied if required. The material is environmentally friendly, comprised from food-chain compatible reagents and manufacturing is straight-forward and easy to scale.

The NoBACZ coating product will be investigated to confirm its activity against single strand RNA viruses like the coronavirus. NoBACZ will then iteratively test combinations and consistencies of different formulations in order to zero in on the most durable and widely applicable viricidal version. The target product profile is a coating, visible on any surface, such as a doorknob, a train hand rail, or a supermarket trolley handle, that kills any virus that happens to land on it but is vanilla safe to humans. This would reduce the labour-intensity of decontaminating high-traffic surface areas, ideally allowing cleaning and reapplication to occur only now and again vs the impracticality of several times a day with alcohol / cleaning agents.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ETHOS ENVIRONMENTAL LTD.	Clear: Novel non-faceseal respiratory protective equipment for routine use in healthcare environments	£48,809	£48,809

Development of novel respiratory protective device for use in healthcare environments



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHI ENGINEERING AND DESIGN LTD	The design and prototyping of a FFP3 mask which offers improved protection and comfort for the user and also offers operational cost benefits to the mask provider.	£47,985	£47,985

The design and prototyping of a made to measure FFP3 mask which offers improved protection and comfort for the user and also offers operational cost benefits to the respirator provider.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPHERITECH LIMITED	A Novel Antiviral Filter for Face Masks	£35,135	£35,135

Face masks currently in use by healthcare professionals in the NHS and in social care were not designed to be specifically antiviral. Even worse, the simple cloth and paper disposable masks often used by the general public offer little protection and may even be reservoirs to catch and retain droplets containing viruses. In these unprecedented times when we are faced with the COVID-19 pandemic it is essential that the front-line staff in healthcare are provided with the best possible protection.

Spheritech has developed a porous hydrogel, originally designed for wound healing and tissue repair that has in-built antimicrobial properties. This can readily be prepared in the form of a porous filter for face masks. The porous hydrogel is proven to be effective against bacteria and fungi but it does not contain any antiviral components. Sodium dodecyl sulphate and sodium lauryl sulphate are well known to be antiviral and are the antiviral components of hand soaps. Our vision is to incorporate dodecyl sulphate and/or lauryl sulphate into our porous hydrogel to add antiviral properties to help combat the current coronavirus pandemic and future viral epidemics.

Spheritech has letters of support from large established company for the large scale manufacture of this novel porous filter and support from a mask manufacturing company who already supply the NHS with masks. The process for manufacture is simple and can be scaled rapidly. The raw materials for the filters are a food preservative, poly-epsilon-lysine and the fatty acid suberic acid, both of which are manufactured on a multi-tonne scale.

A unique advantage of using a porous hydrogel is its ability to absorb large amounts of aqueous droplets where the viruses are carried and transmitted.

This project will fund the development work required to optimise the loading of the antiviral component into the porous hydrogel. It will also cover the antiviral studies required to assess the filters, which have to be carried out to regulatory standards.

During the project the company will also be in continuous discussions with the two companies that can scale up the manufacture of both filters and the masks.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Aiklu Limited	An Epidemiological Data Capture and Reporting Platform to Support Local Antibody Testing for COVID-19	£49,500	£49,500

AIKLU develops and deploys digital solutions for Healthcare. Our team's extensive experience in Front-line Medical Practice in addition to Clinical Trial Management and Diagnostics has identified a specific need to develop end-to-end Digital Workflows that can capture, analyse, and present, Antibody test results from remote locations.

Our proposed solution will be a key element in local and national roll-out of antibody testing programmes (UK and Overseas) and will enable a data-driven way to support certification of individuals to return to work safely while helping to identify those who remain at risk of contracting COVID-19\.

In addition to supporting a robust method to support bringing the economy back safely, longer-term, our tools will support epidemiological studies and may also be used as part of an early warning system to monitor potential outbreaks of COVID-19 and **other infectious diseases**.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SME HCI LIMITED	Innovative Care Pathway for Employee Mental Health Support	£49,838	£49,838

The impact of mental health problems on the UK economy is estimated to be up to £70 billion each year. Because of this need, around 72% of employers now utilise data driven health and wellbeing strategies. This impact is due to the endemic mental health problems within society. The current COVID-19 crisis will result in a significant increase in these costs as the impact of traumatic experiences are felt by individuals and therefore there is an increasing need to address these problems.

Current treatment pathways are slow, requiring multiple points of contact before individuals are directed to the care they need. We propose the development of an innovative automated care pathway to enable the rapid assessment of mental health needs relating to COVID-19 traumas and a direct connection to care providers. By building onto our existing software platform, we can enable direct video conferencing between individuals and trauma treatment specialists using our existing data analytic techniques to evaluate and refine a care pathway to ensure the accurate assessment of individuals in need. To our knowledge no platform with this capability exists on the market today.

Since 2005 Vivup has been a supplier of EAPs to the public and private sector, including existing implementations within different NHS trusts. We offer support for mental healthcare within the workplace, using a data driven approach to develop effective care pathways for individuals requiring assistance.

During the current COVID-19 crisis individuals, in particular frontline healthcare workers, are under incredible strain from their current traumatic workplace conditions. We have already seen an increase in the 10% uptake of the clinical services we provide in March 2020 alone.

By developing an innovative automated care pathway to rapidly direct individuals to the mental health treatments they need, we can minimise the effect of Trauma on frontline NHS staff, keeping them at work and improving services at the point-of-care.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
XYRON LTD	Open Digital Tools Improving Identification of Deterioration and COVID-19 in Patients in Care Settings	£49,968	£49,968

Xyron are working on a digital health project that aims to develop open source digital tools that improve the identification of deterioration and/or COVID-19 in patients in care settings. We will provide the tools to support monitoring and decision making for carers in the care setting. This provides carers with the tools to undertake both clinical assessments, such as NEWS2 and non-clinical assessments such as DENWIS (worry / concern assessment) and sepsis screening; with secondary care capacity being pushed to the limit, it is clearly essential to get the right balance to admit only those cases that require acute care, and safely monitor those with unscheduled care needs in the care setting. Specifically during the pandemic, this solution will help ensure those with critical need get they care they need when they need it.

Xyron will build upon existing open source clinical tools that have been developed through an open way of working, utilising existing open standards around clinical data (openEHR).

Our key objectives are to:

* Develop a browser based application that provides carers access to non-clinical assessments that identify patient deterioration and/or COVID-19 and provides non-clinical teams with patient information that allows them to make critical decisions around patient care to safely monitor them in the care setting

* Persist all clinical information using open standard (openEHR) to ensure handover is possible across health and care settings

* Ensure the final developed software is available in perpetuity under the custodianship of the Apperta Foundation, with the clinical and non-clinical individuals who designed or uses it

The project is innovative because it;

* Addresses a key issue of "concern" raised by non-clinical carers and/or care staff and digitises serious illness assessments that have previously not been made available in a community or care setting.

* Enables close collaboration with health care professionals, clinicians and technologists to ensure best practice; built to the Apperta Foundation Custodian Model principles, built using an open approach, released on an open source licence, made available in perpetuity under the custodianship of the clinical and health care teams that designed it.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ASUUTA LIMITED	Physiotherapy at a Distance: Mobility Rehabilitation in the Home	£46,900	£46,900

The global spread of Covid-19 is disrupting the way economies operate - be it work or recreation. No other sector has borne the brunt of this more than the healthcare sector, which is in the front line of dealing with probably the most significant existential risk faced by humanity in recent times. As the fight to identify, treat and eradicate Covid-19 is underway, other aspects of healthcare delivery are affected due to restricted movement to and from treatment facilities, including recovery from conditions or procedures such as stroke, osteoarthritis and surgery.

There is an urgent need for solutions that allow clinicians to remotely oversee and deliver rehabilitation and recovery treatments such as physiotherapy to their patients. This project aims to explore the suitability of enhancing an existing solution to be delivered remotely by allowing the clinician to engage with their patients using digital tools while not compromising on the care received.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MACPHIE LIMITED	Provide business continuity services for bottling Hand Sanitiser for an increased target group.	£46,256	£46,256

During the pandemic, we have identified that not only do the front line depend on hand sanitiser, but also the care sector, service functions, transport, banking, charities etc. are dependant on supplies of hand sanitiser. The innovation is to provide a suitable container and dispense system, originally designed for sauce application, but modified for hand sanitation. Whilst the many scoured the market for applicators and pumps, Macphie looked at how best we could utilise an existing fitment to deliver a measured dosage of sanitiser to allow a fast response to market demand.

100,000 units that were destined for Strawberry or Chocolate Sauce were re-purposed into front line combating hand sanitiser to help not only the NHS, but also Police Scotland, The Red Cross and charities such as Ronald McDonald House and CHAS.

The Innovation centres around utilisation of existing packaging material, however with a twist. As WHO Hand Rub sanitiser is thinner in viscosity and has a specific gravity of c. 0.88% -- not all bottle fitments lend themselves to this application. The team assessed the problem i.e. lack of available product as well as a lack of available closures in the market place. They looked at how our existing fitments delivered a dosage. Initially, it was haphazard, and the deposit was c.300% of the required material. We concluded that a smaller diaphragm was required in the fitment. However, this would have required new tooling, time delays as well as costs. Instead, the team devised a way to simply pierce the inner membrane of a lid, opposed to completely removing the seal, thus restricting the flow and achieving the correct dosage level.

Utilising existing bottle fitments allows a greater, faster reach of product throughout the supply chain without tying the packaging market up due to over demand and under supply.

Fortunately, HMRC and HSE provided dispensations in terms of duty and licences for manufacturing /blending. Thus, allowing complementary businesses with compatible filling equipment from the Food & Drink sector to support during business continuity / pandemic situations.

The size of the market has expanded due to the Pandemic being world-wide, not just country /sector specific. No amount of modelling could have predicted the impact as well as behaviours in terms of procurement and supply. The adaptation of equipment and environment to address the critical shortage is innovative as well as admirable.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CREEVX LIMITED	Intelligent water management solution for the FM sector	£38,438	£38,438

With the assistance of Innovate UK, CreevX have developed an intelligent water management solution for facility management companies (FM) and healthcare facility managers. Our solution will transform how domestic water is managed in buildings used by the public such as schools, office blocks, universities, hospitals, care homes and factories. Our solution will

* Allow FM companies and managers to comply more effectively with current H&S legislation for the control the growth of legionella bacteria in public building's domestic water systems.

* Reduce unnecessary water wastage. 000's of litres of water are flushed away every day unnecessarily in one single building in order to comply with current legislation.

* Identify and resolve system inefficiencies such as failing pumps and calorifiers or simply badly designed water systems.

* Allow for remote water management (in times such as these) when buildings are vacated for prolonged periods of time.

Buildings that are unused for a prolonged period of time are a potential H&S hazzard when reoccupied if a proper water management regime has not been implemented.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TARGET3D LIMITED	RoMoCap	£45,417	£45,417

Our industry has ground to a halt in this current climate of social distancing. The inability to call together a full cast and crew to stage an effective motion capture shoot has led many production companies to be at risk of not being able to complete active projects whilst still being required to maintain large premises or store large amounts of valuable and technical equipment without return.

This disruption in the content creation process is not being felt at the other end of the chain where audiences are consuming more entertainment content than ever before through streaming platforms and home entertainment.

We can clearly see that the fast-tracked creation of animation content is very valuable in this current 'work-from-home' climate - however the mechanisms for organising, choreographing, directing and delivering motion capture shoots is by no means perfected. By utilising a mixture of clunky pre-existing video conferencing and remote desktop tools, we are able to operate a shoot at around 30 - 40% of the speed and efficiency that would otherwise be attained with the physical presence of the artist and production teams.

Our project sets out to resolve this by designing and testing a complete shoot direction streaming platform. This will give the necessary 'on-set' personnel the tools and information required to react and make decisions exactly as they would if they were present. This includes, but is not limited to, live streaming of the actor data, multiple remotely operated camera views, access to the take database, access to the reference cameras and audio on stage as well as the ability to immediately recall and playback a take.

With only the actor, and a single motion capture engineer present our aim would be to deliver a number of takes or shots with the same fluidity and ability to iterate as if the team were all on set.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PEARSON ENTERTAINMENT GROUP LIMITED	Collective Creative Initiative	£49,544	£49,544

The Collective Creative Initiative aims to provide support, training and guidance through a time of uncertainty and disruption within the Arts. We aim to offer regular and focused online support across the creative arts, available to anyone from any background, race, gender, sex or age for the next six months.

Our goal is to connect industry experts and practitioners, legal professionals, mental health professionals and artists in a free and wide-reaching service designed to allow for continued training and development of creativity, heavily underlined with a focus in improving and supporting mental (and physical) health and wellbeing during the Covid-19 pandemic. This platform will be available online to the arts community allowing regular access to training, mental health support and creative outlets, whilst at the same time creating some financial relief for UK industry experts financially impacted by the Covid-19 pandemic.

This scheme will support a hugely impacted and damaged industry at a time of real need, connecting communities across the arts, and giving access to online support to those who need it, free of charge.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TERRACE METRICS SOFTWARE LIMITED	Terrace Metrics MVP2Platform	£49,617	£49,617

This project will improve the functionality and usability of the Terrace Metrics Behavioural Health platform so that it is able to respond to the growing mental health needs of the UK population following the Covid-19 pandemic.

As a result of the Covid-19 crisis, we are likely to see increased mental health burden in society. 50% of adult mental illness starts before the age of 14 and 75% before the age of 24, suggesting proactivity in childhood can have a significant impact in reducing issues in adulthood. With nearly half of adult's reporting mental health issues, yet only a third being diagnosed; proactive assessment can improve identification of those who need clinical support for early intervention and drive prevention through improved understanding.

The Terrace Metrics approach, using clinical and non-clinical tools to assess and then support the management of incremental improvements in behavioural health has the ability to support pupils in schools; students in colleges/universities; and employees in the workplace to understand and then improve their current mental health and wellbeing.

Through our easy-to-use tool we will be able to provide a non-clinical holistic view of someone's behavioural health (risk and resilience) guiding them to make improvements where necessary and improving the effectiveness of referral for clinical support where necessary. With this investment, we will be able improve and enhance our platform based on the feedback from our early successful pilots and help individuals and their families to better understand their behavioural health.

This project will enable us to enhance our platform so that we are better able, post Covid-19, to launch and scale rapidly to meet the increasing mental health needs of society.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CENTAUR ROBOTICS LIMITED	Centaur Robotics - Personal electric vehicle proposal for care services and hospitals	£49,778	£49,778

Background

The Company was founded by David Rajan who was inspired to create a mobility product by his young son who has Cerebral Palsy. David researched the market but there was nothing available that worked well and looked good. David's research pointed to a gap in the market for a functional and beautifully designed personal vehicle that could provide the user with previously unattainable mobility and confidence.

Centaur Robotics is re-imagining mobility for the 21st century and the Centaur is the first of a new generation of personal electric vehicles (PEV).

Product description / innovation

The Company has built a personal electric vehicle (PEV), a self balancing robot two wheeled driving chair with height adjust. The vehicle is designed for people who are less mobile but have good trunk control.

Innovation comes from the complexity of bringing together the different elements of the product. Our design innovation reduces the size of the PEV and we have worked hard on keeping the desirable aesthetics. Innovation covers four main areas:

* Design - inclusivity via use of high-tech, composite materials and software to produce a lightweight PEV.

* Mobility and AI - new technology to provide solutions such as driver assist, collision avoidance, autonomous driving, routing and navigation, plus recording well being data.

* Social mobility - mobile app, user groups, voice control, hand control, including diary integration and reminders.

* MaaS - real-time PEV management information, two-way user communication, well being data, vehicle information and location.

The innovation enables automation of this service, mobility-as-a-service in comparison to existing manual intensive methods.

This project

This project supported by Innovate UK looks to help solve some of the issues caused by the Covid-19 pandemic. Namely the mobility and independence of patients in care home and hospital environments.

Care home and hospital staff can be more productive by focusing more on patients and less on moving people around the facility, potentially an extra one million days per year of person centred care and socially distanced mobility.

The key objectives of this project are to develop a vehicle specifically for care home and hospital environments and engage with business partners to bring a solution to market.

The future

Centaur Robotics looks forward to a future where there is independence of movement for all and users feel empowered. Centaur Robotics is the leading company in the UK focussed on this type of vehicle in health care.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
IGROWING LIMITED	Vision System for Verification of Effective Hand Sanitisation	£48,566	£48,566

The Covid 19 pandemic has highlighted the necessity for high standards of hygiene in workplaces and public spaces. This means using santizers on hands to prevent the spread of viruses and bacteria. Unfortunately, most of the sanitizer dispensers in use today are optional and there is no measure of the effectiveness with which the user employed them, if at all. The proposed innovation addresses these short comings by building on the advanced sanitizer system already developed and deployed by iGrowing Ltd under the Steriloc brand by adding vision system technology in conjunction with flourescent marker knowhow to create a sanitizer application verification and performance module. This module together with the electronics logic and hardware to link to door, gate or turnstile access systems will ensure any persons entering a hygiene controlled area have verifiably and traceably washed/sanitized their hands to the pre-defined standard. iGrowing has already filed a patent application for the verification system concept and the project will focus on developing the concept into a commercial prototype. This will encompass the development of the vision system, image capture, lighting arrangement , marker optimisation, system software, hardware for integration into entry systems and data storage and reporting. The system will be designed to work with the full range of skin types and ethnicities and the methodology for providing quantitative sanitization performance will be optimised for both sanitizer application and 'soap, wash and rinse' applications.

The objective is to create a sanitization application system that ensures all persons entering a critical environment (expected to include all workplaces where people work in groups) have cleansed their hands to a uniformally high standard providing the traceable levels of biosecurity that will be require to get the UK back to work after the Covid 19 lockdown.

The public funding is being sought to significantly accelerate the bringing of this product to market so that it can be available before the end of the year as a viable product for critical environments.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SYNDEO LIMITED	Syndeo Digital Well-being Coach	£49,792	£49,792

The COVID-19 pandemic is causing dramatic changes to the lives of everyone. The crisis is already impacting on the happiness and mental well-being of the UK population. It will continue to have a negative psychological effect for quite some time.

Most people find themselves in an extremely challenging situation and are forced to plan how they cope with the immediate challenges caused by COVID-19\. Equally, many people also need to consider how they plan to bounce back from this crisis. This inevitably means people need to reconsider and change their professional goals. Alongside these personal challenges people are also forced to adapt to these challenges through the means of working virtually.

The Syndeo Digital Wellbeing Coach will assist people in adapting to this new reality by augmenting an already existing "Goal-Setting through Happiness" online training course which particularly focuses on setting goals that restore, maintain or increase psychological well-being. The Digital Wellbeing Coach uses the latest A.I. technology to be able to point participants to the most beneficial exercises for them. Thus, this proposed project offers a completely personalised, online experience for participants to work on their goals whilst maintaining the highest levels of mental well-being.

The Digital Wellbeing Coach has been created in conjunction with Oxford Brookes University and builds upon research carried out by Dr Christian Ehrlich (Ehrlich, 2012, 2018, 2019; Ehrlich & Bipp, 2016).



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SETL LIMITED	The Citizen Wallet	£50,001	£50,001

The Covid 19 Crisis has accelerated the need for certain technologies to be brought into mainstream use. One of those technologies is verifiable credentials. Verifiable credentials are digitally signed certificates that can be verified simply and quickly both in person and over the internet. Examples of possible deployment include prioritising older or vulnerable people's use of online supermarket delivery slots or certifying medical tests results to allow people to work in specialist medical roles or make use of air travel. This would be operated on the basis of a digital certificate issued by one or more trusted authorities.

W3C recently released standards for the format of these certificates to encourage an interoperating eco system of credentials issuers, holders and verifiers. The vision for this project is to implement a framework that allows this new standard to be used but also connects to existing identity technology so that its use can be quickly scaled.

The aim will be to create an environment where credentials can be easily issued and checked using web and mobile technologies. It should be usable at both a local and global level. For example a local authority would be able to issue credentials which can be read by a local welfare service provider to assist prioritisation, while a national government may use it for travel permissions.

The environment will include a permissioned distributed ledger of credentials that will facilitate the issuing, holding, asserting and verification of the credentials. The environment will maintain credentials in W3C format and in X.509 format to allow bridging to existing identity environments. The distributed ledger will not use costly proof-of-work algorithms typically associated with this technology, and therefore not have the associated negative environmental impact.

The main area of focus will be to create a system that can be used to store and deploy verifiable credentials using the new W3C standard. This will be interoperable with other systems using the same standard and will be part of an ecosystem that will allow credentials such as medical test results, key worker status or verified vulnerability status to be widely used in both physical and online environments.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VIVISCO LIMITED	Next generation minimally invasive photodynamic therapy for treating COVID-19	£49,491	£49,491
We are developing the next generation of medical devices which activate light-sensitive drugs. We will use these medical devices to enable light-activated drugs to be used as a treatment of COVID-19\.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CORACLE ONLINE LIMITED	Digital in-cell support for isolated, digitally excluded prisoners within UK prisons	£49,361	£49,361

Covid-19 is having a major impact on the UK prison system. Our primary concern at this time of great uncertainty is the health and well being of those in our most vulnerable communities. Prisoners can no longer receive visitors, support from outside organisations have been curtailed, prisoner movements have been severely reduced and prison officer numbers are reduced due to self-isolation. This has an adverse impact on prisoner education, mental health and wellbeing and put the prison system under increased stress.

Coracle is delighted to have been awarded a grant from Innovate UK to help tackle the issues of isolation that are acutely seen within the prison estate and are grateful for the opportunity to be able to support HMPPS with the roll out of our innovative, patent pending "Coracle Inside" technology that allows prisoners access to in-cell digital education, without breaching security or allowing access to the internet.

Coracle has been working over the last three years with HMPPS and the Ministry of Justice to get approval for the technology. The system was developed, working closely with Learning Together -- the network of 31 universities, led by the University of Cambridge's criminology department, that enables prison residents to study alongside university students.

James Tweed, founder of Coracle Inside said. "It's a well-researched fact that prisoners who engage in education are less likely to reoffend. Covid-19 has impacted prisoners access to education. One problem is any form of internet access is forbidden in prison. This severely restricts access to course materials and the digital tools that most of us take for granted, especially for those that are vulnerable or self-isolating. Coracle Inside laptops are issued to prisoners for use in their cells whilst ensuring 100% separation from the internet or any other devices. We allow syncing through patent pending Coracle Inside Hub, installed in a location with supervised access. The system has passed rigorous Ministry of Justice security testing and can be used to assist learners with any kind of course whether academic, vocational or self-improvement. We also support health, mental health and wellbeing programs. Our focus is now twofold -- firstly to demonstrate the system to prison governors, prison education managers and heads of reoffending and rehabilitation and secondly to work with organisations that support prisons in improving learning, skills development, mental health and wellbeing so their materials can be delivered digitally in cell."



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIMEJAR LTD	BOOP - A remote learning platform that aims remove barriers to learning and provide remote support to individuals with Special Educational Needs	£49,640	£49,640

Problem The Covid-19 pandemic has resulted in unavoidable change, leading to the closure of many schools and community settings which has disproportionately impacted those with certain health conditions such as **Autism**. Many individuals with Autism struggle with change, especially unexpected ones. It can be especially difficult to navigate during this change - causing distress and increased anxiety levels as well as negatively impacting on other members within the family home.

Solution

BOOP - a platform aimed at removing the barriers to remote learning and support for students with Special Educational Needs such as Autism

Objectives

The objectives of the BOOP platform is to provide a fully accessible resource that can be implemented by families at home and by teachers to support distance learning and also for key people to offer support, remotely, to families.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GPEP LIMITED	Solution that redefines empowered physiotherapy self-care reducing attendance at NHS services	£49,414	£49,414

GPEP technology (App) will provide professional guidance and motivational support to anyone with Musculo-skeletal problems at anytime, anywhere; opening more access to physiotherapy and helping patients measure and compare progress across their peer group to sustain personal motivation and improve outcomes. In short -- it will help reduce pain and improve mobility and therefore social well-being more quickly and effectively.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SUMMERHOUSE DRINKS LIMITED	Increasing efficiency & sustainability in online retail glass packaging delivery	£36,812	£36,812

The overriding vision for this project is to develop more environmentally sustainable, more effective and labour efficient packaging for small glass bottles and employ them in a new ecommerce store for our soft drinks which can use lower quality fruit and herb ingredients from UK fruit & herb processors. This will support the processors in the UK by reducing waste and assist our drink manufacturing business which has lost 60% of its turnover due to Covid-19\.

Key objectives for this project are:

1\. Collaborating with our packaging supplier to develop an innovative shipping packaging solution for small, glass bottles for delivery by courier which is more environmentally sustainable, labour efficient and effective in delivering its contents safely that the current options.

2. Through our packaging supplier, make this innovative solution available to producers of other products in small glass bottles to improve their online delivery proposition.

3\. Launch an online platform to allow customers to purchase our drinks online and have them delivered by courier, diversifying our own route to market.

4\. Work closely with our ingredient suppliers to identify excess or waste produce to maximise their use in our soft drinks, therefore improving returns and efficiencies of UK fruit and herb processors.

The main areas of focus for this project are two fold. Firstly, the development and successful launch of our ecommerce platform. Without this there would be no need to develop the second area of focus, a new shipping packaging solution for small glass bottles.

Current shipping packaging options for small bottles are either to wrap each bottle individually in plastic bubble wrap or use cardboard dividers within the cardboard box. The first option is not environmentally sustainable and labour intensive and both options still produce breakages in transit, costing time and money.

Our concept is to develop a cardboard die cut which holds each bottle within the cardboard shipping outer. It reduces the opportunity for bottles to become loose in transit and smash against each other and keeps bottles away from the edge of the box where they are also at risk of being smashed in transit.

Our own research and our packaging supplier have not found anything like this on the market and will require their in house packaging innovation centre to develop the product.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
Q-FLO LIMITED	Active Virus Filter Membrane	£44,741	£44,741

Provision of an Active Virus Filter capable of capturing and destroying the virus molecule that causes Covid-19\. Assembled in a low cost unit for deployment initially in ambulance interiors and then in other critical spaces.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRUST ELECTRIC HEATING LTD	CAVE: Remote Heating Control System for Confined Adults, Vulnerable & Elderly	£49,961	£49,961

With the launch of Lot 20 EcoDesign legislation in January 2018 new standards were put in place that not only affected the design of electrical heating appliances but, as a result, have precipitated a new set of challenges for the majority of consumers.

In the drive to improve the energy efficiency of electric heaters, more sophisticated digital control systems have seen widespread introduction. For consumers who are not 'digital savvy' they are now presented with a product they struggle to use as intended, with many subsequently bypassing the very systems designed to improve efficiency and resorting to basic manual control of their appliances. For many users the complicated programming and multiple overrides is even leading to them having no heat at all. Therefore, these energy saving thermostatic controls have caused more anxiety with a majority of users as the energy efficient controls are not being correctly used. Additionally, due to the heaters being left on manual settings, there are many cases of higher energy consumption than needed.

The development of CAVE (Confined Adults, Vulnerable & Elderly), a web-based technology that allows remote monitoring and control, is designed specifically to safeguard this group of individuals. CAVE offers multiple benefits for the consumer to ensure they keep warm efficiently, accessing a service that offers:

- 1. Remote programming based on their lifestyle and seasonal changes
- 2. Controlling their heaters to help decrease energy consumption
- 3. Monitoring of energy use per room which limits wastage
- 4. Detection of early faults on the system and acts quickly
- 5. Accelerated diagnostics fault finding
- 6. Reduction in electric bills by supporting the programming of the smart digital controls
- 7. Improved social distancing
- 8. Quick, immediate response with no waiting, no loss of heat

CAVE is designed to provide resilience for the future especially for individuals who may be self-isolating. It enables:

- * Social distancing measures
- * Fast and immediate response
- * Reduced carbon footprint due to remote interactions and enhanced efficiency

CAVE is a simplistic 3 step approach for the consumer:

- 1. One phone call to a customer support line
- 2. Press the SOS button on their appliance

3. Remote access begins This supplementary service will provide comfort and well-being to the shielded, vulnerable and elderly so that their thermostatic/heating requirements can be dealt with quickly and remotely.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
V2G EVSE LIMITED	Covid-19 eHealth Data Acquisition Unit (COVeHealth)	£49,506	£49,506

The UK is currently in "lock down" due to the novel coronavirus pandemic. Before putting the currently locked down country back to work we need to:

1) Reduce the incidence of cases to reduce the burden on the NHS to more normal levels

2) Once that is achieved, we need to prevent the virus from catching fire a second time

To reduce the risk of a second wave, we need to develop tools to enable us to:

a) Preemptively identify early stage Covid-19 sufferers

b) Use these tools to guard the borders of spaces (hospitals, homes, shops, workplaces, shopping malls, schools, universities etc.)

The World Health Organization's message is that we must **"Find, isolate, test and treat every case to break the chains of Covid transmission."**

Covid-19 screening tests are currently performed at a modest distance by a health worker using a "no touch" infrared thermometer to detect the tell tale fever. The other common symptom indicative of Covid-19 is the persistent dry cough, detected by the characteristic sound.

What is desperately needed, both in the UK and around the World, is a way of performing screening for early stage Covid-19 symptoms remotely.

With DfT seed funding V2G EVSE have developed a low cost "smart" 0G to 5G enabled communications controller with a wide range of input/output, currently configured to monitor and control an electric vehicle charging station and securely communicate with a cloud based management system.

We will repurpose our existing technology by connecting the controller to a microphone and infra-red camera, then use novel machine learning algorithms to detect the characteristic cough and fever of Covid-19 sufferers. This will allow us to create an installed or hand held device that can be used to identify those with potential Covid-19 symptoms.

Since our existing hardware is effectively the internals of a smartphone with no touch screen but more versatile communications, including Bluetooth, we are also ideally placed to participate in the recently announced Apple/Google track/trace initiative.

The COVeHealth project will develop proof of concept prototypes of a "commercial" version suitable for use at the entrance to public spaces and an alternative low-cost "domestic" version for use hand held or in confined spaces.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ZAYC LTD	Low-cost Powered Air Purifying Respirator Mask	£49,672	£49,672

We think of the economic and social effects of this pandemic on our country. We are aiming to return the country back to work as soon as possible. We focused on the re-openning the business sooner again. But with the current personal protection equipment, it is still hard to reach these objectives in a short time.

We need to provide better PPEs which should be low-cost and provide a perfect protection against treats both aerosol, droplet, and splash from all directions caused by close contacts in our daily lives.

Our project with the theme providing low-cost and achievable Powered Air Purifying Respirator (PAPR) Mask. PAPR masks will transform an idea into practice. This will create a faster re-opening for the businesses. And the people will return to work sooner. Our innovation will bring significant benefits to every workgroup of society.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MANAGEMENT NETWORKING LTD	Mission to Mars	£49,886	£49,886

Mission to Mars needs YOU!

Space exploration and self isolation share many similar challenges - Mission to Mars acknowledges the current restrictions and turns them into an exciting and immersive space simulation that your children can experience at home!

Your child will 'apply' to join the first team of humans travelling to the planet Mars. Their training takes place at home, as they simulate the long-isolated journey to Mars in a space craft (in real-time this would take at least 7 months - but you can take it as fast or slow as you like). They will receive regular video messages from 'Mission Control', just like they would on a long duration space mission. These messages will be from a combination of actors and real-life individuals who work in the space industry and they will set the mission narrative and present a series of fun challenges as the mission progresses.

The engaging challenges will fit seamlessly into the overall mission story and will be curriculum-linked for Primary School Key Stages 1+2 across all subjects. For Example...

Art: designing a mission patch, Music: creating a mission theme tune, PE: how to keep fit in space, Science: growing, tending (and then eating!) a vegetable, Computing: programming and debugging a space robot using Scratch, English: keeping a mission log, Geography: looking for a suitable landing site on Mars, DT: designing your new Martian habitat.

The aim is to provide a 'learning through fun' experience that will immerse and inspire your child throughout this self isolation period.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IMRSVRAY LTD	PolySonic Live immersive home music broadcast tools	£49,672	£49,672

In the wake of Covid-19, the live music economy has collapsed. Their events have come to a halt, but the desire to see our favourite acts remains, with millions of people quarantined at home and seeking entertainment.

With many artists broadcasting their material over the internet, and festivals morphing into virtual ones, the shift to online content is happening at an increased rate. We, at IMRSVRay, believe our Polysonic Live project can bring live music listening to a higher level of immersion.

If Walkman used the magic of stereo, where sounds are placed along a left-right axis, our project is an attempt to more accurately replicate real world music experiences, where sound comes from all around your ears.

We are the lead partners in a £1m immersive audio project already supported by Innovate UK, with the BBC and Surrey University. In turn, we are building on the previous £5m S3A research project so have software and skills capability to build tools to improve home concert production. For example using complicated audio processing algorithms to place specific sound sources, like a voice or a guitar, at specific locations within a sphere surrounding the listener.

Using this 3-Dimensional approach will work particularly well for live music tracks because the goal is to recreate the concert audio experience. We intend for this to revolutionise the way we listen to live music online.

Our software will also target the provision of a live mixing engine called the Spatial Mixing Polymersive (SMP) engine. Using sophisticated machine learning, the SMP will place the audio objects in the mix in real time, with algorithms designed to recognise where each instrument should go around the listener, and it is able to alter other parameters, such as reverb and equalization; important ingredients for making better quality audio.

Polymersive Studios will provide this software along with the knowledge of how to use it. This software will be provided for musicians and producers, and any group or solo act will be able to use this software to broadcast their music online, or to make a home recording to upload.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NATIONAL EDUCATION GROUP LTD	Learning hub enhancements to support schools with remote safeguarding and online CPD during the COVID-19 pandemic	£46,872	£46,872

National Education Group (NEG) is a multi-award winning online education provider who respond to changing policy, emerging trends and customer-insights to deliver modern and responsive online CPD. NEG operates under two core brands; National Online Safety and The National College.

National Online Safety deliver award-winning CPD accredited courses and educational resources to help support UK schools in educating the whole school community in online safety.

Providing designated safeguarding leads, teachers, school staff, parents and cares with the knowledge they need to keep children safe online. Users receive access to a comprehensive library of online safety training, guides, videos and lesson plans.

The National College provide expert-led, remote video CPD to school leaders and teachers. Governors, headteachers, senior leaders, subject leads and school teaching staff can access up-to-the minute video webinars on the latest policy changes, practice and education research.

Demand for both services has resulted in NEG experiencing an increase of c. 20,000 users on their Learning Hub since the closure of schools due to COVID-19 on 20 March 2020\.

Schools are continuing to seek our support to help safeguard children remotely. There is a particular concern around the safety of children online given the increased amount of time they are spending on devices due to remote learning and/or for entertainment purposes.

Our online safety package is one of the most comprehensive in the world and our belief in delivering a whole school approach to online safety means providing universal access to all school stakeholders. Our training materials and resources are available remotely and can be accessed anywhere, at any time.

School leaders and teachers have an increased need to stay updated on changing policy, practice and research with many using this time for continued professional development.

The project will support National Education Group to build robust infrastructure to support the increased demand as well as adding new features requested by schools to support them through COVID-19 and school closures. These include:

* Providing all of our guides through a mobile application so that they can be easily accessed by parents.

* Including the ability for schools to add their own CPD to our Learning Hub. Many schools are recording their own updates and training that they want to share.

* Improving the report functionality for schools to be able to manage training effectively whilst being remote.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
COOLSKY LTD	Solar-Thermal Heat-Pump Combination System - STHP-Combo	£49,306	£49,306

This project will deliver a combined renewable heating system that is capable of year-round delivery of hot water for Manufacturing, Industrial, Commercial and Domestic applications.

The system will consist of an evacuated tube solar thermal collector in an innovative combination with a heat-pump whose operation is optimised by a smart electronic control system to deliver a consistently high temperature hot water supply that is suitable for industrial process applications.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
STERLING & BEANLAND LIMITED	Business Support Expertise during COVID-19	£45,599	£45,599

"Quick-Point" will help businesses and individuals get the answers they need on how to continue trading during the coronavirus, what kind of support is available and will it be applicable to their businesses. It is powered by a chatbot which will provide analysis of a company's financial status and help to understand their internal processes, making recommendations on an individual basis.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SMARTZER LTD.	Making Fashion Week digital with interactive videos	£44,071	£44,071

The Covid-19 pandemic has had a devastating effect on the fashion industry both through retail as well as the drastic changes required to fashion week as we know it. Fashion week is a key event driving the industry both from internal as well as consumer perspective. The situation is forcing designers to find a new way to showcase their collections to consumers and press and to facilitate the buying process from retailers and wholesalers globally.

We want to build a product that allows designers to create an innovative digital form of fashion week. Designers will be able to create videos showcasing the new designs. These videos can then be made interactive allowing the viewer to click on the products to discover all the associated details from original sketches to material details and costs. There will be a further connection to enable buyers to place orders directly via the videos. Additionally, as soon as the products are available to consumers, the videos can be made shoppable for consumers. This is also crucial as designers are currently sitting on vast amounts of excess stock.

This will allow designers to get their collections in front of an extended audience globally through an easily shareable video link.

Brands will also be able to access data on consumer/buyer/press interest in different items. Data that has previously been much more difficult to have access to.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Rogue Product	Mobile Automated Safety Kit (M.A.S.K.) for rapid deployment of custom fit PPE	£49,314	£49,314

The recent outbreak of a respiratory illness caused by novel coronavirus (2019-nCoV) is a reason for concern around the world. As the virus is an airborne inhalation hazard, respiratory protection from properly fit tested filtering face pieces can minimise the risk of infection amongst doctors and nurses. The sad reality of a global pandemic is that a disproportionate number of cases will be borne by healthcare professionals and first responders. As well as the direct risk to life, indirect effects of failing to provide adequate respiratory protective equipment (RPE) are that more staff are off sick from infection and so fewer doctors and nurses are available to treat patients. Providing either inadequate or suboptimal protection leads to elevated workplace anxiety and distress, with the NHS warning of post-traumatic stress amongst NHS staff at an all-time high when the crisis resolves.

One of the lessons emerging from this pandemic is the challenge in properly distributing RPE to a large rapidly mobilised force, not normally be expected to use RPE. This has led to delays in getting protective equipment distributed and in use amongst healthcare professionals ([https://www.theguardian.com/society/2020/mar/16/not-fit-for-purpose-uk-medics-condemn-Covid-19-protection][0]). One of the reasons for this delay has been the necessity for any RPE facepiece be properly fitted to the wearer. As faces come in all shapes and sizes, it is impossible that any one type or size of RPE will fit everyone. Fit testing is critical to ensure the equipment selected is suitable for the wearer. Currently, given the necessity that fit testing be carried out by a qualified individual before RPE can be distributed amongst NHS staff, this process has led to unnecessary delays in staff availability.

To overcome these delays, we propose a novel 6-month project to develop a smartphone application to convert a standard 2D photograph into a 3D head scan for virtual fitting of RPE. This will enable the hospital to get an indication of sizing required for all members of staff using digitised records. This would also increase the speed at which RPE can be distributed and streamline the amount of equipment that needs to be ordered.

[0]: https://www.theguardian.com/society/2020/mar/16/not-fit-for-purpose-uk-medics-condemn-covid-19-protection



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SECOND HOME STUDIOS LTD	Cardbox - Artists and Charities Working Together	£49,405	£49,405

Cardbox is an innovative new model which supports both artists who work in animation and charities looking to diversify their income from greetings cards. Stop-motion animation is a much loved and respected craft-based medium. Unlike its other counterparts in 2D and CGI, stop-motion must be done in a studio space with lights, cameras, space, people and stuff! Which is why, under a lockdown scenario, it is only lone artists with their own studios who are able to continue to operate and it is these people we wish to attract to the site.

On the other hand, charities are presently struggling when income from shops and streams which require person-to-person contact is non-existent. Cardbox will enable charities to champion, commission and associate with a new medium of sending personalised greetings through the medium of animation. Both artists and charities will be able to reap the rewards through a new creative outlet.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BREAD MATTERS LIMITED	Flour to the People	£48,519	£48,519

Loaves disappear first. Then flour. Empty shelves are a stark motif of the Covid-19 crisis. **Flour to the People** is an ingenious response to the food insecurity that afflicts many vulnerable people when just-in-time supply chains are disrupted.

Overnight, lockdown caused a quadrupling of demand for local flour. Like other specialist mills and food businesses the Scotland The Bread online shop was overwhelmed and had to close for a fortnight. This project is an answer.

Flour to the People will rapidly

* instal an innovative cyclone mill to double round-the-clock production of flour milled from nutritious grain grown in Fife; extra sales will help fund additional community work

* deploy a mobile bakery at community food hubs to bake bread with better flour and, using video links while physical distancing continues, teach real breadmaking skills so that people can do it for themselves when restrictions are eased

* work with existing community bakeries to develop popular products and the skills to make them using Scotland The Bread flour so that food hubs and food banks have better options than the usual low-value, mass-produced and ultra-processed offerings.

This project is both an urgent response to a short-term spike in demand and a blueprint for a more resilient food system involving short distances and human relationships between producers and consumers. Bread Matters Ltd, with decades of experience in bakery training and dissemination, founded Scotland The Bread to popularise better grain and bread from its base at the Bowhouse food hub in Fife.

The Flour to the People project is innovative in several ways:

* technology: the first low-energy Zentrofan cyclone mill of its kind in the UK, installed in 2017 and since upgraded, will be joined by a similar mill to double round-the-clock automatic production of nutrient-rich flour

* society: the mobile bakery will pass on information and skills so that communities can start their own bakeries and be less dependent on distant supplies

* nutrition: uniquely among mills, allis tested flour for nutrient density: fewer slices of more satisfying bread takes pressure off budgets and belts.

* scale: we'll scale up by replication: inspiring, equipping and certifying other local soil-to-slice networks in the healthy, resilient and environmentally sustainable food system of the future.


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BLAKBEAR LTD	Applying electrical gas sensors to monitor food quality in households to reduce food waste.	£49,944	£49,944

BlakBear have invented a novel paper-based printed electrical gas sensor (PEGS) that can detect food degradation by measuring the spoilage gases emitted by perishable foods like meat, fish and poultry. We will deploy our sensors in food-boxes to consumer households, to monitor and reduce unnecessary and avoidable food waste.

Food waste is a major problem, both globally and in the UK. Over half of UK food waste is generated at home and 60% is deemed "avoidable". In 2015, UK households binned £13bn of food that could have been consumed, generating 19m tonnes of greenhouse gases (WRAP, 2015). There are multiple causes, but the major contributor is that consumers throw away 1/3 of food that is still edible based solely on use-by-dates, and consumers lose track of the perishable food in their fridge, discovering items "too late".

Due to quarantine, the majority of the UK workforce is working from home, and subsequently consuming 3-meals a day in the household. By our estimates, this will increase potential food waste by 12-15% at a time of food shortages, due to a spike in demand.

This project is a collaboration between BlakBear and OXO. We will distribute food-boxes to 50 households with our sensor incorporated. Over a 3-month period we will measure food waste in households using a digital scale, and test whether the BlakBear sensors' behavioural nudges change household behaviour. Through this project we aim to understand the effects of BlakBear sensors on food management and waste generation in the home. We will capture data on usage frequency, faults, sensitivity, efficiency, click-rate, time of day usage, and length of engagement. We will use this data to estimate the amount of food waste avoidance from high-value perishable food groups: meat, fish and poultry.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
QUALIS FLOW LIMITED	Automating compliance for remote construction working	£27,374	£27,374

Construction logistics monitoring and compliance is typically paper-based and requires multiple individuals and teams to process, in order to ensure that material movements are handled in a safe and environmentally responsible manner.

Qflow is a software tool, using a combination of Internet of Things and machine learning techniques, to digitise the information recovered from paper tickets at a construction site entrance. This ensures that this information is fed directly to the managers who need it most, and without the need for any on-site presence aside from the existing traffic marshals. Information is provided on the material types and waste removals, descriptions, relevant certifications of the supply chain, and listed quantities. This supports several teams to work remotely, including logistics, environmental, QS and data administration.

The innovation that Qflow is exploring now is automated compliance screening and anomaly detection, to notify users when there are discrepancies in their data that require investigation, or where there is an illegal waste transfer. The software provides the eyes and ears on site in real-time, and provides access to that information on a cloud-based platform, meaning that those who need the data can access it wherever they are, without having to double handle paperwork and ensuring that the site operations continues smoothly without the need for intervention.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
COOPERATIVE INNOVATIONS LTD	A Virtual Tour Platform for Curators to help deliver Culture to the home	£49,966	£49,966

Visit brilliant cultural institutions from all over the world from the comfort of your own home!

Explore heritage sites you've never been to before, get a fresh perspective of your favourite gallery, discover new artefacts and their stories in even your most frequently visited museums. Find out directly from curators, historians, artists, and experts which pieces, stories inspire and fascinate them.

Go with friends, or go alone and take the opportunity to ask questions. These tours will give you a new way to explore history and culture. Supporting and protecting historic institutions by keeping them alive in the public imagination and by offering an opportunity for you to make a donation or to pay for exclusive content.

The project has two applications. The first is an audience facing application for smartphones, tablets and a fully immersive version for VR headsets where users will be able to;

- * Choose from a variety of prerecorded virtual tours
- * Book on to a Live Tour where they're able to ask questions to the curator
- * Virtually explore a location at their own pace
- * Look in detail at 3D captures of exhibits

The second is an application that enables institutions, artists, and curators to create the tours themselves, it will be an easy to use system that will allow them to:

- * Import 2D, 3D and audio files to build up a virtual version of their cultural institution
- * Layout the various assets in a 3D space for users to explore
- * Add hotspots to trigger content and create relevant tags for people to find
- * Add a 3D virtual "actor" controlled by the tour guide using a VR headset, either live or recorded



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPAN TRAINING & DEVELOPMENT LIMITED	Development of digital learning platform, intergrating planning, teaching progression tracking and funding MIS	£49,750	£49,750

We are a leading Independent Training Provider delivering Apprenticeship programmes operating across a wide geographic area in the South, West and Midlands of England. We deliver to over a 200 learners in 100 small and micro businesses predominantly in the hairdressing and childcare industries.

Many young people have been furloughed to their homes and are still eligible to receive Apprenticeship training.

Our project is to implement a diverse package of remote training tools to replace our previously face to face delivery model for training, assessment and education. We want to keep learners engaged and busy in their homes during lock down giving them much better life chances and better chances of retaining jobs after lock down.

We see significant scope for development of our in house bespoke data systems, to provide integrated tracking and reporting while also providing a one stop shop/portal for all ancillary component technologies. All would be integrated through our secure data system and we would be able to bring together new and existing data tools such as our in house branded app which currently is accessed separately via Tribal's WhamBiz web platform, Awarding body Digital Platforms, Zoom video conferencing,NearPod and other leading modern online technologies. We will leverage various APIs and Rest Protocols together with Claris Filemaker web-viewers and XML data transfers to Government Finance claim systems.

Provider staff, learners, and employers would have access remotely to progress reporting, communication logs, data submissions and funding allocation data. digitisation of existing paper based systems would also be converted forever allowing future efficiencies and faster answering of query and application decisions for programme places and funding.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INTRINSIC ENERGY LTD	Keeping People Connected with Live- Virtual Training	£47,541	£47,541

In order for people to maximise their potential, reach their career goals, decrease stress and live fulfilling lives, they must have access to new skills, knowledge and training enabling them to take control of their futures. Due to COVID-19, there has been widespread cancelation of learning opportunities at a time when learning and staying connected is essential. The UK workforce needs access to continuous learning opportunities on a variety of subjects including excelling in remote working conditions, staying connected virtually or leading virtual teams. Jobs are also being severely or permanently disrupted by COVID-19 which means more than ever people need affordable support to become more employable. Access to world-class education during times of uncertainty and change, supports mental health and wellness as well as creating a UK workforce that is ready to take advantage of opportunities after the threat of COVID-19. The greater adoption of live virtual training through the use of this project's EdTech Platform, up-skilling of professional educators on how to bring their classroom programs alive online, and a disruptive, innovative business model will enable accessibility to live, virtual learning opportunities for small businesses, individuals and the unemployed.

This platform will also be a vital source of support to many freelance trainers/coaches who have seen their in-person work cancelled in the wake of COVID-19\. This project will enable coaches/trainers to transform their material into a live-virtual format that is not pre-recorded or a lecture like other online training available today. They will learn the skills to create virtual role-plays, incorporate break-out sessions, ask questions which encourage active group-chats and how to keep participation high throughout the training. Trainers will learn how to use voice to virtually encourage engagement and how to create eye-contact through a camera. They will be equipped with a new mindset, tools and abilities to make their programs come to life through this training platform.

The goal is to connect highly skilled trainers virtually with everyone and anyone who needs their support during this difficult time. This project business model and EdTech Platform aims to up-skill 1,000 UK workers effected by COVID-19, positing the UK in a better place to maintain employment levels, be more competitive in the global markets and be more resilient to similar disruption. This project addresses the needs of the small/medium sized companies that account for \>98% of UK businesses plus the self-employed or un-employed.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OVYO LTD	Web-based direct aid for care organisations such as food banks	£47,654	£47,654

Our project is enhancing community support services by making it possible for individuals and/or organisations to directly support and provide aid to care and community organisations using a website.

With reduced footfall to supermarkets and other community hubs during isolation and distancing scenarios, there is an impact on some of the most vulnerable in society -- e.g. fewer items are donated to food banks by people directly leaving goods in stores. It is well-documented in the news that many care organisations have struggled with the impact of lower donations during isolation.

We are creating a website which allows care organisations to register what goods and support they need, and allow people to provide goods and pledge support. For instance people will be able to purchase specific items to be delivered by a grocer or supermarket to a food bank, or specific supplies from a retailer or wholesaler to a hospice, or pledge their time to run errands or otherwise support a retirement home. Importantly it will also provide the right aid, only targeting items that organisations are specifically requesting, relieving such organisations of the pressures of sifting through and dealing with generous but ultimately unwanted support.

Our website enables the fantastic generosity and spirit of the British public to be spread widely to where it's needed most, highlighting organisations that are close to 'filling a basket' and/or have had least support -- the goal being to provide an even distribution of charity rather than seeing an oversupply to some well-loved and well-publicised institutions coupled with no supply to others. We also have a number of ways to increase engagement with the public, allowing people to receive different types of 'badges' when they donate which they may choose to share on social media, and allowing organisations to share specific lists to social media to drum up their own campaigns.

Our project website of course provides a valuable resource even outside of times of isolation, making it easier to provide useful, practical support direct to the most needy organisations at all times. This can include around festivals, e.g. for donating Christmas gifts to refuges, or for donating food items for community meals and celebrations.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OXY-GEN COMBUSTION LIMITED	Grocery Trolley Decontamination	£49,962	£49,962

A system of decontaminating a grocery shopping trolley both entering and leaving a supermarket along with its products inside. A non contact method ensuring contaminated trolleys do not go on to infect subsequent customers and that purchased groceries are also decontaminated before entering the community or family home.

The decontamination system can kill all bacteria and viruses within 30 seconds and does not require any advanced skills to operate as it is largely automated. The customer can simply pass their trolley through the decontamination unit entering the supermarket and again when leaving with groceries inside. Giving peace of mind that they have not infected others or brought contaminated goods home. No chemicals, disinfectants or liquids are used in the decontamination speeding up cleaning without any secondary mess that needs careful containment and disposal.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DIGITAL SIGNS FOR TRANSPORT LTD	Real Time Health Alerts Digital Signs	£45,848	£45,848

Our innovation is to leverage our existing real-time _Digital Sign_ technology to connect people, places and communities to the real-time health data that surrounds them.

Our innovation will support the UK Governments response to COVID 19 by encouraging behavioural changes 'on-the-fly'.

We propose to re-engineer a SaaS platform we developed for Transport for London to collate/aggregate micro-data from health sources, merge it with mapping and other data and deliver it as elegant real-time, hyper-local 'Digital Signs' for display on any connected totem, kiosk or screen, UK-Wide.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ANDERSEN CALEDONIA LIMITED	Covid -19 Environmental and Surfacing testing development	£48,973	£48,973

Andersen Caledonia's project is to expand our Coronavirus (CV) environmental testing capability beyond hospitals to benefit the wider community. Recent published data has shown that this Coronavirus(Covid-19) can survive on surfaces for many days: e.g. A set of tests on the cruise ship the Diamond Princess found the virus 17 days after all passengers and crew had left. It is not known how common the transmission of the CV is via surfaces but the possibility of the transmission from surface to hand to mouth has been shown.

By providing testing information to organisations such as GP surgeries, care homes, pharmacists, supermarkets, bus fleet owners and dentists, we can enable them to ensure that their facilities stay clean of the virus as far as possible. It is much better that we keep especially high-risk people free of the virus than to work tirelessly to try and save them post-infection. We also need to make everyone feel that they can live their life in social isolation without it becoming a prison.

Testing for CV in the environment requires the collection of samples using swabs from high risk surfaces. The swabs are then transported in cool boxes back to our laboratory for testing using a QPCR machine. This machine can look for exactly the DNA/RNA of COVID-19 virus and can identify as little as 100 strands. A single human cell has 92 strands of DNA / RNA.

Andersen Caledonia are already a key supplier to the NHS: sterilising gowns and testing hospitals for environmental contamination. Our two testing laboratories are UKAS accredited and serve the whole of the UK. Testing for CV is not without risks to the staff, but our whole team have enthusiastically given their time to develop our capability and we have carefully minimised risks. In addition to our staff we have been able to build our testing service within a matter of weeks due to the invaluable support of our supply base. I am pleased to say that our whole supply base of swabs, viral transport media, QPCR machine and reagents has been sourced from UK manufacturers. We thank them for their support !



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JACK MASTERS LIMITED	To create a British-made re-usable face mask with an antimicrobial finish	£31,117	£31,117

Jack Masters Ltd, established since 1987 is British manufacturer of Premium Knitwear. With our expertise in creating a variety of fashion knitted products using existing flat-bed knitting technology we are looking to create a reusable face mask using sustainable or recycled materials. Equipped with some of the latest technology our factory is using its deep knowledge to create a staple item to protect the general public and reduce the spread or all bacteria and viruses. For additional protection the facemask has been coated with an antimicrobial chemical which is natural and sustainable, free from nano technology and is effective in reducing bacteria by up to 99.9%. Wash tested effective beyond 50 washes with a 95% efficacy



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WORKPLUS APPRENTICESHIPS LTD	Developing talent through apprenticeships	£40,320	£40,320

Investing in apprenticeships is an excellent way for the UK economy to recover from the effects of COVID-19\. Apprentices each generate an average **£34,000 of economic benefit each year** in the UK and Government receives a **21x return on every £1 it invests in apprenticeships**.

COVID-19 is having a **deep effect** on the ability of employers to plan and manage the workforce they need to maintain their business. Some businesses are struggling to meet **increased demand** whilst others are fighting to keep going amidst **unprecedented decline** for their products and services.

Apprenticeships will provide a **better way** for people to **continue learning and start earning** once this initial period of COVID-19 has passed. However, it's just **hard to find apprenticeships** as you need to be tuned into when individual employers (which are mostly the bigger firms) are recruiting and fill out lots of different forms. You can also apply directly to a training provider but this has a limit on the types of apprenticeships they offer and really they are working to fill their course, then try and find employers.

Workplus makes it **easier** for people to find apprenticeships - **think UCAS for apprenticeships**. Workplus is employer-led giving confidence to applicants that they can access a wider variety of apprenticeships and are **applying for a real job, not the hope of finding one**.

Since 2016, Workplus has helped **45 companies in Northern Ireland find 130 apprentices** and can use its experience gained in Northern Ireland to help sectors across the UK & Ireland **develop new and existing talent through apprenticeships**.

To date, Workplus has developed its product to include a **simple application and shortlisting service** for employers. However in order to supprt other employers that have been impacted by COVID-19, **market research** needs to be undertaken, the product needs to be developed to be **location-based** and we need to develop partnerships with more **training providers**, all to ensure that we **provide as many people with as many options as possible.**



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RLC TECHNOLOGY LIMITED	STEM education: practical science lessons using remotely controlled laboratory equipment	£47,044	£47,044

This project will enable science teachers and their A-level Chemistry/Biology and BTEC 3 Science students to remotely connect to and control laboratory equipment to conduct practical experiments in real time.

Due to the current Covid-19 lockdown, teachers are limited to online classes to discuss theory only and share video of prerecorded generic experiments. The aim of this innovative project is to allow teachers and students to include practical lessons, performed in real time, as part of their continuing STEM education.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WOMEN IN GAMES WIGJ CIC	Women in Games Virtual Global Conference	£50,000	£50,000

Women in Games is the leading force for gender equality in the games industry. Its Women in Games European Conference has provided a safe, supportive and celebratory space for women to socially connect, exchange knowledge, celebrate female talent and address challenges for over a decade. In that time, the conference has become pivotal to building and supporting a female community of practice in the games sector across the UK and Europe. Unfortunately, COVID-19 disruption means our conference cannot happen in its physical form in 2020.

But existing equality challenges continue to impact the professional lives and personal wellbeing of females in the games sector. And these are being made worse by new problems emerging from pandemic-related disruption -- from women adapting to remote work experiencing increased 'digital discrimination' to a surge in domestic abuse and mental health challenges. Both the UK Government and United Nations increasingly recognise Covid-19 is having devastating social consequences for females. As a result, our conference is needed now more than ever to support the community.

In response, Women in Games wants to redefine the online conference. This project turns a major challenge into an opportunity to innovate a new and exciting model for virtual and immersive conference experiences. It harnesses game design, immersive technologies and data science to engage and connect, entertain and educate audiences in new ways to drive positive social change. It will help Women in Games understand, respond and support the female games community through the COVID-19 crisis. It will help us continue our mission to realise a games industry, culture and community free of gender discrimination, with equality of opportunity for _all_ women to achieve their full potential. And, ultimately, it will help us, our community and our industry bounce back from COVID-19\.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHENOTYPECA LIMITED	The development of yeast strains to produce SARS-CoV-2 antigens for serological assays enabling the detection of COVID-19 cases in the UK population	£48,854	£48,854

Phenotypeca Ltd is a biotechnology company based in the University of Nottingham's Synthetic Biology Research Centre developing next-generation yeast for the manufacture of recombinant proteins, such as biopharmaceuticals.

Using a genetically diverse collection of natural baker's yeast engineered for large-scale industrial processes we breed up to a billion progeny and select cells optimised for the product and process of choice. Baker's yeast has been safely used for over 30? years for the bulk manufacture of biologics, such as insulin and vaccines, and is relatively inexpensive compared to mammalian systems.

This project aims to address an urgent unmet need for SARS-CoV-2 viral antigens for the UK's production of serological assays, used to identify individuals with immunity to COVID-19\. Phenotypeca will produce yeast strains for the manufacture of specific antigens for evaluation by Oxford University's Jenner Institute, and build UK partnerships for their supply to serological assay producers.

Parts of the SARS-CoV-2 virion have strong homology to other coronaviruses, making it challenging to produce tests that are both specific (no false positives, risking COVID-19 spreading) and sensitive (no false negatives, preventing people with immunity from returning to normal activities). To achieve this, we have designed multiple antigens from unique parts of the virus particle's structural proteins, including an exposed region known to bind the human ACE2 receptor, which has been guided by previous work that successfully made high-quality antigens from yeast after the 2003 coronavirus outbreak.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SMART-H LTD	Hydrodrive Energy Cell - Improving Air Quality to Reduce Respiratory Related Symptoms Through Mitigation of Particulate Diesel Emissions	£49,752	£49,752

HYDRODRIVE - IMPROVING URBAN AIR QUALITY

After 10 years of research and development a cutting edge technology has emerged!

The Onboard HydroDrive Energy Cell, built by Smart-H, a British Company, produces Hydrogen-on-demand. The technology is fitted to HGVs, buses and plant machinery, Hydrogen (98% purity) is produced and then fed into the engine air intake. The result is an improvement in combustion and lowering of carcinogenic particulate emissions.

HYDRODRIVE FOR HEALTH

PM2.5 emissions from diesel exhausts on trucks, buses and plant machinery contain high levels of black carbon, which has been found to be 4 to 9 times more deadly than other types of PM2.5\. It is a serious issue to human health worldwide in both respiratory and cancer related diseases.

The Smart-H HydroDrive significantly reduces these harmful gases when fitted to any diesel engined HGV, bus or plant machine; in some cases to zero within a relatively short period of time.

The product itself is an onboard vehicle En-cell (Energy Cell) that produces pure Hydrogen in small amounts using the power from the diesel engine. Firstly, by connecting the HydroDrive to the power, the En-cell begins to produce pure Hydrogen, which is then naturally drawn into the air intake of the diesel engine. A mixture of this Hydrogen and diesel are combusted causing a more efficient, leaner, greener burn, that makes the emissions far cleaner, giving increased engine power and even improving mpg.

Large diesel engined HGV's, buses and plant machines are all expensive to buy and maintain. With that in mind, the HydroDrive is fitted in such a way that it is unobtrusive and non-invasive, taking less than 2 hours to install, meaning the vehicle does not need any engine or bodywork changes and is off-the-road for only a morning.

As an environmental company producing a totally green product, Smart-H have given great thought to the build of the En-cell and the method of producing Hydrogen at such a high purity level. The stainless steel single cell inside the unit is made from recycled materials, the heavy duty plastic body also and the Green-Chemistry (the catalyst -- it's a liquid) is non-toxic and contains food grade ingredients. It is truly a 'green machine' from a Smart green company!

The technology is totally tax deductible under current UK accounting regulations.



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Total available funding £34m.

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
VITAL SPARK CREATIVE LTD	UVGI Cleaning of Card Payment Terminals	£41,126	£41,126

COVID-19 has caused the world to change immeasurably and people are more aware than ever before about how germs are spread and the day to day objects that they touch. Studies have shown that credit cards and cash are known to harbour many harmful bacteria and can spread disease.

As the world moves on from COVID-19, it is important to try to keep items that are touched regularly by different people clean in order to set peoples mind at ease and to prevent the spread of disease. As the keypads on Card Payment Terminals are touched by many people every day, improving the cleanliness of these terminals will improve retailer / customer safety and confidence.

We intend to design a safe, retro fit cleaning device that works with most Card Payment Terminals, keeping them clean and helping to stop the spread of disease.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
GenesisPathwayAl	Adaptation and development of existing Al platform to repurpose pharmaceutical drugs for treatment of impaired lung function from Covid19	£49,645	£49,645

GenesisPathwayAI is an artificial intelligence platform enabling translation between data sets from health informatics, research and development functionality and ultimately synthesis for repurposing drug compound development. Our aim is to use AI as a disease management tool by dramatically reducing the time taken to approve new drugs for respiratory illnesses arising from Covid19\.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
REDWIRE DESIGN LIMITED	Virtual Graduate Shows	£49,001	£49,001

The Virtual Graduate Show (VGS) is an online showcase for graduates from design courses throughout the UK to display their work and final year projects. It replaces the normal physical 'End of Year Show' (EoYS) staged at universities during May and June which cannot take place due to the restrictions in place because of the Coronavirus pandemic.

Instead of visiting actual universities, members of the public and potential employers of design graduates will be able to 'wander', via search facilities through the online virtual shows and view the detailed work of final year students.

Those graduating from courses will be able to take advantage of the showcase displaying work across all design disciplines including but not limited to: fashion, graphics, interiors, jewellery, products, textiles, UX & UI, automotive, etc and their various subsectors.

Visitors to VGS will firstly be asked to accept the terms and conditions of the show including the Intellectual Property Rights of work showcased and GDPR. They will then be presented with a list of exhibiting courses and can use an interactive search engine to find a particular course, design discipline or location and use a keyword search.

Once entering that particular course the visitor will then see a gallery displaying photographs of the graduates together with their names. On selecting a particular graduate the visitor will then be presented with the graduates details and a text explaining their major project. Further images will allow the visitor to open sketch books, view models, watch videos and read documents relating to the final year project.

An interactive contact form will allow visitors to communicate and ask any questions of the graduates.

VGS will be promoted to all UK design courses by the Chartered Society of Designers, the professional body for designers in all disciplines, who will provide those graduates showcasing their work with guidance as to how to make the most of this employment opportunity.

Data collected as a result of the VGS project in the form of statistics will be made publicly available subject to GDPR and Data Protection.


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
EXHALATION MEDICAL TECHNOLOGY LTD	game changing PoC screening device to be used at the front line in the fight against Corona.	£50,000	£50,000

The rapid spread of the Corona virus leads to a need for reliable Point of Care (PoC) tools offering rapid screening for the virus.

Corona spreads via small droplets, aerosols, being released in coughs, sneezes or simply in the exhaled breath, and scientific evidence exists to support the accurate detection of virus by Exhaled Breath Condensate (EBC).

We intend to expand on an existing technology, the Inflammacheck(r), to test for Corona in EBC. The Inflammacheck(r) is a handheld, non-invasive, Point-of-Care (PoC) device which detects hydrogen peroxide (H2O2) in EBC, a well-documented biomarker for inflammatory conditions in the airways system. The full test cycle including sample collection and test assay typically takes place in 5 minutes following a fully automated procedure.

The Inflammacheck(r) is CE marked and registered with the MHRA for sales and use in the UK as well as in the EU by September 2019\.

We aim to deploy a Corona specific sensor within the framework of the Inflammacheck to establish an easy-to-use, rapid and reliable screening device for Corona.

Following a proof-of-concept obtained through a feasibility study, we intend to partner up with a suitable partner to drive scale up and commercialisation of the concept.



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Total available funding £34m.

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
NEURODIVERSE SELF ADVOCACY PARTNERSHIP C.I.C.	Neurodiverse Self Advocacy mentoring into employment pilot project	£40,970	£40,970

We run an self advocacy information site and forum for autistic adults where we plan a mentoring into employment project including a forum support group and online supported employment course delivered by autistic people, this way building an autistic self-advocacy and peer-to-peer support network helping autistic adults overcome the disadvantages in employment.

We will train autistic adults to mentor other autistic adults to find their way into employment.

Autistic unemployment is the highest of all disability groups stagnating at 77% for decades, autistics are the first to lose and the last to regain employment in a crisis. Estimated 230000 want to work, 58% among them want some help but don't get any.

Autistic people are particularly vulnerable in the current crisis as their routine is disrupted, they suffer from heightened anxiety amid uncertainty and imposed isolation, which cut the few social connections they rely on, closed support services and isolated them from family members. They would struggle to seek and find help, may reach crisis point without support.

Focus is on people with so called 'lower level needs' ineligible for existing support, unable to access help and suffering from crippling mental health problems(70%), suicidality(66%), financial hardship(45%), 16 years shorter life expectancy, suicide being the lead cause of early death, by harnessing skills and energies of autistic people who are ready to mentor others, in particular as a safeguard and support amid the current crisis.

The National Audit Office identified a gap in support for higher functioning people and estimated that targeted support will become breakeven if just 4% were helped and result in millions of savings beyond that, while employment support costs £4,680 per job placement. We will do it for £1600\.

Research shows that wellbeing centres around positive autism identity, employment and perception of social support. Employment holds the key to all of these. Our programme not leaving autistic people behind amid COVID19\.

The project is life changing for both mentors and mentees, it builds capacity of the autistic community, relieves the disadvantage of disability and tackles social exclusion.

We have a strong team. We are working with leading autism researchers and professionals.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
OPTIMUM HEALTH LTD	KamiCoach	£49,604	£49,604

KamiCoach is developing a trusted intelligent voice-enabled companion providing: Individualised parenting plans complete with inbuilt activity reminders; 24/7 access to expert guidance through conception, pregnancy, birth, and early parenting; while teleconsultation from our vetted specialists affords parents the coaching and support they need to follow social distancing guidelines as they develop effective strategies and schedules that enable them to: work in a happy and productive way throughout their pregnancy; enhance self-efficacy and wellbeing throughout early parenting; and balance becoming their child's best first teacher with home-working as they return to work.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE WORKCAST CORPORATION LIMITED	WorkCast Enhanced Virtual Events Platform	£49,702	£49,702

With the restrictions on movement in place around the world as a result of the Covid-19 pandemic, more and more people, social groups and large organisations are turning to web-based communication to facilitate remote working and interaction. Despite the large number of providers of communications platforms for individual and groups, there are very few providers of environments that can host hundreds of delegates.

WorkCast are UK-based providers of market leading virtual event software. Our Virtual Events platform is used by large organisations around the world to host webinars, conferences and educational events. WE are now experience a surge in demand that requires us to innovate and adapt our product offering to meet customer requirements.

This project will focus on automating the set-up process of events in on our platform, reducing the amount of intervention and support required by WorkCast staff and significantly increasing our capacity to host multiple concurrent events. Alongside this, we will be developing new features that will make our Virtual Events platform a unique online replacement for large conferences. These new features include development of:

* Webcam-based breakout rooms where small groups can move away from the main proceedings for smaller interactive discussions

* Enhanced AI Introductions that will make smart suggestions of delegates you may be interested in connecting with based on delegate profiles and behaviours and interactions with event content, making it easier to find people that matter to you in events with large numbers of attendees.

The project will form the basis of a new product offering for WorkCast, facilitating large scale communication and education during this time of uncertainty and provide a platform for large international events and conference to go ahead despite travel restrictions.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
MUSEMIO LIMITED	Musemio multimodal, device-agnostic immersive learning platform	£47,996	£47,996

Musemio is an award-winning Edtech business developing interactive, solutions rooted in cultural narratives. Our products improve knowledge retention and understanding of historical contexts which users are immediately immersed in. The company is research-driven and evidence led. To date, Musemio has created novel educational products for mobile VR, accessible with only a smartphone and cardboard headset, but the current COVID-19 crisis requires widespread access to impactful educational solutions. This project will enable a business step change so our KS2 and above software products are available across all delivery platforms: VR, mobile-devices, and desktop solutions making Musemio accessible for all.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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 NANODETECTORS LIMITED	Lung function device to aid COVID-19 management in care homes	£49,930	£49,930

The COVID-19 pandemic raises particular challenges for the 400,000 UK care home residents, their families and the key staff that look after them. Recent guidance from the British Geriatric Society has been developed to help care home staff and NHS staff who work with them to support residents through the pandemic. This guidance recommends that where possible, care home staff should be trained and equipped to measure vital signs including temperature, blood pressure, heart rate, pulse oximetry and respiratory rate. This will enable external healthcare practitioners to triage and prioritise support of residents according to need.

We aim to develop a simple, low cost, portable device to monitor the essential vital signs providing useful actionable measurements in a few minutes. This device has direct relevance in the current COVID-19 crisis where it can be used alongside other front-line care solutions to identify and monitor people at risk of respiratory problems. It would be designed to be easy to use for care home staff. This new solution would protect them, and the people they care for improving their quality of life and help them live longer.

The device, which could be directly utilised in care homes and community settings works by monitoring the lung function allowing very early indications of any abnormalities and also the progression of illness -- directly relevant in COVID-19, but with broader healthcare application beyond the current crisis.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MASTIHA WORLD LTD	FEED: Food & Essentials E-Delivery	£49,968	£49,968

The FEED (Food & Essentials E-Delivery) project will create hubs in Oxford and London to deliver locally fresh food and essential amenities using zerocarbon vehicles. One innovation is expanding the supply from only bars and restaurants to include mobile caterers that can work from home. Thus, FEED will enable the hospitality staff to utilise their years of expertise in safe catering to deliver a service to the community.

Observing social distancing and minimising the need for people to travel, so amenities will help reduce gatherings in retail shops.

FEED will utilise a combination of electric vehicles, e-cargo bikes, ice cream bikes, coffee bikes, delivery UAVs (within VLOS) and an existing supply chain to deliver essentials, hot and cold food with the minimal carbon footprint. All last-mile deliveries will be done using PPE. Beyond the will two initial hubs, in Oxford and London, FEED aims to expand to more cities.

Our aim is to offer new opportunities to catering and hospitality staff, reduce the need to travel to shops, provide fresh food and reduce the carbon footprint of last-mile freight.



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Total available funding £34m.

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
MY BLUE ZEBRA LIMITED	Automation for NHS Labs	£49,895	£49,895

We are developing a new way to control robotics and deliver automation solutions. The goal is to be simple and pragmatic, covering a majority of automation needs with a fraction of the complexity of large PLCs, turn-key systems. We are targeting a gap in the market, where SMEs struggle to access widely-available automation solutions because the offerings from large PLCs are too complex and expensive for the needs of SMEs.

The stress that COVID-19 has placed on NHS laboratories which analyse medical samples and support the frontline, has brought into sharp focus the simple fact that the NHS is not taking full advantage of available automation technologies. Within the laboratory environment, robotic handling of test samples will reduce risks to operators, increase throughput efficiencies and improve accuracy.

We can retool our pragmatic semi-automation solutions and specialised robotic vision and control software to fit directly into the NHS laboratory environment, where they can improve laboratory throughput and processing times. Our automation solutions will focus on sample intake and sorting, leaving professional staff to focus on only the most challenging tasks associated with sample analysis.

This grant will accelerate our overall development and bring a specific focus on the NHS, enabling us to bring onboard two NHS operations consultants whom we have already identified and pitched this idea to. With COVID-19 causing the temporary or permanent shut-down of much of our customer base, the grant will also be a lifeline, allowing our business to develop and to deliver value during the present crisis.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENTOTEM LIMITED	i-PCT: Indoor Pandemic Contact Tracing in large crowded venues	£49,276	£49,276

Convert's objective is to develop a comprehensive, accurate, scalable tracking system to better support infectious contact-tracing measures in large venue, super-spreader locations such as trade shows and concert/sporting venues, where current solutions using Bluetooth (BLE) will be unsuitable.

Using a superior ranging technique, the system will record accurate trace information to identify close contacts at crowded venues, working alongside emerging mobile systems. The 6-month project will deliver a prototype system.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
NCC EDUCATION LIMITED	Developing a robust, online, remote assessment solution for international students to increase opportunities to access Higher Education institutions in the UK	£46,811	£46,811

NCC Education is an awarding organisation and global provider of British education.

The Innovation Fund will be used to develop a robust, remote assessment methodology which meets regulator requirements, whilst allowing access to assessments for progression for students from varied geographic and socio-economic backgrounds, including those where the digital infrastructure is fragile.

This will enable students from around the world to take assessments, where they would not be able to otherwise.

Due to immediate changes in the global education space, mostly by the recent Covid-19 crisis and its effect on transnational education, millions of students globally can no longer access assessments conducted under traditional and rigorous 'exam centre/hall' conditions; considered acceptable for many UK Universities and Higher Education Institutions.

Currently nearly all assessment centres globally are closed, creating an urgent need for a global online assessment solution, as many international students now have no route to UK higher education with traditional assessment methods.

NCC Education aims to challenge this by developing an online, robust method of invigilation, the findings will form a case study for education establishments in the UK and internationally and will be shared as best practice with the Moodle community of over 156,000,000 education sites.

The online assessment methodology and development will be a collaboration of partnerships with NCC Education's 180 Accredited Partner centres around the world in over 50 countries.

Unlike current remote assessment methods (such as downloading questions and uploading answers), this project will retain the principles of traditional exam methods; with robust and tried and tested approaches. Without compromising assessment integrity, students will have access to remote assessment atmospheres where they can perform to their best ability.

Whilst online invigilation is becoming popular in the UK, in International markets, it is a barrier to student assessments[\[EC1\]][0]. Many countries are tentative to adopt such approaches, preferring traditional assessments.

To date; there hasn't been one universally-accepted approach which is robust enough to penetrate digital international infrastructures which may be weak.

NCC Education would like to develop a solution using a globally-tested assessment methodology which meets regulatory requirements and education principles, but can, in a cost efficient way, be deployed remotely to countries with a mix of IT and digital infrastructures: online and offline.

This will allow students globally to continue their studies uninterrupted, gain their qualification and progress to the UK and assist the UK in growing a valued community of international students.

[0]: file:///C:/Users/kerry.voellner/Desktop/Innovation%20Fund/Public%20description.complete.docx#_msocom_1



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
OTSUKA PHARMACEUTICAL EUROPE LTD.	Mental Health & Covid 19: enhanced decision support system	£41,603	£41,603

Across the UK around 2 million people use adult mental health services every year, and because of the coronavirus pandemic there are around 1.3 million people who are shielded and must isolate themselves completely for at least 12 weeks. There are a proportion of people who have pre-existing mental health conditions and are shielded. In Liverpool this overlap is 22% of the shielded population.

A team of people from the Mersey Care NHS Foundation Trust and Otsuka Health Solutions, a digital health company, are working, on a project, to support mental health services to care for these vulnerable people by using the information recorded in the electronic health record.

The purpose of the project is to help people who are in the most need of care and support not miss out on treatment when they need it and receive support at home rather than in hospital or in community facilities.

A computer system, called MaST, has been developed, with service users and health care staff, to work out when a person is more likely to need crisis services. MaST was designed using mental health research to understand what makes one person's need for complex care greater than another person's.

The team want to combine this with information about people who are shielded or vulnerable in another way because of the coronavirus so that doctors and nurses can access it quickly and easily. It is hoped that staff will make better decisions and respond more quickly.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
THE WORKSHOP (SHEFFIELD) LIMITED	Magic Paper	£49,491	£49,491

In the age of lockdowns and social distancing, imagination matters more than ever. Creative writing is a powerful outlet, a way for young people to make sense of the world around them and to tell their stories - but it's a hard sell compared to video games and on-demand streaming services. But what if you could gamify storytelling?

Magic Paper is an interactive storytelling platform that brings the written word to life. Users have free rein to write about whatever they wish, and a virtual mentor - who happens to be a jellyfish - is always on hand with encouragement, narrative prompts, and tips on spelling and grammar.

There are already AI-powered writing assistants, such as Grammarly. What makes Magic Paper so innovative is the fact that it's aimed specifically at young people, and is specifically for writing fiction.

But the thing that really sets Magic Paper apart is...well, magic. Once you've finished writing, you can switch to 'read mode' and watch your story come to life. Write about an earthquake, and the page shakes. Write about a storm, and raindrops begin to fall, smearing the words before your eyes. Write about dusk, and watch night fall across the page. We like to think of it as 'augmented fiction'. The gamification element is enhanced by reward badges that players can earn when they meet targets, such as finishing a certain number of stories or for using a word of seven syllables.

We've built a minimum viable prototype. Now we're seeking funding to take Magic Paper to the next level: equipping the writing mentor with more sophisticated AI capabilities, and imbuing the paper with real 'magic'.

We believe in the power of storytelling to transcend the everyday. With Magic Paper, we want to give young people the tools they need not just to passively absorb stories, but to create their own. Designed for 8- to 16-year-olds, the ultimate aim of Magic Paper is to instill in our users a lifelong love of language and storytelling that will sustain them through the quarantine and beyond.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
EDGE HEALTH LTD	Dynamic demand planning	£49,178	£49,178

CARE Planner is an online tool which acute NHS trusts can use plan and prioritise demand and capacity in the wake of COVID19\.

The response of our NHS to COVID19 is extraordinary. Measures such as cancelling all elective surgery, creating 4000+ additional beds (within 9 days) and redeploying thousands of staff mean that the NHS has been able to cope with peak COVID19 demand, with capacity to spare. But this has come at cost. Mortality data shows that non-COVID19 deaths have risen (people not accessing essential health care?) and waiting lists will rise by 2.7m patients because elective surgery is not happening. By any standard, this backlog is huge, and the NHS will need to plan effectively to mange this and to minimise further impacts of COVID19 on the health of the nation.

Hence, the next challenge for the NHS is to transition back to normality as smoothly and as quickly possible. The Edge CARE Planner helps hospitals do exactly that. It is an interactive demand and capacity planning tool, drawing on simulation techniques and artificial intelligence, to help NHS trusts understand the backlog of patients, their available capacity and prioritise accordingly.

CARE Planner is an online tool that can be deployed quickly and calibrated to fit local circumstances. Acute trusts can use CARE Planner to simulate the impact of different scenarios, understand the impact of uncertainties and plan accordingly. CARE Planner is updated regularly so the underlying models are learning from the latest data and adapting to changes in national policy and local priorities.

CARE Planner has been developed with pilot NHS trusts, to ensure the outputs are valuable and timely, and relevant to the planning and prioritisation challenges facing typical acute trusts.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
MYPOCKETSKILL LTD	A digital solution connecting work-from- home parents with online activities and homeworking support for their children	£49,984	£49,984

This project will deliver an enhancement to our current platform to provide a digital community service, connecting parents/carers who are working from home with young people who can provide educational & engaging activities for children.

Parents will be able to login to an online platform and book online sessions (art, dance, drama, music, technology, academic subjects) from capable young people. Our solution will onboard, verify and background check these young people and provide them with specific training and input to work safely and effectively. It will provide analytics and monitoring activities and provide a structured approach to booking and reviews.

We have already tested this business model with students, parents and business owners, and used our existing platorm to pilot a prototype solution which we now want to build-out fully into a comprehensive and scalable offer.

The project will have a significant beneficial impact on the lives of two target segments of the UK population:

- Working parents/carers of young children who are currently working from home, but whose productivity is significantly impacted by the need to juggle work and childcare

- Students (16-18) who were expecting to take GCSE and A-Level exams this summer but instead are unlikely to properly re-engage with the educational system for 3-4 months.

Whilst the current crisis and lockdown has a particularly stark impact on these segments of the population, it is highly likely that current ways of coping will transition to mainstream once the emergency conditions have abated - this will take the form of more home/remote-working, greater acceptance of online forms of communication and service delivery and an increase in virtual rather than face-to-face communication. We are therefore projecting continued significant growth for this digital solution, once the lockdown ends.

We have a great team to deliver this, with notable recent successes:

* Alumni of University College London's EDUCATE programme, backed by the British Educational Suppliers' Association, the European Regional Development Fund, Nesta and F6S.

* 2019 finalist in the Global Edtech startup awards, recognising the impact and potential of our platform

* 2019 finalist in the TechCrunch Europas Awards (Hottest Edtech Startup)

* Featured in NatWest's \#PowerUp 100, a list of 100 startups, chosen from 10,000 who "stand out for having a significant impact on their local communities and on the national economy, showing impressive growth, and demonstrating the behaviours and qualities that we expect of the country's future business leaders".



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
THE SOCIAL CHANGE AGENCY LTD.	Open Collective for Community Support	£45,215	£45,215

With the current global COVID-19 pandemic, the current distancing measures, whilst essential to stem the spread of the virus, have put many in our communities in difficult and worrying situations. As always, communities are responding in amazing and generous ways to ensure people are not going through this alone. We are now seeing many community led groups forming across the country who aim to provide community support to those who are most at risk from the virus but may not be covered by statutory services. The support spans from helping with running errands like dropping off paracetamol, to providing hot meals.

However, needs are evolving quickly, and without systems in place, groups may not be able to meet these challenges over the months to come. We want to support these groups by providing them with resources and structures to ensure that the groups are functioning effectively, safely, and are sustainable throughout this crisis.

For example, much of the time local groups (especially those that spring up quickly in a time of crisis) have no bank account, legal status, governance, decision-making structures or back office systems. Whilst this allows them to act quickly it can pose a significant problem when it comes to financial accountability. To meet this challenge, we are providing innovative fiscal hosting plus through a platform called Open Collective, providing an easy way to raise and manage finances transparently and support governance. **This also allows groups to set up an account quickly to start receiving donations and reimbursing community volunteers so that they can grow and sustain the great work they do.** With SCA's expertise, we will also provide resources supporting the groups to ensure they are organised in a way that allows them to be effective.

As the fiscal host we are the legally constituted organisation that enables community groups to transact financially without needing to legally incorporate themselves. We hold community group's funds in our bank account and generate invoices and receipts for financial contributors. Having a fiscal host also allows the community groups to receive donations from bodies that rightfully require a level of accountability normally provided by legal status. It also protects against the risk of people donating directly into individuals' bank accounts, with little to no accountability of where that money will go. Open Collective keeps a public record of all the transactions, of donations and expenses.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SKOOT RIDE.COM LTD	SKOOT Community Based Mobile App for Errands	£47,278	£47,278

SKOOT Errands - SKOOT Community Based Mobile App for Errands

SKOOT Errands -- A mobility errands app connecting people within a community who drive, with people in a community who need help.

Using the latest digital technology to build a carbon negative mobility network app that brings local communities and friends together across the country.

SKOOT Errands will be a simple app to install and activate -- enabling users of all ages to benefit. At the touch of a button it aims to create an errand marketplace of those who are able to run the Errands with those that need help (due to the lack of transport, or due to the fact that they are from a vulnerable group, or need to self-isolate).

These Errands can, whilst in lock-down, take the form of essential shopping, to collections and deliveries, through to picking up, say prescriptions ensuring that all those in need can be helped and looked after. After Covid-19 has passed SKOOT Errands will thrive and add features of additional tasks meaning that communities can build on the relationships made during this difficult time.

SKOOT Errands will launch nationally with an easy to use safe and secure App that connects and organises communities to provide much sort after help caused by the COVID-19 pandemic; transport and mobility, social welfare, loneliness and isolation.

* someone needing an errand in a community with someone able to do one

- * for free or for a simple pre-agreed cost
- * that does not compromise a driver's insurance,
- * enabling in app payment with safety and security features including special fraud protection
- * automating routes and pick-ups for the Errand provider
- * quick and simple registration for drivers, checking their car is roadworthy
- * simple linking to friends, friends of friends and social networks, depending on your own preferences
- * and if any errand doesn't quite go to plan a dispute service that is fair to both parties.

SKOOT Errands is looking to scale up to millions of users to assist now those in need, and to create jobs and work for when we reach the other side.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BRAMBLE ENERGY LIMITED	Rapid, mass-production of low-cost, high precision Oxygen level sensors for ventilator applications	£39,516	£39,516

Companies and organisations around the world are rapidly developing ventilators to help deal with respiratory issues caused by COVID-19\. However, they are all facing a supply issue for in-line oxygen sensors which monitor the concentration of oxygen the patient is receiving. When the oxygen concentration is too low, the treatment is ineffective, whereas when the concentration is too high it can have adverse effects on the body. This therefore requires an oxygen concentration feedback sensor that allows the ventilator operator to quickly and accurately assess the oxygen concentration being administered to the patient.

Bramble Energy has a solution. Using our patented materials and manufacturing routes for the development of hydrogen fuel cells using the printed circuit board (PCB) industry, we are able to produce a high precision, low cost and mass manufacturable electrochemical in-line oxygen sensor that can be used with any ventilator technology to provide feedback oxygen concentrations to operators.

Electrochemical sensors have proved to be long term, high precision components in many everyday applications. At Bramble Energy, we are designers and manufacturers of high precision electrochemical devices using the PCB industry; we therefore believe that we are the only company with the manufacturing and testing capabilities to rapidly prototype these devices and bring them to market cost and time efficiently.

In collaboration with the National Physical Laboratory (NPL) we intend to produce a mass manufacturable oxygen sensor for deployment with ventilators required to assist in respiratory issues commonly seen with the COVID-19 virus.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMTEC CORPORATION LIMITED	Emtec De-Centralised Contact Tracking Project	£49,827	£49,827
EMTEC is collaborating with a medical team at Le Bonheur Hospital, Memphis, Tennessee to develop a contact proximity tracking application which can be used by hospitals and other organisations to manage the impact of COVID-19 and other infectious diseases.

The EMTEC software development team has extensive experience of vehicle tracking using GNSS location data and Bluetooth and will be able to deploy people tracking technology onto its existing cloud-based platform using apps installed on mobile phones.

The project team is developing analysis methods that can identify users, localise them based on triangulation with the aid of Wifi signals inside buildings and then applying machine learning methods to build a true contact graph with probabilities. For example, not only staff in contact with COVID-19 patients will be high risk but also the people that interact with them. The immediate goal of the contact tracking is to be able to trace back all high-risk contacts when a new infection is determined and implement targeted testing. Contact tracking is a critical technology to manage staff levels and keep hospitals and other companies operational while managing risk.

The project has an essential priority on establishing and observing the privacy protection issues required by management and staff. The privacy protection analysis will be based on USA Fair Information Practice Principles (FIPPS) and European General Data Protection Regulation (GDPR) to ensure global viability.

The solution will be ready for wider global community deployment by September 2020\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SAY IT NOW LTD	Charity Donations Driven Via Voice Assistants	£47,586	£47,586

The charity sector is set to lose £4.2bn in funding directly linked to the Covid-19 pandemic. The impetus for individuals to donate needs to be stimulated by developing easily accessible channels. As of March 2020 34% of UK homes have a smart speaker and digital radio listening has increased 12% on these devices since the start of the pandemic. Our project will stimulate charitable donations via highly targeted smart radio adverts that allow the collection of donations using simple voice commands with existing payment methods.

By combining in-market technologies we will create a simple flow for charities to use to drive donations. These start with a location and user targeted advert played on smart speakers streaming digital radio that, in turn, invites the listener to say a few words to open a bespoke voice experience that leads to a donation.

Example:

"...People who are homeless are especially exposed to the coronavirus outbreak. But together we can get vital care and protection to them. To find out how just say 'Alexa, support crisis'"

The listener is then guided into a rich and informative, voice led, experience that allows them to find out how they can support the charity and leads to a donation using existing Amazon Pay or Google Pay credentials.

We will create specific templates that reduce the entry level cost of this approach, allowing many charities to avail themselves of this funding channel. We will be reporting specifically on return on investment and believe this will become an important fundraising channel both now and in years to come.

Donating by Voice Assistant is not new, Driving smart speaker usage via targeted Audio Advertising is not new and reporting on a fundraising channel is not new. Bringing these all together with a focus on a platform that democratises access for all charities is where the innovation lies



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
COLLAR & TIE LIMITED	Prospero: Creative distance learning for those in social isolation	£33,027	£33,027

COVID-19 has closed schools across the UK and internationally, meaning millions of children are now being educated at home, to varying degrees of success. Some subjects are more easily taught through digital platforms. Most online learning tools are instructional, using the web as a means of educational transmission. Often, practical subjects are disadavantgaed by these tools. Subjects like the arts, PE and CDT require students to be practical. Even subjects like Geography, History, RE and English require project based learning, often in groups. Most websites cannot help with this.

Prospero is a powerful Online Distance Learning created by theatre company C&T and it directly addresses exactly these practical needs. Prospero brings together creativity, practical work and digital technologies to enhance learning. It enables the building of interactive lessons, called Smartscripts. These can be populated with practical tasks, dilemmas, conflicts and challenges designed to provoke students into taking part in these digitally enabled lessons.

This project extends what Prospero can already do, by extending the system's toolkit for teachers and making it available to students. This will give the learner the chance to build their own interactive portfolios of practical work and collaborate with their classmates, even if they are separated by distance.

Our objectives are:

* Make changes so students can easily access the appropriate functions and tools in Prospero.

* Add tools so teachers can supervise, moderate and evaluate their students' work

* Build a new evaluation module, so Prospero can collect, report and evaluate data.

* Add message board functions to students can collaborate on practical work easily.

* Create a training module, so teachers and students can get to work easily in Prospero.

* Finally, test the whole system with teachers from all subjects so we know it works and is relevant.

This will make Prospero more user friendly, intuitive to use and responsive to the creativity of students.

As young people become more immersed in video games and notions of 'gamifaction' this project will turn this enthusiasm to education's advantage. Prospero will be able to make engaging, child friendly lessons and workshops wherever students are learning. Prospero will become to practical learning what Minecraft is to Lego. Even the most challenging subjects and issues will become accessible in new and relevant ways. Finally we will evaluate what we have learned and bring our new technology to schools in the UK and across the world.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPUS VISION LTD.	Co-assessment with structured data for COVID-19 management	£49,983	£49,983

This project provides a viable way to store structured clinical and non-clinical data relating to COVID-19 and related conditions. This provides a better understanding of risks and informs decisions at a local and national level.

Based on the openEHR Clinical Data Repository.

Need addressed are:

- reliably query data from different perspectives, including
- geographically tracking health information
- predicting demand for unscheduled care from the health sector
- logging of wellness (negative diagnosis)
- managing community data including care homes
- identifying at risk groups
- enable improved interaction between different applications and systems
- platforms that enable further innovation and agility whilst ensuring integrity and privacy of data
- assist with self-management, ready for clinical intervention if required
- supporting proactive care coordination

The objectives of the project are

- To provide Open Source ready-to-run software application
- Integrated to other key systems (ie Summary Care Record, NHS Log-in)
- Create strategic approach to the platform that can be extended as required
- Developed in the open and as Open Source
- Ability to rapidly scale and deploy
- Enable others to build applications on top of the platform to exploit the data
- Demonstrate via data capture and dashboard, with WHO-standard reporting

The project focuses on the specific clinical data surrounding COVID-19 and the ability to connect community assessment with clinical assessment

This project is innovative as it focuses efforts around the same data structures rather than a software application.

- enables both structured clinical and non-clinical data to co-exist appropriately
- builds on the openEHR data standards and structures developed by a global workgroup of experts
- is developed as Open Source from the outset and will be an asset of the UK public health sector

- is able to deliver a significant outcome rapidly as it builds on previous Open Source activities

- uses optimum method of clinical and technical collaboration enabling global networks of experts to work effectively together
- provides clinical context through non-clinical structured data
- option to integrate with device-based contact tracing such as DP-3T
- option to integrate with readings from IoT devices in the field



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRSG LIMITED	PAST - Parallel Alternative Streams of Teaching	£46,311	£46,311

PAST is an online learning platform that allows parents to customise the their level of engagement in the teaching process and students to select a teaching style that they connect with. By providing parents with a range of flexible options to guide how their children engage with the lessons, we aim to achieve higher levels of engagement with the lessons than alternative learning resources and we believe that, once validated by this project, the parallel teaching stream method employed could deliver wide-ranging benefits to the education system as a whole, compared with traditional methods.

The need for such a platform is now more important than ever in response to the disruption to the education of children caused by the COVID-19 disruptions at a critical time in their development.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CLYTELL (UK) LIMITED	Emergency Construction for COVID19: A Voice-Activated BIM System for Boosting Productivity for On-Site ASSEMBLAGE and DISASSEMBLY	£49,959	£49,959

BACKGROUND AND PROBLEM STATEMENT:

According to WHO (2020), the outbreak of the Coronavirus disease (COVID-19) is a global pandemic that has recorded more than 2.06million cases, resulting in more than 137,000 deaths. Although more than 510,000 people have recovered, evidence suggests that there may be a possibility of relapse or reinfection (Independent, 2020). To cater for the ever-increasing number of active cases and the uncertain possibility of relapse or reinfection, a number of countries, including the UK are desperately constructing new hospitals and/or convert convention centres into temporary hospitals (e.g. London' ExCel Centre, UWE Bristol's Exhibition Centre into Nightingale Hospitals).

Owing to the time-critical nature of the Emergency Construction of temporary hospitals, it is imperative to boost on-site productivity as much as possible. According to PBC Today (2019), Building Information Modelling (BIM) has been unanimously agreed to being central to boosting productivity for on-site assemblage and disassembly. However, evidence suggests that to realise the actual productivity-boosting benefits of BIM, its usability needs to be modernised (Goucher and Thurairajah, 2012). At present, BIM provides Conventional Web and Mobile interfaces for interactions that require tremendous time and efforts to master their usage. However, in this trying time where time is of the essence and workers are fearful about their safety away from their homes. The last thing on-site assemblage and disassembly workers need is to spend needless time searching BIM models while performing their routine tasks. This limitation reduces on-site workers' productivity and defeats the purpose of Emergency Construction. It is on this premise that this Clytell has spent the last 11 months developing a Voice-Activated BIM system for boosting productivity for on-site assemblage and disassembly (Voice-BIM).

THE INTERVENTION OF VOICE-BIM AND ITS BENEFIT:

In light of this COVID-19 pandemic, Voice-BIM will significantly improve productivity by enabling users to quickly interact with BIM Models using their voice. This will aid on-site assemblage and disassembly. Also, Voice-BIM will potentially reduce the spread of COVID-19 amongst on-site workers as the amount of time they touch on-site hardware to access BIM tools will be significantly reduced.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DAVID NIEPER LIMITED	PPE Design and Supply for NHS	£28,730	£28,730

David Nieper Ltd is a long standing family run British manufacturer of ladies clothing. The company would like to use its existing experienced design, production and manufacturing resources to bolster the NHS's supply chain for desperately needed PPE using the available fabric from other UK companies. This will require some design changes to the scrubs, gowns and hoods the company is looking to supply to use the fabric in the most efficient way possible whilst reducing the time of manufacture to a minimum to start enable the supply to commence as quickly as possible.

At the same time, the company looks to supply more environmentally friendly products which may be washed and reused many times, to replace some of the current single use items. This should, in the long run, save the NHS money as well as cutting down on the amount of fabric and plastics sent to landfill.

Being a British based manufacturer should provide some additional resilience to the NHS's supply chain and reduce the likelihood of future shortages of these vital pieces of equipment



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BLOCKMARK TECHNOLOGIES LTD	Digital-Mobile Proof of Immunity Certificates (Verifiable Credentials & Verifiable Presentations)	£49,517	£49,517

Immunity testing is part of a coordinated raft of policies to assist UK society in 'returning to normal' after lockdown and social distancing.

A method of issuing, storing and displaying Immunity Certificates at scale is required. Later the same system can be adapted to Vaccination Certificates.

Existing paper based certificates are costly, slow and bureaucratic to administer. Other solutions (wristbands) are open to fraud and spoofing.

Coherent with a Government Digital First Strategy would be a new digital verifiable credential scheme available to display on-the-go with mobile phones.

The start up BlockMark Technologies has developed a Verifiable Credentials Platform for the digital cyber secure issuing at scale of accredited **Proof of Immunity (PoI) Certificates, and later Proof of Vaccination (PoV) Certificates.**

Display of **Pol and PoV** Certificates would be done by mobile phone SMS/QR codes. (with paper versions available for 6% non mobile owners) which can be instantly verified without interpersonal contact and at social distance if required.

COVID 19 **Pol and PoV** Certificates would enable a return to normal of social contact - with particular benefit to the Healthcare, Social Care, Transport, Air Travel, Education, Live Entertainment and Sports sectors to ensure visitors and mass gatherings are safe from further risks of viral spread.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JUGGLE JOBS LTD	Modern Professional References: Preparing Organisations for Remote Hiring	£49,733	£49,733

Britain is known all over the world for its work in the Financial Services, Professional Services, Software and Advertising sectors. All of these industries rely on being staffed by highly skilled, innovative and adaptable professionals. Historically these traits are assessed in a series of face to face interactions which is no longer possible in the short term due to Covid-19\.

In the medium to long term, many companies are realising that Covid-19 presents an exciting opportunity to rethink their talent strategy. This forced change to remote working has demonstrated that skilled, innovative and adaptable employees do fantastic work without the rigidity of a 9-5, Monday to Friday environment. Consequently companies now have the freedom and flexibility to hire from all over the UK and even the world. It is also unfortunately possible that we as a global society will face another pandemic in the future, meaning that companies learning to adapt now to a remote world will have a competitive advantage over those that don't. It is not just existing teams within companies that need to adapt, it is the hiring practices in order to acquire high quality talent that needs to change too.

In person interviews today often mirror snippets of a real life work scenario. For example, white-boarding a problem, or presenting to a group. Although this can be done on video conferencing, the nuance is often missed and technical challenges / distractions are inevitable. In summary, the experience is poorer. Instead of simply taking real life in person interview techniques and transitioning them into a video conference context and making poorer decisions as a consequence, we are proposing disrupting, simplifying and improving the interview process as a whole, by modernising professional references.

As a technology company focusing on building a flexible working platform we are uniquely positioned to solve this problem, drawing on over 30,000 professional records for initial research. We ourselves have adapted successfully ourselves to a purely remote environment with no need for additional physical products or interactions in order to fulfil this project.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ADVIZZO LTD	Driving Behavioural Change in Energy and Water consumption to overcome households' financial difficulties derived from COVID-19	£49,838	£49,838

Through the deployment of a unique consumer engagement solution for targeted behavioural intervention of both energy and water consumption in households, the project aims to address the challenges of increased consumption and utility affordability/fuel poverty which have been compounded by Covid-19 virus and the associated measures to reduce transmission by keeping households in isolation. It has also been designed to help Utility companies to better support their customers (especially vulnerable groups) through targeted measures to better influence sustainable consumption behaviour. The approach is fully user driven, building on Advizzo's existing predictive and consumer analytics solution for residential water saving, consumer delinquency (debt support), low income support and pipe blockages, now used by a number of UK utilities and Middle-East. The project would seek to extend coverage to energy consumption and tailored to the COVID-crisis with the potential to achieve up to15% saving/household in water consumption and up to 12% energy, and providing new insight into consumption behaviour in crisis situations to support future planning.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRIDGE BIOTECHNOLOGY LTD.	Investigation of disinfection for fogging application efficacy against SARS-CoV-2	£37,688	£37,688

Bridge Biotechnology is a manufacturer of innovative, low carbon disinfection solution -- Esol.

The technology uses less energy and produce less waste than traditional disinfection and purification technologies such as sodium hypochlorite or reverse osmosis and has widespread potential in the fight against coronavirus.

Bridge Biotechnology have developed in house expertise in the production of Esol, an electrochemically activated disinfectant solution that is produced by the electrolysis of salt water in very precisely controlled conditions. The production cell involves an electrolysis process which produces two separate solutions from a double chambered cell separated by a proprietary permeable ion exchange membrane using specialist electronics. The positive chamber produces the Esol solution containing a range of oxidisers giving it a high ORP (oxidation reduction potential). The high ORP environment has been found to be particularly effective against a range of bacteria and virus particles with a rapid kill rate. Esol has been proven to kill E.coli as effectively and at a faster kill rate than 80% alcohol.

The unique, non toxic properties of Esol would allow it to be applied to contaminated areas within healthcare in the form of a fog which would disperse over all surfaces while being safe to inhale and touch for healthcare workers and patients. This project is designed to initially test the efficacy of Esol against SARS-CoV-2 and then extend into developing an innovative fogging system to deliver the disinfectant properties in the most effective way. The fogging system can be developed to control the volume and particle size to be delivered in the optimum way to maximise the efficacy against the virus particles without leaving any traces of moisture.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KNOWLEDGE NOW LIMITED	Back to Work - Safely	£49,909	£49,909

Covid-19 has created an unprecedented situation of emergency lockdown worldwide that has impacted severely business both worldwide and in the UK. The Office of Budget Responsibility warns that the lockdown could wipe out up to 35% of our GDP. There is an enormous pressure on governments to ease the lockdown as soon as possible so to let business go back to normal. However, the return to normalcy will not be easy and some analysts warn that we should consider some forms of lockdown as the new normalcy for the next few years. In any case, this return will not be to business as usual in the short or medium term. Return to work will be in stages, with only part of the personnel back to work so to be able to impose distance measures - some analysts expect companies to command back to work about one third of the workforce for the first period. Companies will have the requirement to guarantee that their operations are compliant with any temporary or long term measure imposed by the government, including social distancing in the workplace and expedite identification of outbreaks. This will require new ways of organising works both in terms of physical spaces and in terms of work organisation.

The goal of this project is to create a technology and methodology able to support these companies and organisations in this return process by providing support in (i) keeping the appropriate distance among employees while on premises; (ii) control communal areas (e.g. bathrooms, meeting rooms, etc.) to detect overcrowding; (iii) support planning of teamwork to minimise cross-contagion and (iv) ensuring that employees at risk (e.g. with existing conditions or of older age) are safeguarded.

The technology is low cost, privacy preserving for the employees and of easy installation. It is based on a combination of mobile technologies and a limited number of beacons/detectors to be self installed on the premises. The solution provides an organisational dashboard to support control and support demonstrating compliance with the new regulations.

We aim to commercialise a product within 1-2 months in the UK and abroad (Europe, Australia and the USA) by building on a combination of existing technologies to be followed by a fully fledged product within 6-8 months.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WELLBEINGX LTD	BetterSpaceNOW: A personal digital assistant for employee and community wellbeing and resilience	£49,846	£49,846

The coronavirus (C-19) pandemic has caused profound disruption to work, families and communities across the globe. Home-working and physical isolation are severely impacting mental and physical health. BetterSpaceNOW is a free, physically-distanced personal wellbeing assistant which will improve health and resilience during these extraordinary times.

BetterSpaceNOW builds on the success of BetterSpace, an AI and digital health company with significant potential for international expansion. Our guiding belief is that we can empower people to self-manage wellbeing through choice and personalisation. £50k of public funding will allow us to rapidly deploy BetterSpaceNOW, free enterprise and single-user versions of BetterSpace designed to help people navigate the coronavirus era. Through a zero-barrier product, we will help large numbers of people with no financial resources get through this crisis.

How will BetterSpaceNOW feel to a user? It will:

Provide seamless access to hundreds of carefully curated resources for self-managing wellbeing at home;

- Educate people on managing their wellbeing;
- Make personalised suggestions based on need and preference;
- Facilitate invitations to colleagues and friends to join virtual events and try new resources;
- Create groups of people who look out for each other.

BetterSpaceNOW is based on eight key pillars of wellbeing: exercise, sleep, social connections, managing stress, meaningful activity, helping others, productivity and recovery.

Examples range from Rebel Books Clubs, GeoGuessr (travel the world online for free), MyEva (digital financial advisor), Joe Wicks online PE lessons, Skillshare (online classes from web design to baking), Sleepio (sleep CBT app), Down Dog (home yoga studio), IAPT self-referral, Covid-19 Mutual Aid and Age UK's befriending service. Nothing like BetterSpaceNOW exists today.

Our project will start on 4 May 2020 and be delivered by a multidisciplinary team of entrepreneurs, health professionals and technologists with the capability to deliver a successful project. 20 companies will use and test the platform, and 50 individuals, scaling to at least 1,000 through viral recommendation.

BetterSpaceNOW will add value by winning new enterprise customers and individual users, which will be leveraged to BetterSpace paid customers when economic conditions improve, anticipated 2022\. We aim to support 10M people by 2023, 60% in the UK and 40% overseas.

BetterSpaceNOW will have substantial positive impacts on society (improved mental health and wellbeing) and the economy (lower cost to employers from ill-health, reduced burden on the NHS). We estimate the ROI from £50k of public funding to be at least 350% within 3 years, representing substantial value for money.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
REDGEAR SOLUTIONS LTD	Carer Assistance through Sensor Technology CAST	£44,366	£44,366

Through the CAST project, Redgear will deliver a solution that enables carers to give residents the care they need, remotely. Redgear Solutions use IoT technology to gain a better understanding of a person's behavior, health and well being by monitoring the environment around them. But for us it's not just about creating data. We are focused on equipping care teams with the information they need to make evidence-based decisions that benefit the people they care for. The added advantage during these difficult times of lock-down and isolation is that the system can be used entirely remotely, minimizing the spread of infection while still providing a high level of situational awareness.

So far our sensor solution is being used with the largest provider of independent living villages in the UK. Daily reports for each resident inform care teams of the events of the previous 24 hours - allowing them to see the information they need at a glance. The goal is to create a solution that is un-intrusive which allows the resident to live more independently for longer.

The CAST project seeks to expand the use of the solution, and particularly focus on helping those residents left most isolated by the pandemic. Once the system is installed, which takes less than 2 minutes, it can be used entirely remotely. This allows carers to 'check-in' on residents virtually and gain a greater understanding of how the resident is reacting to the isolation. Telephone contact will allow the care teams to discuss the issues raised via the system, and can be used to cross-reference any information the care team receives on the phone. Care teams can share the information they gather directly with family members - giving them greater peace of mind on their loved one's condition. In addition to the daily reports, automated alerts inform carers if anything abnormal has occurred - such as a lack of movement for extended periods, or unusual changes in their environment. This enables carers to react at speed to solve problems.

The overall aim of the project is to equip carers with a solution that allows them to continue providing a high quality person-centered level of care, even though they are physically unable to be with residents. This has the simultaneous benefits of meeting the resident's care needs, whilst not exposing them to the risk of contracting COVID-19\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DATAQUBE GLOBAL LTD	ThatchConnect	£49,621	£49,621

DataQube is an expandable modular and scalable edge technology data centre solution, which through ThatchConnect will enable growth of technology outside the traditional main cities into rural communities. Using 5G solutions it negates the requirement to deploy fibre, with expensive excavations, and by utilising immersive technology there ae substantial energy savings in addition.

DataQube can act as a Neutral Host solution to allow multiple mobile network operators and businesses to use each DataQube, up to 1200 per single module, and through ThatchConnect will allow the growth of services at the edge around home and remote working, development of SMEs building local economies and employment, support of the vulnerable and reduction of social exclusion, increasing education opportunities, improving well being and also enabling high performance compute and artificial intelligence.

DataQube utilising ThatchConnect -- The Future of Computing and Technology at the Rural Edge



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ZIPABOUT LIMITED	Personalised Transport Messaging and Key Worker Analytics to Help Bus, Tram and Metro operators during the Covid 19 Outbreak	£49,800	£49,800

We propose to develop a toolkit to support bus, tram and metro operators as they react to a rapidly changing transport landscape and need to provide support to key workers - both during the current disruption and then supporting the recovery. Our patent-pending (application number 17185399.7, dated 08/08/2017) demand analytics and our Passenger Connect messaging platform -- currently deployed for the rail sector in the UK - will enable real-time journey updates in order to keep travellers informed of any disruption (including potential crowding or difficulties maintaining social distancing on transport services) and provide the best routes based on personal preferences and real-time performance. Offering a mechanism to identify key-workers and understand intention to travel for all users, this will be backed up by a custom analytics product to help prioritise services, understand demand (in real time and on a week-by-week basis) and plan infrastructure accordingly. By supporting both key workers and transport operators in the region, key routes can be supported during the crisis, and economic cases can be made for the recovery of less-essential, or lower-demand services.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VANVAS LTD	Live Trial of Micro-Hub System for Cheaper and 100% Carbon-Free Last-Mile Deliveries	£48,766	£48,766

Current parcel delivery systems are not fit to cope with ever-growing parcel volumes, more and more demanding consumer expectations and are, most importantly, incredibly harmful to the environment.

Our goal is to provide 100% emission-free last-mile parcel delivery in London (and other cities across the world) whilst operating at a lower cost than current van-based methods of delivery.

We are going to achieve this by setting-up and operating "micro-hubs" with a footprint of 10-20sqm (1-2 car parking spaces) in garages, car-parks, railway arches and other underutilised spaces in urban areas. Micro-hubs temporarily hold parcels on their way from a traditional warehouse outside of the city to the customer which enables bulk deliveries (with electric trucks) to micro-hubs to be made at non-peak hours. Any micro-hub is no more than 15-30 mins walking distance from the parcel's destination, making the final delivery by foot and/or cargo-bike not only feasible but also highly economical.

This delivery process will bring a host of benefits to all stakeholders (residents, retailers and end customers): increased (peak) parcel volume capacity, greatly reduced number of vehicles on the road (and reduction of freight km driven), reduction of delivery vehicle emissions to zero, noise reductions, increased road safety and less accidents, amongst many others. At the same time this approach is significantly more cost-efficient as the number of costly delivery vans can be greatly reduced and overall efficiency is drastically improved.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FOREPSYTE LTD	LOQUID: an augmented web-conferencing tool	£49,370	£49,370

Life and business are drastically changing, and we are likely to see more disruption to our normal routine activities, not only in the short term but also in the long run. We need to rethink how we can adapt and create favourable new working conditions under this COVID-19 crisis. When thinking about the creation and dissemination of educational activities, still typically based on the physical presence of pupils and learners in classes of up to 100 people in some cases (e.g. university modules), we wished to provide an off-the-shelf solution to mitigate the enforced physical separation that this crisis has provoked.

At a glance, current Learning Management Systems (LMS) allow instructors to upload course information for easy student access. Standard LMSs such as Blackboard, Canvas, and Moodle (to name a few), provide an accessible exchange of information between teachers and students. If the department delivers a course asynchronously, candidates may view lessons, lectures and course materials, such as PowerPoint presentations and syllabi, at their leisure. Synchronous courses, however, require scheduled attendance through online chats or conferencing to allow real-time interaction, evaluation, assessment, and to judge the attention of learners. At present, no tool enables such interactions, focused on evaluating, in real-time, students' attention and preparation, assess their comprehension, and gather students' feedback.

LOQUID is a tool that will allow teachers and professors to easily create and share web-conference rooms with multiple students, and create and distribute on-demand augmented questionnaires in real-time to assess students' preparation and understanding while attending online classes.

Web conferencing platforms (e.g., Zoom, Google Hangout, Skype, etc.) are incapable of delivering data collection in this way, and no existing data collection platforms (e.g., SurveyMonkey, Typeform, etc.) are able to provide web conferencing. LOQUID solves this market gap through the integration of web conferencing with a live assessment tool focusing on both qualitative and quantitative data collection.


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAMDEN ENTERPRISE LIMITED	JewelBase	£50,000	£50,000

JewelBase will aid the jewellery sector and allied trades to become more flexible and connected in a new, post Covid-19 world, enabling traditional and valued jewellery businesses to take advantage of the opportunities in a more digitally connected marketplace.

Through a combination of virtual consultancy, tailored support and a bespoke secure technology platform, JewelBase will help to connect trading businesses with those able to fulfill manufacturing requirements, as well as supporting B2C businesses to navigate connecting with consumers during and after Covid-19\.

Support will be multistranded and delivered through a combination of bespoke technology development, 1-2-1 / 1-2-many virtual consultancy, alongside research into ways the industry can update and adapt to new ways of working, selling and creating.

JewelBase aims to develop a model that can be adapted and used across any sector with a production process that is reliant on a number of suppliers to fulfill order delivery, or has a need to connect with customers outside their traditional pool of clients



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FORGE DESIGN CONSULTANCY LTD	Software tool to track and protect IP during remote working	£49,984	£49,984

Forge Design, a British technology company, is developing an intuitive software application for creative workers. The app will allow them to protect their intellectual property while working remotely, to a degree never previously achieved.

As a company, Forge is dedicated to enabling the most talented design professionals collaborate together in global distributed teams, and since its conception has been creating remote working tools to liberate design teams all over the world.

After proving its core technology the company has been developing it into a refined product, whilst simultaneously growing its client base, validating its business concept and providing expert design services to car manufacturers and engineering firms all over the world.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
UNTANGLE LIFE LTD	Grief Support App	£49,952	£49,952

Grief impacts all areas of life. People suffering a bereavement grapple with hours of administrative tasks related to death, poor mental health, worries about financial stability and feelings of loneliness. Yet, it's difficult to find trusted support and advice. The industry is antiquated; in the UK there are 17,000 funeral directors, solicitors and therapists who work in silos.

Untangle is on a mission to ensure that everybody who experiences loss is supported emotionally, socially, financially and practically. Our goal is to increase and improve grief support across the UK so that people feel connected and in control. By bringing communities and experts together, we will make it easy to get the support you need when grieving.

This project will enable us to launch an App that enables bereaved people to meet others who have been in a similar situation, and easily find experts such as therapists and financial coaches. By creating an App we can scale up our support to reach more people.

We help people to feel connected and in control, from day 1 to the 10th anniversary of their loved one dying.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RYEHARVEST LTD	Antimicrobial biodegradable packaging for takeaway and bakeries	£49,880	£49,880

Significant changes due to the spread of COVID-19 are expected in the global economy. The current pandemic situation will inevitably lead to an increased demand for hygienically packaged products and the continued drive toward a reduction in carbon and plastic waste. We aim to develop anti-microbial, biodegradable (ABD) wrapping film designed for packing cold or chilled food products in takeaways, bakeries and bread-makers (e.g. sandwiches, artisan bread and shortcrust pastry) with improved anti-microbial properties. This film will not increase the burden on the environment, unlike contemporary conventional plastic wrapping films when left behind it will degrade. It will be produced regionally reducing its carbon footprint and creating local employment opportunities. It will be capable of being produced internationally adding to UK exports, and competitiveness of the British economy.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FUTURICE LIMITED	AirCnC - The Platform to connect crisis demand for cargo with available aviation capacity	£49,771	£49,771

During the Covid-19 pandemic, cargo and freight flights are amongst the few areas operating and generating revenue for the aviation sector. Cargo and freight have historically had less investment than passenger air travel but are now the focus of efforts to shore up commercial positions of multiple industry operators. Supply chains have been disrupted in many industries and new logistics requirements have emerged, notably including movements of critical supplies of medical equipment and personal protection equipment.

There is currently no efficient way for airlines to connect available capacity with organisations urgently needing to transport goods. Arrangements are being made unilaterally between airlines and individual organisations -- an approach which is inefficient and scales poorly.

We propose to build a solution that gives private companies and the public sector the ability to find and make use of aviation slots or unused capacity for freight or cargo that may previously not have been cost-effective. This capability will support the movement of critical supplies and the reinstatement of broken supply chains whilst enabling a 'recovering' aviation industry to maintain some revenue. Countries will recover at different rates and passenger numbers may be down for some time, but demand for supplies, including samples and time-critical equipment, will remain high for months.

We are aware of the impact aviation has on the environment and this project is focused on efficiency: better utilising spare capacity on existing flights rather than simply stimulating additional aircraft movements. This solution should also provide a long term de-carbonisation and noise pollution benefit as the focus of the project is on increasing the efficiency of flights currently operating by utilising 'wasted space'. High utilisation aircraft traffic may also lead to a reduction in road cargo with consequent pollution and congestion benefits.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EUROPEAN INNOVATION LIMITED	COVMOB	£41,120	£41,120

With every emergency worker in the UK needing to use PPE when dealing with COVID19 patients there has still been a very high infection rate and during this week alone 3 UK Nurses have died from the virus. This project will provide every key worker in the UK with access to a simple, fun and engaging training module which takes learners through the process of wearing, working and disposing of PPE safely. The course will be free to access online and via a virtual locker room you will engage with fully interactive 3d avatars, listed to audio in multiple languages and experience videos, all the time learning about the safe operation and use of PPE.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
APPLEGATE MARKETPLACE LTD.	COVID-19 Supply Hub	£49,612	£49,612

Supply chains have been disrupted by the outbreak of COVID-19, causing difficulties in getting vital equipment - face masks, visors, respirators, spare parts for medical devices and food production facilities - to where they're needed.

This project uses Artificial Intelligence (AI) to match up those able to supply these items with the demand. It builds extensively on previous investment which created an online supply portal and an AI matching engine (identifying which suppliers are likely to be able to fulfil a request for goods or services and allocating them to it). By creating a next-generation matching engine the project increases the volume of enquiries the portal can handle and the speed at which they can be processed through the automation of remaining human interventions, and also makes the portal easier to use for non-specialist staff.

The project will:

- increase the volume of vital equipment reaching the front line during the crisis;
- establish a capability to respond to disrupted supply chains in future emergencies;
- strengthen the potential to displace slow, expensive and outmoded approaches to procurement;
- extend an existing academic-commercial partnership, increasing knowledge and understanding of commercialising UK research in AI.

The work builds on the existing, strong partnership between Applegate Marketplace Ltd and the University of Exeter Institute for Data Science and Artificial Intelligence.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OMEGA DOT LTD	Turbo Air Purifier for Filtering Bacteria	£49,414	£49,414

Pathogens are a major risks to patients, doctors, nurses and staff within a hospital, more specifically in ICU where COVID19 victims are being treated. On top of the necessary PPE, having a turbo air purification machine will ensure the ICU and the surrounding spaces are being continuously cleaned off pathogens to vastly reduce the risks of airborne contamination.

The vision is to have a device that is compact enough to fit in the palm of your hands, but allows the entire air space of a large room to be filtered and clean of pathogens in matter of minutes!



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARQUER DIAGNOSTICS LIMITED	Facilitating the adoption of a new bladder cancer diagnostic test to support the management of urology waiting times post- COVID-19 lockdown	£49,735	£49,735

This project will focus on the introduction of a novel technology to assist NHS in the stratification of urology patients (to ensure a quick diagnosis of patients at highest risk of having a bladder tumour). In the aftermath of COVID-19, patients presenting to NHS urology clinics will not be able to be prioritised with current tools. Arquer Diagnostics have a new Bladder Cancer Test (ADXBLADDER) which can be used to support the stratification of patients', thanks to its ability to rule out high risk tumours with a 98.7-99% certainty. Those patients with a negative test result have a very low chance of having a high risk tumour meaning they can safely delay having the invasive tests at the urology clinics, whilst those at high risk can be prioritised.

Through this project a clinical team will be deployed by Arquer Diagnostics to identify those hospitals most in need of this stratification tool and to provide technical expertise for the installation of the test into NHS diagnostic laboratories. The team will also disseminate the relevant clinical and technical information to the NHS Urologists. These activities will provide NHS with a reliable stratification tool so that all the patients delayed during the COVID-19 crisis will be attended to with a strong clinical rationale, reducing the delay faced by those patients at highest risk, allowing these high risk tumours to be identified earlier and therefore improving their outcome.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SLINGSHOT SIMULATIONS LTD	Breathing Cities: A Living Model of People and Place	£40,565	£28,396

The vision for this project is in the name: Breathing Cities. "_The Covid-19 lockdown has led to cleaner air but will do little to address the issue of air pollution in the long run_ \[and\] _world leaders now have a chance to plot a different, cleaner future_" \[1\]. Slingshot Simulations plans to use this project to help city councils to not only develop their resilience to the influx of traffic and people returning to work but help them find sustainable methods of positively impacting people working and living in cities. Our mission would be to use the data we have as a society and maximizing its potential through our Simulation-as-a-service platform to encourage healthier, breathing cities coming out of Covid-19\.

Our main objective is to brace city councils for the impact on, and as a result of, the traffic and people flow as we return to work following the pandemic. By using existing data to forecast and then iteratively, in real-time, update those forecasts, we want to support councils by informing them of the Pandemic situation from multiple environmental and economic angles thus helping them monitor developments and adapt their strategies in an agile manner.

The focus will be on working to significantly accelerate our existing partnership with Leeds City Council to find solutions surrounding, transport (including couriers and delivery) and people, specifically how transport and citizens will move around the city following the wake of Covid-19 with the aim for councils to view all possible "what-if" scenarios of traffic and people flows and plan accordingly. For example, helping them with their Clean Air Zone Strategy \[2\], which is due to be enforced from mid-2020 and could have a further impact on local business, particularly couriers and delivery systems.

Our truly original Simulation-as-a-Service platform, has been developed over seven years of R&D at the University of Leeds:

* It runs in real-time, allowing businesses and organisations to act immediately

* It can produce results within days not months using just flowcharts

* And most importantly it uses a "no-coding" approach that both accelerates and democratises the benefits of high-end simulation for businesses big and small.

This fresh approach of interactive forecasting, multi-objective optimisations, and "what-if" analysis could lead to a world first: A real "Digital Twin".

- 1. [https://www.weforum.org/agenda/2020/04/the-deadly-link-between-Covid-19-and-air-pollution/][0]
- 2. [https://www.leeds.gov.uk/business/environmental-health-for-business/air-quality][1]

[0]: https://www.weforum.org/agenda/2020/04/the-deadly-link-between-covid-19-and-air-pollution/ [1]: https://www.leeds.gov.uk/business/environmental-health-for-business/air-quality



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SMARTIFY CIC	Visit Virtually: Scalable content creation for museums and culture	£49,440	£49,440

Context: The UK's estimated 2,500 museums have all had to close due to COVID-19\. For the average museum, over 75-80% of annual revenue comes from visitors stepping through their doors (NEMO survey 2020) and with spring and summer peak time for tourism, a cultural financial crisis looms. Museums will also likely see a drop in donations and government support as funding is redirected. Meanwhile, many museum staff have been furloughed or laid off and a recent sector review by Artnet estimated at least 20% of museums globally may not survive the COVID-19 crisis.

Opportunity: Museums are now looking for new ways to engage their audiences, support wellbeing and generate donations. Over the past decade museums have made huge strides in digitising collections and 60% of museums are increasing their digital reach (Artnet 2020). However, business models which leverage these assets are not yet established and many digital collections go unused. The tools needed to put these assets to good use in generating engagement and revenue are either prohibitively expensive or are part of oversaturated platforms. Museums currently rely on social media or Google Arts and Culture to create and share content. These platforms have clear failings: 1) User experience is poor; clicking around an exhibition with Street View is a frustrating interface and results in 'serious tradeoffs in how the art _and_ the building are communicated' (FRAME, April 2020). 2) They are competitive , saturated and promote paid content. 3) They lack appropriate tools to export media without platform branded logos. 4) Copyright images shared become public domain and museums are unable to develop bespoke rights agreements. 5) The time and effort needed is beyond staff capacity: 'facilitating access... cannot be delivered at the detriment of the sector's already stretched workforce' (Museums and Heritage, 2020).

Innovation: With over 1 million users Smartify is the world's most downloaded museum app and has seen a 30% user increase in engagement since March 2020\. Smartify will build a smart multimedia tour authoring tool that is semi-automated and repurposes existing museum assets. This will include textto-voice; transcription; translation; predictive content generation, editing and publishing. The tool will enable museums to create, develop and disseminate content, and will analyse online audiences for conversion into membership or donation. It will also create an opportunity to retrain furloughed staff; and will offer distance learning opportunity and alleviation of boredom for audiences at home.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GENERIC ROBOTICS LIMITED	TITAN: Targeted Immersive Training at NHS Nightingale	£49,846	£49,846

Emergency preparedness training is fundamental to success in a pandemic such as COVID-19\. The NHS Nightingale London provides a fresh challenge to large-scale healthcare-related training. Unusually to healthcare, it has brought together professionals from wide ranging medical disciplines in a short period of time for a singular purpose. A replica of the Nightingale was created at the O2 Arena to address these training needs. Educators stationed at the Nightingale aim to train the workforce in COVID-specific competencies.

Inevitably, the speed and unpredictable nature of an emergency means the quality, realism and range of procedures that can be supported through training is limited.

Virtual Reality (VR) technologies which are portable, setup quickly and easily modifiable could provide unique training opportunities in emergency situations, yet VR has not featured in any UK response to COVID-19 training. Although it has been used in clinical education for over 10 years, uses thus far are bespoke.

We are working with teams from NHS Nightingale London, King's College Hospital and King's College London to design and build a modular (software and hardware) platform for the rapid deployment of targeted training interventions in emergency situations.

We will use the emergency need for training to inform the design of tools and requirements as we implement carefully selected training scenarios to complement existing training, reducing staff and consumable burden. A major area of which has been highlighted is the need for solutions to the Personal Protective Equipment (PPE) shortage, which is amplified through its use in training.

The overall project ambition is that, eventually, creating a 3D training scenario using our toolkit should be equivalent in technical competency and time to creating PowerPoint 2D training materials.

Equally, deployment should be simple, scalable and meet all necessary health and safety requirements (e.g. contagion control and decontamination).

While we will focus on the needs of NHS Nightingale in the first instance, the effects of COVID-19 (along with other infectious diseases) will likely continue to have a worldwide impact for many years to come.

Our vision is to use the outputs of this project and our learning through working with the NHS Nightingale team to create a rapidly deployable and customisable VR training solution that can be put in "on the ground" right where training needs to take place. Thereby enabling the support of e.g. inexperienced volunteers during a Lassa Fever outbreak in Nigeria or a field hospital in a conflict zone.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOLCOM LIMITED	Covid-19 assessment tool development and deployment to care homes	£49,960	£49,960

This project will develop a tool and help guide specifically aimed at care home and domiciliary worker support for pandemics such as Covid-19\. The tools will be made freely available to more than 9,000 existing Whzan enabled care workers. In addition, the grant will allow ten regions to try this tool and our care system called Whzan digital health.

Whzan is an easy to use tablet PC and medical instrument system that enables care workers to monitor the health of residents in all types of care homes. Whzan has multiple tools to assist care, including the National Early Warning Score used in hospitals throughout the UK. The system highlights early signs of infection and gives an indication of the seriousness of the condition of the residents. This allows the right help to be sought, preventing unnecessary trips to A&E and permitting clinicians to prioritise their resources based on clinical need. In some areas where Whzan is used the call on ambulances and A&E visits has fallen by more than 70%. This is much better for everyone, not least the residents.

In the times of Covid-19, clinical resources will be stretched and this system helps to minimise demand on the NHS whist allowing the care homes to give the best level of care.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SCREEN MOGULS LTD	Supporting small cinemas through improved digital marketing	£49,500	£47,025

Screen Moguls is helping small cinemas compete in a digital age by giving them access to leading edge marketing technology in a simplified, cost effective way. The tool enables cinemas to engage existing (and potential) movie goers in their area, through channels like Facebook, with no prior knowledge or training required. The technology is based on location behavioural analysis, and is already proven by large movie studios to be up to six times more effective than using a marketing agency to run digital campaigns. Small cinemas get the same artificial intelligence based marketing methods used by marketing goliaths at a fraction of the cost and complexity.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PROTRONIX LIMITED	Technologies for Disinfection and Decontamination	£49,076	£49,076

In response to the current Coronavirus pandemic we intend to develop a suite of sanitising products that will enable the disinfection of a wide range of items and equipment as well as hospital wards, rooms, vehicles and public spaces. By developing expertise in a number of specific core technologies, we will be able to rapidly create a range of products to suit each application and minimise the risk of further outbreaks of this particular Coronavirus as well as other similar ones in future.

There is a huge need for PPE during the current crisis and while we expect that production will ramp up over time, there is also a requirement for alternative solutions that allow for multi-use - maximising its availability and minimising waste.

Our idea for this project is to produce a sanitising and disinfecting cabinet which allows users to decontaminate any wearable device such as PPE, headsets, glasses, watches, phones and other related tools. During the design and production of this cabinet we will be developing a number of core sanitising technologies which we will then be able to repackage and redevelop into a suite of further disinfecting products

For instance, a solution is required that can disinfect public transport vehicles such as buses, trams and trains that may have transported persons with the COVID-19 virus. There is also a need for the rapid sanitising of ambulances and similar blue light service vehicles which will minimise costly downtime and reduce the strain on these critical services.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
REJUVETECH LTD	Protection of highways workers from Covid 19 whilst maintaining and repairing highways and pavements	£47,237	£47,237

Project pothole has been a venture which has vexed the nation for a decade. The 2020 budget saw the government commit long overdue funds, but the Covid 19 pandemic has now stopped all but emergency repair work. This means that when drivers and cyclists return to the roads, the hazards from potholes continue and if no meaningful repairs are carried out before the winter, then the roads may be severely effected next year. One of the main issues faced by highways operatives, who are classed as key workers, is an inability to social distance. Most repair maintenance requires operatives to work in gangs of 2 or 3 men, sitting in the same lorry cab and unable in the performance of their duties to work in an isolated and safe manner.

Rejuvetech Ltd has developed an innovative asphalt repair technology which uses fresh air to repair the roads. The innovative process uses a nitrogen generator which draws in air from the atmosphere, separates the oxygen from the nitrogen, and then by using a specialist heater, heats the nitrogen which is used to meld the old asphalt and when mixed with the new, forms a seamless bond thereby producing a durable repair. The unit is designed to sit on the back of a trailer or flatbed lorry, with a hot box, and thus can be used on any size of road with minimal road interruption.

The project has reached a final stage of needing a full scale working prototype to take it out on the roads for testing and demonstration. The de minimis funding will be used to finalise the prototype and because the technology is so adaptable the unit can be used on a sole operator basis during the pandemic. The process is already UK patent protected and the funding to scale up the prototype will speed up the ability to maintain roads safely and protect jobs in a safe and efficient manner.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TIDZE LTD	Tidze, a live streaming platform that allows you to get paid for doing what you love.	£47,692	£47,692

Tidze, is a unique live streaming platform that allows you to get paid for doing what you love, easily and safely.

Tidze is for instructors, teachers, entertainers and experts: anyone who wants to share their passion, skills and expertise through an easy-to-use live streaming platform.

Transform your live streaming journey with Tidze. We are a complete platform that allows you to simply accept payments, schedule classes and live stream online all from one place.

Anyone can live stream online and accept payments through Tidze; all you need is a web browser, a webcam or mobile device, and a bank account. We'll do the rest! No technical knowledge required and no convoluted workarounds to start accepting payments.

We're with you every step of the way, from simple onboarding to dedicated support to get you up and running in minutes.

Reach and engage with new audiences through Tidze, sell access to your live streams to anyone, anywhere and anytime.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THIRDFORT LIMITED	Electronic witnessing solution allowing remote execution of Wills, thereby increasing Wills accessibility during a pandemic and going forward.	£49,997	£49,997

Covid-19 has driven the largest increase in the demand for Wills the UK has ever seen ([Law-Society-Gazette-March-20][0]). All demographics are scared about their health, worried for their family's wellbeing and financial security, whilst thinking about the legal and financial ramifications if the worst was to happen. In addition, c.40% of UK over 55 year-olds do not have a Will (Unbiased-2017), largely due to the manual (non-digital) administrative hassle involved.

When writing or updating a Will, everyone could benefit from proper legal advice and over 70% (Law-Society-Gazette-2020) of people use a regulated lawyer to help write and execute Wills. UK regulations mean that lawyers must verify a person's ID (to avoid fraudulent claims over assets) before giving advice and a Will must be signed and witnessed by two individuals. These processes typically happen face-to-face with a lawyer, but this is simply not possible during a pandemic, when social distancing and lockdown rules are in place. Worse still, vulnerable individuals who are most at risk and practising shielding are likely to be the most in need of a Will.

The UK government has rightly classified Wills lawyers as 'essential workers', however they cannot carry out this essential work. Some Thirdfort client law firms get by via requiring witnessing over garden fences, but with no electronic solution, lawyers are resorting to all kinds of dangerous and cumbersome workarounds. Another Thirdfort client drives to clients with a gazebo to use as a makeshift office to conduct ID-checks and signing/witnessing. If the client lives alone, the lawyer must travel to the client's property with another member of their own household to act as the second witness. If the lawyer lives alone, finding a second Witness becomes even harder. These workarounds are slow, costly and potentially lethal, as it exposes vulnerable clients and essential-workers to Covid-19\.

Thirdfort is building a remote ID-checking and E-signing/witnessing mobile-app to allow any individual with a smartphone to write and sign their Will, whilst getting the necessary legal advice. The solution is built on the back of our existing mobile-app which tackles equivalent problems in the property legal market. We will sell the product to Wills-lawyers who will be able to use it in combination with offering legal advice over telephone/video-conference to offer a fully remote Wills service. This new remote offering can then endure post-pandemic, upgrading the archaic, inefficient and potentially insecure way Wills are currently executed.

[0]: https://www.lawgazette.co.uk/news/coronavirus-demand-for-wills-jumps-by-76/5103703.article


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MYKNOWLEDGEMAP LIMITED	Support App for final year nurses and doctors and returning retirees for in-situ training	£40,112	£40,112

This project creates a new mobile app that supports final year student nurses and doctors and returning retiree doctors and nurses with micro-learning content delivered by their local university medical and nursing school. This supports those volunteers supporting the NHS with important training resources directly onto their mobile phones and tablets, linked to the established university eportfolio systems. The student's eportfolio is also available within the app to enable experienced healthcare professionals view and understand the current progress, competency and experience of the trainee.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ADVANCED DIGITAL INNOVATION (UK) LIMITED	MyPathway to Wellbeing	£49,670	£49,670

The proposed project, MyPathway to Wellbeing, will make remote assessment, intervention, monitoring and coaching tools available to help employers assess and improve the mental wellbeing of their staff. The underlying platform, MyPathway, is already used by over 45,000 NHS patients for self-management and clinical pathway support in areas from chronic pain and MSK to Motor Neurone Disease and serious mental illness. MyPathway to Wellbeing will provide a sounder, more structured, evidenced-based, approach to managing and improving wellbeing than has been available to most companies, while enabling fully on-line, secure delivery. It also provides a rating and ranking engine which allows users to be recommended resources and programmes that "people like me" found most helpful in addressing problems from sleep quality, workplace stress, or general anxiety, to specific issues with things like finance, business restructuring, housing, or relationships. A mix of pre-recorded and "live" online sessions and programmes will be offered and scheduled for staff users.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SELENE TALENT MANAGEMENT LTD	Galatea: Empowering the Virtual Fashion Model	£41,937	£41,937

Our project to demonstrate Galatea, a flexible tool for the planning and production of fashion and advertising events. Galatea will enable high quality content creation and allow designers and models to work remotely while collaborating in a virtual space.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRICORN SYSTEMS LTD	SmartApart - the social distancing app	£49,976	£49,976

To reduce the spread of Covid-19 it widely acknowledged that social distancing plays a critical role.

However, due to the criticality on the UK economy it is envisaged that most manufacturing companies will be encouraged to restart production well in advance of the UK beating Covid-19\. It is therefore essential that UK manufacturers are able to protect their employees and proactively encourage social distancing.

This project combines low cost off-the-shelf sensors worn in tabards around the necks of employees, with a scalable monitoring app, factory visualisation dashboard and an innovative gamification approach underpinned by AI, to provide real-time monitoring and Covid-19 HSE compliance scores by employee, department or company.

Tracking systems can be set up which rely only upon employees 'opting-in' to allowing their employers to track them using their personal or work-issued mobile phones through either a dedicated app, or simply by registering a device on the WiFi network. However, this technique offers limited positional accuracy and is best for sparsely populated workspaces. For privacy sake, this ability is limited to proximity to the work WiFi network.

Better accuracy can be achieved with Bluetooth Low Energy (BLE) tracking. While this option does require capital expenditure, the costs are modest and would account for an improvement of a facility infrastructure. Fixed BLE 'stations' are deployed throughout a facility and interact with personal BLE devices on a continuous basis to determine location. Personal mobile devices can be used, as in the WiFi tracking method, but small, unobtrusive dedicated body-worn sensors can also be purchased for this purpose. The dedicated units have a number of advantages over the opt-in use of personal devices, including 100% compliance and the ability to sanitise devices effectively in sanitation stations overnight or between shifts to allow a 'pool' of communal sensors to be used.

The SmartApart app will continually monitor Covid-19 social distancing which will be communicated to workforce employees via digital shopfloor dashboards as well as via an app on their smart phones.

The critical success of this project is ensuring that the sensor technology is very low-cost, simple to implement and use, and has a gamification element to encourage individuals and organisations to focus on social distancing.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AIMES MANAGEMENT SERVICES LIMITED	RAPIDS (Remote Access for Patient Indentifiable Data Systems)	£49,638	£49,638

The RAPIDS project is aimed at helping NHS and Social Care staff access secure clinical systems from outside of their normal working environment. The current Coronavirus pandemic has led to many healthcare professionals needing to work from home and this is often extremely restricting if they are unable to access information about patients - what treatment they are undergoing, what medications they are taking and the results of blood tests or diagnostic imaging.

The company undertaking the project are AIMES who have over 10 years experience in providing secure virtual desktop infrastructure (VDI) to medical researchers in the UK - so that they can access patient data in order to carry out clinical studies and to improve patient care. AIMES currently host a wide range of services for the NHS, from complex electronic patient record systems to national registries (such as the Renal Registry) and systems to help assess risks for mental health patients. Their expertise in providing secure environments will be used in the RAPIDS project to provide VDI services which will be accessible from anywhere - allowing healthcare professionals to consult with patients (using say video-conferencing) but at the same time having access to the patients data.

The project will start in June 2020 and the first demonstrator will be available by September 2020 and will be tested by 50 users from an NHS Trust to ensure the performance and usability of the service meets the staff needs. The RAPIDS service has the potential to simultaneously increase the flexibility and availability of computing resources for health and social care staff but also to reduce costs.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LDT DESIGN LIMITED	Respirator Mask (RM) with Self User Fit Test & Tracking Capabilities	£49,812	£49,812

The problem we wish to solve is a major problem that has emerged from the Covid-19 pandemic and it specifically addresses the fit, comfort, distribution and compliance fit of face respirators for front line healthcare professionals. Respiratory Protective Equipment (RPE) i.e. FFP3 and facial protection, must be considered when a patient is admitted with a known/suspected infectious agent/disease spread wholly by the airborne or droplet route.

Our vision is to allow all NHS workers and Healthcare professionals globally to have a newly designed respirator mask (RM) that can be easily fitted and removed, provides a better seal to the face and is comfortable to wear for longer. The main aim of this project is to allow the users to fit test the RM themselves and log the user and Health and Safety Information directly onto a digital database in real time. Current fit test procedures are very time consuming which leads to inefficiencies in getting a correctly fitted RM to users and the current paper-based method of logging fit test information is an antiquated inefficient process.

By providing the user with a new RM, simple test feature and mobile application-based procedure for the fit testing the respirator mask we believe it will improve efficiencies within the NHS and allow healthcare professionals more regular control of their safety in the workplace. The instant fit test feedback will give reassurance to users that they are protected in the best way possible. The data logged by the RM system will be Health and Safety information for an individual and information about where that piece of equipment is in use to help manage stock and distribution of product.

The project is split into three main areas:

The Respirator Mask Design - This will be a new design using materials that can better form a seal to different face shapes and sizes, improve comfort and make the RM easier to put on and remove.

The Seal Test Feature - Will integrate into the respirator and have electronic hardware built into it to log face seal integrity and provide fit approval measurements before a member of staff can start their shift. This information will be pushed to a mobile application. The Mobile Application - Will take the user through the fit test procedure and also log the seal pressure test and ultimately identify if they are suitably protected for their shift.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
UK POWER NETWORKS SERVICES (COMMERCIAL) LIMITED	Smarter and secure remote operation and automation of Heathrow's private wire electricity distribution network	£40,687	£40,687

The project will comprise of a desktop study that will be carried out in the below four phases:

Phase 1: Analysis and review of Heathrow's existing remote operation technologies and processes

We will review and analyse the existing SCADA and remote operation systems at Heathrow Airport. We will identify under normal operating conditions how the technology is used for safe and secure operation, the processes involved, and the staff critical interactions with the systems. This will give a clear benchmark of what is normal practice at Heathrow Airport.

Phase 2: Identifying needs in constraint environment (COVID 19 etc.)

We will focus on the constraints that the COVID 19 situation is placing on the operation of Heathrow's network and the impact on critical staff for the operation of the network. The impact on normal maintenance operations will additionally be identified, and also consider scenarios where further impacts on staff could lead to detrimental impacts on operating the network at Heathrow.

We will carry out this data gathering through telephone calls and video conferencing.

Phase 3: Innovative technology and market study -- review of commercially available solutions

The SCADA market has been continuously expanding and a number of suppliers are now offering remote applications for monitoring of programmable logic controllers (PLCs) and remote terminal unit (RTUs). More importantly, the desired solution should not only address the challenges identified in the COVID-19 environment but should also be useful in other restrictions for many years into the future.

As part of this study, we would also focus on how the innovative solution could place Heathrow in a more resilient and competitive position. The options would include the following:

- 1. Ability to operate the infrastructure with limited availability of control engineers
- 2. Ability to carry out switching operations remotely or with the help from the control room
- 3. Ability to switch off the electricity network to reduce losses and energy costs

The study would consider implementing the following technologies:

1. The Internet of Things (IoT)

- 2. Augmented Reality
- 3. Virtual Reality
- 4. Artificial Intelligence

Phase 4: Final Report

The final output of the study would be a comprehensive report that will recommend technologies, processes and tools which could be adopted at Heathrow along with a vision of what a smarter remote operation system might look for working through a pandemic situation such as being faced with COVID 19\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RADEMON ESTATE DISTILLERY LIMITED	Development and Certification of Hand Sanitiser Production Facility	£49,630	£49,630

The objective of this project is to develop further the manufacture, certification and sales of a hand sanitiser and surface cleaning product, to sustain employment and offer a unique online portal direct to the consumer in these challenging times.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ZAP CONCEPTS (UK & IRELAND) LTD	Smart Power Plan Online Tool for the specification of low emission energy supplies for live events and other temporary users	£46,663	£46,663

Our project addresses the issue of decoupling energy use on live events and other temporary sites from current high emissions fuel use.

The project delivers a highly accurate online calculator for specifying temporary power supplies and links this with suppliers of clean tech and low/zero emissions equipment for the supply of energy.

The benefits of the project will be seen in increased energy efficiency, improved public health, increased cost effectiveness for business and stimulation of new markets for clean tech.

The project encourages and enables cross sector working and diversification of businesses from the live event sector (currently severely impacted by Covid-19) into other markets and improves resilience and energy independence.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRANSPARENTLY LIMITED	Development of a unified communications solution, to effectively connect legal professionals and clients working remotely	£49,623	£49,623

transparently is looking to expand its existing product, to introduce a unified communications feature, to clients and legal professionals within Family Law. The intention is to address the additional workload, manual cross-referencing and over-reliance on email, resulting from the Covid-19 self-isolation measures and to improve the ability of private individuals to access justice effectively.

Recognising the importance of personal wellbeing in this difficult time and the emotional pressures that exist within the Family Law sector, it is important that we enable private clients to reduce communication costs and law firms to collaborate effectively, both internally and with clients, to ensure that those clients are proactively advised and protected at all times.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HANDHELD HEALTH LTD	Development of a flexible, bespoke and remote rehabilitation programme for Covid- 19 survivors	£49,988	£49,988

The Covid-19 pandemic has had a devastating effect on our society. Many of the \>2 million individuals who have contracted the virus have suffered with serious respiratory distress, in some cases requiring hospitalisation, and unfortunately, in the case of \>130,000 people, leading to death of the patient.

Survivors with pulmonary damage face a difficult road to recovery. The infrastructure in place for helping to rehabilitate patients with respiratory conditions such as COPD is already sub-optimal, and with healthcare systems (including our amazing NHS) currently overwhelmed fighting the virus, there is little capacity to help these survivors. This is where we come in.

HandHeld-Health is a recent start-up company that is developing technology to deliver truly tailored exercise-based rehabilitation programmes for cancer patients. Our innovative approach uses a proprietary algorithm, which processes self-reported data from the patient and, considering the patient's other conditions (including diabetes, high blood pressure, etc, which informs the type of exercises that are effective and the way to do them), selects a bespoke regime optimised for the individual. To our knowledge, no other app provides such a tailored rehabilitation programme without the need for a healthcare professional to interact with the patient.

The algorithm was born from over thirty years of academic experience of the company founders and a database of thousands of curated strength and conditioning exercises. As our founders have experience in the rehabilitative impacts of exercise on respiratory disorders like COPD, it would be remiss of us not to re-appropriate our technology to do our part to help Covid-19 survivors.

Our plan for this Innovate UK award is to work with an app-development company to produce an app that Covid-19 survivors can use to develop a personalised rehabilitation plan. The app would guide the patient through the exercises, with ongoing monitoring and engagement to support and inspire progress. We will perform a streamlined clinical study to measure the magnitude of impact on health and wellbeing. We will then release the app, free of charge, to the global public.

We believe this will lead to a significant positive impact on the survivors of Covid-19, improving their quality of life and reducing the probability of needing further hospital admissions. Modifying the app to support patients with other disorders would widen the impact further. Ultimately, we hope our work here will help to ameliorate the effects of this unprecedented global pandemic.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
YOUR BEST CAR LIMITED	Business model innovation towards safe and effective virtual or non-contact automotive trading	£49,960	£49,960

The automotive industry is a key pillar of the UK economy, representing £18.6Bn GDP and employing \>800K people. Cars are also central to society, ensuring mobility of key workers, collection/delivery of goods/services and access to health-/social-care. Since COVID-19, showrooms have closed leading to a \>44% reduction in car sales (with \>85% reduction forecast during April) and the closure of manufacturing globally, with most staff furloughed.

Car sales have traditionally relied upon showroom browsing and test drives. This enables customers to visually inspect and experience the car prior to making a purchasing decision. These activities are also important in building rapport and trust with the dealership. Continued social distancing measures require the motor trade industry to transition from the showroom to the internet enabling safe, non-contact trading. Whilst most dealerships have an online presence, these platforms fall far short of the hands-on experience customers gain from visiting a showroom.

Through the application of commercially available technologies, YBCL seeks to innovate the motor trading business model towards online sales, whilst ensuring safety across key traditional showroom activities. The new business model combines:

- * car sanitising/disinfection methodologies for safe trading
- * a virtual showroom, addressing customer needs/expectations in-terms of visual inspection, test drive experience and sales agent engagement
- * portable set-up and methodology for safe, insured solo test drives
- * business best-practices/offerings that facilitate customer buying decisions, including remote financing and money back guarantees

The new business model will not only enable the continuation of motor trade during future periods of social distancing/trade restrictions, but will also open national markets/customers to small traditionally regional-based dealerships (such as YBCL).

The project builds upon activities already undertaken by YBCL during the initial period of social distancing/restrictions to validate customer drivers/needs and receptiveness to virtual/online trading.

The project will deliver a technology prototype platform/tools suitable for immediate commercial deployment by YBCL to refine and validate use. YBCL will then further develop the platform technologies to bespoke market ready systems suitable for licencing/use across the motor trade industry.

In the short term the project will unlock ~£10M of trade via YBCL, with the potential for up to ~£30M of licence fees across UK dealerships (medium-term).



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
REFERO SOFTWARE LTD	Provision of secure two way messaging and video consultation between clinical team and relatives of patients	£33,245	£33,245

In normal times staff in Intensive Care Units (ICU) are not just there for the care of the patient, but also to provide care and support for relatives. Important discussions take place about what they can expect to see when they visit, and what is happening to their loved one.

This includes difficult discussions about the diagnosis, how ill their relative is and how likely it is they will survive. This leads to discussions about ceilings of care i.e. just how intensive and invasive attempts will be to save the patient. These meetings form part of the daily care of the individual patient and their family and are documented to ensure the wider clinical team deliver and provide a consistent message. Naturally, the ICU nurse's bedside role caring for the patient includes spending more time with the family than other members of the clinical team. This gives relatives valuable time to ask questions and seek reassurance. The end point is that relatives are helped along a difficult pathway which can include the demise of their loved one.

The current crisis now raises a very important question - how do we maintain this human touch, and the caring side of Intensive Care, in the face of the human tragedy which is unfolding within our hospitals, as they deal with ever increasing numbers of seriously ill patients who require ventilation, and more importantly isolation, due to their infective nature.

In many cases hospitals are now having to turn away relatives, that travel with them to hospital; unfortunately, the heartbreak of this situation is elevated when their relative is admitted to ICU.

Refero wants to help connect relatives to the clinical team. Providing a system that is secure, that links the family to the patient and allows simple communications such as messaging and video consultations. Our vision is that relatives can provide information about the life of the patient, perhaps encouraged by a simple questionnaire and the ability to upload a picture of the patient when well. This will allow the relatives to 'paint a picture' of the patient which is a vital step in reinforcing the identity of the patient as a person, not just a diagnosis.

The clinical team can send regular message updates, the relatives can send messages enquiring about their loved one and importantly the software allows users to easily move to video consultation when needed.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENDURING NET (UK) LTD	Proof of c19 credentials for care homes and post lock-down	£49,678	£49,678

Our project's objectives are to facilitate economic regeneration post lockdown and to reduce the hardship and the spread of Covid19 (c19) with better managed social distancing procedures. This is achieved by providing, digitally, proofs of individuals' c19 credentials (e.g. previous c19 infection, results of c19 and antibody tests etc.) in absolute privacy preserving environment governed by the Self-Sovereign Identity Framework. Our first planned deployment is care home, but we are ready to meet the mass population in big venues (e.g. football matches, concerts, shopping centres, university buildings etc.) by collaborating with Sthaler, a lead VeinID expert in the secure biometric identity sector.

Our innovation is on decentralised and strong privacy preserving digital identity security by design. It meets the UK Industry Strategy Challenge Fund's list of challenges, and will have a widespread impact on every sector (public and private). The SSI technology is very new. It is still being shaped and developed under the stewardship of the Sovrin Foundation. Our team members have representations at several of their working groups (https://www.covidcreds.com/) and we are establishing collaborative relationship with Evernym, the lead contributor to Sovrin.

In our proposed system, anyone accepting a credential proof would know (in real-time) with certainty (i) who issued the credential, (ii) that the credential is being presented by the person who it was issued to, (iii) that the credential has not been tampered with, and (iv) that it has not been revoked. The focus would be also on privacy by design as a key feature of the SSI Framework. Other important features of our digitised identity security implementation include: transparency, control, purpose limitation, data minimisation and storage limitation.

As a leading edge technology provider we will provide a tangible system to enable effective procedures that will enable organisations to operate within the context of a lockdown. To do this, we collaborate with 3rd party compliance and regulatory bodies. We are conscious of compliance around GDPR, ICO and PII and have taken steps to engage with the relevant 3rd parties.

To meet the social goals, we are working closely with the other stakeholders to help us access key demographic areas and business models so that our solution can facilitate use cases around the world to deal with the current c19 pandemic. Our infrastructure is based on the open source Hyperledger Indy to build and deploy the SSI solution using physical security devices provided by security hardware companies.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE FIFTH 9 LIMITED	Business Opportunity Collaboration Platform Furloughed and Unemployed	£49,681	£49,681

The Digital Business Skills Collaboration platform matches nationwide business opportunities/demand to groups of furloughed or unemployed professionals; forming virtual teams & businesses to combine complementary skills and resources; allowing people to return to work quickly.

The key objective is to shift away from the long bake times seen in traditional re-hiring cycles; these times expected to be compounded by the COVID-19 situation and instead create an ecosystem for a new "gig" economy to help people get back on their feet, create new collaborations form and innovate and new entrepreneurs to emerge.

Individuals who are "on the bench" during the work restriction period can join by registering their skills, services and assets on the platform, and share their existing professional digital profile (facebook, linkedin etc) so that the system can start intelligent matchmaking with other people's complementary skills to address specific business needs.

The end objective is to provide an innovative "at-home" digital capability for furloughed and unemployed users to collaborate and form new flexible virtual teams to meet local & national business needs and contribute to the economy quickly after COVID-19\.

The platform will be powered by AI and smart contract technology, and as part of the process offer up-skilling direction, entrepreneurial support and a positive back-to-work mindset.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARCTORIS LTD	Arctoris Freenet as virtual laboratory for the UK life sciences	£43,703	£43,703

The life sciences are a crucial pillar of the UK's prosperity and scientific and industrial competitiveness. There are about half a million students enrolled in biological, biomedical, chemical and related courses (Universities UK 2015). The COVID-19 pandemic has led to large-scale disruption both in scientific training as well as academic R&D efforts, that are even more important under the current circumstances, where educating and training the next generation of researchers and developing new diagnostics and therapeutics is critical.

Arctoris Ltd is an Oxford-based company that developed and operates a fully automated, remote-controlled laboratory for life sciences research. Our robotic facility conducts cell-based, molecular biology, and biochemistry experiments for researchers at academic centres, universities, biotechnology companies and pharmaceutical corporations.

Thanks to full automation, Arctoris' robotic facility is not affected by the COVID-19 pandemic, continuing to conduct life-saving research for researchers in academia and industry. At the same time, Arctoris has already implemented a sector-defining proprietary IT infrastructure that enables researchers to design experiments, remote-control the laboratory online, and to interrogate data in real-time.

Within the proposed project, Arctoris Ltd would rapidly design and implement Arctoris Freenet, an Open Science software solution for a virtual collaboration space highly integrated with and in addition to the existing automated laboratory that enables continued online education combined with lab-based training in the life sciences. Thereby, Arctoris Freenet provides the tools required for academic researchers to seamlessly collaborate, train, supervise, and conduct experiments, even in a lockdown - removing one of the greatest barriers to continued life sciences education and progress. Concretely, the new portal to go online within 5 months will enable academic researchers to continue mentoring and supervising their PhD students; life sciences students to learn new skills and continue their degrees; and universities to continue tracking programme progress.

The Arctoris Freenet will contain a set of software tools that enable secure and convenient research collaboration and training within a life sciences context, providing half a million students with an opportunity to continue their training, and become fully skilled and proficient life sciences researchers.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
COGNITANT GROUP LIMITED	Smartphone-based COVID-19 support for care home staff	£47,809	£47,809

Care home residents and those receiving community-based care are now recognised to be at great risk from COVID-19\. We are relying on care home staff to look after this very vulnerable group of people with very little support. Although highly experienced in the general care of frail patients, care home staff are under tremendous pressure as they learn how to safely manage patients affected by Covid-19, to protect spread of the infection to others and to maintain their own health. They also need to be able to conduct medical observations such as measuring blood pressure and oxygen levels in order to liaise with remote clinical teams to ensure that patients who develop more severe illness are assessed for further medical treatment.

This is a proposal to develop and deliver a free short high impact training programme for all care staff to access via smartphones. The programme will be shared amongst care staff by care organisations and by staff themselves using peer to peer networks and social media. The programme includes a self-assessment component and a certificate of completion.

This is an innovative, approach which will support and train care workers with minimal disruption to their time and work duties. The smartphone-based route makes the content high accessible and creates a mechanism to provide updates to care staff as policy and procedures are adjusted over time.

Cognitant Group has experience in building visual immersive health education modules for both HCPs and patients has the infrastructure in place to undertake this project at short notice. This includes a team of highly skilled and experienced developers, clinicians, writers and animators.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OR3D LTD	VR Collaboration tool/application	£47,776	£47,776
3D data has a wide array of uses in our modern digital world and provides much more information than 2D drawings. Architects use it for modelling buildings, Doctors for visualising CT/X-Ray data and Engineers for visualising complicated real-world parts. Where digital 3D is not used, physical 3D models are also key for collaborative engineering, meetings with clients and visualising real-world scale.

Considering the Covid-19 pandemic several challenges to using 3D data for collaboration have arisen. Firstly, with many people being asked to work from home the key workstations that 3D data users used are no longer readily accessible. The software and hardware requirements for working with and sharing 3D data are above the hardware specifications of typical homes PC's and laptops, with many of these home machines not having the physical hard drive space needed for large 3D models. Secondly, due to social distancing restrictions, people can no longer meet in person around a single machine or model. This is further compounded by the expense of licencing software to view models and the incompatibility many 3D software files with each other.

As such, the project's goal is to develop software and a service that is both general-purpose and industry-minded to enable collaboration using 3D data regardless of computer specification or file type. Working on a subscription model, users will be able to upload their 3D data. This data can be viewed by multiple individuals through their preferred web-browser and can be manipulated using the necessary basic tools for 3D meetings. Where commercially sensitive data cannot be publicly hosted, the software will also be available for offline hosting on organisations internal servers.

The web-client will allow for chat between meeting attendees, the sharing of reports, and camera control for viewing and exploring the 3D models. The subscription costs to host private meetings will vary by data size and/or the number of attendees. Access will be controlled via invite.

It is our hope this project will help re-enable the collaboration and workflows that have been disrupted, enable new forms of collaboration between users of 3D data, whilst also providing a platform for future use that eases the challenges of working with and sharing 3D data.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OBJECTIVITY LIMITED	Remote Dietetic Service Application	£45,000	£45,000

Diabetes remote monitoring service, advice, and guidance

In view of the current social distancing rules during the COVID--19 pandemic, face-to-face meetings are on hold and consequently patients with diabetes who need advice and guidance to manage their condition, are unable to meet with healthcare professionals.

Even when meetings are reinstated, healthcare professionals acknowledge that attending health and weight monitoring group sessions can be an awkward and embarrassing experience for some patients. Rolling out a mobile app will help avoid the more awkward social aspects of managing this condition and it will positively enhance the experience with expert instant advice, guidance, and progress monitoring. When meetings can be reintroduced, the app can still be used to collect the data, saving time at the meeting.

This data could also be shared nationwide to see analyse UK wide weight management and diabetes



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARTBROWSER LTD	ArtBrowser TV - digital TV channel for art lovers	£45,152	£45,152

ArtBrowser TV is a digital TV channel for art lovers. It helps both new age and traditional art lovers connect with art by providing an innovative platform to showcase interesting video content relating to arts and culture. ArtBrowser TV offers a curated selection of content from around the world and produces original shows aimed at helping art lovers engage with arts. The vision of ArtBrowser TV is to leverage the power of art and technology to bring the art community together and influence positive change in the society.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
PLASTIC-IT LTD	Cost Effective Disposable Face and Eye Protection for Medical Professionals	£38,169	£38,169

Following the recent COVID-19 pandemic there has been an increased requirement for the use of face/eye protection for many workers in the medical field. Existing products are simple in their geometry which compromises their effectiveness in protecting the user and does not provide clear vision. They are also uncomfortable to wear over long periods and expensive as they have not been designed for single use.

The design intent is to produce a disposable face mask to be produced from the least number of parts and at low cost. It provides a high clarity distortion-free region in front of the users' eyes yet a significant wrap-around of the face to provide the maximum protection from airborne contaminants. The Shield is vacuum formed with an anti-fog coating applied to both sides.

The Shield is worn and kept in place with an adjustable injection moulded strap which surrounds the users' head above ear level. The Shield would be supplied as a complete assembly or as a set of 4 parts and assembled by the first operator to keep supply costs to a minimum.

Once adjusted the Shield could be removed and replaced as easily as wearing a cap of the correct size. The strap has been designed for comfort and would be ranged to accommodate all adult head sizes.

All materials used for this are 100% recyclable.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
FREE ICE CREAM LIMITED	Game Design for Social Innovation: Building Resilient Communities in Times of Crisis	£49,900	£49,900

Covid-19 has upended all assumptions of what a resilient community looks like in the midst of a global crisis. It's not measurable by house prices or educational attainment or employment levels - it's measurable by connectedness. By the trust and reciprocity that flows between its citizens. Faced with immediate needs, strong communities have proven able to provide solutions in a distributed way, often faster and at lower cost than a centralised solution. This is because social capital, in which community interactions build trust and reciprocity, makes a community capable of organising itself, reducing the transaction costs associated with more formal coordination. And under normal conditions, connected communities have happier, less lonely citizens - with all of the positive social and economic externalities that implies.

But community resilience is hard to pin down, and as a society we haven't managed to measure connectedness, never mind enable or resource it effectively. Our platform is an answer to this. It will combine the best of systems mapping, place-based analysis, game design and network theory to gather global data on how communities structure themselves - all through the lens of social capital. Citizens and practitioners will be able to create network representations of their own communities and benefit from a shared library of networks created by other users. They will be able to stage shocks and look at how resilient their particular network of connections is under challenging conditions. Ultimately they will be able to plan to adapt their real-life community in response to the learning the platform offers.

The implications are profound -- enabling communities globally to build resilience to catastrophic events - not through investment in social infrastructure with its vast call on resources - but through investment in community networks and belonging. The collective intelligence gathered by the platform will provide a powerful dataset through which government, funders and change-makers can consider again how resources are allocated and interventions made -- all in pursuit of a stronger, more resilient future as we adjust to the new world that emerges.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VALI LALIOTI LTD	Immersive Environments for music and performance training	£50,000	£50,000

Performance training and live performances are heavily impacted by the covid-19 crisis. Musicians and performing artists are now training in home spaces, visually and acoustically poor in comparison to real venues, limiting their rehearsing effectiveness and with their livelihoods in peril as live performance venues remain closed.

Recent research shows that 94% of the UK's music workforce is self-employed, with musicians set for financial devastation with losses so far totalling £13.9m. Furthermore, home spaces bear no resemblance, visually and acoustically, to rehearsing and performing spaces, limiting performers' training effectiveness. There is an urgent need to a) improve rehearsing conditions at home and b) to provide new opportunities for monetising performances while venues remain closed.

To address these urgent needs, the project will develop a Virtual Reality (VR) application, combining visual 3D models and accurate binaural acoustic rendering of real performance spaces to a) give musicians and performers the sense of rehearsing as if in real performing spaces and b) to record and perform to broader audiences, monetising their performances. A musician rehearsing will feel as if they are on stage and hear their music or performance with the acoustics of that room through their headphones. When performing, their video will appear on stage and the sound as if recorded in the real venue. Similarly, the audience will be able to "sit", watch and listen to these performances as if they are in the real performing venue, potentially opening up monetising opportunities aligned with the Virtual Audiences challenge of ISCF.

The project benefits performers, who urgently need and would be able to train more effectively from their homes. It helps the recovery of creative sectors, as it opens up the potential to monetise personalised performances in VR space. It also benefits society engaging more with art performances, as CPS research shows that arts engagement is beneficial with current loss of performances negatively impacting the well-being of audiences.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EUROPEAN THERMODYNAMICS LIMITED	+veCool- IoT enabled portable active cooling box for sensitive goods	£49,990	£49,990

The challenge of a mass immunisation programme brings unique delivery challenges to all involved from manufacturers through to final delivery. Vaccines and plasma treatments require temperature stabilisation throughout their journey. The highly infectious nature of COVID-19 puts an estimate 1.5M vulnerable people at immediate risk in the UK and they must remain isolated for their safety.

This group needs to be safely reached by front line workers and community support services in their homes allowing sufficient time for immunity to build and provide sufficient protection to allow activity to return to normal.

+veCool will develop the following key attributes:

* A scalable compact cooling system which is convenient to transport as a personal cooling system

* An IoT capability providing data rich stream to provide long term analysis of many thousands of journeys against key performance measures.

* A system which has dual function in acting as a temporary mini-fridge when powered to allow dedicated cold box when needed at local temporary clinics, or community centres.

* Performance/weight/volume are key criteria to minimise ownership costs for transportation

* a solution which can be scaled across manufacturing sites across the UK.

+veCool will address these needs by developing an environmentally friendly active cooling system based on thermoelectric cooling which is rapidly scalable and deployable to give front line workers the support tools needed raising morale and allowing them to do their best. +veCool is a simple idea that through it's execution will deliver a superb solution that will be available and deployable in the time when it is most needed.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GIGLETS LIMITED	Schools Out: A Digital Literacy Resource for Independent Home Learning	£49,891	£49,891

Our innovation is a Digital Independent Home/Remote Learning Product for Reading and Writing for Teachers, Parents and Pupils.

This project will develop a Product for learners at home during the COVID19 disruption and school closures now and in the future.

The Product will be designed to maintain a relationship between Teachers and Pupils and continuity but also engage Parents actively in the process and in their Child's progress and development.

The Product is designed to address the specific issue of Teachers being able to continue to deliver the curriculum when pupils are not at school or are unable to attend. This will provide an agile and flexible response to any future crises and address the key issues of distributing school work to individual Pupils and maintaining their learning journey whatever their age and stage.

The Product will provide personalised learning to pupils with bundles of work that can be reviewed and assessed against defined curriculum standards in order to define next steps in terms of learning content and subsequent assessments. The Product is aligned with the four UK school curricula.

Giglets is an EdTech business with a school focused digital platform with thousands of e-Books and interactive resource online to support learning and development providing services to hundreds of schools in the UK and internationally. This includes providing National Standardised Assessments on behalf of the Scottish Government.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SYNAPTIV LIMITED	Applying AI to smartphone movement data to determine the onset and severity of COVID-19 infection	£49,481	£49,481

The biggest challenge COVID-19 presents to health authorities is knowing who in the population is infected. A real time view of infected individuals and the severity of their symptoms would allow authorities to better manage medical resources. Once quarantine restrictions are lifted, this insight would enable a targeted contact tracing program. Together, these measures would lead to a dramatic lowering of healthcare costs, along with a reduction in the spread of infection and lowering of fatalities.

This proposal is focused on using data collected from the motion sensors on smartphones to model the health behaviour of individuals. All smartphones have motion-tracking sensors capable of detecting when a user is moving or stationary. Our solution will develop Al to profile periods of inactivity. Those exhibiting a change in movement behaviour over an extended period will be categorised as 'ill', and the degree to which their behaviour has changed will be used as an indication of the severity of their symptoms.

Using passively collected data from sensors on smartphones to infer health status is a highly innovative idea, and is different from other health monitoring solutions currently being trialled, which rely on individuals to self-report their symptoms, and sometimes requires the use of specialist equipment.

The benefits of our proposal are numerous. Unlike other attempts at remotely monitoring patient health, our approach leverages technology widely used in the day-to-day lives of the vast majority of the population, from the young to the elderly, making it a solution applicable to all, regardless of socioeconomic status. The insight generated allows health authorities to conduct real time targeted contact tracing to effectively limit the spread of the virus, which will be imperative once quarantine restrictions are relaxed. It provides a granular, real time view of infections across a community, allowing hospitals and GP practices to better target care and optimally manage resources, saving more lives and reducing care cost. And it gives doctors the confidence to discharge patients knowing that the severity of their symptoms can be remotely monitored.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VELOCITY RDT LIMITED	Wireless Predictive and Preventative Maintenance of Infrastructure and Assets	£49,964	£49,964

Unique, yet simple, accurate and effective sensors called 'Intelligent-Things' no bigger than a credit card can predict the structural health of equipment, infrastructures and assets. Our sensors predict when fatigue or breakage will occur, the current structural health and exactly when maintenance is required. This sensor can reduce at least 30% from an organisations annual maintenance costs.

Liberally deployed, the sensors are fixed using an epoxy resin. Each sensor is made from the same material its monitoring & will mimic the life of the asset.

Sensors have small fingers, they are calibrated to break at set percentage increments, between 5% 30% 50% 70% & 90% (in many cases fatigue occurs well before they can be seen through routine inspection) The sensors deliberately break when a change occurs, the data is stored on a chip and transmitted wirelessly and securely allerting engineers.

The data made available enables multiple stakeholders to make accurate decisions to intervene, order/replace, repair or investigate further. This immediately eliminates the need for costly regular inspection and replacement, where, in many cases there is no need, saving considerable sums for organisations and directing maintenance and repair to where it's actually required to be spent.

The uniqueness of the sensors mean that once deployed they can be left and any intervention will be as a result of sensor fingers breaking indicating a change has occurred and when or if the asset requires further intervention, typically once its exceeded 70% fatigue.

The sensors can also be calibrated to be 'extra sensitive'. This is critical where assets have been deployed for many years, yet difficult to distinguish how long the life of the asset remains. Retrofitting the sensors across many assets means that deployment can be easy and effective for organisations.

Finally the vast array where the sensors can be used is considerable. With active enquiries across many sectors including:

Transport: Railways, Vehicles - Gears/Brakes/Hydraulics.

Energy Sector: Pylons/Wind Turbines, Oil Pipelines.

Infrastructure & Build Environment: Construction, Buildings, Bridges, Scaffolding. New Homes.

Facilities: Elevators and Escalators, Retail Store Facades.

This is just the start with advanced plans for nano-sensors especially for 'Industry 4.0' and we are investigating the medical sector for nano sensors for fatigue in joint replacements for humans.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TELOS BLOCKCHAIN SOLUTIONS LTD	Covid-19 Test Management Platform	£49,560	£49,560

Covid-19 Test Management Platform

Is a distributed ledger technology (DLT) based unified platform for test kit suppliers, laboratories, data scientists, public health practitioners and policymakers. It will consist of a mobile based application, desktop consoles and platform integrated together to deliver an end to end process of collating, managing, recording and delivering test data to users. The test management platform provides the whole process of testing and a channel for the parties included. This will help the nation, individuals and companies as a whole.

The system will leverage the immutability, availability and account structures offered by a fast DLT to offer:

- 1. Stable data that is immutable and anonymous once uploaded
- 2. Selected access to data Users will be able to selectively delegate access to their test data based on account permissions
- 3. Test kit suppliers will be able to track each test kit end to end
- 4. Laboratories will be able to deliver test results securely and quickly directly to the user's application account

5. The connectedness of the Distributed Ledger allows for large scale rollout of the system without accelerating costs. The platform will be accessible through secure internet connections

6. The selected DLT is fast, scalable with free transactions and data recording, utilising off the shelf servers that are not as energy intensive as current blockchain mining nodes

The platform is suitable for any testing and is therefore reusable with minimum reconfiguration requirement. We submit that this platform will have a positive impact on the collaborative effort of tracking through testing, understanding and the development of vaccines and therapies for COVID-19\. This platform can also form the basis of tracking other pandemics and infectious diseases.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TEXTCARE LIMITED	Intelligent Home Remote Monitoring	£49,915	£49,915

Our product will allow care providers to remotely and accurately monitor the vulnerable at home 24/7 and for intelligent reports to automatically be generated and notify care providers of any problems which may warrant intervention.

Micro power sensor technology will monitor key indicators of wellbeing within the home, including activity levels and environmental factors. The data will be fed wirelessly to a main hub which in turn feeds it to the cloud. Our unique algorithm will then harness the power of cloud computing to build a home specific information base, which recognises patterns of behaviour, habits, routines and the environmental norm of the person being monitored, so that any variance from routine can be highlighted.

Sensors will provide data for each room or area and will monitor activity, temperature, light, and sound levels. Monitoring activity levels in any room at any time will build a pattern of behaviour so that any variance, for example, an abnormal number of visits to the bathroom at night, can be highlighted. Logging temperature details enables the carer to recognise, for example, that the heating is working normally or be alerted if the temperature drops below a certain level. Monitoring light levels can also build a picture of routine, for example, lights being switched on at unusual times would log as a variance and again be highlighted in the daily report. Tracking sound levels can indicate whether there is normality, for example, a TV or radio playing routinely in the evening or afternoon, or distress if the sound levels are high during the night. Our system will also monitor door access so information about front or back door openings can indicate, together with activity levels, whether the home was entered or vacated. In addition, a door sensor on a fridge will provide information about food habits.

The 'machine intelligence' collates all the sensor data to establish a daily pattern, and will generate a concise report to confirm all is well or, importantly, to immediately alert the carer to any changes they should be aware of. Thus, the system recognises when a situation is abnormal and needs action, and ensures an alert report is initiated at that critical time.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VEON SCIENTIFIC LTD	Compact Lab System for COVID-19 Sample Preparation	£49,999	£49,999

Veon Scientific are a manufacturer of custom liquid handling and automated robotics for laboratory sample handling. They are seeking to break down the boundaries between manual pipetting and automated liquid handling by developing an innovative low cost liquid handling robot combined with an intuitive touch screen application suited for quick set-up of simple tasks or complex assays.

It is well established that robotic automation or liquid handling systems can be used to increase the reliability, accuracy, throughput and speed of sample preparation however Veon Scientific are combining these key advantages with a scaled down system. Furthermore, this development creates a technology with such affordability and simplicity that it will be accessible to all laboratory scientists bridging the gap in the market between manual pipetting and automated techniques.

Amidst the COVID-19 pandemic, significant demand has been placed on laboratories to perform a high quantity of clinical tests to determine if patients have contracted the virus. qPCR and PCR are the globally established molecular biology techniques to perform this test. Clinical samples (saliva swabs, serum, etc) need to go through preparative steps prior to performing the qPCR process and ultimately achieving a clinical result for the patient.

The inability of existing large format automated systems to really address the needs of the lab is evident in the fact that, amidst the COVID -19 crisis, many front-line lab technicians are using manual pipetting to process samples. Veon Scientific have identified this unique need for a liquid handling system that is inexpensive, extremely simple and fast to operate, and sufficiently compact to fit at a lab technicians' individual workspace.

A further significant benefit of this technology is the time capacity that is created by removing the need for laboratory scientists to perform labour intensive tasks. This will enable scientists in industry to focus their time on other aspects of science, including developing a better understanding of the COVID-19 virus or maximising laboratory efficiencies and reducing error.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MOLECULOMICS LIMITED	Generic Rapid Antiviral Screening Platform (GRASP)	£39,203	£39,203

The Covid-19 pandemic has exposed gaps in drug discovery capabilities specifically with respect to viral pathogens, such as SARS-CoV-2, but also revealed new opportunities for rapid repurposing of currently prescribed drugs as antiviral agents. The combined power of supercomputing, genomic platforms and machine learning based molecular docking (screening) algorithms provides scope for development of specialist screening platforms that can focus our best possible efforts on any viral pathogen of which the genome has been sequenced, including incorporation of new mutations that result in new viral strains.

Moleculomics is a life science technology company focused on genome scale computational modelling of receptor structure and drug docking, serving the pharmaceutical, health and biotech sectors. It has developed the Human3DProteome platform, the first technology to offer structurally-based open-ended lead discovery, pharmacological profiling and toxicity screening applied to every receptor in the human body; and Re-Drug, a comprehensive Artificial Intelligence-based screening technology for assessment of functionally feasible on-target and off-target interactions of a candidate therapeutic drawn from a pool of around 1400 FDA-approved drugs.

The proposed project involves the adaption of our existing repurposing platform and wider pharmacophore screening platform to targeting key proteins of SARS-CoV-2, moving forward from the current pandemic, and in effect, getting ahead of future outbreaks, by making the technology applicable to any virus and new strains evolving. An ambitious study at the Wellcome-Wolfson Institute for Experimental Medicine to screen 1000 FDA approved drugs and 500,000 drug combinations against the virus is underway. This project is fully complementary to that. The additional challenge is that the virus is mutating, though not particularly rapidly, still at about 26 mutations per year. It is likely in time that these mutations will affect viral structure, drug specificity and pathogenicity, opening up new opportunities for drug targeting and closing others. We are able to get ahead of the virus by modelling these new variants and structural changes before they happen by using our structural modelling pipelines to generate models of future coronavirus strains, and screen them against UK-approved drugs and wider chemical libraries. A further challenge is that the next global viral threat might not be a coronavirus, so there will be built-in future applicability to the other most threatening viruses, including influenza virus, on a "plug-and-play" basis. This will provide an invaluable rapid-reaction capability in industry and biomedical research for targeted drug discovery, which can incorporate screening of any chemical library against any virus.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GAUBERT'S BROTHERS LIMITED	App for mentoring and mental health support for the LGBT+ community	£49,934	£49,934

Due COVID-19 LGBT+ helplines are experiencing double the amount of calls and many people have lost their jobs. Research shows the LGBT+ community is particularly isolated and at risk when it comes to poor mental health and well-being (Trevor Project, 2020). This has serious implications for the mental health of LGBTQ people including significant increased risk for depression, anxiety, substance use, and suicidality. Additionally, unemployment is expected to rise by 2million due to COVID-19\.

The "myGwork App" provides an easy tool for mentoring while incorporating mental health so people can find the support they need including:

-Matching people using AI to pair mentors and mentees

-Connecting people with mental health professionals and providing them with online resources (free webinars, articles, etc.) to reduce stress and improve well-being

-Helping people get back to employment (webinars on CV writing, push notifications for jobs, etc.)



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VITAL SIGNS SOLUTIONS LTD	Scaling antibody testing and immunity tracking by digitising test results	£27,011	£27,011

There is a lot of discussion in the UK currently regarding mass-scale antibody testing in order to determine immunity. Understanding immunity in the community at scale is critical to allow people to return to work, but it can only be done via mass-scale testing.

There are many manufacturers of Covid 19 antibody tests which are currently only approved for use in a professional setting. Many of these manufacturers have applications pending to secure CE marks for self-test usage. It is also not Public Health England's decision to approve (or not) these applications, they will be reviewed by EU level notified bodies so at some point (soon), private companies will be selling self-test covid tests to the general public.

We believe one of the major obstacles to mass scale antibody testing is the huge administrative, data security and traceability of results.

The current antibody tests are visually read lateral flow assays (e.g. a pregnancy test). The likelihood is, in order to keep costs low, that they will stay this way. Certainly the millions and millions which have already been manufactured and purchased by governments across the world are of this format.

If a test is a visually read test, unconnected to the digital world, how do you record those results? Who records them? How? Where does that data need to get to? How can you ensure GDPR regulations are followed as to those medical records? How can you provide follow on advice? How do you use that data to confirm someone can return to work?

Even a small sample size would be a large burden, but at national scale it becomes impossible.

We want to investigate if our existing image analysis software that is embedded within a smartphone/tablet app can be adapted to read any covid-19 test, immediately digitise the result and send that data securely to any public health backend database.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRIBOSONICS LTD	Novel Measurement Technology to Transform the Plastics Industry	£49,995	£49,995

Tribosonics is an innovation-led company located and forged in Sheffield, United Kingdom. It drives transformation by using its unique ultrasonic sensing technologies to address challenges in tribological contacts (wear, friction and lubrication). Using its unique Technology Stack, it provides data of unmatched information density at an embedded component level with core measurement competencies in stress, lubricant film thickness, wear, fluid properties, contact pressure and non-destructive testing. Tribosonics have developed a polymer equipment monitoring system using their ultrasonic measurement technology for measuring wear in polymer processing equipment.

The polymer industry faced significant disruption during 2019 due to concerns about plastics pollution. This disruption, however, has been dwarfed by the widespread disruption brought about by the Covid-19 pandemic. Every point in the supply chain has felt the impact. Production via labour intensive and poorly digitised processes for some polymer-based products has come to a halt (e.g. plastic equipment and automotive parts). On the other hand, production of plastic packaging and medical plastics has been booming in these times of intense pressure on supply chains, but not in a way that is sustainable or environmentally acceptable.

This project is to develop novel embedded, real-time sensor technology for the polymer processing industry to promote sustainable plastic packaging and the circular economy, to improve productivity through automation and remote monitoring by digitising the industry and accelerating the adoption of the "Industrial Internet of Things."

Our vision will manifest itself in a more productive and responsible polymer processing industry that is sustainable both in times of crisis and post-crisis when normality returns.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RAMBERT PRODUCTIONS LIMITED	Rambert Home Studio: bringing the vitalising power of dance to isolated people across the UK	£49,655	£49,655

Innovate UK has funded Rambert, one of the world's leading independent dance companies, to build Rambert at Home - a digital platform that will bring the vitalising power of dance into homes and hospitals across the UK, using emergent digital and storytelling technologies.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INSPIRING DIGITAL ENTERPRISE AWARD C.I.C.	iDEA Global Pandemic Preparedness Kit	£49,856	£49,856
The Inspiring Digital Enterprise Award (iDEA) is an international programme that helps people of all ages and backgrounds develop digital, enterprise and employability skills. The iDEA platform provides free digital skills education in the form of bite-size modules called "badges" that can be accessed by anyone, anytime, anywhere when they are online. Anyone who wants to be digitally literate and learn how to optimise opportunity in a digital world can enhance their prospects by gaining vocational skills using iDEA.

Supported by Innovate UK, iDEA is creating the "Global Pandemic Preparedness Kit" - a series of digital badges targeted towards people of all ages, experience levels and backgrounds to help them understand what a global pandemic is, learn vital skills for managing crises, and provide current and future workforces with vital skills and knowledge that are applicable, actionable and transferable across all aspects of their lives and to ultimately help stabilise and strengthen the UK's economy during its recovery.

As part of the "Global Pandemic Preparedness Kit", iDEA will create three new digital badges to help people:

1\. Understand what a pandemic is, where to find reliable information, and how to adapt in times of a global health crisis.

2\. Enhance mental wellbeing, covering tips for coping with uncertainty, stress management, fostering positive relationships and developing a growth mindset.

3\. Understand how to make use of the latest technology for effective learning, working and socialising in a virtual world, along with tips and advice to boost inspiration, motivation and productivity.

These three new badges will be supplemented by existing badges on iDEA to enhance the curriculum at no extra cost. iDEA badges that can be incorporated into the kit include: Fake News, Safe Online, Collaboration, Money Management and Intro to Social Media, just to name a few.

The innovation of our project lies in the scalability, accessibility and ease of use of the iDEA platform in combination with the delivery of this well-rounded programme that is relevant and practical to learners from all walks of life. iDEA is the global leader of digital badging with more than 700,000 learners ranging from age eight to 83 in over 100 countries who have completed nearly five million badges and achieved 60,000 Awards.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PELUCID LIMITED	Phoenix - Real-Time AI/ML Led Identification of active UK Companies to improve Sales and Marketing Efficiency during the Covid Crisis and beyond	£49,495	£49,495

Phoenix is a novel innovation that will allow our systems to predict the operational status of any UK company.

UK companies have adopted many different strategies to cope with the Covid-19 pandemic. In order to restart the B2B economy efficiently businesses need to ensure that their marketing and outreach is targeted to those companies that are active throughout the pandemic and those who restart operations over the months and years following the lifting of the lockdown.

In addition to the commercial application of the innovation, Phoenix will be able to provide a real time barometer for the UK Corporate Economy by identifying when individual companies and micro sub-segments of the economy reopen and the degree to which they have opened at any one time. At this granular level we will be able to identify this by geography, industry sector, any set or subset.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
COLTRACO LIMITED	Ultrasonic Compartmentation and Tightness Detection of Negatively Pressurized Hospital Isolation Wards	£47,826	£47,826

Coltraco Ultrasonics is developing a new and innovative solution to the problem of ensuring adequate compartmentation in hospital wards for the treatment of airborne diseases. Inspired by over 30 years of experience applying ultrasonic technologies to the betterment of safety in the maritime and fire sectors, we are now adapting our award-winning ultrasonic generators and receivers for the purpose of hospital ward compartmentation airtightness inspection.

Ultrasound is sound of frequencies above the range of human hearing. It is used frequently in medical diagnostics and is safe to use around patients and medical personnel.

It is essential that wards used for the treatment of airborne diseases such as COVID-19 are able to contain pathogens such that they do not contaminate nearby wards and facilities. This is ensured through the negative pressurisation of the room, whereby air is pumped out of the room to a safe location. This is only possible if the room has adequate airtightness, a property that can be quantified with ultrasonic technologies.

This project aims to develop the required technology to identify quickly and easily the suitability of a room for negative pressurisation in this manner. Such a technology will rely upon the physical properties of ultrasound, specifically, that ultrasound is impeded significantly when incident on fluid to solid interfaces and that the waveform of ultrasound in air is affected quantifiably by the aperture through which it propagates.

The behaviour of ultrasound when incident on a potential leak site is dependent on a number of parameters such that quantifying airtightness is complex but achievable. Nevertheless, our research has so far shown evidence that such a quantifiable relationship does exist. In this project, we hope to develop a device that uses extensive scientific data to automatically determine the suitability of a room for negative pressurisation by scanning potential leak sites ultrasonically.



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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
SCALE EXPONENTIALLY LTD	Fast Track Investment Assessment	£49,902	£49,902

This project is to deliver a software platform to allow early stage 'Angel Investors' to quickly and robustly assess company viability. It collects data from a variety of sources including accounting systems to provide financial health checks prior to investment. Thereafter, the software provides an automated view of key metrics, tailored to specific industry sectors, to benchmark performance. The objective is to provide both entrepreneurs and their investors with a rich data set to make better decisions.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
OPEN DATACENTRE SERVICES LIMITED	Testing and Immunisation Certification Project	£48,733	£48,733

This project is intended to create a decentralised digital certification and verification mechanism for the current Covid-19 testing and a future immunisation programme, in order to increase UK pandemic preparedness and resilience to any future outbreaks.

Adoption of this model will enable UK residents to take control of elements of their own medical history and provide information to selected third parties in a secure manner, without disclosing more confidential medical information.

The current Covid-19 pandemic has highlighted a need for UK residents to have greater access to selected parts of their medical history. This will enable patients to grant interested third parties, selective permission to access their records, in order to validate their personal testing and immunisation information.

By establishing an effective certification and validation process, clinicians, pharmacists and future testing organisations, can validate and digitally certify, the results of antibody testing and any future immunisation programmes.

Selectively accessible certification of testing and immunisation information will enable the population to emerge more rapidly from the current crisis caused by this pandemic. Individuals will be able to return to work, travel, and resume their normal activities and be able to prove they have been either tested or immunised from the current outbreak. Certification also provides a suitable infrastructure for any subsequent pandemics.

By introducing a certification programme, individuals will be able to be released from the current lockdown in a more controlled manner. This will have positive effects not just for UK GDP, but in the wider social contexts of mental health, domestic violence and isolation.

The inclusion of immunisation certification is crucial. Not only is this relevant to the current situation, but provides the opportunity to include and delegate travel and other regular vaccinations, which can be clearly identified as current or expired. This is an enormous advantage for the travel sector and employers alike.

The solution generates a digitally signed certificate that confirms testing results and any immunisation data, by means of QR codes. These QR codes enable access to this information either by means of scanning the code contained in a mobile phone app, or could be printed for those who do not possess a smartphone.

This project provides a simple solution for the ongoing testing process, and any future immunisation programme, not just for the current pandemic. Implementing such a solution, not only aids recovery from this pandemic, but increases the UK preparedness for any subsequent outbreaks.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BILLON GROUP LIMITED	Fraud-Resistant Covid-19 Immunity and Back-to-Work Certificates on DLT	£49,966	£49,966

A fully digital solution for issuance, sharing and instant verification of 'back-to-work' certificates for those who have a presumed immunity to CV19 and can safely return to work, including in high-contact jobs and industries.

This is an open platform solution -powered by our proprietary Distributed Ledger Technology (DLT), where certificates would be issued by public bodies or health care institutions into and controlled by the user, who can access and retrieve them on their devices, and share them in a peer-to-peer manner. Employers, third parties and law enforcement will be able to instantly verify such certificates as issued by a trusted source. Issuance and distribution of the certificates through a DLT ensures individuals' privacy is protected and they retain full control over how certificates are shared.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
PULSE HEALTH SYSTEMS LTD	A Secure Community Solution for an Integrated NHS Ecosystem	£50,000	£50,000

A closed Messaging system for the entire NHS with the ability to provide solutions in the most widely used platforms such as IOS, Android and Web applications. With capabilities of instant chat, audio, video calls, and discussion forums. The users are restricted to NHS mail users, healthcare-related organisations, social care emails only. The data are fully encrypted to the latest cybersecurity standard acceptable to the government of the UK and NHS standards. Above all, this solution will be available with no restriction to NHS users and organisations Free of charge.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
RINICARE LIMITED	Portable remote vital signs monitoring and Al-based risk analysis platform for use in care facilities for vulnerable patient assessment in response to the covid-19 pandemic.	£49,949	£49,949

Covid-19 poses the greatest threat to people with existing underlying conditions and the elderly, where strict social distancing protocols offer the best protection from infection. The NHS has been discharging these patients from hospital care in an effort to protect these members of society from the impact of the virus and to free up critical resources, with a doubling of ICU capacity required to treat critically ill Covid-19 patients (NHSE, 2020). However, it is vitally important that the NHS maintains the ability to monitor the health of these citizens (including those with symptoms of Covid-19) to ensure that their overall health is not impacted by the lack of face-to-face healthcare provision in this challenging period. To alleviate pressure on the NHS and global healthcare systems, there is an opportunity for remote vital sign monitoring systems that allow healthcare professionals to monitor low-risk patients without the need of risking further hospitalisation (chance for infection and reduced clinical outcomes).

However, there are currently no systems on the market that offer a comprehensive monitoring suite capable of replacing hospital observations systems in elderly and vulnerable patients with no-life-threatening conditions and at a cost-effective price point.

Rinicare aims to test the feasibility of combing two novel but associated technologies; a portable vital sign monitoring system and AI-based health risk analysis software which have been designed for compatibility from the outset. This project will accelerate the development of a system for a use-case directly relevant to the current Covid-19 pandemic. The technology overcomes current adoption barriers, offering a comprehensive and portable vital sign monitoring suite with the ability to provide advanced warning for certain life-threatening conditions at a cost-effective price point.

With market need validated (through preliminary discussions with healthcare providers and end-users) and building on two innovative technologies, this project will develop an early prototype to validate concepts. This novel solution has the potential to completely revolutionise the way in which non-life-threatened patients are treated in the healthcare system, allowing hospitals to monitor patients remotely without compromising on clinical care and ensuring that their best interest is looked after (lower risk of infection and comfort improvements). Rinicare aims to deploy this technology, directly targeting both the NHS and Care Commissioning Groups (CCGs) as well as care homes who are looking to provide their residents with additional support.



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Total available funding £34m.

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
ADAPTIVE DIAGNOSTICS LIMITED	Rapid swab-based point-of-care antigen testing assay proof-of-concept for the detection of SARS-CoV-2	£43,897	£43,897

The COVID-19 pandemic has had a direct effect on the livelihoods of millions here at home in the UK. Unfortunately, the restrictions set on our daily lives will persist until a coronavirus test is widely adopted. Adaptive Diagnostics have made it our mission to create a cheap, rapid and accurate coronavirus test that can be used by all healthcare workers to quickly screen and identify those patients who are positive or negative for the disease. We will do this by detecting a distinct molecule present on the virus's surface with a novel biosensor that we are developing. This will give the user of our test a simple and reliable visual readout if the tested patient is positive for the virus. In doing so we hope to help benefit people everywhere. The technology we are developing can also be applied to other diseases, synergising with other aspects of our overall business strategy, ensuring we are best prepared to fight any future outbreaks, and bringing adaptivity to diagnostics.

We aim to:

- * Increase the rate at which people can be screened for infectious disease like COVID-19
- * Reduce the risks taken by frontline NHS and healthcare staff
- * Provide a novel and alternative screening method to those that are currently available in the diagnostic market



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EASY AS 123 LIMITED	Easy As 123: balance	£42,750	£42,750

The project is to take the work we've been doing since 2018 -- creating a full financial data processing system with Client Relationship Management \[CRM\] called kEAper that we will sell on licence to anyone working with self-employed clients -- and to develop the client-facing web & mobile app called **balance**. The project will allow us to finish a free trial version to test the THP tool on self-employed people accessed through networks and partner organisations that we have been cultivating.

The specific need is the lack of financial management skills & confidence amongst self-employed workers (including gig workers/side hustlers) often leading to business failure. As the COVID-19 pandemic has proved harshly yet again, the self-employed are an extremely vulnerable sector with often very little safety net, treated as an irritating after-thought by a distrustful HMRC, and they struggle with their financial management -- so many of them may not survive this crisis or even restore their income levels.

HMRC's digital tax plans will make things even harder. Uniquely, we started from HMRC's published proposals (which we believe gives a competitive advantage and helps to future-proof) which are to expand Making Tax Digital quarterly tax reporting to all, decrease the VAT threshold, access bank accounts in order to calculate tax 'in-house', and expand self-assessment to everyone.

Our approach, compared with existing accounting softwares and banking apps that some in this sector use (85% still use Excel or paper), is to encourage users to:

* see the whole picture from their portfolio of activities;

- * set aside for tax & rainy days (or crises such as now);
- * focus on vital but understandable analytics; and
- * build their financial management skills through elearning.

We believe the self-employed can be helped towards financial resilience and independence, but that they sometimes need a helping hand, not just from our time-saving technology but from human advisors. That's why we are developing a new role that we call Business Data Interpreter (or BDI). These could be existing Bookkeepers, IFAs, & Business Coaches, or new people entering the sector looking for flexible remote working. BDIs can use kEAper to help with analytics as well as preparing Tax Returns, and so on, and communicate with and assess clients through **balance**.

Our ambition is to make **balance** the toolkit to fulfil the needs of the enormous potential market of 4.8 million (& rising) self-employed plus private landlords, SMEs, and anyone with Pensions/Savings/Investments.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMPIRIBOX LIMITED	Empiribox @ Home	£48,578	£48,578

Empiribox was originally formed to enable the effective teaching of science in primary schools by non-science qualified teachers. The strategic need for a workforce with science and STEM related qualifications is growing yet science is often an undervalued subject in primary schools.

Schools are closed during the Covid-19 crisis and is not known when "normal" education can resume. The Empiribox @ Home project plans to enable the digital delivery of primary school science education using experiments to be conducted at home, supervised by parents or other adults. The experiments will be developed using easily available domestic materials and will be safe for use at home. The supporting resources will include online delivery of interactive demonstration videos with embedded questions, and assessment worksheets that meet the National Curriculum outcome objectives.

In order to cover the National Curriculum approximately 180 experiments, lessons and supporting resources will need be developed. The supervising adults will not need any science knowledge to support the pupils. The project will enable teachers toassign specific lessons to their classes to complete after which they can assess pupil progress against the national curriculum objectives via individual worksheets. Pupil names and progress data will only be available to the school as this data will not be handled by Empiribox.

The existing Empiribox @ School classroom based system is already innovative. Empiribox @ Home will be deliverable in a domestic environment. No equivalent system is known that allows digitally delivered remote and interactive teaching of science at an individual pupil level while being compliant with the National Curriculum, including pupil assessment.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NORTON STRAW CONSULTANTS LTD	Thermodynamic Air Sterilisation	£49,314	£49,314

There are considerable doubts about the effectiveness of masks for protecting individuals in public spaces. While masks are probably sufficient for those who are only occasionally exposed, for those exposed for long periods on a continuous basis, a better method of local air purification is required.

Thermodynamic air purification systems are currently available but are not portable and are heavy. This project will use advanced computer simulation methods and additive manufacturing (often called 3D printing) to design and prototype a lightweight device suitable for use by people like bus drivers, train conductors and shop workers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IDEAL MANUFACTURING LIMITED	Nanobubble sanitisation of laundry	£25,075	£25,075

As a leading manufacturer of professional laundry chemicals, Ideal Manufacturing Limited (IML) is always looking to develop new products and methods which offer superior cleaning, excellent value with minimal environmental impact.

We have identified a novel cleaning chemical which promises significant cleaning and sanitation performance. Hitherto, lack of understanding of how this technology interacts with the wash process has limited development. However, we have obtained equipment from another sector which can be applied to this chemical to improve performance in the wash process. IML believe that this new combination will be effective against harmful bacteria, spores and viruses as well as stains.

As it is known that these pathogens can survive on fabrics in some cases for days even after a conventional wash, these soiling are potential source for spreading of infection (e.g. NHS or care home linens). Thorough cleaning and disinfection is therefore a key hygiene requirement. Successful application of this chemical for the purposes of laundry sanitation will also yield substantial other benefits, including reduced consumption of energy and water, an increased lifespan of the items being washed and a reduction in the quantity of microfibres released into the environment.

This central aim of this project will be to demonstrate that the application of this chemical in aqueous environments can lead to inactivation of viruses and bacteria of clinical significance. Experiments will be conducted to find the optimal method of application for achieving inactivation.

Funding for this project will be used to enable experimental work, analyse its findings and apply them to the benchmarks for hygiene the sector demands. The funding will provide salary for staff to carry out these tasks, lab consumables as required and for administration of the project.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EQUAL EDUCATION LIMITED	Equal Education: e-learning lockdown solution	£49,740	£49,740

Equal Education is a social enterprise that provides tuition for children in the care system and those with special education needs and disabilities. There are currently almost 80,000 children in the care system in England. Educational outcomes for this group are, on average, 30% lower than their peers, they are far less likely to go University, and more likely to be unemployed. Our mission is to improve outcomes for this group and close the educational attainment gap.

We are extremely concerned about the disproportionate effect of the pandemic on our students and their families. At the time of schools closing these children will already be 18 months behind their peers. We are therefore acting so that the attainment gap does not widen further during this time. According to TeachFirst, only 2% of teachers working in the most disadvantaged areas believe all their pupils have adequate access to the devices they need for home learning. In moving our operations online, it was evident that many young learners do not have access to a device suitable for participating in online education. In response, Equal Education has set up a Technology Supply Service to enable schools and Local Authorities to order iPads to be delivered to those who need them.

We acknowledge there are concerns over online safety; the NCA has reported activity of paedophiles looking to exploit children online during the pandemic. We believe our managed device offering provides a safer option to accessing technology and mitigates risk. Each device is installed with specialist protection software, which limits distracting and dangerous websites or apps and enables Equal Education to lock down stolen or lost devices. Each device will already have all the software pre-installed on the device, with no changes or updates needed by users.

This grant will enable schools and Local Authorities to provide vital access to the technology that so many children do not have. The digital divide is bad for social mobility and equality of opportunity, but now it is denying many children a fundamental right to continue their education. Education is a fundamental human right that must be upheld during this crisis. We believe every young person should have access to the educational support they need to reach their potential. Access to technology plays a vital role in enabling young people to continue to learn.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GEN3D LTD	Gamified Learning of Additive Design	£49,378	£49,378

The value of additive manufacturing processes (AM, otherwise 3D-printing) has been clearly demonstrated during this pandemic. The global community has energetically developed novel ventilator and PPE solutions in a very short time frame. Frustratingly, the number of designers and engineers with the required knowledge to drive such innovation is very low. In short, there is a critical skills gap in terms of design for AM (DfAM). However, the furlough, quarantine and lock-down presents an unprecedented opportunity to upskill the UK workforce in this regard.

This project will design and deliver a new, highly-interactive educational course. It will move away from the stale, rote learning approaches seen so often in traditional e-learning. Instead, it will rely heavily on 'learn-by-doing', gamified walkthroughs within Gen3D's proprietary DfAM software. This will be free for the next year, and it will be coupled with online teaching materials (videos, assessments, etc.). This will overcome barriers to access during a time of great financial pressure and remote working, directly impacting education and culture. In addition, it will give a rich, deep learning experience to maximise engagement and fulfilment.

E-learning is experiencing significant growth through platforms such as the Code Academy. These interactive, digital environments encourage positive learning where the user has to perform different tasks to progress through the course. Using our bespoke design software, we intend to produce a series of video lectures and interactive case studies to demonstrate best practices and methodologies to consider when designing and producing parts for AM. We will embrace 'gamification', where game-like experiences promote desired behaviours and drive learning outcomes. This methodology is grounded in pedagogical research and is built on constructivist learning, which predicates the need for experiential learning via social interaction with the environment and peers (Zainuddina, 2020).

The course will primarily focus on upskilling quarantined, furloughed or otherwise locked-down engineering or design staff. However, wider impacts may readily extend to disrupted students and hobbyists who are seeking DIY solutions or self-improvement during this challenging time. By delivering this low-cost/free online course, we hope to increase the UK workforce's understanding of AM processes and workflows. It will build awareness surrounding the benefits and drawbacks of AM processes, the economics of using AM and the principles and mindsets that lead to the successful deployment of AM. Looking further, upskilling the UK advanced manufacturing sector will help to maintain a competitive advantage within a global engineering community.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AGO ACTUM LTD	Legal Services Bot to make access to legal services quicker, better and cheaper during Covid-19	£32,162	£32,162

Project aim is to create a legal services robot to replace the initial meeting of a client with a lawyer / solicitor due to Covid-19 and provide a better initial facts gathering exercise. Many companies facing legal challenges as a result of Covid-19 (job loss, contracts cancelled, rent not paid etc) and want cheaper, faster legal services. Not going to take out the lawyer(much bigger work) but just makes sure all of the pertinent facts are picked up so that the lawyer is armed with the key facts prior to engagement.



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Total available funding £34m.

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
CLOUD COVER IT SERVICES LTD	Design of a new lighter VPN client for Home working	£44,180	£44,180

Existing VPN solutions are relatively difficult to administer and difficult to scale. Limitations imposed by older encryption methods leads to poor user experience and limit the number of users each device can support. Traditional full-tunnel VPN architectures also impose high bandwidth requirements on hub sites that many SME struggle to meet.

Our solution will provide an SME friendly, simple to use, easy to deploy, scalable and secure remote access solution to allow access to both local and cloudbased resources without the capacity & bandwidth limitations of traditional VPN systems. With a focus on performance and ease of management, this solution is intended to address many of the challenges currently faced when deploying remote access solutions at speed & scale.

Business IT teams have a major challenge in providing a secure connection to company systems against the backdrop of the enormous growth of home working. This system will provide a solution that companies can self manage using existing systems more efficiently and securely.

This is a significant advance on existing solutions because it brings remote working technology previously too costly and complex within the reach of the SME sector.

The CloudCoverIT team has developed hundreds of specific solutions of this type over nearly a decade in business. And our experienced in house team have scoped the technical elements of this project in 2019\. The current COVID-19 situation has brought the project to the forefront and the team have a project plan ready to develop including technical and commercial development in an 8-week window.

The market need for this is significant as all businesses follow government advice to enables all worked who can to work from home.

Every business that has staff connecting to systems can do so more securely that without VPN and faster and more reliably than with a stretched VPN operating near or beyond its limit of connections.

This system enables companies to make secure connections without large numbers of terminations and high bandwidth by employing modern encryption and compression technology to improve the overall efficiency of the system.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
QUINTICAL LTD	Enhancing a device management solution to improve the ability for NGOs and volunteer groups to assist in the COVID-19 crisis.	£49,811	£49,811

Our project proposal will add features our existing device management software so that it can be used by volunteer and NGO teams to combat the COVID-19 epidemic. This will enable the smartphones of these organisations to be updated with the latest apps and information, and provide them with a suite of services to better manage their organisations.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INTERACTIVE OPPORTUNITIES LTD	Home Learning - Daily Structured Activity and Content Provision	£49,989	£49,989
Imagine you are the parent or carer of a young child - or more than one! Their nursery or school has closed and you are trying to work from home or around an emergency role and trying to make the most of a confusing stream of suggestions and ideas to entertain and educate them.

The school is doing its utmost to support you but you still don't have enough activities to occupy, let alone educate your child. Celebrities are providing some bits and pieces but what age are they appropriate for and do they fit in with what they are doing at school?

You hear that the BBC will be offering educational support - great! But, then find out it will only be doing this for a limited period of time per day and maybe not appropriate for your child. One key worker told us 'I need resources for the kids but have no time to research .. there seems to be too much out there'. Then you hear of a website - curated, organised, content aimed directly at you and your child's age. It provides a community, support and advice and even a chance to share your child's creations with thousands of their peers. One parent told us on Facebook, "this was brilliant! Though the activities only lasted a few minutes, you enabled us to engage and our imaginations took us much further! Our first go and it was a really fun day after a few where things have got a bit tough. Thank you so much!'

Our platform already brings together dozens of volunteers and thousands of parents. But we need help to scale up and reach hundreds of thousands of parents and carers. To help teachers go further in supporting their families, parents cope at home and not feel useless; to help children laugh, learn and have fun in difficult times and to make the most of the creative talents of teachers, celebrities and entertainers who are keen to help others.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
POLICY IN PRACTICE LTD	Accelerated analytics for local authority emergency response	£47,814	£47,814

Policy in Practice helps local authorities to unlock the power of their existing administrative data to improve the way social policy and welfare support is delivered across the UK.

With over 1.5 million shielded residents, one million new benefit claimants, and thousands of vulnerable children and adults, councils are at the frontline of supporting people impacted directly or indirectly by the pandemic. They have a statutory duty to protect their most vulnerable households and recognise the importance and potential of their existing data to help identify and support people impacted by COVID-19\.

Low income households are disproportionately more likely to be affected by the measures put in place to control the pandemic. With benefit caseloads rising rapidly, the administrative data councils hold on low income residents (those in receipt of housing benefit or Universal Credit) can help councils target support quickly to those most heavily impacted.

This data is already an essential part of the design and delivery of support at the local level, helping local governments target the right support to the right people. Currently, there is a time-lag between the receipt of administrative data and our ability to deliver meaningful insights, with the process taking up to six weeks and refreshed on a quarterly basis. With conditions changing so quickly due to COVID-19, these analytics need to be delivered monthly and in near real time to maximise their impact and effectiveness and utility for councils. Real-time analytics will help councils to identify newly vulnerable and key affected groups to better mitigate the social and economic costs of this crisis.

Innovate UK funding will be used to accelerate a novel approach to ongoing automation efforts with councils, speeding up access to insight from six weeks to two days, and frequency from quarterly to monthly updates. Working with administrative data on a secure, automated scalable basis in the cloud will enable data to be used operationally to support people impacted by COVID-19\. Grant funding will accelerate development efforts at pace, bringing in external expertise to enable real-time monthly analytics to be accessed by a minimum of fifty participating councils.

The long-term benefit of the project will be to accelerate a shift in the use of administrative data from processing and resource planning today, toward proactive and targeted support to individuals in the UK and elsewhere, greatly improving the cost-effective delivery of outcomes across a range of social policy areas.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CONNIDO LTD	ACT (Automated Covid-19 symptom monitoring Technology for care homes)	£49,753	£49,753

Market Need - Over-65s represent 80% of COVID-19 fatalities (Imperial College, 2020) and early identification of symptoms is essential to avoid severe COVID-19 infections (The Lancet, 30/03/20). UK's CHs play a vital role, however, 28% have confirmed cases of COVID-19 (CareHome.UK, 17/04/2020). Care Homes face extreme challenges reducing transmission, with movement between residents' rooms taking time, adding stress and increasing risk of spreading the disease.

Key Objectives - ACT will rapidly augment Bluebell's current baby monitor to be suitable for Care Homes, safely and quickly identifying early COVID-19 symptoms in residents. As well as improving care for older people, this will reduce costs and pressure on the healthcare system.



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
UVAMED LTD	Trauma Trays - colour coded, secure, tamper evident and bacteriostatic procedure-packs for use in remote and temporary relief hospital facilities.	£49,828	£49,828

The recent COVID19 pandemic has highlighted the adverse effects on healthcare systems to effectively deal with medical-related disasters. Whilst exceptionally ill patients are cared for within existing hospital infrastructures, patients requiring less intensive care, but still in need of hospitalisation, are cared for remotely. It is these remote facilities that require specific support to operate, as they will not have the resources of main hospitals. In particular the human resources allocated to remote facilities may be less experienced to deal with the specific medical interventions required, the equipment may be unfamiliar and limited and the environment may be challenging to staff and patients alike. Nightingales ratio of consultant to patient is 1:42 compared with standard ICU ratios of a maximum of 1:15\. While nursing ratios have increased from 1:1 to at least 1:6\.

The challenge of providing appropriate and effective care, specific to the needs of patients in relief hospital facilities is one that Trauma Trays can help to support.

By providing organisational, secure and auditable procedure-packs (TraumaTrays) containing equipment and medication curated for specific tasks or emergency incidents, remote hospital facilities/departments can deliver quality and specific care to patients whilst allowing for the optimum use of human resources across all sites to deliver the best care as quickly and efficiently as possible.

State-of-the-art crash-carts in ICU or A&E are equipped for all eventualities and are familiar to all professionals in the department. However, the provision of comprehensive equipment, comparable to ICU or A&E standards in remote facilities is both costly and inappropriate; but relevant equipment and drugs must be immediately available for the patients.

Curated and secure procedure-packs, centrally dispensed by the main hospital, securely sealed with auditable labels, will provide a means to get essential and appropriate equipment, supplies and drugs to patients, remotely hospitalised, quickly and safely.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACORN CARE AND EDUCATION LIMITED	Develop an On line school for Looked after children	£49,686	£49,686

The Acorn Digital Learning (ADL) vision is to improve the educational outcomes for Looked After Children using an online school to support their learning on transition into a care placement, between placements and provide additional catch up support. In other word to level up the playing field for a Looked after child in terms of educational outcomes.

The key objectives are to:

a) improve the outcomes for Looked after Children

b) help Local Authorities meet their legal obligations in terms of education provision

c) deliver an efficient, cost effective and holistic education support to Looked after Children



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Shout Business Technologies Ltd	Shout4 shared outcome ecosystem	£50,000	£50,000

SHOUT4 is being developed as online deal management software featuring the sharing of outcomes. MVP will carry project details, revenue share agreements and reporting functions. The value of a shared outcome deal is its ability to secure the best teams to work on projects while de risking the upfront capital costs. In some ways it can be considered as an online sweat equity deal system with a true democratised outcome. This innovative model offers a real opportunity to reshape how deals are made. **SHOUT4** software will integrate and manage this as the umbrella format on all deals offered it processes.

The Founder has already proved an analogue version of the economic and legal model within the music industry. Artists and labels have been able to create new product for onward sale for as little as 10% of traditional costs. Professionals and other service providers have accepted a significant reduction in their normal upfront fees in return for a share or wider share of future revenues generated by that content and or artist.

SHOUT4 software is being developed to enable this model to operate within an online ecosystem. Although initial focus will be on supporting the development and marketing of artists and labels, the software is being developed as sector agnostic. Post MVP, **SHOUT4** will develop additional capacity to assess opportunities for the benefit of all parties through the application of AI and data management.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEXA MEDICAL LIMITED	Ease of use specialist wound care dressings to reduce hospital and nursing home burden	£49,559	£49,559

Hard to heal wounds, such as Pressure Ulcers and wounds that get infected after surgery cost the NHS over £700 million a year as well as adversely affecting the wellbeing of the patient and their families. NEXA Medical have developed a novel wound healing device that stimulates the body's natural healing process and ensuring infected material is removed from the wound. It does this through the application of a low level negative pressure applied at the wound site. Although this technique, known as Negative Pressure Wound Therapy (NPWT), has been used in clinical practice for over 20 years, many of the devices that deliver NPWT are complex, noisy and expensive and not really suited for mobile patients or for use in their home.

Specifically, dressing changes have been required to be undertaken by specialist wound care nurses which has often required patients having to be admitted to hospital or nursing homes who have the trained staff. This project is aimed at developing bespoke, easy to apply dressings that can be undertaken in the home. Supported by training and assessment tools that can be used where appropriate by family members and carers under the supervision of Health Care Professionals remotely. The aim is to keep patients in their home for as long as possible when it is deemed appropriate by nursing staff and GPs.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMBLATION LIMITED	AVAC: Anti Viral Air Conditioning	£49,863	£49,863

Emblation Ltd would like to repurpose the microwave generators it has to create a prototype air filtration system that renders viral particles in air inactive. In order to validate the prototype works, a test rig will be designed and manufactured to fit into a class II biosafety cabinet. Existing filtration methods do not destroy the virus particles but the novel use of microwave energy can be applied to vibrate the particles sufficient to inactivate them. The technology can be applied to large scale air handling systems in hospitals or small-scale residential products for care homes, helping stop the spread of coronavirus by the airborne route. The project will take 6 months to complete.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ROEBUCK PRODUCTIONS LIMITED	The Heart Of The Community (HOTC)	£39,626	£39,626

Our project, **The Heart of the Community**, is a website and forum to create and grow a thriving Community Shop network based upon active **volunteer** participation. By reducing resident's exposure to Covid-19 and addressing local needs, it shows how communities throughout the UK can work together to create a meaningful, "national" Community Shop.

There is a lot evidence to suggest that volunteering is hugely beneficial in terms of physical and mental wellbeing; and the majority have much to offer from their life-experiences. Further, by engaging local volunteers at low cost, profit can be reinvested in other community-benefitting schemes and services.

Aimed primarily at rural communities (19% of the UK population) -- ideally those with a Post Office - the project will target the 12,000 UK Parish Councils through the National Association of Local Councils. The purpose is to prove -- through sharing the example or the Church Fenton Community Shop (CFCS) - that tangible societal, economic and environmental benefits can be enjoyed.

Free registration provides access to the **Project Plan**, which is based on the steps taken by the organising committee of CFCS. There will be links to relevant and useful help pages (sources of funding, business plan, revenue streams, documentation and a framework for consensus management) supported with personal anecdotal observations.

There will also be advice about every aspect of setting up the business from the vital importance of generating a feel-good factor to negotiating the best property deal and setting up accounts with local suppliers.

Our project will show how to build a supportive, resilient and sustainable community using the CFCS concept through 2022 and beyond.

CFCS is about people helping other people and the website will balance practical / legal information with personal reflections and observations from those who were involved with CFCS; we believe it is important to share success stories as well as failures. We want to ensure every project has the very best chance of success.

Equally, we want to hear from other participating communities. Ideas and innovations ought to be shared, as we can all learn from collective experiences. In the long term the website will seek sponsorship and advertising to sustain its existence but in the true spirit of the venture short-term day-to-day management of the site will be handled by volunteers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SERG TECHNOLOGIES LIMITED	A Telemedicine Parkinson's Disease Assessment System for Home-based Monitoring.	£49,586	£49,586

SERG Technologies Ltd has developed a new, revolutionary, wearable sensor suite for the investigation and monitoring of muscular rigidity and underlying neural signals in Parkinson's Disease (PD). Our patented technology has the potential to be employed in telemedicine for automated accurate assessment of PD symptom severity enabling vulnerable people that cannot visit their neurologist due to the COVID-19 pandemic to be independent and maintain their quality of living. Our system is reliable, user-and-doctor-friendly, and unique as it is the only device capable of an assessment of all cardinal PD symptoms within the current framework of current NHS neurological tests. In addition, it can be utilised as a future means of continuous closed-loop deep brain stimulation (DBS) for patients with PD, providing a foundation for a range of ground-breaking, new, neurostimulation treatments.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RIPPLE EDUCATION LTD	Home-working software for teachers - replacing in-school curriculum planning with a custom online platform.	£46,863	£46,863

Pango helps teachers with the crucial lesson planning process by bringing their content, curriculum and collaboration needs into one place.

Higher quality lesson preparation result in higher quality lesson delivery, which results in all-important higher learning outcomes for students.

Teachers spend 60% of their time not in the classroom, and 20% in lesson-planning mode. It is a highly fragmented task, breaking the curriculum and lessons into bite size chunks, working across 2-10 pieces of software, hunting for quality content. Pango is changing that with an easy to use software tool that helps teachers to plan great lessons in less time.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIVE CINEMA LTD.	Head Holiday	£49,440	£49,440

Head Holiday is a new platform bringing together all the best virtual and 360 degree travel, cultural, creative and nature content that's currently scattered across the internet. The platform gives housebound audiences the know-how to view this content in the most immersive way possible, without the need for a headset or any virtual reality experience.

Head Holiday is a curated and searchable platform full of virtual trips you can take without leaving the house, and without having a virtual reality headset. All you need is a smartphone and some cardboard to be able to take your head on a holiday around the world, whether you're anxious, bored, curious, or making plans for future travel.

Curated by film festival programmers, travel and culture journalists, and environmental psychologists, the platform cuts through the noise to bring you the best existing and emerging virtual content from around the world.

Don't just view these places, step inside them. With the instructions on the website, visitors can make their own cardboard virtual reality viewer by recycling household items, or follow the links to buy one cheaply online. Using these simple devices, viewers can put themselves inside these experiences quickly and easily. You can also view content without a VR viewer, navigating content from your phone or computer screen.

Our ability to visit new places and feel the wellbeing benefits of nature has been restricted for the time being, but there's a wealth of 360 degree experiences we can have which are almost as good as being there -- if you know where (and how) to look.

Head Holiday is a project from Live Cinema UK - researchers and producers of immersive film experiences, working nationally and internationally, and based in Yorkshire. Previous recipients of Innovate UK's Audience of the Future Design Foundations funding, their knowledge of quality immersive content, audience needs, are key to the realisation of Head Holiday, as are their partnerships across the creative and cultural industries.

The technical development of the project is being created with Marmelo Digital, a London-based digital agency which specialises in creative technologies, including web, mobile, immersive and embedded systems. Their clients range from the NHS to Tesco, from the Royal Shakespeare Company to Twitter, and includes a practice designed from the ground up to work collaboratively with smaller organisations in the cultural sector.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KNOWLEDGE COLLECTIVE LTD	Rapid point-of-need intervention for remote learning	£49,980	£49,980

120 Seconds is an online platform that gives secondary school students access to a tutor within two minutes. Timing is critical in the learning process and current tutoring services lack in speed and affordability. With our service, students are able to access quick slots with a high quality tutor, providing them with flexible and impactful learning when they need it most. They can interact with their tutor via messaging, voice, or video calls, allowing a learning method that suits the student.

Knowledge Collective is an education company that brings together a unique blend of experience and resources, including professors, graduates, and students from higher-education institutions such as the University of Oxford (amongst other leading UK institutions). We emphasise pedagogical approaches and merge them with 21st century technology to bring impact at scale. Our aim with **120 Seconds** is to help students during this unprecedented time as they are challenged to rapidly adapt to online learning. We also aim to create new job opportunities by prioritising the hire of recent graduates. Public funding will enable us to bring our service to market as early as July 2020\.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NIGHTINGALE HQ LIMITED	A business AI Productivity toolbox for SMEs	£49,380	£49,380

Micro to medium enterprises have been significantly disrupted by COVID-19, and face staff shortages, disruption to their business model, and a dramatic need to lower costs. This temporary shock has scared the economy's future potential and the onslaught of business failures, cancelled investments and unemployment bring longer-term impacts.

We want to provide a toolbox of "on-rails" Artificial Intelligence (AI) productivity projects that Small and Medium Enterprises (SMEs) can implement without needing extensive additional external support. We are delivering an opportunity to them to learn how AI can generate value, save costs and generate revenue and growth opportunities for them. The AI market is predicted to grow to \$169.4B by 2025 with significant startup activity. The AI market is at the early stages and UK SME's need to be prepared before their competitors are. Our AI toolbox will support SME's to adopt many of the core AI quick wins and make an important shift in making their business AI-ready.

For example;

- Augmenting customers service roles with AI chatbots (Customer Services, Sales, IT, HR etc)
- Optimising sales process with Sales AI
- Increasing knowledge worker productivity via Robotic Process Automation and Knowledge Mining;
- Automated digital experiences using Cognitive AI solutions,

The more that UK SMEs adapt to this changed world the better. Adopting AI into their business and their operations make good business sense.

SMEs don't have the time or the cashflow to support extended and complicated technical projects so our aim is to deliver online guided i.e. "on-rails" interfaces towards design, deployment, and rollout of these AI projects to see success quickly. We want SME's to feel cost-savings and revenue opportunities quickly.

These AI technologies are cutting edge and innovative but the really innovative area is the "on-rails" capability. The guided deployments will unlock AI for this sector of businesses and help them bounce back and become competitive.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRANSROBOTICS UK LTD	Low-cost circuits for short-range radar for remote health monitoring	£44,950	£35,960

TransRobotics seeks to deploy advanced micro-radar systems to remotely monitor the health of at-risk individuals, such as the elderly. These systems will require no interaction by the user, but will collect detailed long-term records of the health of the subjects. These data records include the presence, position and posture of the subject in their living space as well as clinical-grade vital signs, such as cardiac and breathing activity. This monitoring will allow patients to return from hospital far earlier while maintaining safety and preventing readmission. Elderly users can also remain in their home safely without the need to travel to hospitals or other health care facilities as often.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ELCHIES ESTATES LIMITED	Virtual Farmers Market	£47,681	£47,681

The procurement, build and commissioning of a Virtual Farmers Market for safe and sustainable locally produced food supplied to the rural community in a novel, 24/7 way. Replacing the farmers market facility, lost to Covid 19, which provided a service to the community and a valuable revenue stream to local food producers.

This project uses modern technology and state of the art vending machines housed in a cabin to provide a direct conduit between local food producers and the local community. It provides an 'open-all-hours' solution which meets the protocols of social distancing and, with minimal intervention, provides a clean and safe environment for retailing a number of small to large foodstuffs including, but not exclusively, fresh and frozen meats, seasonal vegetables, cheese and dairy produce.

As a business model it is conceived as being replicable throughout the UK and therefore successful proving of this concept will lead to further project opportunities.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GILLSTREAM MARKETS LTD.	Streamed and timed online auctions for livestock sales	£44,362	£44,362

Allowing online participation in livestock market auctions.

These have been conducted in broadly the same manner for a thousand years with public auctions at the Market. Bringing online participation to these has been hampered by cost and inertia.

The Covid-19 lockdown restricts the number of people who can physically attend the auctions and so there is now an imperative to bring in an online solution to complement the physical service offered. With public support and new entrants we can also address the cost issue.

This will not only serve farmers through the lockdown, but provide a platform for more efficient trading of livestock to the benefit of the whole supply chain in future.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CGS DIGITAL LTD	onlineteachingplatform.com	£49,972	£49,972

[onlineteachingplatform.com][0] is a platform for creating online courses. We aim to lower the barriers to entry for online course creation. We do this in two key ways (1) By making the project open-source. (2) By offering gentle introductory pricing for new creators using our paid hosting service.

The platform will offer all the features necessary for online course creators to publish their lessons such as video hosting, lesson creation, payment collection and student progress reports (to name just a few examples). The platform also offers a number of state-of-the-art capabilities that distinguish it.

Our innovative business model means that for those who wish to use our open-source code, they have the option to work with our code for free and handle web hosting themselves. For those looking for a managed solution, we have a flexible paid plan which fosters new teachers. This brings with it the benefits of the open-source community, transparency, and a commitment to high standards.

[][0]

[0]: https://apply-for-innovation-funding.service.gov.uk/application/60353



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TRICERION LIMITED	MyVaccineRegister - App/Portal to declare an individual's vaccination against and immunity to COVID-19	£49,774	£49,774
MyVaccineRegister aims to create a real-time verified database of individuals who have received a COVID-19 vaccine, who have subsequently been tested for the generation of antibodies and therefore have confirmed immunity to the virus; this is in contrast to the concept of herd immunity - where a subject has been exposed to the virus but not necessarily generated long-term immunity. It will enable registered individuals to return to normal work and not be affected by coming into contact with the virus, whatever the transmission mechanism. It also deals with the issues of social distancing -- since a person who has been vaccinated not only protects themselves, but also reduces the risk of onward transmission.

At present, a vaccine is not yet available, but by setting up the platform now, the project will be ready to deploy as soon as vaccines come onstream. It is apparent that several companies (biotechnology and pharmaceutical) are developing a vaccine and that more than one vaccine may reach the market. The platform will be designed to work across any of these vaccines.

A key objective is that the platform should be open to all nations and it will need to deliver data accurately and speedily.

Once we have created the platform in the UK, we will look to scale globally. The access to an accurate vaccination record and immunity, verified and digitally delivered, will enable the world to live with COVID-19\. Access for the individual is to be via a mobile App (Android/iOS platforms) or portal.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VISTALWORKS LIMITED	Detecting and preventing the supply of illicit and falsified medicines online	£49,914	£49,914

This project will develop and launch data-driven software to detect and prevent the supply of illicit and falsified medical products and PPE on mainstream online marketplaces and ecommerce websites.

This increases detection/prevention rates and enforcement against illegal sellers; enables safer public and private procurement, and protects citizens and communities from harm.

Organised criminal sellers have been quick to target the urgent need for PPE, testing kits and medicines, as well exploiting people's fears by offering illicit, harmful, Covid-19 "miracle" cures.

By focusing on prevention and enforcement, we'll help reduce the \$2.2trillion global impact of illicit trade, which deprives governments of tax revenues, harms citizens' health, and pressurises public services. Even before the Covid-19 explosion in illicit supply, fraudulent medicines were recognised by WHO and OECD as one of the most harmful forms of illicit trade.

Vistalworks has previously released an AI-driven system to warn shoppers of threats from illicit online sellers in online marketplaces, and just launched a Chrome browser-extension to warn consumers of Covid-19 related risks as they shop online.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JSF HEALTHCARE LTD	ReBleep - The Redefined medical bleep	£48,368	£48,368

Following the emergence of the Covid-19 pandemic, the pressure placed upon NHS staff has increased drastically. What was always a stressful and timecrucial organisation, has become even more constrained. At the heart of healthcare, is communication. We communicate with patients; we communicate with their family members; we communicate with our team.

Despite the emphasis on communication, there is research to say that 70% of all errors in healthcare are down to poor communication. The current method of communication amongst doctors -- the pager -- is inefficient, expensive and compromises patient well-being; so much so, that the Secretary of State for Health and Social Care has ordered for them to be phased out by the end of 2021\.

ReBleep is an application, designed by doctors, to combat the negatives of the pager system and improve communication throughout the NHS. This is an application designed for all healthcare workers - from doctors, to nurses, to phlebotomists. Faster and more efficient communication amongst the healthcare team will mean better healthcare for individuals. Features we include, such as severity-level indication will enable the easy prioritisation of tasks -- a task that doctors have had to manually think through themselves. This will reduce the workload and stress on the NHS. A clear track-record and more certain handover of bleeps will ensure that jobs do not get missed -- an unfortunate scenario that is becoming more likely due to the impact of COVID. As a whole, ReBleep will help alleviate the burnout of NHS staff - a profession where 76% of employees experience mental distress or ill health at work, and up to 57.4% of foundation year 2 doctors decide not to enter further training (2017). Future expansion to GP Surgeries will decrease the separation between primary and secondary care, substantially decreasing the time taken for GPs to write to specialist clinicians for letters of advice.

The rapid communication between all members of the NHS will increase the country's scope to deal with future crises, whether it be an unforeseen pandemic, or an unexpected war. 'Communication is at the very core of our society' - Jan Koum - and it is at the very core of our NHS.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MARMELO LIMITED	Good Morrow: a helping hand for employers and employees transitioning to remote working	£44,436	£44,436

Good Morrow is an employee-centric productivity app for the post Covid-19 age. We want to replace all the awful timesheeting applications your business uses, and replace it with something that is made for organisations that have had to embrace remote working quickly and perhaps against their will.

But Good Morrow isn't just a really good timesheeting app - it turns the concept on its head. Rather than asking the employee to account for their time, it applies the principles of modern wellness and productivity apps to help employees organise and understand how they are using their time. An employee-centric approach which matches the realities of remote working.

Check in with Good Morrow each morning and you'll get an AI-supported conversation asking which items on your to-do you managed, confirming which meetings happened and how they went, and making sure you've taken time for lunch and relaxation. It'll give you tips for how to manage stress, or handle conflicting work demands, based on the data you've provided over time. And at the end of all of this, it will use that information to fill in your timesheets for you, asking you to fill in any gaps.

At the end of the work day, you open Good Morrow again to get your to-do list in shape for the morning and close off the day. And your employer gets quality management information, delivered straight to their existing system, which really reflects how their employee's time has been used.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FVG SMARTI ENVIRONMENTAL PRODUCTS LIMITED	Multi surface environmental enzyme spray, providing long-lasting protection against airborne and surface viruses.	£49,281	£49,281

Our project is to re-engineer our current enzyme based odour barrier surface solution by incorporating newly targeted enzymes. This will provide long-lasting protection for all surfaces to multiple viruses and airborne bacteria. Our products will be applicable to all communities and families world-wide. It is considered that current cleaning products focus on short-term disinfecting properties only and require constant reapplication. Our project is to provide a solution that can be simply applied, offering long-term surface protection across multi areas such as handrails, worktops, door handles, taps, light switches, desks, etc and be used in all environments. There is an increasing need for society to protect itself from any bacterial/virus spread and this project will enable us to fast track our innovate concept and provide long-lasting environmental surface protection for all, world-wide.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FINTEX LTD	Job Search Automation	£49,835	£49,835

There are four approaches a jobseeker can take to find a new position, they can; search and apply for roles listed with online job boards, reach out to their network of contacts to help uncover opportunities, register with recruitment agencies or research and contact employers directly. These approaches interoperably link together - for example a contact might work at a company where a role has been found on a job board and could be a source of background information to help support an application.

It normally takes a mix of all four of these elements to secure a new role. Performing an effective job search also needs the data from each approach to be logically stored, organised and linked to keep in control of the process. For example, a job is found on a job board, have I already applied for that job? How can I store a list of my shortlisted jobs? I got to interview stage, which version of my CV did I use for that application? A contact advised me to check back in with them in three weeks when this year's budget had been agreed, when do I need to complete that task? And so on.

There isn't a software package or website that organises and links all these data elements in a single location. Instead an organised job seeker may put together a spreadsheet to do their best to keep track of all the moving parts (data which often updates daily). But this can quickly become counterproductive with more time being spent copying and pasting URLs and job descriptions and manually updating lifecycles than is spent on the job search itself.

Rolecatcher.com mitigates all these gaps by providing the job seeker with a full suite of online tools to help them keep organised and save time. Using this tool all elements of the job search (jobs, contacts, companies, documents, tasks and notes) can be stored together and logically linked together as required. Where possible the tool links directly into data sources such as job boards meaning that data can typically be stored with a single click - no copying and pasting required. A dashboard and MI then then bring all elements together as a single view helping to visualise activities and to provide analysis on what is and (more importantly) what is not working in an active approach to find a new job.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TOCALABS LIMITED	NHS Appointment Recovery Project	£49,552	£49,552

This Project is to set up a pilot scheme with an NHS Trust to address patient appointment backlogs caused by the Covid-19 Pandemic, with potential for rollout across the sector.

The Project is an automation software solution initiative aimed at rebuilding the vast appointment systems within the NHS and Healthcare Sector, without tying up vital resources. The majority of routine appointments were, by necessity, put on hold at the start of the Covid-19 pandemic. The present state of the data could best be described as chaotic and only manageable with a massive cost in terms of human effort unless a new and revolutionary approach is adopted, and adopted within tight timescales. Appointments will need to be re-allocated and re-scheduled alongside new patient appointments. Our key objective is to pull-back the appointment information held on various systems within each client's premises and, alongside new patient appointments, will use Tocabot's existing proven Robotic Process Automation platform and adapt it to provide integration with the NHS Trust's system in order to resurrect data and re-allocate / re-schedule appointments according to preset priorities. Due to the nature of the current situation, NHS Hospital Trusts have not experienced such lock-down action before and only by taking advantage of the latest automation technology will a safe and rapid resolution be achieved. The use of Tocabot's Robotic Process Automation platform would give a safe and rapid solution and moreover will eliminate the inevitable human error that would occur if the task were to be completed in a traditional manner even with the use of existing IT facilities. In this respect Tocabot's Robotic Process Automation represents a huge advance on earlier systems.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HEALTH PATHWAYS LIMITED	Patient-Held Digital Passport for Home Mechanical Ventilation	£49,337	£49,337

The number of adults on home mechanical ventilation (HMV) has significantly increased in recent years. HMV patients are vulnerable, caught between home and hospital. Critical information on their management is held in silos across multiple agencies in hospital, community, health and social care.

A person dependent upon HMV needs collaboration and good communication between these agencies to keep them safe at home and avoid hospital readmission. If they are admitted to hospital they face exposure to hospital acquired infection, and, as they usually need to be cared for in a high dependency or intensive care bed, this creates additional pressure on this scarce resource.

Access to up to date clinical information plays an important role in managing deterioration at home. An electronic patient-held record that can be accessed in real-time by both community and hospital staff provides a platform for communication, sharing of expertise and the ability for patients and carers to seek advice on interventions at home that could avoid escalation and transfer to hospital. It provides a platform for remote or 'virtual' consultations with specialist services.

During the COVID-19 pandemic a shortage of home care workers has meant that HMV patients need to be managed by agency staff who are not familiar with their individual care plans. Patients or family members become responsible for the clinical handover between different health and care staff. Permission to view the patient-held electronic record can be granted on a need to know basis, as decided by the patient or their primary carer.

The digital passport is innovative because it holds key health information under the control of the patient and/or their primary carer at home. It will serve as a lean record of their individual HMV and care plan details. The benefits are anticipated to be improved outcomes, avoidance of hospital readmissions and more effective care by addressing unwarranted variation in practice.

Longer term impacts could be achieved through integration with other systems. The digital passport could be linked to outputs from ventilators to develop AI enabled algorithms that will guide changes in HMV management.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
IMPULSE INNOVATIONS LIMITED	Enterprise platform for dynamic product demand predictions in retail	£49,780	£49,780

During the current Covid-19 pandemic, businesses require more support than ever; in particular, retail organisations are experiencing major disruption. The rapidly evolving conditions and government regulations are making it increasingly hard for retailers to adapt their stock and strategy quickly enough to meet their customer's demand for high-priority products, such as consumer staples and medicines. During a crisis, it is especially important for these organisations to be as efficient as possible. Accurate and timely demand predictions are key to minimising product shortages and maintaining adequate volumes of stock, resulting in a drastic, positive impact on their customers and on the financial robustness of the organisation itself.

This project will expand the causaLens platform. In its current form, it is the leading time-series platform with unique technology that leverages the latest research into causality to autonomously build dynamic models that adapt to new data. The delivered product will contain technology specifically tailored for consumer demand applications, including the capability to load new data on a fixed schedule, to discover and update models in an online fashion, to support small data scenarios, and to provide predictions across multiple locations.

The main innovation developed will be the ability of the deployed machine learning models to update their parameters as new data arrives, immediately reflecting changes in the environment and providing more accurate demand predictions. In a time of crisis, the assumptions about the drivers of a product's demand are likely to change. Demand is no longer able to be reliably predicted using historical data from a time of normal business operations. Therefore, the system will need to operate in a small data scenario as only recent data will provide the greatest benefit in providing accurate predictions. This will be achieved by implementing the latest research into causal algorithms, which have the ability to leverage causal relationships discovered in the data to learn from vastly fewer points than traditional machine learning algorithms. Additionally, the system will allow the user to combine data from various retail locations to predict demand at each one. A system that is capable of learning this new environment and providing accurate predictions in this way has never been used before.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIMBER JOBS LIMITED	limber	£45,336	£45,336

Due to Covid19 travel restrictions in place in Europe, the UK farming sector is facing a labour shortfall of up to 80,000 people this season. The reason for this is that the vast majority of UK farming labour is migrant workers (UK workers haven't historically been willing to take these roles). With reports suggesting up to a third of UK crops could go to waste this year, it's paramount that we continue to support the UK farming industry. If we don't, crops will waste, food prices will rise, jobs in agriculture will be lost and businesses will go under - that's not to mention potential food shortages in this country.

In parallel with the agricultural crisis we face, it's estimated that 9million people have been furloughed - and many of those will lose their jobs altogether.

So, in summary, our project will help protect the farming industry, address concerns over waste and availability of food while providing thousands of people the opportunity to earn an income, who may otherwise be struggling to find work.

In order to achieve our objectives, we have partnered with a labour provider, HOPS Labour Solutions, who are affiliated with the NFU, and owned by the National Federation of Young Farmers. We have agreed to adapt, host and licence our pre-existing shift matching platform (our "Technology") to them on a white label basis. That is, our Technology will act and respond in a similar way, but it will run by HOPS (under the brand, picker).

Our Technology will enable farmers to connect directly with and manage UK workers for a shift, a day, a week or a month easily, quickly and efficiently. The Technology will also handle payment and payroll automatically - meaning an individual can work across multiple farms and receive just one payslip.

Our proprietary Technology will be the first of its nature in the UK farming market.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BISCUIT TIN PLANNING LIMITED	End of life transformation	£49,910	£49,910

The vision for the 'End of Life Transformation' Project is to encourage and support the change needed to the way we handle the end-of-life planning across the UK. The key focus being to remove the barriers and empower, enable and motivate everyone to get organised and put their affairs and wishes in order. By making our own decisions and planning in advance, storing it all digitally in one place, we make a world of difference to those we love. We eliminate the unnecessary hassle and stress and provide peace of mind at an emotionally distressing time of loss.

The solution for this Project is centered around the Biscuit Tin Platform - an innovative digital secure vault to hold all your accounts, important documents, wishes and memories all in one place that are released to those you nominate when you die.

It is born from my personal experience of losing my parents and finding out first hand that the way we handle 'end of life' today is completely broken and needs to change. In a world where there are digital tools to simplify almost every area of our lives, not having one to help close them down is a glaring omission.

The minimum viable proposition for Biscuit Tin is in beta testing and it is innovative as the first of it's kind in the UK. The objectives of this Project are to manage the increased and accelerated society need for an 'end-of-life' digital proposition resulting from COVID-19 as soon as possible.

The key objectives of this Project in support of the CV-19 societal need are:

a) alleviate the motivational barriers from the end of life planning process and make it as easy as possible to create, populate and maintain your 'end-of-life' plans and wishes e.g. innovative encouragement, engagement and gamification wizards, links to other related propositions;

b) expand the 'end-of-life' features to cover a critical illness scenario e.g. digital storage of 'Advance directives' ;

c) further automate the death verification process e.g. Death Certificate uploader;

d) removal of unnecessary hassle and stress for families during 'life close down' e.g. enhance the guided help and support and checklists to make the process easier and quicker.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LUTTON FARMS LIMITED	Experimental development to develop a hand held blueberry harvesting aid	£49,796	£49,796

The UK soft fruit industry is facing unprecedented challenges due to the uncertainty of available picking labour as a result of the Covid-19 pandemic, coupled with ongoing limitations caused by the uncertainty of Brexit, the fall in the value of sterling and greater opportunities becoming available to migrant labour in mainland Europe.

Given these pressures, it is now critical to develop a harvesting aid to alleviate the pressure on requiring large numbers of migrant workers and improve the industry's resilience to future disruptions. A successful aid will enable the industry to pick all available blueberries and therefore supply the UK population with blueberries which are high in antioxidants and help support the immune system. Whilst also supporting the UK economy, protecting jobs in rural areas and preventing unnecessary imports which are detrimental to the environment.

We will use advanced and precision design techniques to rapidly develop a blueberry harvesting aid. We will use 3D CAD modelling, digital prototyping and 3D printing to create the harvesting aid. This project is critical to the immediate sustainability of the blueberry industry.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ONORACH LIMITED	CoviSAFE-CFAITH (Covid Safety for Cystic Flbrosis Achieved in the Home)	£49,973	£49,973

Cystic Fibrosis (CF) is one of the UK's most common life-threatening inherited diseases, impacting sufferers' lungs and digestive systems. Patients have strict daily regimes to remain active and take the necessary antibiotic medication and food supplements required to survive.

This project aims to develop a platform which will allow sufferers of Cystic-Fibrosis to self-manage their condition in a COVID-19 world, and for their specialist teams to provide the required vital support remotely.

The 10,500 sufferers in the UK (100,000 worldwide) are currently unable to leave their homes as a result of COVID-19\. This means an absence of any vital face to face care, which would typically take place at a specialist CF Centre. Patients have no capacity to undertake their traditional physical regimens outside of their homes, and this additional social isolation, imposed on an already socially isolated patient group, risks impacting the mental health of CF suffers both during lock-down and post COVID-19\.

At the end of the 6 months, we will have created a platform which is able to be clinically validated and trialed within an NHS setting and with a specialist CF Centre. It will offer patients a tool to support the day to day management of their condition through tailored information, remote and video access to specialists and via a bespoke peer to peer support community embedded within the application.

It will offer the NHS a means through which to ensure regular check-ups are still permissible with their patients, and that live condition monitoring is possible, resulting in their ability to rapidly triage, assess and support both the physical and mental needs of the CF sufferer.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE REINVENTORY COMPANY LTD	Spareable	£25,568	£25,568

Spareable is platform that gives foodbanks access to a cloud-based system that helps them manage the supply & demand as well as logistics of food donations from members of the public.

Donors use an app to see the exact essentials a foodbank is in short supply of and make a purchase right in the app as a donation. All food orders are then aggregated and sourced from distributors offering discounts on volume and food surplus clearances that the software calculates to get the most out of money available.

Foodbanks get more food than if the donors had purchased individually at a supermarket.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MICROPPLY LIMITED	Disinfecting RObots for Nhs England (DRONE)- A Demonstrator	£48,364	£48,364

This project seeks to develop Disinfecting RObots for Nhs England (DRONE). Our long-term vision is to allow machines instead of people to make complex/less deterministic decisions about what, where, when, and how often to monitor, sample, test, and disinfect areas in NHS hospitals/infrastructure, safeguarding the 1million patients passing through every 36hours, the 25million A&E admissions, all visitors, and the 1.05million professional staff, and health practitioners.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LINKS CLINICAL LIMITED	Rapidly Deployable COVID-19 Testing Laboratory and Isolation Facilities for Care Home Settings	£49,624	£49,624

This project will develop a rapidly deployable, decentralised COVID-19 testing laboratory and isolation facilities to support care home providers, enabling them to screen residents and provide swift and comfortable isolation where necessary. This will provide an additional level of support and protection for those at most risk in society.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BESPOKE LEARNING TOOLS LIMITED	mLAH - a methodology to help children Learn At Home	£47,000	£47,000

mLAH - a methodology for Learning At Home

mLAH is a freely available methodology that helps children Learn At Home.

Use the methodology help children :

* bring structure to their day

* work with their peers

* measure their progress

If your children or pupils are struggling with motivation then mLAH can help.

Download the methodology, watch the videos and learn how to set up your own mLAH group.

The methodology helps children focus on :

* balance

* motivation

* activities

mLAH helps children do the stuff they know is good for them !



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WIZINTECH LTD	CircleRent	£43,844	£43,844

CircleRent is an app and web-based property administration platform for tenants, landlords and property managers. It streamlines interactions between stakeholders and provides data in real time about residential real estate holdings.

Whether for a single buy-to-let property or a professionally run portfolio of assets, CircleRent has tools to manage tenant onboarding, rent payments, incident reporting and access to services.

For tenants CircleRent provides instant access to information about their lease and an immediate line of communication with the property manager to quickly resolve issues.

The system is designed to keep a log of all tenant and property management interactions, with reminders sent to both parties for key dates, the ability to raise and resolve incidents, notify parties of missed payments and a plethora of additional metrics.

For property owners, real-time metrics about their property portfolio are displayed and they can monitor customised metrics about the performance of their assets.

CircleRent is the next level in residential property management, bringing together, organising and presenting key performance metrics in real time to enhance the ability of owners, asset managers and property managers to manage returns and maintain expectations.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SME CENTRE OF EXCELLENCE (COFE) LIMITED	SensoryXR	£45,611	£45,611
SensoryXR (eXtended Reality) aims to support children and young people with disabilities to reach their potential during the lockdown and subsequent restrictive phases of Covid 19\.

Many children and young people do not currently have access to their 'favourite places', SensoryXR will provide virtual reality experiences to deliver sensory experiences and help them to improve mental health and enhance overall wellbeing.

Recognising that a significant part of the UK population owns and use a Smart phone, the virtual reality experiences will be accessed through existing established platforms using smart phones on both the Android and iOS platforms.

The virtual reality experiences will be tailored to the needs and demands of the user, ensuring a relevant and responsive positive experience. Through providing this easily accessible and user friendly app, both children and young people, alongside their carers will benefit significantly.

In our early research and development, a teacher at a school for autistic children commented, "In 14 years of helping to develop this child's skills, I've never seen such a significant step change in her attitude and ability. It's literally transformed her life."

The interactive educational experience is distinctly different to simply spending time in front of a digital display and will ensure a number of the senses are engaged and activated. This is a direct response to the needs of children, their families and care homes.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RESPOLAB LTD	N95 - FFP3 -Interchangeable Filter Cartridge Project	£49,000	£49,000

We are developing a N95/FFP3 full face mask for the medical profession and half face mask for the public as a superior solution to block particle transfer and protect the owner and those in close vicinity.

The main innovation will be a comfortable non marking face mask that is a cost-effective solution by offering a quick and easy replaceable filter to reduce costs to the consumer and reduce recycling needs -- thereby protecting the environment.

The full-face mask will be totally transparent visor to give perfect visibility without condensation. Viruses can be contracted through facial mucous membranes making eye protection a crucial part of transmission prevention especially for health care workers. This solution will also be available for the public.

The full mask and half mask will both incorporate a quick "Plug&Play" solution for the filter replacement. The filter will provide superior protection to block virus particles down to 1 nanometre in size.

Additionally, the half mask which is integrated in both solutions will be of a soft material that molds to the facial contours to offer enhanced comfort and sealing.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TITAN PMR LTD	Ensuring Continuity of Medicines Supply by Empowering Pharmacy Services with Remote Clinical Support	£50,000	£50,000

During March 2020, community pharmacies went into overdrive as patients flocked to stores amid the panic of Covid-19\. Every pharmacy faced unprecedented demand, dispensing several times their usual prescription volumes. At the same time, they experienced stock shortages and staff absences which has added further pressure. Some pharmacies have also had to lay on additional delivery services, stretching their resources and increasing costs.

The current situation has greatly impacted the pharmacy sector putting extreme burden on pharmacists on the frontline, many of which are close to breaking point. If pharmacists were to fall ill and if pharmacies were to close, this would significantly disrupt the supply of medicines across the country and reduce a valuable NHS resource for health advice at a time when this is needed the most.

We considered how our technology could offer an innovative approach to supporting the sector during the Covid-19 crisis. Our new pharmacy operating system, Titan, was accredited by NHS Digital in 2019 making it the first new dispensing system to launch into the pharmacy market in over 10 years and aims to transform the way prescriptions are processed. The solution has now been implemented into 30 'trailblazer' sites across England and Wales with ambitious growth planned this year.

Titan is the only cloud-based pharmacy platform on the market capable of breaking down the dispensing process into distinct digital stages. The step which crucially requires pharmacist involvement is that of clinically checking every prescription. In light of Covid-19, we explored an idea where clinical checks could be performed by remote pharmacists working from home. This would redistribute workload and greatly ease pressure from pharmacies whilst mobilising untapped resources at the same time.

Our new concept of Titan Teams introduces an 'Uber' style service to pharmacies, significantly improving their chances of coping in the months ahead whilst upholding patient safety. The Business Led Innovation Grant will enable us to develop a functional system which complies with all regulatory and professional requirements. We will initially release this system to Titan Trailblazer sites within a matter of weeks and once the model is proven, then make this available to the wider pharmacy sector alongside Titan.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
WOLV LTD	B2B platform to allow companies to lend/borrow talent to/from each other	£49,961	£49,961

Wolv is an online platform that allows vetted companies to borrow or lend talent from each other. In the face of the COVID-19 crisis, it allows companies to utilise their talent in companies that have short-term staff need, instead of laying them off. It has already saved over £110k for the companies, 4 layoffs and £160k+ in livelihoods with a minimal product in 10 days of operation. It aims to utilise the InnovateUK grant to expedite research and development of the platform and making it generally available to companies within 4 weeks.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AUDIO ANALYTIC LIMITED	Enhanced Communication System	£49,570	£49,570

Audio Analytic is a high-tech firm located in Cambridge, UK, and is the world leader in providing the humanlike sense of hearing to consumer devices. This project looks at the feasibility of assisting with improving communication.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
APLISAY LIMITED	Machine based telephone agents for Support Group and Retail SMB workflows	£49,683	£49,683

This project aims to reduce the cost and complexity of building machine based telephone agents to help small organisations better service their customers during the extreme demand spikes caused by Covid-19 and other similar scenarios.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FLOWLEDGER LTD	FlowLedger Web Application	£48,376	£48,376

FlowLedger, closing the gap between construction and manufacturing productivity

We're developing a web application that uses our deep experience of planning large and complex UK construction projects (inc. HS2) to tackle the widening productivity gap with manufacturing head-on. According to the ONS, construction sector productivity growth over the past two decades has averaged just 0.4% per year, compared with 3.2% in manufacturing.

So what can construction learn from manufacturing? From our research in manufacturing processes we've developed a type of pull system that can be used to manage construction projects. A pull system is a lean manufacturing strategy used to reduce waste in the production process.

"Less waste means better productivity."

Focus on collaborative, remote working

Our app will facilitate remote management of construction sites while the industry recovers from the current and indefinite measures put in place by the UK Government to contain Covid-19\. Because it's free and web-based its accessible to project teams across the UK and internationally.

Intuitive user experience, automated work flow

Our app lights up the construction supply chain by:

1. boosting productivity with advanced systems adapted from manufacturing

- 2. collaborating on the contract programme in real time, saving time and money;
- 3. prioritising workload with our intuitive user experience;

No other product on the market offers these combined functionalities, and is available free.

Save 10% of £117 billion UK construction spend (1)

McKinsey & Company, a consultancy, estimates that:

- * 98 percent of megaprojects suffer cost overruns of more than 30 percent;
- * 77 percent of which are at least 40 percent late. (2)

We've calculated cost savings of at least 10% on projects that utilise the free features of our application, based on improvements in productivity and reductions in disputes and delays.

(1) Construction industry: statistics and policy, House of Commons Briefing Paper, December 2019

(2) 'The construction productivity imperative' by McKinsey & Company, June 2015



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AIRCURY LTD	Quiz Carousel - building learning resilience in the face of COVID-19	£49,633	£49,633

Quiz Carousel is a digital application to help students embed knowledge into their long-term memory while enabling pupil-teacher feedback. This is particularly relevant during the current lockdown when things that have been taught may be quickly forgotten, but the product is also urgently needed longer-term to facilitate homework, revision and embedding learning.

The concept is well-researched and evidence based. There has been a welcome focus on the importance of a knowledge rich curriculum in recent years, and academic literature shows that taking memory tests improves long-term retention (a concept known as the testing effect).

The product is based on an idea developed several years ago by science teacher Adam Boxer and prototyped in an Excel-based system called Retrieval Roulette. Adam's learning and feedback from a highly engaged teacher community of users has been incorporated into the new Quiz Carousel product, and he continues to lead on teacher engagement and customer voice.

Quiz Carousel works as follows:

1. **Teachers upload carefully sequenced questions** covering a whole curriculum.

2. **Students take quizzes** combining questions from both recent and earlier curriculum areas, using adaptive learning and spaced repetition algorithms to select questions. Answers can be viewed as flashcards.

- 3. **The system auto-marks where possible**, reducing the work burden for teachers.
- 4. **Teachers offer feedback** on misconceptions and incorrect answers.

We are committed to ensuring that a version of Quiz Carousel is available for free, forever. Longer-term we expect to build in paid-for features that enhance the learning experience.

Quiz Carousel will play an important role in helping students to embed learning now more than ever, given its suitability for learning at distance. We offer a simple and easy-to-use way for schools and students to remain in contact through these difficult times, as well as a tool to help lock key curriculum knowledge into the long-term memory once things return to normal.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SYNALOGIK INNOVATIVE SOLUTIONS LIMITED	Automated Analysis of Furlough Workers to Minimise Fruadulent Applications on behalf of HMRC	£49,967	£49,967

Synalogik through the deployment of its innovative technology will provide assistance to Her Majesty's Revenue and Customs (HMRC) and its beleaguered Staff during the period of national crisis concerning the Covid-19 pandemic. Synalogik will transform the on-line Coronavirus Job Retention Scheme (CJRS) validation system through R&D concerning the integration of an automated process which considerably improves the implemented manual claimant verification check procedures and practices. The current approach is labour intensive; manual processes are required to verify new claimants which require extensive time to validate. The current Covid-19 claims processes will be entirely different from the norm and potentially incapable of full verification due to the overloaded system. HMRC is not designed to cope with such an amount of new data and therefore is potentially ill-equipped for these extreme circumstances.

Deploying a Cloud-based technology capability will assist HMRC investigators and analysts by significantly reducing valuable resources and saving significant time whilst conducting the necessary verification checks. Additionally, the advanced technology named 'Scout' identifies those claims which had risk assessment/indicators associated to their applications which gave rise to preventing fraudulent applications by individuals or organised crime groups (OCGs) targeting the CJRS scheme deliberately, whilst HMRC are under unprecedented pressure due to the underestimated applications sought within a few weeks due to the pandemic.

Synalogik are a UK based technology company, founded by experts in data science, intelligence, security and fraud investigation.

Synalogik has developed a unique solution, at the cutting edge of revolutionary intelligence management, to automate the identification, detection and evidencing of fraudulent financial activity by individuals or OCGs. The Platform - Scout substantially increases the efficiency, capability and capacity of organisations, such as HMRC, who rely on information to make intelligent and evidence-based personnel authentication decisions during such circumstances experienced during the unparalleled CJRS applications to HMRC throughout the Covid-19 pandemic.

Core to Scout is the automation of data analysis that draws intelligence on-demand from disparate data sources, providing HMRC with actionable intelligence in a fraction of the time, and at a fraction of the cost of current approaches.

This development project will focus on increasing the capabilities of this technology, through R&D, integration expansion, incorporation of specific case management systems and testing of increased Platform functionality, specifically technology operating over multiple UK datasets to better predict and identify fraud across the Revenue/Taxes sector.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE POLLARD MANAGEMENT COMPANY LIMITED	The production and promotion of free- access online video-driven interactive training for families in 'skills-based caring' for pro-active self-help treatment of young people's mental ill-health resulting from the societal impacts of COVID-19.	£49,997	£49,997

The impact of Covid-19 is significantly affecting the mental health and wellbeing of young people. In particular, it can lead to the growth of mental illnesses such as Anxiety, Depression and Eating Disorders.

Pro-active self-help, facilitated by the child's family, can be effective in treating mental ill-health - if families are equipped with the necessary skills and knowledge. The New Maudsley Method for training families in 'skills-based caring' (developed at King's College) has proved to be effective in facilitating such pro-active self-help in a family context.

So, working in collaboration with King's College, we are providing a free online resource that will enable all families to access video-driven interactive training activities, based on the New Maudsley Method, in their family unit, within their own home. This will help them to develop the vital skills and knowledge to facilitate family-based pro-active self-help for the mental health and wellbeing of their young people.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
URBANTHINGS LIMITED	Public Transport Distancing and Contact Tracing Platform	£49,565	£49,565

It is vital to ensure that the nation's transportation systems can continue to function while maintaining required social distancing and the ability to contain localised outbreaks of Coronavirus via contact tracing. Not only are passengers required to maintain distance, there have been well-publicised cases of overcrowded trains or buses and, sadly, the subsequent deaths of several drivers.

This project allows public transportation operators to enforce adequate social distancing by capturing and sharing vehicle occupancy data, fed back to the operators and their passengers. This allows passengers to travel more safely and transport operators to have the data to enforce social distancing measures by adjusting their fleet capacity to meet demand.

The system can integrate with external sources of passenger boarding data, such as smart-card tap in data, and also has the potential to integrate with emerging contract tracing applications as it is account-based.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BECOCO LTD	Digital re-employment and client engagement solution	£49,919	£49,919

BECOCO's digital "reemployment & client engagement" solution supports the fashion retail sector, one of the most impacted by COVID19\. McKinsey is forecasting that if stores remain closed for two months, 80% of public fashion companies in Europe and North America will be in financial distress and that a large number of global fashion companies will go bankrupt in the next 12-18 months.

Our solution will enable currently jobless store assistants to continue their sales activity safely from home. It allows users to rapidly create personalised pdf lookbooks powered by AI-driven styling technology using a laptop or mobile device to engage the business' most valuable customers.

This project is grounded in two strands of innovation: 1) Technical innovation: we create unprecedented AI-driven styling technology and 2) Employment innovation: out of work sales assistants can now quickly be re-employed from home and efficiently generate online sales for the business.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ALBION ENVIRONMENTAL LIMITED	Household Waste and Recycling Support Mobile App	£44,095	£44,095

Albion Environmental Ltd is an environmental consultancy firm providing management support and training in the waste sector, regularly working with local authorities and private waste management companies. We have identified recurring issues with council's waste collection services and as a result we have designed a project that would improve communication between councils and householders.

Some of the key issues that have arisen from poor communication between councils and householders include; confusion caused by complicated collection schedules due to increasing number of bins and high contamination rates due to inadequate recycling guidance and varying recycling schemes across councils. Other issues identified include missed bin collections, delays/cancelations due adverse weather and public holidays, and staffing and mechanical issues delaying collections.

There is a need for improvement as current communication methods have significant draw backs. Councils posting on websites does not directly reach householders and mailing paper copies is very expensive, cannot provide updated information and is not environmentally friendly.

We have identified a project that would assist with all of the above issues while bringing additional short- and long-term benefits. This project will develop an app which will have immediate benefits to both the councils and householders.

Householders will benefit from having;

- * Easily accessible calendar for each bins collection day, including phone notifications.
- * A searchable list of waste types detailing correct colour of bin waste items should be placed in.

Council's will benefit from having;

- * Improved customer engagement by providing direct link to residents.
- * Increase recycling rates and reduced contamination, bringing environmental and economic benefits.
- * Push out notifications for changes in service due to staff shortages, breakdowns or adverse weather.

This system could be implemented in every UK council and the app would be updated to reflect their recycling practises. This would help to reduce contamination rates by providing comprehensive guidance, reduce confusion around bin collection schedules and provide councils with a direct link to its residents. This could be used to send push notifications detailing any changes to current collection systems caused by; route changes, adverse weather, staffing issues, public holidays etc.

Having the app in place would be hugely beneficial for dealing with events such as Covid 19, where significant changes in collections have been required at short notice. Our app would provide councils with direct access, to the public, allowing them to relay changes in a more direct and efficient manner compared to current methods.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SSCG CORPORATE SERVICES LIMITED	One Africa Network Project	£49,197	£49,197

Ethnic minority entrepreneurs (EMEs) have traditionally been associated with lower growth industry sectors (Jones and Ram, 2007; Carter _et al._, 2015; Ram _et al._, 2016, p. 6). This challenge has not been helped by slow growth and high early-failure of minorities' start-ups and small businesses - relative that of other ethnicities, a disconnected entrepreneurial ecosystem, business and management skills' shortages and poor access to information and resources.

Bogged down by ethnic stratification and geographical challenges, ethnic minority entrepreneurs, and African businesses in particular, have often been at the tail end of government initiatives and support (Boyd, 2018), including that they are typically delivered through Quangos such as the various regional chambers of commerce.

One Africa Network (OAN) is an initiative of SSCG Consulting, the leading network for Black and African entrepreneurs, investors, businesses, leaders and professionals in the Midlands, established in 2018 with a vision to inspire, support and catapult African businesses into higher growth and more rewarding industry sectors. As the voice of Black African Ethnic Minority Entrepreneurs and professional in the midlands, OAN, through regular events and initiatives, has, since 2018, enhanced the potential, participation, competitiveness and productivity of hundreds of Black and African Minority professionals, entrepreneurs and small businesses in the Midlands.

Prior to the Covid19 pandemic, our solutions to address the above needs were delivered through organising face to face inspirational and capacity development events that helped to connect members, facilitate debate on pressing business and economic issues amongst the Black and African communities, encouraged the sharing of knowledge, opportunities and collaboration across various business sectors and disciplines. This offered several benefits to our members, including learning and sharing new opportunities, building new networks for collaboration, entrepreneurial & management skills. However, since the Covid19 pandemic, and subsequent Government lockdown, it has not been possible to host these face-to-face activities, using previous methods - yet the needs for our members have, if anything, been exacerbated by the pandemic.

In order to reach and deliver service to our members remotely, we have had to be innovative and transformative in our approach and operating model, taking advantage of digital technologies and moving all our activities online. This project will help us to maintain contact with, and support for our members.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DIAGNODUS LTD	Detection of SARS-CoV-2 RNA presence in colorectal mucus collected from patients recovering from COVID-19 for assessing the risk of exposure to the virus in medical professionals performing invasive colorectal procedures including endoscopy.	£50,000	£50,000

The COVID-19 pandemic not only affects millions of people, but also generates high levels of risk for medical professionals caring for their patients. It is established that the virus induces predominantly respiratory symptoms that are often culminated by the development of severe pneumonias, and COVID-19 mostly spreads through aerosol droplets generated when an infected individual coughs or sneezes. It is, however, evident that COVID-19 can also invade gastrointestinal tract, and the presence of the virus was shown in stool samples from patients not only during active disease, but also when its symptoms disappear, and the virus is no longer detectable in pharyngeal smears. The virus can also be found in the faeces of asymptomatic carriers. This means that the virus is often present in the human gut and may infect medical professionals during diagnostic or surgical procedures on gastrointestinal tract, such as commonly applied endoscopic investigations and colorectal surgery. Therefore, all these procedures apart from life-saving urgent interventions are currently suspended in the UK. Reliable tests for detecting the presence of COVID-19 in the human gut are urgently needed for protecting health of medical personnel working in gastroenterology and colorectal surgery.

Although stool testing for COVID-19 detection is possible, stool collection may be unpleasant and especially inconvenient if needed repeatedly. Moreover, the highest concentrations of the virus are expected to be present in the colorectal mucus (CM), the most informative element of the human faeces.

DiagNodus Ltd has recently developed a patient-friendly non-invasive method for CM sample collection (self-collection) that can be repeatedly applied in the same subject. Samples collected using this new method are very rich in biomarkers and suitable for detecting such major colorectal conditions as inflammatory bowel disease and colorectal cancer. Although we believe that CM samples also presents an excellent biological material for detecting infectious agents in the gut, the exploration of this direction was so far regarded only as a potential future option. The current COVID-19 pandemics has dramatically changed the situation, making it an urgent task. The main objective of the proposed pilot study, which will be undertaken by DiagNodus Ltd in collaboration with St George's Hospital and St George's University of London, is to prove the feasibility of quantitatively evaluating the presence of COVID-19 in CM during recovery after the infection, thus providing a tool for estimating the risk of exposure for medical professionals involved in gastrointestinal procedures.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEURONOSTICS LIMITED	ConnectEP: The smartphone app connecting people with epilepsy to researchers and neurologists	£49,859	£49,859

We will develop a mobile app for people with epilepsy. The app will empower people with epilepsy to best manage their condition within the home environment, whilst contributing to their sense of purpose through voluntary epilepsy research involvement. In response to the COVID-19 crisis, we conducted a global survey of people with epilepsy. We received over 150 responses, including nearly 100 from the UK alone, between April 7th and 14th. Our survey revealed concerns about the impact of isolation on stress, mental health and anxiety, memory and sleep, with consequences for drug adherence and seizure control. Our survey further revealed connecting with researchers and healthcare providers as important priorities for people with epilepsy. Being empowered with relevant information and contributing both to management of their own condition and a broader research effort to understand epilepsy, were considered very important for reducing the impact of isolation due to COVID-19\.

\#ConnectEP will be developed in partnership with globally renowned epilepsy advocates, researchers, clinicians and charity partners. It will be an important resource for delivering up-to-date information, recording relevant information, access to latest research findings, and the ability to contribute to research and clinical studies. In response to the challenges of isolation raised by COVID-19, raised by our community survey, our immediate focus will be on stress and mental health, drug adherence, sleep and seizure occurrence.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CURIOSITY LEARNING LTD	Curiosity in the home	£46,577	£46,577

In difficult times we often look towards our schools and our teachers and think of them as a pillar of strength and stability. But who supports them?

Curiosity does. It is a well-established platform that schools deploy to engage children age 9 to 14\. Using a 3,000 year timeline, pupils take a journey choosing moments, events and topics that interest them. They pick _Challenges_ and complete them in a way that they find appropriate. Once completed, the _Challenges_ are submitted and the teachers engage with each child in a 1 to 1 tutorial style discussion using the comprehensive resources that Curiosity provides. The students log in through their own personal dashboard to plan the next steps on their journey and choose new _Challenges_. The teacher logs in to monitor and record student progress and to access the resources.

Curiosity is a hit with teachers (particularly as there is no lesson preparation) and a hit with students since they work at their own pace, in a manner they choose on a Challenge they have selected.

From September 2020, Curiosity will be available on a free of charge extended trial basis to over a thousand schools across England and, in light of the recent Covid-19 experience, we would now like to upgrade the platform and build in functionality so that it can more easily be used by teachers as a way of communicating and providing exciting learning opportunities to pupils in their homes.

We would like pupils and teachers to be able to easily maintain contact by way of seamless video assessments and chats and we would like also to expand the timeline topics so that additional curriculum areas are covered. This will build a stronger, more dynamic teacher/pupil relationship.

Curiosity _Challenges_ are all cross-curricula, carefully crafted, and develop essential life-skills across seven key areas: numeracy, literacy, research, experimentation, communications, visualisation and memory. They are all able to be approached from anywhere along the ability spectrum and undertaken at a speed and in a way that each individual student finds appropriate to themselves.

Curiosity used in the home environment will empower teachers without adding to their workload and gives pupils and teachers the ability to instantly access remote working functionality. Teachers and pupils will benefit from classroom-built familiarity and, with the broad and rich learning that Curiosity provides, it will help to develop a life-long love of learning.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JUST: ACCESS LIMITED	Creating information transparency during the COVID-19 pandemic	£39,819	£39,819

COVID-19 is significantly impacting civil society, especially with regards to the delivery of justice across the UK. It is obfuscating the principle of 'open justice' and our archaic court processes simply aren't able to deliver on their purpose in this new setting.

The need for 'information transparency' (visibility over court processes; over data about the throughput and volumes of cases; about the age, gender, or other protected characteristics of the litigants; about the substantive decision, etc) is greater than ever since 'real-time transparency' is not possible. Hearings are taking place between the judge and the parties involved, with little room for scrutiny from reporters or the public. Researchers have indicated that the inperson ethical framework they usually abide by to evaluate the impact of proceedings (getting informed consent, not disrupting proceedings) is not possible in this new setting. And innovators are calling for court data which was never before possible to obtain until now.

Our radical idea will address these issues by changing the way we 'observe' proceedings. We are committed to working across the legal sector (commercial, Government, third sector) to create a shared insights roadmap and common schemas. Utilising our speech-to-text software, this project create automated transcripts from recordings, and impose rich structure on this data that can be analysed collectively to analyse trends and garner insights in unprecedented ways.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JINGO JUICE LIMITED	The Virtual Being Entertainment System (ViBES)	£49,994	£49,994

The Virtual Being Entertainment System (ViBES) by Marshmallow Laser Feast (MLF) is a solution to strengthen virtual production tools available in the market, based on real time observations in the Covid-19 pandemic. ViBES is about the ability to remotely and natively build content for advanced digital offerings.

The problem we will focus on is the virtual & distributed production of characters in performative environments. ViBES will allow remote contribution & collaboration. It will allow creatives to remotely contribute assets (motion capture data & audio) from input devices. The MLF system will input that data, then output to multiple platforms for viewing. A performer captures movement from home then through ViBES can puppeteer an avatar that a director can view on their smartphone, browser or VR headset. With ViBES you could get data from anyone in the world with the right hardware, stream & share via general plugins for Unreal and Unity.

Working with multiple inputs & outputs will allow this tool to be flexible enough to accommodate a wide range of users. This will allow creatives such as dancers and actors to be able to provide inputs such as movement remotely which can then be translated into a usable format that can drive an avatar or something of sort on different platforms and devices such as an android phone, a chrome web browser or an iOS system.

ViBES provides agility, allowing for efficient remote work to take place alongside setting up cost effective solutions for companies in the virtual production sector (once re-opened) to integrate low-cost solutions into their workflow. Our objectives are to:

1\. Contribute to a more innovative & financially resilient offering from organisations in UK arts & culture.

2\. Support the continued employment of UK based performance talent, even in isolation or remote locations.

3\. As a creative organisation ourselves, support our own pipeline and pivot to offering innovative at home experiential content.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
APA PARAFRICTA LIMITED	Development and Testing of a Low Friction and Biosuppressive, Fabric, Reusable Type II Medical Face Mask	£41,520	£41,520

As restrictions on movement of people are lifted it is likely that it will remain essential to pay careful attention to social distancing measures, including the wearing of masks to prevent the further spread of Covid-19 from potentially infected people to other people in close proximity. The use of disposable medical masks is likely to become widespread therefore. These masks may well become uncomfortable after longer periods of wear and the negative environmental effects of disposing of millions of such items could be substantial. This projects aims to produce a washable and reusable mask made of fabric that meets the strict medical and quality standards of the available disposable masks. This mask will have added benefits in the the lining fabric, already used in other medical products to prevent pressure ulcers, will be very comfortable and dry against the skin. It will be designed to reduce the risk of spreading pathogens, including Covid-19, to others (by preventing droplets from the mouth and nose being ejected by breathing, speaking, coughing and sneezing). It will contain another innovative fabric that has an innate ability to reduce the build-up of bacteria over periods with wear up to 8 hours. Wear will be suggested, for example, when visiting care homes, in shops, at hairdressers, in gyms, in cinemas, at sports events or in any public places where there is a risk of being unable to maintain social distancing, in accordance with UK Government Guidance.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARCADIA SPECTACULAR LIMITED	The Arcadia Application	£50,000	£50,000

Following the effective closure of the global live entertainment industry from Covid 19, Arcadia Spectacular are creating the Arcadia Application - a pioneering new virtual experience allowing artists, fans and partners to collaborate in virtually digitally creating and engaging new Arcadia experiences.

With a uniquely pioneering approach the Arcadia Application users will be able to build, explore and share Arcadia themed virtual worlds. At a time when the public has no opportunity to physically interact with art, this Arcadia Application will provide an artistic outlet, and a create a space for engagement. In doing so the Application will play a part in reducing anxiety and supporting mental wellbeing whilst the physical lockdown continues.

The Application will ultimately allow an infinite number of users to collaborate virtually designing a new Arcadia experience to be physically built in Arcadia's workshops and toured globally once the international Covid lockdowns are over. Tools will include 3 dimensional model making, special effects, musical interaction and aerial performance. Through the process the Application will challenge traditional design and creative practices. The Arcadia Application will be compatible with all smart mobile devices.

Arcadia Spectacular are an internationally renowned arts organisation with an 11-year history of re-purposing industrial and military machinery and hardware into grand-scale interactive kinetic sculptural stages for audiences of over 50,000 which are used to showcase spectacular performances fusing moving sculpture, aerial, dance, theatre, tech and SFX. The company hosts one of the largest areas of the Glastonbury festival, collaborated on Paralympic Closing Ceremony in 2012, created a large scale spectacular show for the headline event for the European Green Capital City in Bristol in 2015, and has toured internationally since 2014 with over 50 crew across 6 continents and to over 14 countries.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SWIFTER LIMITED	Swifter AI - Artificial Intelligence Driven Healthcare Live Assistant	£39,260	£39,260

Swifter AI Healthcare Assistant is an artificial intelligence powered virtual agent designed to support healthcare providers to overcome even more challenging communication problems with their patients, due to the Covid-19 pandemic.

Built using cutting-edge cloud and AI technologies, Swifter AI Healthcare Assistant uses Natural Language Processing (NLP) to understand patients' needs and respond to their enquiries with a high level of efficiency without human intervention, to free up time for medical staff to focus on tasks that only humans can do.

With an initial focus on Covid-19, Swifter AI Healthcare Assistant can be easily integrated with the existing phone systems (mobiles, landlines or VoIP) in the GP practices, NHS 111, Public health England or private healthcare providers, or other communication platforms like Facebook Messenger to offer 24/7 support.

Swifter AI Assistant can be trained to answer thousands of questions, offering rich and natural conversational experiences to enhance patients' experience without any waiting time. It can handle thousands of calls simultaneously and can scale to millions of users, offering full control for personalized responses and agent training through Swifter AI web management console.

In the long run, Swifter AI could also provide bespoke solutions to clients that require integration with patients data or implement patients triage. Swifter AI can use sentiment analysis to understand users' attitude towards their conversations with the virtual assistant. Similar processing could be used to understand the urgency of a patient's condition and take decisions to prioritize the call and redirect to human staff.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SCOTLAND'S LEARNING PARTNERSHIP	Elfies Online Shop	£49,294	£49,294

Elfie's online craft café will sell original crafts made by adult learners across Scotland and deliver a range of fun online craft workshops through the Elfie's website.

Our craft workshops are unique and offer a flavour of the range of activities we can develop for adults and families through an online portal. The website offers a friendly non threatening programme designed to encourage people to try something new.

We will run 6 and 8 week programmes alongside one-day events aimed at bringing people together to share talents and develop new employment opportunities for people who might otherwise have missed out on getting into work.

The website will set out the stories of the learners and their journey to craft work acting as inspiration for others to follow their own dreams.



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Total available funding £34m.

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
Visbion Ltd	Visbion Image Cube CT Enhancement Project	£45,662	£45,662

The coronavirus crisis has emphasised the need for integrated and flexible healthcare provision. The NHS is an extremely well-integrated organisation, which under normal circumstances, provides excellent healthcare to the nation. However, in the current circumstances there is a need for greater flexibility in the deployment of resources for specific needs. An example is the creation of the Nightingale Hospitals at several locations throughout the country. However, modern healthcare practice relies heavily on the use of medical imaging techniques (e.g. CT and MRI) to achieve effective diagnosis. Prior to the coronavirus crisis, the requirement for additional imaging capability has been met by the introduction of mobile imaging trailers that contain different types of scanners (e.g. from Siemens and Philips). This use of mobile facilities has significant economic and practical advantages for Hospital Trusts, allowing them to secure imaging as and when needed (without the need for significant financial investment). In the current circumstances, imaging capability is severely stretched and, again, this has been addressed using more imaging trailers. So, for example, the Nightingale Hospitals use mobile trailers for their CT provision. CT images are important because they provide a unique diagnostic facility for the detection of COVID-19 caused pneumonias in the context of intensive care. The Nightingale Hospitals are a good example of the need for flexibility. Although images and data can be acquired within that Nightingale Hospital, the images and data need to be transmitted for storage and viewing at an established hospital (e.g. in the case of the Nightingale Hospital in London's ExCel to St Bartholomew's Hospital).

The image and other data acquired using mobile scanners normally needs to be transferred onto DVDs for transportation to the hospital, with the risk of errors and possibility of transferring the infection. The transfer process is also completely reliant on significant human intervention. The Visbion solution in the proposed project overcomes all these problems by using the company's unique Image Cube technology. This allows images and data to be automatically transferred across a commercial telecommunications network using military specification encryption. Once the data has arrived at the permanent hospital, Visbion's technology decrypts the images/data and automatically stores them in the hospital's information system. The second aspect of the project is the ability for radiologists working remotely (e.g. from home) to rapidly read and report on images from multiple locations within the NHS using Visbion's webbased PACS -- thus providing rapid, expert diagnosis.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
FOREVER HOLDINGS LIMITED	Parley Creator	£49,808	£49,808

Imagine having the ability to answer somebody's questions, any time of the night or day, 24/7, without being there in person. Whether you're a teacher, pop star, artist, business person or the Chief Medical Officer, our innovative Parley Creator App will enable you to create content for a voice interactive video conversational experience from the comfort of your own home or office.

This will allow you to easily give audiences the ability to ask questions using their voice through a browser and get an answer from a set of pre-recorded media files that have been created, edited and uploaded by you - giving an experience akin to a personal Zoom or Skype video interview, available any time of the day or night.

So, whether you want to create a voice driven selection of FAQs for public health, a conversational experience with a musician or actor, or a question and answer session with your favourite TV personality, we make that happen - now we can give you the power to do that too!

The Parley Creator will build on The Forever Project's existing work and expertise, built up over years of producing voice interactive video content. It will embed new learning from our current work on our powerful interactive VR project being delivered for InnovateUK's Audiences of the Future programme, where we are developing a high resolution, multiplatform conversational experience with music legend Nile Rodgers.

This new project will democratise access to our production methods and revolutionise communication potential. By enabling remote direction and filming of media assets, Parley Creator will allow fast and efficient development of content for publishing for audiences to interact with through their browsers on mobile and desktop devices.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ATAMATE LTD	Using UV-C sterilisation, occupant monitoring and air quality monitoring in the workplace to facilitate economic recovery post Covid-19	£48,476	£48,476

When Britain returns to work at the end of the lockdown period, we will need to limit transmission of Covid-19 to avoid another major outbreak to properly ensure Britain's economic recovery. With this project, we intend to protect employees from infection by minimising contact spread within the workplace.

Our approach builds on Atamate's building control system. This continually monitors interiors of buildings, optimising services eg: lighting/ventilation. We plan to extend its functionality to combat the spread of Covid-19 in the workplace using the following approaches:

Employee protection: someone infected with Covid-19 can transmit the infection for several days before they know they are infected. We plan to support existing workplace cleaning and limit the potential for infection. We will use ultra-violet lamps that can sterilise an area if triggered by sensors detecting that everyone has left a room. This can be used to sterilise spaces like lifts and toilets \]where many people intersect. Buildings can be sterilised before the cleaners come in, both enhancing cleaning and protecting the cleaners.

Regular cleaning of surfaces is key to preventing transmission, so we plan to track cleaners and their equipment using Bluetooth tags allowing managers and other occupants to confirm that every part of the building is cleaned.

Atamate monitoring of air quality will detect areas where virus-infected aerosols may linger, indicating where improved ventilation may eliminate a possible transmission hotspot.

Monitoring people: Countries like Taiwan and South Korea have minimised lockdown restrictions by tracing the contacts of infected individuals and instructing them to self-isolate before they know they are infectious. The UK's post-lockdown strategy will need to incorporate similar measures if prolonged economic impact is to be avoided.

We will enhance 3rd party's proposed contact tracing in the workplace using Bluetooth tags or phones providing a much greater level of triangulation and accuracy. If someone is diagnosed with Covid-19, anyone they have been in contact with can be instructed to self-isolate avoiding the entire building being closed.

Reassurance: Many people will find the return to work stressful because it will involve exactly the sort of contact that months of social distancing have been intended to avoid. Being able to see that employers have taken steps to safeguard their wellbeing will be reassuring. Employees will be able to view the tracking of cleaning and activity of ultra-violet sterilisation for themselves.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SPIRO CONTROL LTD	Secure remote access for digital automation systems	£49,966	£49,966

Advanced digital automation systems can provide well documented benefits to industrial manufacturers in terms of increased productivity, improved resource use efficiency and lower environmental emissions. In order to sustain these benefits the automation systems require support and maintenance. Typically, this support relies on physical access to the systems, often provided by experienced engineers who need to travel to the industrial site.

Remote access has the potential to increase significantly the productivity of support engineers and as a result enhance the performance of the manufacturing sites. By eliminating the need for travel to remote locations, support companies and multi-national operators with centralised engineering groups can reduce their environmental impact, increase productivity and effectiveness and increase employee inclusivity. This benefit is amplified significantly by the Covid-19 pandemic.

However, providing remote access to industrial control systems brings associated risk compared with a physically isolated control system domain. This project will generate a reference architecture for secure remote access. It will then subject this architecture to a detailed and rigorous risk assessment.

The goal is to provide an appropriate reference design for the operators of manufacturing processes to properly configure their systems architectures and procedures as well as guidance on how to assess and mitigate the risk associated with their own installations.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
WARNER'S DISTILLERY LIMITED	Innovations in Hand Sanitiser Production	£49,959	£49,959

Conversion of an existing food and beverage business to hand sanitiser production in response to the global Covid-19 pandemic.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
MEDECI DEVELOPMENTS LIMITED	Mind-Heart-Tech and online remote therapy for PTSD and anxiety	£49,431	£49,431

Many dedicated staff and volunteers within the NHS ecosystem will experience Post-Traumatic Stress Disorder (PTSD) as consequences of the covid-19 pandemic. Existing PTSD interventions which involve many sessions are not fit-for-purpose in light of the emergency and scale of the need. By combining a very innovative and effective psychotherapeutic method with biofeedback sensors, highly sensitive to user emotions, we will create a solution that can often cure PTSD within a single session.

Within six months we will develop an accurate inexpensive bluetooth sensor, which users can use at home (on their finger or wrist). It will measure their stress/anxiety level and minute changes of their heart rhythm, analyse both in real time, and present feedback to the user through a friendly, appealing interface. Furthermore, it will enable therapists (working remotely from home) to view the user/client's emotional reactions in real-time and provide effective intervention. Mind-Heart-Tech can help users to improve their resilience and prevent relapse.

Our initial focus will be to provide Mind-Heart-Tech and therapy to the dedicated NHS employees who have risked their lives to treat coronavirus patients. Later on it will be available to the wider UK population and subsequently internationally.

Our sensors are very sensitive, monitor and calculate heart-rate changes better than i-watch, fitbit and similar sensors, and even tiny changes in stress levels from thoughts, imaginations and emotions.

It will enable therapists to view their clients' emotion/anxiety level in real-time and treat them remotely, with options to add images and video that the user can watch.

Both the therapist and the user can see and measure, immediately, how effectively the therapy is reducing the anxiety level of the user during the session and later on.

As Mind-Heart-Tech provides objective measurements of the anxiety levels during the therapy, and gives feedback to both the therapist and the user during, between and after the therapy, it can improve any existing therapy method. It will also enable researchers and NHS to compare, immediately, how effective each method is, how fast the user recovers with each method, and which method has lowest relapse rates.

The Mind-Heart-Tech together with new online therapies we will reduce the length of recovery of patients from several months to days.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ATMPS LTD	Efficient Provision of Cancer Treatments post-COVID19 suspension	£49,744	£49,744

A fully digital cancer treatment management solution which ensures patients are put at the centre of treatment, parties to the production, administration, transportation of samples and treatments are efficiently coordinated on a regulatory compliant platform.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
WOOSHII LIMITED	Remote Production Tool	£48,284	£48,284

In certain circumstances, it is not always possible for video production companies or freelancers to run shoots with customers or on-screen subjects.

Recently the Covid19 pandemic has severely restricted these businesses ability to assist clients. The consequences have been significant for the production industry, with many companies suffering as they are unable to deliver for their customers.

The new **RemoteDirect** tool solves this problem by enabling video teams to run productions remotely and without being in the room. This specialist app allows directors and crews to use smartphones to run productions from a distance. It provides directors with control over a phone's camera and then returns captured footage to the director and editor at the end of a shoot.

This **RemoteDirect** app will allow production companies to continue to serve their clients and customers by running shoots from anywhere in the world. Even beyond the immediate need, such a tool could provide extremely valuable to an industry that has been extremely hard hit by the Covid19 crisis.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
BRIGHT DIGITAL MARKETING LTD	Enabling virtual public consultations for large-scale infrastructure projects	£40,418	£40,418

Planning applications, particularly those for large-scale projects like wind farms or solar power developments, require public consultations before they receive planning consent. Current Covid-19 safety measures make public gatherings impossible, leading to delays in the consultation and planning process. Without intervention, this would lead to delays in renewable energy construction and, ultimately, undermine the UK's ability to hit its ambitious net zero carbon target.

Our solution brings these public consultations into the virtual world, allowing community members to examine plans and ask questions from the comfort of their home. We intend to retain all of the benefits of a real-world consultation, from the presentation materials through to the one-on-one and group discussions with the developers and independent experts.

With the support of Innovate UK, our project will help to ensure that the UK comes out of this pandemic with infrastructure planning complete, signed off and ready for action.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SANDBOX SUMMITS LIMITED	Online Portal and Series of Mental Health in the Workplace Conferences for Front Line and NHS Workers Post-COVID 19	£46,611	£44,747

There will be a tremendous need for the post-coronavirus world to meet, share experiences and find practical and tangible ways to move forwards. This imperative will be even more important for those 'at the forefront' of the health crisis and therefore, it would offer NHS workers, doctors, nurses, support staff, ambulance, police, fire and other key front-line workers the opportunity to feel connected with each other in a confidential, post-COVID-19 environment to share mental health challenges and to collectively network both at events and online to lessen their feelings of desperation and isolation amongst the greater national workforce.

A confidential online managed community (moderated by experts) will be created combined with specific post-COVID-19 events around the country to show they are not forgotten and there is no stigma attached to feelings of PTSD and other related feelings of depression, anxiety and self-harm.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ZOE BLASKEY LTD	Family Wellbeing In Covid-19	£44,050	£44,050

For families with children aged 0-18 Covid-19 has brought with it unprecedented challenges with the perfect storm of school and nursery closures, homeschooling requirements, closure of all child-centered social support (playgroups, youth groups, NCT groups, children centres) - this is an extremely challenging time for parents.

This bespoke-developed online programme will provide UK families with simple, accessible, science-backed wellbeing tools to support the whole family with their mental and emotional health - directly into their homes, to complete at a time and pace that suits them.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CITIZEN SECTOR LIMITED	We Got You - Give & Get Help During Covid-19	£48,662	£48,662

Citizen Sector - with technology partner Tectonica - has launched a free, volunteer-built website and app that lets people give and get help from their local community in order to stay at home safely during the COVID-19 crisis. They bring together skills and understanding of community organising and digital tools to help address some of the challenges created by this pandemic.

WeGotYou aims to help reduce the demand for statutory, charitable or organisational support - and to make it as easy as possible for neighbours to help one another get what they need quickly. The app hopes to supplement and assist the incredible work already going on at a local level, including through mutual aid groups, to get help to those isolating and help volunteering activities scale through the use of digital tools while acknowledging the most vulnerable are not always online. Crucially, WeGotYou allows people to get help for others, outside their own neighbourhoods, such as a parent living in another part of the country of an elderly neighbour up the road.

1. Through the WeGotYou website, users can make requests for help for themselves or someone else, such as collecting shopping and medication or walking the dog.

1. Through the WeGotYou app, users will see the requests for help closest to them, allowing them to take immediate action.

Kyle Taylor, Founder of Citizen Sector, said:

"Being a good citizen has never - in peacetime - been so essential. All around the world, people want to do their bit and relieve some of the burden on the government and charities. WeGotYou helps people be good citizens and neighbours from their phone, supplementing the incredible work already going on in local communities everywhere. If you'd like someone to bring your mum some fresh milk or to come and walk your dog, WeGotYou."_

Ned Howey, CEO of Tectonica, said:

"Through WeGotYou, our team has managed to transform existing digital organising tools in the space of a week to help people get help for themselves and their loved ones. The scale of the response calls for innovative digital solutions that get help to as many people as possible as quickly as possible. We are proud to have developed part of the answer."



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DIGITAL REAL ESTATE TECHNOLOGIES LTD	Resivue Real Estate Web Application	£40,206	£40,206

Digital Real Estate Technologies (DRET) Ltd, has built an innovative iPad digital brochure for the real estate market, enabling developers to present their property to their potential clients in an attractive and informative digital form factor. This has proven popular in concept. This digital brochure replaces the current printed brochures and augments the existing real estate market places such as Zoopla and Right Move, by providing a much richer brochure experience, with ability to communicate directly with the developer. The developer receives comprehensive reports on the brochure usage.

This project is to take this iPad experience and move it to the Web, allowing PC and Android users to access the digital brochures and view the real estate properties. This development is particularly beneficial during the current Covid-19 restrictions, as clients can not view properties, resulting in a massive slow down in the real estate market, and reducing people ability to move and relocate.

DRET believe that the successful completion of the project will enable real estate developers to promote their properties to customers remotely, resulting in the housing market recovering much faster from the Covid-19 restrictions than it otherwise would.

The existing iPad application is innovative in its use of rich content within a mobile application, with the content fully managed and updated on the fly by the real estate marketing team. The Web platform will continue and extend this innovation, providing a rich brochure experience combining imagery, text, video, 360 degree immersive video into a single easy to use experience.

Digital Real Estate Technology team has extensive experience in both the technology Software as Service market and the real estate business, and has proven capability to deliver this scale of project.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
YOURMEDPACK LIMITED	Using YOURmeds to help isolated and vulnerable people in the community to medicate effectively	£46,555	£46,555

Approximately half of all adults in the UK take prescription medication, but only half take this medication correctly in terms of timing and dose. Many elderly and vulnerable people (e.g. those with mental health issues) require additional support to ensure that they take medicines correctly, with many of those over 75 on multiple drugs for long term health issues. This support is often given as part of any care visits or as a specialised medication visit. Taking medication correctly is key to good health and independence and important now more than ever as we aim to reduce burdens on the NHS.

Within the current Covid-19 pandemic, it is important that we shield those most at risk from poor health outcomes whilst maintaining their support network and protecting the health and safety of carers and the wider support network. Therefore, it is not always possible to offer the same level of in-person care or family support visits and maintain everyone's safety.

We will pilot our patient centred medication support solution, YOURMeds. YOURMeds is a pre-packed smart medication pack and electronic tag that alerts the user to take their medication and notifies their nominated support network including formal carers and family to any instances when medicines are taken incorrectly (e.g. wrong, missed or overdosed). This digital solution works remotely, transmitting data to the YOURMeds dashboard (accessible via an app for support networks) using the same technology as a mobile phone. Therefore no separate internet connection is required.

We will work with a GP group and care agency to recruit participants to our planned pilot and test our solution for a period of 10 weeks with each participant. Our solution will help patients feel supported and maintain their good health and independence in a period where they may not be able to access their usual service or have the support of their wider networks and family.

In the longer term, there is scope for YOURMeds to save time and money for councils and other agencies providing adult social care whilst also minimising hospital admissions. This would create additional capacity in the care system and bring more vulnerable people into the safety net.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ANCHORED ENGINEERING LTD	Home Schooling - Provision of Physical Education via Digital Platforms	£49,950	£49,950

Anchored Engineering will produce a unique Physical Education resource suitable for all children of schooling age, which can be delivered via existing digital teaching platforms, by class teachers. The application will promote social inclusion and benefit the mental wellbeing of children who are confined during the lockdown period experienced due to COVID-19\.

Physical Education is a mandated part of the school curriculum and should not suffer just because schooling has moved to a different medium.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DATA IMAGES SOFTWARE SOLUTIONS LTD	Scheduling and management for deliveries of vital food and medical supplies to the elderly and vulnerable during the COVID 19 crisis and beyond and developing new ways for access to and delivery of services.	£41,410	£41,410

The Covid-19 crisis has highlighted that there are many members of the community who are at risk. The elderly, vulnerable and socially isolated have always been there, but now more than ever they need help.

We produce software for Local Authorities and Community Transport operators to provide efficient, cost effective transport for these often neglected members of our community, so we already understand their needs and vulnerabilities.

We now have the opportunity to help, with funding from Innovate UK, by providing new ways for people to get the assistance they need and for the authorities to manage the delivery of essential supplies and other services in an efficient and cost effective way.

The new software will provide multiple access channels for people to get what they need and allow the authorities to use innovative new methods of delivery.

For telephone access, authority's call centres or home workers will have access to the system to register first time callers and place orders on their behalf. Internet access will be provided by simple to use online forms accessed through links on the authority's website.

However, the most innovative access will be using Alexa smart speakers. These are already being rolled out by Local Authorities to combat social isolation and to assist the elderly and disabled, so the addition of new Alexa skills to provide direct access to urgent supplies and services will be of massive benefit at this difficult time, particularly for authorities already struggling with lack of staff resources to answer phone calls due to the pandemic.

The software will also allow the authorities to utilise e-cargo bikes for the delivery of supplies by optimising routes specifically to extend their range.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
METIX LIMITED	Evaluating the utility of a prototype high acuity monitoring device for detecting deterioration in Covid-19 patients	£49,330	£49,330

The Covid-19 pandemic is an exceptional Public Health crisis; presenting an immense challenge to Healthcare systems around the world, with intensive care units capacity in danger of being overwhelmed. Because Covid-19 affects breathing, it is essential that Nurses and Doctors can detect deterioration in related vital signs, e.g. blood oxygen or carbon dioxide levels. These vital signs are recorded by several devices, making them costly, time-consuming, and prone to human error. A device that could ease the burden on front-line staff is sorely needed. This project can expedite the progress of our device and system to market, at a time when innovative medical devices are needed more than ever.

Our prototype hand held portable monitor device, Coremed, is ultra-portable, flexible, easy to use, for capturing, transmitting and reporting patient vital signs. Our device records and transmits readings for non-invasive blood pressure, pulse, blood oxygen, temperature, respiration, and capnography, automatically calculates a (revised) NEWS2 score, and sounds an alert if the patient is in deterioration. Data is displayed, securely transferred and not lost. This can minimise medical, legal, ethical, and financial implications. By doing all of these things, we will enable Doctors and Nurses to better analyse information about patients.

It transmits data continuously to Metix Remote, a remote monitoring system that tracks these outputs, making them visible on digital dashboards to clinical staff elsewhere. This makes monitoring of patient health more efficient, reducing clinical error, and improving standards of care.

Testing the usability of our device and system will be invaluable, and benefit the eventual marketing of our device. Our study objectives are therefore:

1. Reliability testing Coremed prototype output part 1: compare for accuracy and equivalence with a similar monitor, using Fluke vital sign simulator, which simulates vital signs that can be read by any device.

2. Reliability testing Coremed prototype output part 2: compare the accuracy and equivalence of the Coremed prototype output with a similar monitor on a sample of healthy adults.

3. Determining UX: we will examine the usability of the Coremed prototype, and record performance issues to allow refinements.

4. Road test Metix Remote: test the reliability of Metix Remote tracking Coremed device taken on a random road trip.

5. Comparing time taken to record and chart vital signs: we will record how long it takes to set up, record and chart a full set of vital signs for Coremed and a similar monitor in a simulation vignette.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENSPAN INNOVATIONS LTD	Ensuring SMEs have access to capital	£49,914	£49,914

The COVID-19 Situation has exacerbated a pervasive problem: Smaller U.K. companies (SMEs) often struggle to grow and invest in people (jobs), marketing (sales) and equipment (capacity) because of cash flow constraints. Typically, these constraints arise from a) being paid late by the customer, and b) limited access to institutional (bank) capital to invest in the business.

Larger customers are notorious for paying their suppliers late because they too are managing the cash flow problem, only at a much larger scale: _"Large companies with lots of buying power carry substantial leverage in negotiations with suppliers. Delayed payments can free up working capital enabling finance chiefs to **strengthen financials at the quarterly close.**"_ - Wall Street Journal (U.K. Companies Penalized for Failing to Pay Suppliers on Time - July 17 2019)

SMEs are left with three options: 1) Wait for customers to pay, 2) Apply for bank financing, or 3) Apply for invoice factoring.

All of the above have their challenges. Banks have largely been uninterested in SME financing because the cost of due diligence outweighs the benefits of, what are typically smaller loans. Invoice factoring is more expensive to the SME (due to higher invoice fraud risk) and only partially funds the requirement. But primarily, **all of the above take time** - which is critical to solving the **immediate** cash flow problem.

Enspan's supply chain financing innovation is to **immediately** advance cash to SMEs against the **actual deliveries** recorded by their customer. By this time, there is hard proof that the customer has taken custody of the goods and has an obligation to pay the SME based upon Purchase Order Terms. The credit rating of the customer is used to determine the interest rate of the SME (which is typically much more attractive than the SME's own interest rate).

Enspan's current supply chain platform facilitates digital receiving of goods and provides proof of delivery. We propose to open this delivery information to institutional and retail investors as a way of connecting SMEs with pools of funding - bypassing traditional banks and invoice factoring points of friction and dramatically speeding up access to capital which is critical to keeping SMEs in business, protecting jobs and keeping the U.K. competitive.

A byproduct of this is that it has the potential to connect pools of capital (largely private and seeking yield) with new investment opportunities and allow investors to directly support the nation.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PI LIMITED	Modelling the pathways of Health and Social Care following on from the impact from COVID19	£49,919	£49,919

As we hear on the news every day, it is already the case that COVID19 is impacting everyone's lives and the underlying statistics are pointing towards the elderly population being more vulnerable and at risk. Wolverhampton City Council supports approximately 6,000 older people while approximately 34,000 older people across the city have used either the NHS or social care services in the last 2 years. With the current rates of infection seen across the UK and especially in the West Midlands it is expected that a noticeable percentage of this population will contract COVID19\. Our key objective with this project is to create a predictive model that will allow the council to better support their population, predict the demand that they will place on Social Care services as a result of COVID19 and help identify the most effective pathways that result in the best, most cost efficient outcomes.

The insight from the model will allow the Council to manage the risk of the expected increased needs as a result of COVID19 across their elderly population and help ensure that the best services are available for the people that need them most at the right time.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CYTOCHROMA LIMITED	RAPID: a new test to identify the safety of new drugs and vaccines	£50,000	£50,000

Access to medicines and anti-viral vaccines would have significant societal, environmental and economic impacts, both in the short and long term. The current Covid-19 pandemic has highlighted the inefficiency in how novel therapeutics are made and tested.

New drug and vaccine development takes on average >10 years, with costs in excess of 2 and 0.5 billion USD respectively. Latter stage therapeutics failures amount to over 90% in clinical trials, because predicting reactions in humans cannot be determined with current models and tests.

Global pandemics are predicted to become more common, and subsequently, there is an increased and immediate need for 1) more accurate preclinical models, and 2) better, predictive tests to identify safety of drugs and vaccines.

Cytochroma addresses the first need; by providing physiologically relevant, stem-cell-derived, human models for preclinical testing. We specialise in liver cell manufacture, a tissue that is often damaged and in which testing is required.

We propose to address the second need and develop a more efficient method of testing the safety of new drugs and vaccines. This Robust Automated Phenotypic Identification of cell Damage or 'RAPID' test would use observational-based screening. By tagging cells with fluorescent dyes and viewing via a powerful microscope we can visualise how tissues react to drugs and vaccines at a single-cell level. This provides vastly more information than traditional tests and can be combined with machine learning to understand, modify and feedback to directly improve the development of new therapeutics.

Cytochroma manufacturers liver models from a unique stem cell bank. These stem cells reflect a diverse genetic background that allows testing of a global population in vitro -- enabling identification of a _universal_ treatment for diseases.

Our state-of-the-art technology and robotic based cell production can be easily adapted to tag cells and screen for toxicity on a high- content microscope. This automated approach enhances our capacity and enables us to provide cells at a scale and quality required for testing.

These cells and the RAPID test will enable more accurate identification of toxicity, reduce late-stage attrition and accelerate development to make essential drugs and vaccines available faster.

Cytochroma is based in Scotland, where over half of all Europe's biosafety is undertaken. The Company is well connected at all levels within the sector and it has strong relationships with several leading Contract Research Organisations and pharmaceutical giants, both of which offer an attractive route to market.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
JACOBS BOND PASCOE LTD	Air sterilisation - Removing coronavirus from the air stream	£49,864	£49,864

Background

We are using ultraviolet technology, which breaks down the DNA of a virus. This technology allow us to remove coronavirus from the air stream and stop it settling on surfaces, where is can stay for up to 72 hours and possibly contaminate anyone who touches it.

Jacobs Bond Pascoe started looking at controlling pandemics after the SARS breakout in 2002\. Since then we have managed to obtain a product that will stop the spread of viruses within the air stream,

Product.

Jacobs Bond Pascoe Ltd, product range include:

1. Mobile unit that can be positioned any where in any room.

2. Wall & Ceiling mounted unit that can be secured against a surface, negating floor space.

3. Duct Unit that can be retrofitted within existing air supply and extract systems.

Our product once installed will remove the coronavirus from the air stream thus limiting the viruses ability to spread the infection.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ROUND MIDNIGHT LTD	LINK-UP - Remote PSHE Learning	£48,215	£48,215

LINK-UP (working title) is a platform to "bring people together, to learn together", at a distance, in a shared experience format, to encourage young people to think for themselves.

LINK-UP is a unique engagement tool that combines interactive virtual reality drama with Personal Social & Health Education (PSHE) in schools.

'Theatre in Education' (TIE) specialists Round Midnight intend to research and develop a remote delivery platform and make it available to any school in the UK. Theatre in Education has been used as a creative methodology to engage young people in learning since the 1960's. Through live performance and interactive facilitation, young people are able to explore difficult topics that give them a greater understanding of the world around them, helping them to make well informed decisions and become well-rounded human beings.

By developing a new digital format whereby young people watch a film/animation and interact with a live avatar, they are able to explore a topic interactively, whether this be in their classrooms or from the comfort of their own homes.

We will explore:

- * The impact of the COVID-19 pandemic on young people's health and wellbeing
- * anti-social behaviour, domestic violence, bereavement
- * animation, live film, live facilitators, avatars, prerecorded content
- * varying story outcomes, voting systems, interactive Q&A
- * VR headsets, interactive whiteboards, individual users via tablet/laptop, multiple schools participating at once.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OPPOSABLE GAMES LIMITED	The Virtual Bristol VR Lab - a startup incubation and remote worker networking space	£33,062	£33,062

The Bristol VR Lab has, for the last 2 years, successfully been acting as an incubator for startups working in VR & AR, as well as associated ML and IOT, and has also hosted a huge number of talks and meetings to accelerate this field.

The coronavirus has created massive disruption which is leading to increased remote working and networking, fields in which VR and AR are going to be transformative.

With headset sales increasing and workers moving to home offices, there will be a great need for people to come together in shared digital 3d spaces. We are already seeing this in platforms like AltSpaceVR, and in video games like Fortnite, however these are focused on the engine and not the applications such as assisting the technology community and startup development.

Bristol VR Lab has started work on developing a virtual digital mirror of the physical Bristol VR Lab, which can host daily connection for workers, can host virtual talks and seminars, can host meetup events and enable other new ways to network. Due to Coronovirus we see the societal need to implement and actively grow this space, open up to our local members and residents, and to a national and international audience, who will have increasingly limited opportunities to collaborate face to face.

The main objective will be to create and add functionality to a 3D model of the Bristol VR Lab, with areas for virtual working, one to one meetings, 'coffee' breaks, small workshops, seminars and group classes or relaxation. Once this is built, we will host it in AltSpaceVR and use the network and track history of the Bristol VR Lab to drive engagement through hosted events and talks, as well as providing real world training sessions to help members of startup companies, corporates and members of the the public access the space using their VR headset or PC / mobile phone.

This will be an innovative project - as such there is no well known virtual meeting space, and the process of setting up the space and scaling for a potentially huge global audience with multiple functionalities will be useful in assisting other companies set up their own virtual meeting areas.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
KIDZ ABOUT NETWORK LTD	Virtual Social Edutainment Platform for Children 7-15 y.o.built on principles of Positive Psychology	£50,000	£50,000

Kidz About is a unique virtual edutainment platform, created together with educators and psychologists to empower, engage and inspire children and teenagers from 7 to 15 y.o.

Edutainment, which is educational entertainment, is the future of education. Kidz About offers a unique mix of stimulating activities to create an innovative social learning environment.

It uses the cultural phenomenon of social media to assist in healthy development and upbringing by empowering every child to make commitment to positive lifestyle choices.

In contrast to most other social media, it is also a safe space for children using a range of technologies to ensure security and minimise harmful interactions.

By blending the elements of social media, positive psychology and extra-curricular activities, the platform allows to build confidence and self-esteem, gain motivation, resilience and develop a greater outlook on life. This in turn positively impacts social climate, social emotional learning and educational outcomes.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BUSINESS 2 BUSINESS (U.K.) LIMITED	CV-19 Job-Boost	£44,587	£44,587

The CV-19 outbreak has led to many people being made redundant, whilst there are simultaneously tens of thousands of jobs needing to be filled in services that are critical to managing the CV-19 outbreak and its aftermath. In response, by drawing on our in-house recruitment expertise and working in partnership with an experience software developer, we will create a smart, new 'conversationalist' way to recruiting to provide immediate screening of candidates and match to vacancies which are experiencing high demand.

CV-19 Job-Boost will:

* be simple to use;

* be accessible to job seekers at home during lockdown;

* minimise delays in the recruitment process to provide a rapid recruitment solution for critical services.

Developed during May and launched on 1st June, CV-19 Job-Boost will help into employment:

* unemployed people already registered with Jobcentre Plus;

- * people made recently redundant; and
- * furloughed employees who are able to work other jobs as per their employment contract

Job-Boost will be able to:

* match employers and job seekers to fill vacancies critical to managing the CV-19 outbreak;

* provide accurate and up to date CV-19 employment guidance through helpline support to employers and job seekers;

It will be entirely free of charge to both employers and job seekers for six months from 1st June 2020\.

Drawing on the tremendous goodwill demonstrated by TV, radio and social media towards CV-19 initiatives, CV-19 Job-Boost will be widely promoted to ensure maximum awareness employers and job seekers ensuring even hard to fill vacancies receive sufficient applicants and critical services are unimpeded by a lack of staff. This will undoubtedly save lives, relieve pressure on overstretched personnel covering for colleagues absent due to self-isolation and ensure a rapid return to employment of many people made redundant as a result of the CV-19 outbreak.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACTIVECELL TECHNOLOGIES LIMITED	Ultra-fast design and production of custom-fitted reusable FFP2/N95 face masks: combining 3D face scanning and 3D printing technologies (UFM3D)	£49,412	£49,412

ActiveCell Technologies is a Leeds-based start-up developing a **disruptive offering for rapid prototyping and manufacturing using fusion-deposition technology** -- a 3D-printing farm where any item can be sent to print instantly and monitored remotely.

In project UFM3D, ActiveCell will develop an innovative process for the **r**apid design and **manufacture of reusable N95/FFP2 filtering masks to address** 1) the current shortage in respirators for frontline workers, responsively and at scale 2) the issue of face fitting of said respirators.

ActiveCell Technologies will develop a mobile app able to generate a 3D scan of the face of the user, and the back-end software to process this data automatically to convert it into a model for the 3D-printing of a respirator. It will also develop and test a respirator, based on a peer-reviewed published design. **100 units will be produced within 6 months and tested with frontline workers at the NHS**, before the full implementation of the service.

In the longer term, a **service for on-demand manufacturing of perfectly fitted filtering face masks** will be available to both the NHS and the general public.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GLOBECHAIN (UK) LIMITED	AGORA - an asset tracking system to facilitate transparent distribution of PPE and other emergency goods	£49,967	£49,967

Globechain aims to design the first transparent and trusted supply chain system for medical and emergency goods, demonstrating the ability to reliably trace and distribute critical supplies to authorised entities during times of volatility and crises. By incorporating a transparent yet secure and immutable method of asset tracking into the Globechain reuse marketplace, we intend to ensure that much-needed supplies are sourced, validated and distributed to the right hands.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
THINKING MATTERS HOLDINGS LIMITED	Developing Independent Learners in Isolation	£47,006	£47,006

This project addresses the short term need of isolated, school age, learners needing to know how to learn independently in order to cope with the burden put on them by the unfamiliarity of remote learning.

Without the day to day physical presence of professionally qualified teaching staff, isolated learners are vulnerable to the pressure that comes with the obligation of doing much of their studies un-aided. In these circumstances many will suffer, unable to cope with the demands of understanding and completing work without the typical support and motivational input of their teaching staff and peers. The potential negative consequences of this for personal confidence, self-esteem and well being are significant at an individual level. The wider economic and societal costs could also be substantial.

Thinking Matters is a recognised leader in the field of metacognition. Since its emergence from the Cognitive Education Development Unit at Exeter University over fifteen years ago it has been at the cutting edge of developing and training teachers in the use of cognitive and metagonitive pedagogy. It support some of the world's most progressive schools to develop cultures where nurturing independent thinkers and self reflective learners is core to the school's purpose. Thinking Matters continues to develop proprietary metacognitive models and a range of tools and strategies which are used by the staff of its school clients to develop independent, self reflective learners.

To aid the support of isolated learners Thinking Matters is applying for funding in order to adapt its model and metacogntive tools for direct use by all isolated learners (of all school ages) via a web based application.

The outcomes are anticipated to be in line with those seen in EEF studies on metacognition and by accredited Thinking Schools where academic progress has improved by an additional 7-9 months (the equivalent of over a SATS or GSCE grade).

Whilst the short term benefits of the project will be to improve the learning skills, confidence, capability and wellbeing of the isolated learner. A long term benefit will be to give those learners the skills to adapt and succeed in a world likely to be characterised by constant and rapid change.

The project thus addresses education, wellbeing and home working. Home working? With parents and children working from home, learners needs to be busy and self-committed if the parents' home working is to be effective and contribute to the economy.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE GEOGRAPHICAL ASSOCIATION	Geography Education Online	£49,333	£49,333

COVID-19 is disrupting UK education in significant ways. The sudden shift to home learning creates unique challenges for geography teachers and students, since an integral part of the discipline involves fieldwork and first-hand investigation. Over the coming year, large numbers of GCSE and A level students will need to prepare for their qualifications and for further study in new and novel ways.

At times of change and uncertainty, teachers of geography have traditionally looked to their professional subject association, the Geographical Association, for support and leadership. The GA's Geography Education Online (GEO) project will extend support for geographical knowledge and understanding directly to young people. It will create a free, dedicated website, providing:

* online guidance and tutoring for A level and GCSE geography students to conduct high-quality geography fieldwork safely, independently and in their own locality;

* a 'virtual GA Branch' connecting university academics with geography students aged 14-19, enabling online lectures, engagement with up-to-date academic knowledge and dialogue between students and academics;

* online material and activities for students preparing for further study;

* an online forum, to connect students with their peers to discuss geographical ideas and research;

* online and mobile quizzes and activities to build locational and spatial knowledge, as part of the foundation of geographical capability.

GEO will go live by the summer of 2020\. Over the following few months, GEO will grow to provide invaluable support to many of the 285,000 UK students, due to take geography examinations in 2021, whose experience of learning is being adversely affected by COVID-19\.

The project will be supported by Innovate UK, part of UK Research and Innovation, and will be delivered by the GA, the subject community for teachers of geography. The GA's purpose is to further geographical knowledge and understanding through education. Its journals, publications, professional events, website and local and online networks support teachers and share their ideas and practice. The GA represents the views of geography teachers and plays a leading role in public debate relating to geography and education.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INTERACTIVE HEALTHCARE TRAINING LTD	Virtual Frontline Program - Virtually Simulated Learning Environment for Covid-19 and Epidemic Healthcare	£47,267	£47,267

Covid-19 urgently requires us to find a solution to delivering and assessing learners online who require a vocational approach to nursing. Learners could range from student nurses to medical staff from other medical disciplines. Currently there is no online vocational delivery at a key time when they are needed to qualify and work on the frontline.

Our innovative approach is the collaboration of our experienced tutors and the expertise of our technology partner -- mXreality Ltd (mXr) to develop a Virtual Frontline Program. The program uses a Virtual Environment (VE) and Augmented Reality (AR) to cover multiple areas of nursing (including respiratory and Covid-19 infection). This will be a game-change for the educational and healthcare sectors.

The program will allow learners to gain the knowledge and confidence safely and correctly using a range of learning methods including online interactive learning modules combined with an Augmented Reality app, as well as interactive scenario-based assessments. All of which will be easily accessible using the learner's own digital devices at home.

Having swift access to our Virtual Frontline Program will be a great benefit to the healthcare services as staff will be adequately trained. This in turn will further reduce the risk of overwhelming the capacity of services and ultimately saving lives, and reducing the negative impacts on societies and the economy.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
EPICARDIO LTD	Real-time 3D Simulation-based eTraining for Intensive Care Procedures on Mobile Devices	£49,573	£49,573

In response to the COVID-19 pandemic, Epicardio sets out to expand its unique educational heart simulator into a "heart & lung" module, suitable for online eTraining in ICU procedures. We propose to develop realtime 3D simulation-based eTraining apps for ICU Ventilation and Temporary Cardiac Pacing accessible on mobile devices.

The UK Health Secretary has recently confirmed that 4,500 retired healthcare workers have signed up to help battle the outbreak. The NHS will soon have access to nearly 10,000 new Intensive Care Units. As a result large numbers of doctors and nurses of all specialties are currently being diverted to ICU management. At the same time young and inexperienced staff are being deployed in the newly added ICU's in existing and new hospitals, such as the NHS Nightingale in London, Manchester, Harrogate, etc.

Mechanical ventilation and temporary cardiac pacing are the two procedures with the most critical interventions in ICU for COVID-19 patients with acute respiratory distress syndrome. Evidently there is a sharp increase in demand for rapid clinical training for these ICU procedures. The lockdown and self-isolation have also caused additional demand for remotely accessible training.


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
256 KELVIN LIMITED	Video chat for the elderly	£48,728	£48,728

Older adults often struggle with video chat, and this has become especially apparent to families the length and breadth of the United Kingdom during the Covid-19 pandemic. While younger adults turned to Skype, Zoom and other products to stay connected, an overwhelming number of older adults who have not embraced technology have been left with no visitors and little social interaction.

One key reason for this is that many commercial video suppliers require people to sign up, install apps and navigate various complicated options. These options and steps, while second nature to people of the smartphone generation, present significant difficulties to older adults and often lead to frustration, which in turn leads to less communication with loved ones and their wider support network.

We are developing online software in which every decision is focussed on ease of use. There will be no required sign-up, no complex features like screensharing, no address books and, critically, a user interface that does not resemble a mission control room. We will provide a link or a shortcut that will simply and immediately allow anyone to communicate with their loved ones, be it during a Coronavirus-like set of circumstances, or just at Christmas.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIRMINGHAM ENTERPRISE COMMUNITY CIC	Supporting emerging entrepreneurs through uncertainty	£42,860	£42,860

COVID-19 has created disruption never before experienced during peacetime. Businesses suspending operations, job losses and lockdowns have resulted in opportunities for young people's careers dropping significantly, with vacancies in many sectors falling 32-40% (Sources: TechCrunch & Adzuna) leading to falling career prospect confidence.

The aim for this project is to create a programme of support aimed to provide entrepreneurial training to young adults facing career disruptions due to COVID-19 in order to help them create their own career opportunities or increase chances of employment through upskilling. This virtual programme would offer digital training resources, workshops, mentoring and peer support to help develop individuals over competency areas as set out in the 'EntreComp' Framework whilst allowing them to build a portfolio of evidence. Being part of the peer community will remind individuals that they are not alone as they work together to rebuild confidence in their futures.

Those who do not start a venture afterwards return to the workforce with higher skills having developed entrepreneurial competencies, increasing the value they bring to organisations. These entrepreneurial employees bring a source of innovative and creative thinking to organisations and are able to lead them in seeking new business opportunities in a post-COVID world. Those who do launch ventures may create employment for themselves and for others whilst contributing economically, creating impact from the programme.

In order to achieve the vision, this project will focus on three objectives:

- 1. To entrepreneurial upskill 18-30 year olds who have seen their career prospects affected by COVID-19\.
- 2. To support individuals prepare for new career opportunities including starting a business.
- 3. To help target individuals to access a network of like-minded individuals to enable support and combat social isolation.

The area of focus for this project will be individuals aged 18-30 year olds who have their career prospects affected by COVID-19\. This may include individuals who have lost jobs or been furloughed, individuals who are unemployed or individuals who have just left education and are now seeking employment. The regional focus for this project will be the West Midlands area which has been severely affected by COVID and contained a large number of individuals in this demographic.

This project is innovative in the way that it uses entrepreneurial competences to generate an evidenced-based portfolio of professional development applicable to a range of careers, delivered through digital mediums that can be scaled whilst still generating impact and providing value for money.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AXELISYS LIMITED	3D printing point-of-care automat	£49,061	£49,061

The world's most cost-effective, climate friendly 3D print vending machine for health and social care equipment.

The all-in-one devices provide near-instant 3D printed equipment on-site at fixed or makeshift hospitals, GP surgeries, pharmacies and care homes across the world. Removing procurement and delivery delays by using point-of-care additive manufacturing using push button technology to 3D print equipment like hand-sanitiser bottles, brackets, head visors, genioplasty guides, and Personal Protective Equipment on-site, on-demand using simple interactive displays on the printer or remote commands sent from machines on the secure healthcare network. Equipping healthcare personnel, care providers and trusts with near-instant ability to response to major events like terrorist attacks, major infections and pandemics. Making ill-equipped healthcare teams a thing of the past.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VERTICAL FUTURE LIMITED	Leaves to Door	£49,555	£49,555

Food production and supply chains are highly susceptible to disturbances, most recently highlighted by the global COVID-19 crisis. This has led to immediate shortages in supermarkets as consumers bulk buy, alongside increased orders and pressure on food delivery services including those offered by highstreet retailers and 'recipe box' companies. As people seek to reduce their contact with others, more are moving to online ordering and less-frequent delivery services rather than shop in person. The requirement for extended shelf-life perishable goods such as salads and leafy vegetables is therefore clear. More worryingly, insufficient numbers of seasonal workers are available to harvest fresh produce due to cross-border movement restrictions and an insufficiently skilled national workforce, alongside the issues of physical distancing that this type of work raises. This may cause fresh crops to go unharvested and cause increased prices for produce that is harvested this year and highlights the issues that impact the post-BREXIT fresh produce sector.

This project draws inspiration from growing herbs and cress commonly seen on supermarket shelves. Growing plants are both convenient for the consumer and the supplier because the product shelf-life is substantially extended. By adapting conventional, easily sourced plant growth media, we will devise methods to efficiently produce baby leaf salads, spinach, chard and other leafy vegetables that are ready to eat but still growing at the point of sale. We will initially feed this into our direct-to-consumer sales requiring assessment and adaptation of food packaging then expand this to other suppliers in our business-to-business sales once the method is robust.

However, the plant isn't the whole story. Conventional agriculture requires a large number of people to plant, tend and ready crops for sale. We have been working to flip the model for agriculture and have developed smart plant production technologies. This technology reduces the environmental impact of growing and distributing food, locating production closer to demand centres as well as reducing hands-on time required to produce an equivalent product with less waste - all critical factors in the current crisis. To produce uncut, growing crops, we need to modify these systems so that the growth media is not damaged during production processes and can be packaged and delivered to a consumer's home or to a retailer. As both a produce and technology company, we already market our current technology and we will be able to offer this modified technology to our customers around the world.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
COMPUTER APPLICATION SERVICES LIMITED	Employee Communications and Wellbeing Interface Portal (ECWIP)	£48,413	£48,413

The Employee Communications and Wellbeing Interface Portal (ECWIP) is to enable employees and HR professionals to securely yet easily exchange sensitive information, maintaining a "human" touch that is too often lost when technology is put to work.

"ECWIP" brings together, adding value and introducing common security standards across the disparate methods of communication being used in home working and sensitive case management.

ECWIP is not so much for routine matters that are already covered by technology (making an overtime claim or booking annual leave) ECWIP is to help during the most important career events such as seeking support during Absence, lodging a Grievance, accessing Occupational Health support. It works for both the employer and employee equally where Disciplinary or Performance Management cases need to be particularly well documented.

These exchanges to date have involved face to face meetings and written follow up. With more people working from home there are far-fewer meetings (none, in many cases). Likewise with written communications; of course few holds were barred as people came to terms with the first days of lockdown but it is essential that security is not compromised by using more relaxed written communications ... using home e-mail addresses, SMS messages to personal phones with sensitive information included is not sustainable.

Security and access need not be exclusive; we need security and accessibility.

Utilising Microsoft Teams for online meetings (or other media if more appropriate) "meetings" can go ahead with the content recorded. ECWIP also provides individuals and organisations with _a strongbox in a bank vault_, so to speak, a place where documents and messages can be deposited and accessed by each party, using secure log-ins and leaving an audit trail of access and e-signatures.

Administration aside, ECWIP takes the opportunity to gauge "mood and wellbeing" either during case work exchanges or more widely enquiring of entire employee groups, encouraging feedback and interaction.

Just as the term "human resources" replaced "personnel" in years past, it is clear that the world has turned on its head to recognise that an organisations _resources are human_ and they must be treated as such in our dealings with each other.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TENDED LTD	Minimum separation distance solution	£49,666	£49,666

Tended is a personal safety technology company, specialising in developing intelligent solutions and wearables to improve employee safety.

Amid the current pandemic and the safety challenges that have emerged during these unprecedented times, Tended has identified a solution that can help businesses get back up and running, without compromising on the health and safety of their employees.

This solution comprises of the company's existing safety solution (a wrist-wearable device, online dashboard and mobile app) combined with an ultrawideband proximity sensor to enable employers to effectively enforce minimum separation distances (MSD) in their workplace. It will be adapted from Tended's existing solution, which is currently being used to improve safety across industries, and offer an all-round solution to enable companies to regain productivity.

The technology works by identifying when employees are close to the MSD to within a <10cm accuracy. Their wearable will then vibrate to notify them to move away.

Employers can see an overview of their workforce through the online dashboard, which provides data on any MSD breaches and their duration. If an employee tests positive for the virus, they can notify their employer through the mobile app. The employer will then instantly receive a record of who they have been in contact with, and proactively let these workers know to self-isolate and get tested.

As well as giving companies the opportunity to restart their operations, this solution can offer their workers peace of mind when they head back to work.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MOTIONSPOT LTD	Online home adaptations service during Covid-19	£49,917	£49,917

Due to Covid-19 restrictions, currently no vital home adaptations can be carried out to bathrooms, kitchens, ramps and living spaces to make properties accessible for the 1.5 million vulnerable people being shielded at home and the 12 million elderly and disabled people who are isolated in non-decent homes.

The risks of unsuitable housing for this group is ill health due to accidents and falls, over reliance on care givers for support and pressures on Health and Social Care budgets due to unnecessary hospital admissions.

Motionspot plans to overcome these challenges and, inspired by Innovate UK funding, will kick start a design sprint to build and launch a unique home adaptations website and virtual assessment service. This will harness innovative technology, specialist advice and design, market leading accessible products and a trusted installer network trained in Covid-19 working practices.

The intention is to develop and launch the website and complete a pilot project in August with a view to rolling out the offer across the UK from the end of September. It is anticipated that this service will continue to be available after Covid-19 restrictions are lifted as the new model of adaptations delivery can be adopted by Local Authorities and Commissioning groups and can be scaled internationally.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FURTHERMORE MARKETING LIMITED	HSE SNS Hub Portal	£44,517	£44,517

In 2019, FurtherMore Marketing launched the SNS HSE Hub, a forum allowing gas operators from the Southern North Sea (SNS) to come together and standardise their approach to health and safety (HSE). A large, mobile, skilled workforce moves freely between operators where they are exposed to different systems and different interpretations of HSE legislation. The Hub aims to standardise working practices to make these dangerous environments safer for workers.

The Hub has been hugely successful, meeting a demand that has long-been acknowledged by industry, but has lacked an experienced intermediary to foster a spirit of collaboration. What the Hub lacks is a digital platform to share the campaigns companies have collaborated on. Operators are happy to commission work that improves HSE, a single portal is required to ensure employees and the supply chain at large have access to it.

COVID-19 has amplified this need, as working practices change almost daily and new measures are introduced, the lack of a single point of distribution for HSE information and procedures creates a risk for the industry.

By developing a platform jointly owned by operators and available to the supply chain at large, campaigns, learning materials and tests will allow operators to share their collaborative learnings with the workforce through the supply chain. Each operator will have their own secure section of the platform that allows them to register their workers and then electronically distribute the most up-to-date and relevant information before they travel offshore.

It has long been believed that the offshore wind industry should join the SNS HSE Hub to benefit from shared learning and allow cross-pollination of ideas from offshore wind to the more mature oil and gas sector. Having established the demand in offshore wind for access to the Hub, we would include that sector in the launch of this portal.

As well as benefitting operators and the supply chain with access to shared campaigns, there is a chance to share learnings and move towards HSE standardisation for a safer working environment. The Hub will ensure a bidirectional flow of information from the supply chain to operators and back again, bringing HSE issues to the fore and working on solutions that benefit everyone.

No other organisation is poised with access to the right group of individuals from key operators to deliver this system, which will bring a truly revolutionary approach to health and safety in the Southern North Sea.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INVIGILATIS LIMITED	MySafety Covid-19	£39,373	£39,373

Invigilatis will deliver a Covid-19 work management solution to enable work sites to continue operating safely, even when members of the site team have either isolated or tested positively for coronavirus.

Currently, when coronavirus effects any member of a team of workers, the only safe option available to their site manager is to close the site down. Given there may be many more months before the pandemic is fully under control and the UK economy needs to be restarted, it is important that work sites recommence operations and people are assured they can work safely.

Invigilatis' has a good reputation for creating innovative mobile solutions with underlying business intelligence to support work management: most recently MySafety, a mobile solution developed in 2019 to improve incident reporting and safety for the extremely hazardous UK forestry industry. Forestry and Land Scotland are about to begin a national trial of MySafety to ensure work will continue safely on harvesting sites operating to fulfil the country's essential need for pallets, tissue and biomass.

The proposed project will extend MySafety's current capability with data handling innovations to:

* improve the accuracy of GPS positioning (N.B. point GPS readings from standard mobile devices are only regarded as accurate to within 1 to 7 metres: by using smarts significant improvements are possible).

* identify where workers routes have intersected and there have been incursions in their recommended 2 metre personal safety. If one of those people subsequently have to isolate, potentially infectious incursions with that worker can be identified and other workers also be advised to isolate.

Managers and their teams will use the portal and app (available on Apple and Android platforms) to ensure team members who have had no potential contact with an infected colleague may continue to work safely.

While it will be trialled first in Forestry, the solution is equally relevant for many other site-based industries, transport and even volunteering teams helping their local communities.

The project duration will be three months. After the smarts for GPS enhancement and the predictives have been established and incorporated in a version of the existing MySafety app, a series of controlled, proof of concept trials will be run. Once those trials have been concluded the functionality will be released to all existing MySafety users. It will also then be promoted to other potential groups of users and a series of introductory trials organised for those sectors.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
DRAINAGE MANAGEMENT SERVICES LIMITED	Gate sensor for identifying footfall in remote locations	£40,500	£40,500

This project will produce a minimum viable product (MVP) of a self-powered gate-sensor that communicates over the cellular network, and will be ideal to monitor footfall. This device will require neither an external power source nor additional communications equipment, meaning that it will be deployed quickly and cost-effectively across any location (including remote ones that lack power or data infrastructure). Recording when and how frequently gates are opened and closed, and displaying that data in an online portal, this device will help address two impacts of Covid-19:

1) During the current (and quite possibly future) social-distancing restrictions, it will allow local authorities to understand where there is heavy footfall at short intervals, and thus where officers should be dispatched to identify and help prevent dangerous contravention of social-distancing rules. This is particularly useful in rural areas where there are often hundreds of potential locations where people might gather and it is very difficult for local authorities to predict where to send officers.

2) When social-distancing restrictions are relaxed, it is predicted that people in the UK will want to travel more domestically, avoiding cruises and aeroplanes, and make use of weekends to engage in more outdoor activities. Consequently, we should expect increased usage of many national parks, areas of natural beauty, and local parks, and for the pattern of that usage to be different. This device will help local authorities, county councils, and organisations like the National Trust to understand where and how usage is changing. This has very practical and often safety-related applications. For example, knowing that the number of walks from a small car park has dramatically increased, or that a playground is being operated at twice the capacity it was designed for, can help a local authority make much more informed decisions about where to invest in additional infrastructure and services.

We have consulted our existing local authority customers about this product, and they have shown a clear demand for it, due to both its short-term and long-term benefits.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Laurelle London Ltd	From Perfume to Hand Sanitiser	£49,020	£49,020

Some of the key retailers who we deal with at Laurelle London remain open. This lead us to investigate producing Hand Sanitisers as the demand is there.

To fulfil the initial demand from retailers, we have produced Hand Sanitiser outside of the UK and are having it shipped in, which has its own time restraint challenges.

Hand Sanitisers will provide personal protection for retail sectors particularly in respect of back office staff in supermarkets, those staff on the front line, as well as the care of customers going in to store.

A grant would enable us to purchase the necessary equipment to manufacture Hand Sanitiser. Being a perfume manufacturer we already have the basic equipment, including tanks for mascerating perfume/Hand Gel.

We would be able to modify pumps used to extract the gel from the containers they are made in

We would purchase 2 Tube Filling Machines which operate by hand (This would enable us to adhere to the 2m apart restriction)

We would also purchase an automatic tube filling machine, which would be assembled using our adapted Production Line, ensuring all operatives were 2m apart



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
INSURGENT STUDIOS LIMITED	An Augmented Reality Teaching Platform for Physical and Interactive Remote Learning	£50,001	£50,001

The COVID-19 pandemic has had and continues to have a considerable impact on academic and educational organisations such as schools, colleges and universities. Existing students are having to continue their studies online, and the admissions for new students are likely to be significantly affected, at least for the upcoming academic year. In the case of universities, this represents a significant portion of their student fees income.

While some teaching has moved remotely, there are many areas of education and teaching that rely on physical equipment, laboratories or teaching spaces that cannot be replicated online.

This project will develop a platform on which teaching in these areas can be performed remotely through the use of Augmented Reality (AR) hardware. Specifically, we will:

- * Implement a system that allows the management of remote learning sessions on an AR device.
- * Focus on a particular area of teaching that has been impacted as a result of the move to remote learning during the COVID-19 pandemic.
- * Develop multiple proof-of-concept tutorial sessions, representing a short course, within our chosen teaching area.
- * Work with academic institutions to deploy these proof of concept scenarios within the 2020/2021 academic year.

* Provide fallback functionality using low-cost VR devices - allowing students to use existing (smartphone type) hardware generic VR headsets. Helping in the situation where teaching needs to be moved online in an emergency with little notice.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAMBRIDGE MEDICAL ACADEMY LTD	BACKLOG - Bridging the Appointments backlog, post COVID-19 through re- LOcation of urban and rural clinical service delivery	£49,518	£49,518

BACKLOG will produce a secure cloud-based geospatial (location, distance, and transport) context aware resource and appointment allocation decision support service to aid the NHS and public health service providers safely and effectively clear the backlog of outpatient and small interventions which have occurred due to the COVID-19 crisis. The complexity of scheduling and managing this backlog is immense as the traditional appointment scheduling systems available to service leaders do not take into account the short-term, third-party, and mobile resources being made available in light of the COVID-19 response. The scheduling systems also do not take into account patient separation, availability of "clean" clinics, and the mobility of the patients. The BACKLOG system will integrate location-allocation models to the existing IT appointment and scheduling (ERP) systems and will impact medical practitioners and patients by improving their safety, reducing the potential COVID-19 touch points; allowing for a safe and efficient reduction in the patient backlog ensuring effective prioritisation of cases. This will give communities a sense of returning to normality by being able to carry on business as usual, ensuring the return to normality does not increase road and hospital traffic, by ensuring all patients are sufficiently spaced and will reduce environmental CO2 by finding appointments that may be closer or accessible via public transport.

The effectiveness of BACKLOG will be tested by supporting the reestablishment of the Royal Papworth Hospital's oximetry diagnostics services once COVID-19 related restrictions are lifted. Typically, more than 10,000 oximetry tests are carried out in the community. Since routine service provision was suspended on 19th March 2020 the backlog of tests is growing by 195 a week or 868 a month. BACKLOG will aim to reduce the waiting list of sleep services appointments by 25% and the time to eliminate the excess waiting list by 4 months.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
METRON ADVANCED EQUIPMENT LIMITED	3D Printed Titanium face mask with replacable filters	£48,211	£48,211

A 3D-Printed filtering face mask made in 3D printed in titanium and using replaceable filters.

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

Funders Panel Date: 01/05/2020



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
PADOQ LIMITED	An affordable, intuitive ecommerce solution for at risk SMEs	£40,691	£40,691

Shop-owners and small retailers without an ecommerce presence in place are at serious risk during the COVID-19 pandemic. With this Project Padoq aims to expand its existing offering -- an organisational App for communities, which offers unprecedented functionality and efficiency -- to add e-commerce functionality, this would in effect allow these shop-owners to create an online community, and then setup and run their store online and at no cost. This Project represents an opportunity to speed development of this functionality at a time when it now has a chance to resolve a desperate need and keep a significant portion of the economy afloat, maintaining important community hubs and communication between shops and their customers.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NOISEGATE MEDIA LIMITED	Whenthisisover.uk	£41,273	£41,273

Whenthisisover.uk places the power to save and sustain independent hospitality, service and retail businesses, the life blood of high streets throughout the UK into the hands of the consumer now. It facilitates the safe and secure pledging of support, giving businesses security of income and the knowledge that their loyal customers will be back "When this is over".

We are targeting consumer facing small businesses, those who deliver product or experiences from a physical location and who cannot just 'make the move to digital'. The independent cafes, restaurants, pubs, B&Bs, theatres, music venues, florists, therapists and more.

The project will deliver a website with the simple goal of transferring funds from willing consumers to independent businesses in our target sectors that are currently in hiatus. Helping them to stay afloat, demonstrate income and future income to banks, supporting and sustaining their mental and financial wellbeing over the immediate period of social distancing.

And when the immediate effects of social distancing pass, there will be longer term impacts on our economy and for some on our spending power. We believe the trend in gifting experiences will grow so the by product of the immediate goal to sustain our independent high street businesses will be a quick and simple tool that allows you to easily gift experiences for any of these businesses without them needing to invest in the digital technology to do so themselves.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Combine AI	Improving the productivity of virtual meetings in the home	£49,966	£49,966

This project aims to develop and evaluate a prototype that augments virtual meetings with unique features that improve the productivity of workers that are participating from their home.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACT ON ENERGY	Warm Homes Save Lives CRM	£49,294	£49,294

Those living in fuel poverty are amongst the most vulnerable in society and least able to cope with life and debt. Just being cold adds to the risk of falls leading to A&E and hospital admissions. Many have physical or mental health issues which are exacerbated by living in cold homes. Ill and older people spend more than average time at home and have greater need of comfortable, affordable to heat homes. People in fuel poverty include many of the groups at high risk of poor outcomes from Covid 19 infections.

Innovative solutions are required to transform the national response to fuel poverty: a systemic issue for the UK affecting almost 11% of households before Covid 19\. Addressing fuel poverty requires both support to individuals and investment in homes. Our project will develop a fit for purpose Warm Homes Save Lives CRM system, designed for a programme level response to fuel poverty by bringing together property and personal data.

Our vision is the creation of a new tool that providing a holistic and detailed dataset for the use of local authorities. The tool would address failings in current CRM systems adapted for use by fuel poverty advice agencies and build in opportunities to address Covid 19 (and future similar) impacts on fuel poverty support projects, which are currently severely compromised.

The CRM would provide a key tool to support the delivery of the proposed 3 year £150m [Warm Homes Save Lives fuel poverty programme][0] in the West Midlands and its further rollout nationally over the next 10 years.

The Warm Homes Save Lives CRM would be used by local authorities to coordinate a prioritised fuel poverty support service. It would:

* Be a new tool for use nationally to flag households which may be struggling with fuel poverty and/or poor housing conditions

/* This purpose built CRM would link with existing stock condition analysis and whole house retrofit planning tools

***** Support planning for winter heating seasons when cold weather, flu and other seasonal factors increase problems for those living in fuel poverty

[0]: https://shapuk.files.wordpress.com/2020/04/warm-homes-save-lives_apr2020.pdf


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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RESPIRATORY INNOVATION WALES LIMITED	Characterising the immune response in COVID-19	£31,461	£31,461

Some people with COVID-19 are entirely unaffected and some people become extremely ill. There is evidence to suggest that those who become severely ill have what is often referred to as a "cytokine storm". This means their own immune system has gone into overdrive and is causing the harm.

This research will look at the immune system response of a range of hospitalised COVID-19 patients using very advanced blood analysis. What it hopes to find are similarities between patients with similar levels of illness. This would mean that we would better understand what existing treatments might be effective for the most ill patients. It would also mean that we could target future research more specifically.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AQUAPAK POLYMERS LTD	Development of High Quality Water- soluble Infection Control Bags for Domestic Use	£49,250	£49,250

Infection control and minimising the risk of hospital acquired infection is a major concern for healthcare facilities world-wide. Contaminated hospital and care home linen poses a particularly high infection risk, as pathogens can adhere to clothes and traditional plastics such as polyethylene for long periods and can be transported into 'lower risk' areas such as the domestic home.

The preferred method to reduce contamination risks relating to infectious laundry is to use water soluble laundry bags in a hot wash cycle to negate the need for debagging when loading industrial washing machines.

Standard issue 'alginate' water-soluble laundry bags are designed for solubility rather than to be functional. They can be difficult to open, can split in service due to weak seals and NHS protocols require 'double bagging' with polythene outers to get functionality. The use of starch and sodium alginate to aid processability of the Polyvinylalcohol can often result in poor solubility characteristics of the inner sack leaving non-dissolved residues in the washing and cause blockages in washing machine outages.

Aquapak has developed a technology to produce a specially formulated and pure Polyvinylalcohol pellet (Hydropol(tm)) which allows standard bag manufacturers to make a super strong and quality water-soluble bag that can dissolve at controlled temperatures in both industrial and domestic washing machines. It does not use any additives which create residue and is safe and non-toxic in the effluent stream. The hot water-soluble bag is on the market where it is certified in Australia to be strong enough to carry cytotoxic linen, allowing recovery of contaminated linen that would otherwise be incinerated.

This project is to:

* design a quality warm water-soluble laundry bag with inherent infection barrier which allows healthcare/care workers to bag up their work clothing and wash them domestically at 60oC with minimal handling.

* develop a range of water-soluble hospital laundry bags, aprons, gowns and gloves, which are fit for purpose, improve infection control and dissolve during the hot wash cycle used by hospitals, industries and hotels.

* run proof of concept studies on other thermoplastic forms of Hydropol(tm) (adhesive tapes, mouldings, fibres, to see if any can help the NHS).

The successful development of this project opens-up new markets for UK blown film manufacturers to supply soluble laundry bags and other PPE items to the NHS and wider healthcare system and thereby increase UK resilience during the COVID 19 pandemic, and the return to normality.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SHOAL COMMUNITY LTD	Supporting safe return-to-work and the future resilience of of cities, companies and workers post-lockdown by leveraging our existing network of thousands of properly sanitised workspaces, making them instantly bookable by teams and individual workers	£46,800	£46,800

Covid-19 has caused a global work from home experiment, with remote work taking place on an unprecedented scale. Many people have struggled with the change in their working environment, the difficulties involved in collaborating remotely and the lack of workplace camaraderie.

As we transition into a post-lockdown world, it will be important to provide safe, high-quality working environments where colleagues can be together without having to take long journeys on public transport, which risks spreading or re-spreading infection.

Desana enables workers to find quality, properly sanitised workspace near them in coworking spaces and flexible offices. Workspace can be booked for as little as 15 minutes to a whole day at the touch of a button - it's as quick and easy as ordering an Uber, paid for by their company.

This means that workers can find workspace near their home and avoid travelling long distances on public transport, contributing to overcrowding and the spread of infection. It also means they have a suitable working environment without the distractions of working from home.

For employers, they can instantly provide workspaces convenient to where their employees live without having to establish relationships with multiple workspace operators.

This project focuses on developing group booking and 'see where your team is working' functionality within the app. This means that people who need to work together can do so without having to travel to a central workplace which is likely to be much further away from their home. They are also able to socialise with colleagues and enjoy working together in a physical space - benefits lost when working in a distributed workforce. This is important for people's mental health as well as for their sense of purpose.

Covid-19 has had an unprecedented impact on the way we work. The wider opportunity is to leverage that impact to alter long-formed working habits that have increasingly had a corrosive impact on our wellbeing: from long commutes to inflexible working hours.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
QUIDDITY HEALTH LTD	Care Transformation in Respiratory Disease	£48,037	£48,037

Due to risk of COVID-19 people with severe respiratory conditions, including all idiopathic pulmonary fibrosis (IPF) patients, have been classified by the NHS as "shielded" patients and are required to stay at home at all times. Shielded patients typically receive specialist assessment at consultant lead out-patient clinics at frequent intervals. The challenge is how to provide the specialist care and assessment that these patients require without the necessity for hospital out-patient visits, where these vulnerable patients would be placed at a very high risk of virus exposure. The NHS have stated that there is urgent need to increase remote working in the healthcare system to prevent the spread of the virus, and whilst video and telephone based consultations have become standard practice in primary care these do not allow for the collection and assessment of the types of medical data required for the specialist review and care of patients with severe respiratory conditions.

We propose the immediate roll out and validation of an innovative specialist remote monitoring programme for care of patients with IPF in two NHS Trusts -Imperial College Healthcare NHS Trust (ICHNT) and Nottingham University Hospital NHS Trust (NUH). This remote monitoring programme enables patients with IPF to collect clinical grade medical data relevant for their condition at home using bluetooth enabled medical devices integrated with a CE marked patient facing application. This includes the specialist measurement of lung function and oxygen saturation (using integrated spirometry and pulse oximetry) both of which are standard assessments in a specialist IPF patient review. Patient data collected via the app are available for clinicians to review in real time, using a secure patient data portal. Using remote monitoring alongside video or telephone based consultations enables specialists to effectively replace standard out-patients appointments with innovative digital appointments.

This technology can be used to provide medical care to a vulnerable section of our society in the immediate term, and in the longer term has the potential to serve as a model for new care pathways which are most cost-effective for the healthcare service, more convenient for patients, with positive impacts on the environment (carbon emissions and air quality) due to reduced need to travel to secondary care centres.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PUMPED HEAT LIMITED	Improved Solar PV powered cooker with integrated thermal storage	£50,001	£50,001

"Half a billion people could be pushed into poverty as economies around the world shrink because of the coronavirus outbreak, a new study has warned. Poverty levels in developing countries could be set back by up to 30 years, research released by the United Nations University's World Institute for Development Economics Research." 9th April 2020

Almost 3.7 billion people in the world use biomass for cooking, which creates a burden that includes health hazards (respiratory illnesses and burns), increased deforestation, spending a large proportion of income on fuel, time spent collecting fuels, and reduced educational opportunities for women and girls. For decades the dominant policy on cooking energy has been to improve the combustion efficiency of biomass fuels. This policy has broadly failed and the dispersal of improved cookstoves is not keeping up with population growth. Proposals have been made for alternative approaches using electrical cooking either from batteries + solar PV (e-cook) or from electrically powered low energy pressure cookers. The first of these has proved too expensive and the second is culturally difficult involving changes to people's established cooking patterns.

The project will explore a third option by building and testing a low carbon, low cost, secure cooking energy solution, which uses a vacuum insulated heat storage block charged from solar PV.

Pumped Heat, a UK SME, have developed and patented a game changing thermal storage material that has multiple applications worldwide. This project will help to protect and create UK jobs and world class expertise in the rapidly growing field of energy storage. It will also support the UK's leading role in development of a clean cooking solution for the world.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NOTE TAKING EXPRESS LIMITED	NRemote:a personalised remote learning solution	£49,754	£49,754

Note Taking Express is a software and service company which provides Note writing software and remote note taking services through NHub a web-based software program. We provide our solution to the UK's Disabled Student Allowance Scheme and over 300 Higher Education Institutions (HEIs) worldwide.

Universities and Colleges have had to temporarily close and adapt to remote learning. Their students are using online solutions which are limited or inappropriate for the learning environment. Students with learning differences are particularly penalised, as much of that the content is not formatted in an accessible way.

Covid-19 has accelerated the need to educate differently with the resulting unprecedented challenges creating a significant period of economic uncertainty.

We are introducing **NRemote** as a remote lecture capture software for lecturers to engage with students remotely and provide continuing education which will enable engagement and participative learning. Lectures can be delivered from the classroom or the lecturer's home to students in remote locations.

NRemote can be combined with our existing note writing software and note taking service portal **NHub** to create a personalised learning solution, which is inclusive, and provides lifelong learning for students of all abilities. The video content from **NRemote** can be replayed in **NHub** where students can add content, write notes and access supporting tools to enhance their learning journey, including our personally tailored knowledge-bank to further enhance their learning experiences.

NRemote will positively transform the delivery of accessible learning for education and is straightforward and easy to use, with no concerns about security or privacy, (unlike other online platforms like Zoom, which have been removed from use by certain schools, as not being sufficiently secure for, nor designed for education.)

NRemote and **NHub** will be available to Universities and Colleges for all students by way of an annual subscription and/or students will have the option to subscribe to **NHub** for additional services offered. Disability support may also be available for students with learning differences to provide this subscription.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
COLLINGWOOD SOLUTIONS LIMITED	Robotic selection of banded power semiconductors	£48,880	£48,880

Collingwood Solutions has over thirty years of experience in the electrification of transport, energy and construction using electric drives and motors.

Drives are a key enabling component in the electrification of transport, construction, agriculture and energy. They are used in Aerospace, Automotive, Energy (Generation, transmission and consumption), Industrial, Marine, Off Highway and Rail applications. They help decarbonize systems and move from an internal combustion system to an electric system. They are complex systems combining safety, power and input/output signals for the application. The market for Drives in the UK is forecast to grow by over £2Bn by 2025\.

The UK is a world leader in designing these systems however the UK domestic manufacturing capacity is limited as, today we manufacture them in low cost locations abroad. To make the UK more competitive we need to automate more of the manufacturing process, reducing cost and improving quality and productivity. This Project helps in that work.

The project develops the framework for a universal system to test and select power devices for use in Drives.

This project will remove one of the most manually intensive, error prone and expensive processes in the manufacture of a drive. The project will automate a part of the process of Drive manufacture by developing the key enablers, robotics to pick, orientate and present parts for testing, the testing systems, fixturing to allow for different power device topologies to be tested and a process to allow for insertion or placement of devices in the manufacturing process all being Industry 4.0 compliant.

The project will deliver specifications for the Robotics, the testing equipment, the Artificial intelligence around the selection criteria and the repackaging of the devices following test.

The process Intellectual Property developing in the UK is making the UK an attractive location for international businesses to locate here. This is exactly the type of process knowledge that will attract foreign direct investment. This project will also help international collaboration between the UK and some of the foreign companies who might seek to come here to access the process engineering skills and the research capability in the UK.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAMBRIDGE ANIMAL TECHNOLOGIES LTD	Jobs4Agri: A unique portal for connecting farms with non-traditional worker pools	£49,967	£49,967

The proposed project will produce a unique platform solution for farmers, large growers and producers to quickly find, sift, train and on-board workers to cover the looming labour gap in the agriculture industry. This is highly relevant in the current context and urgently needs to be addressed for harvest time in the short term and in the longer-term to make the sector more resilient in managing its fluctuating labour needs. A shortfall of 80,000 workers is expected due to movement restrictions caused by the Covid-19 pandemic preventing seasonal labour coming to the UK.

Key objectives include:

(i) Create a platform that brings together food producers and divergent demographics of people looking for jobs.

(ii) Provide tailored criteria to quickly match roles and skill with proven skills-based assessment techniques, customized for the specific set of roles.

The value to the industry as a whole will greatly increase by integrating recruitment, training and on-boarding temporary workers, with an inherent high churn rate, rather than each grower tackling these issues individually.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
VERIFIABLE CREDENTIALS LIMITED	Standardised COVID-19 Immunity Test Certificates	£49,853	£49,853

The NHS will soon have tests available for COVID-19 antibodies in the blood, showing that a person has immunity to the corona virus. Such people will need to be issued with COVID-19 Immunity Certificates so as to show to others that they are immune and not at risk of infecting themselves or others. This will help the UK formulate its exit strategy from lockdown/self-isolation, and be immensely beneficial in many circumstances, e.g. staff in critical care wards may no longer need to wear the full PPE that currently restricts their movements, causes great discomfort and means they can only work for a few hours at a time.

However, we must ensure that these immunity certificates are not easily forged, copied or passed between people, as this would undermine trust in the entire system. Our solution is to use cryptographically-protected and privacy-preserving electronic immunity certificates, that people can store on their mobile phones, laptops or other devices, as an alternative to paper copies, and can show to anyone or any computer system at anytime, anywhere.

Our Immunity Certificate Infrastructure conforms to the latest international standards and all messages are carried by HTTPS (which secures the entire Internet). In particular we do not rely on operationally-unproven, non-standard technologies such as distributed ledgers and zero knowledge proofs, which only serve to complicate the installation, add costs and complexity to the set up, and make the system more likely to have bugs. Consequently, our system is lightweight, and easy to integrate with existing technologies and systems through 3 simple application programmable interfaces.

Our electronic immunity certificates can be strongly bound to their owner, preferably through biometrics, so that they cannot be passed from person to person (or device to device) and the user can access these certificates without needing yet more usernames and passwords. Our infrastructure allows the NHS to instantly revoke these certificates when circumstances demand e.g. a new strain of the virus starts to circulate. Our proposal is to take our existing proof of concept infrastructure that uses laptops and web browsers, and

* port it to mobile phones,

* write supporting mobile phone apps,

as these are more prevalent in society than laptops.

A demonstration of our proof of concept is available on YouTube at https://youtu.be/i3HIV-MX6Ag



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TUTORBLOC LTD	Operating system for on demand personalised learning and teaching (Tutorbloc)	£49,500	£39,600

UK private tuition market is valued at over £2 billion and is growing at a compound annual growth rate of around 8% with the average hourly cost for a lesson being £30\. Looking deeper into the details, 27% of 11-16-year-olds (approximately 770,000) have received private tuition at least once across England and Wales to help improve their confidence, subject knowledge and exam technique. However, it's a hugely inefficient & fragmented market---hundreds of local learning centres/tuition agencies and large online directories that are plagued by outdated systems, charge excessive commissions, lack transparency and place minimal emphasis on safeguarding. The main barrier for such providers to embrace advanced technology stems from the fundamental shift in business model and operations as well as lack of staff time and digital expertise. As traditional agencies and online directories are under increasing financial pressures, technology solutions are fundamental to the sector's future success.

Tutorbloc can answer this need by bringing to market a highly scalable and cost-efficient mobile application based on disruptive technologies and team's expertise in the fields of education, software engineering, user experience design, and product marketing. Tutorbloc will deliver a full-stack digital platform that has instant lesson booking & management functionality; robust data security and identity verification; seamless payment integration; advanced analytics as well as inbuilt video conferencing. The objective is to empower parents with the tools to safely and quickly find subject experts when their child needs support, and tutors with the technology to crunch day-to-day administration so that they can focus all of their efforts on teaching.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TEKIHEALTH SOLUTIONS LTD	Using Remote Diagnostic Consultation tools In Care homes to Reduce exposure to COVID-19	£49,900	£49,900

COVID-19 is acknowledged as the most significant disease outbreak in a generation. It presents an obligation for technology innovators to help tackle this disease and its consequences on our healthcare systems.

Demand for care home visits has increased as a consequence of this global pandemic. Thousands of people have died from confirmed or suspected COVID-19\. According to the National Records of Scotland, a quarter of all registered deaths (up to 12th April 2020) involving COVID-19 (24.6%) occurred in care homes.

We have designed a unique product that enables clinicians to provide remote healthcare to care home residents.

The solution has two immediate and compelling benefits:

(1) By providing remote care via telemedicine, we can limit community exposure to COVID-19\.

(2) We allow GPs to shift general burden away from hospitals, releasing hospital staff to increase their focus on COVID-19\.

Our solution provides a route to directly supporting remote diagnostics for patients susceptible to COVID-19\. But our solution provides an additional benefit too. COVID-19 is placing huge demands on the healthcare system and we need to minimise demands on hospitals and healthcare professionals who are trying to focus on tackling COVID-19\. Already shortages of primary care doctors result in patients unable to obtain appointments and turning to Accident & Emergency (A&E) departments instead -- around 1 million A&E visits a year occur this way in the United Kingdom. Our solution provides a unique way to siphon off some of this workload to remote primary care doctors.

Current attempts to use video technology to provide remote consultations have significant limitations such as the inability to examine the patient or obtain vital signs. This data is critical when risk categorising patients. Our innovation facilitates the ability to examine patients remotely using state of the art digital technology and strong internet connectivity solutions.

The core device we are offering is called the Teki-Hub. It consists of a mobile hand-held modular diagnostic device connected to a compact lightweight wireless internet router. The Teki-Hub is specifically designed for remote clinical examination. The diagnostic device (FDA approved and CE marking since 2018) consists of a high resolution video and still camera, no-touch infrared basal thermometer, stethoscope, otoscope and tongue depressor attachments. The device is specifically designed for healthcare professionals who want to offer remote examinations to patients.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HAEMOCONCEPTS LIMITED	Haemopulse - an innovative anti DVT device, preventing deaths and saving the NHS money	£49,253	£49,253

Deep vein thrombosis (DVT) is a leading cause of death for hospitalised patients. The clot moves from the veins in the calf, travels in the venous system to the veins of the lungs causing a pulmonary embolism which starves the body of oxygenated blood and thus can cause death. Patients who are at more risk of a DVT include immobile patients, postoperative patients and patients who have a tendency to clot due to vascular problems, or dehydration.

Thrombosis can be reduced by pharmacological means (blood thinners) and mechanical intermittent pumps attached to the calves which increase the flow of blood and decrease the chance of clots. These intermittent pneumatic devices work by a pump attached to a sleeve around the patient's calves. Air is pumped into the sleeve to mimic the normal calf muscle contraction when we walk. There are several disadvantages of the current devices such as a multitude of sizes of the compression sleeves, where the nurse will have to order and fit the correct one to the patient. The patient remains attached to the pump and therefore cannot mobilise without someone having to detach them first. The pumps are noisy and some patients cannot sleep as a result.

Haemopulse has several advantages over its competitors. It is a one size fits all device, portable and can significantly reduce costs for the NHS. This project is a follow on from a previously successful Innovate feasibility project and aims to scale up the prototype for manufacture and commercialisation.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARCADIS CONSULTING (UK) LIMITED	Scientifically Managed Accurate Rapid Treatment of SARS-CoV-2 Fomite Transmission Routes Via Targeted Disinfection	£49,867	£49,867

This project aims to develop advice regarding disinfection, considering the differing scenarios (e.g. ambulances, public transport) considering:

*Effective disinfectants (virucides)

*Scenario specific constraints (i.e. need for rapid reuse of facilities)

*Applicability of advanced disinfectant delivery methods

*Activities where disinfection offers the greatest benefit

The project assist with the need for rapid disinfection of NHS resources and facilities. Has objectives to identify if, why and how disinfection of public and private sector activities could be implemented and can form the basis on which disinfection guidance is developed for both the public and private sectors as the UK returns to work and the lockdown is eased.

This project has multiple tangible benefits to current and ongoing management of the SARS-CoV-2 pandemic. The team assembled bring expertise from academia into industry to combine industrial risk assessment and disinfection skills with viology to manage the risks posed by fomite transmission the SARS-CoV-2 virus.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
LUCKY MARY LIMITED	Bristol XR studio for continuation of events industry in times of lockdown and self isolation	£49,049	£49,049

The landscape of the creative industries has changed forever. We are a robust innovative industry but the restriction of people attending cinemas, events, film shoots, meetings, music festivals, theatre, opera, concerts has potentially damaged if not changed the landscape forever.

We propose to research and develop a world leading XR studio. An XR studio is a mix of virtual, augmented and mixed reality technologies. Most recently you would have been seeing XR studio shots in Disney's blockbuster series The Mandalorian. It is a small studio with an LED wall backdrop and floor with a camera that is tracked in space in realtime. As the camera moves in space, the content on the LED or green-screen is 'manipulated' in realtime using high powered computing power and applications such as Unreal Engine, Unity or Notch to name a few.

By integrating all of these elements it is possible to create vast virtual worlds that extend beyond the physical confines of the studio. Tracked cameras can freely navigate the space, panning and orbiting around the virtual world, which can change dynamically based on the camera position. With the addition of LED walls and floor the performers can actually "see" the environment they are working in, and by tracking the position of the cameras, the director, and online audience can move around and interact with the environment in a completely seamless fashion.

In a time of social distancing, the studio can be run by a bare minimum of technicians and content can be created from home working. The whole thing could potentially be remotely operated. We see the building of a permanent studio in the following ways:

* Streaming hub for events. You could have a central sole host that manipulates the environment with PIPs (Picture in Picture) of people joining the virtual event for presentations and panels from their homes.

- * Creation of work for the area's animation and design companies, including 100s of freelancers that have lost all their work.
- * Forwarding the development of nascent virtual studio technology to support Bristol and the South West film and television producers.
- * Exploration 'sandbox' for interrogating mixed and extended realities use in the arts and media, for performance and audience interactivity.

* Further pushing the boundaries by integrating VR and XR, by creating virtual performance and broadcasting environments that can be experienced both using traditional broadcast mediums, such as PCs, TVs, mobile devices, but also using VR headsets.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEUVILLE GRID DATA DATABASE TECHNOLOGY LIMITED	Remote Work O&M Technician Support Monitoring of Utility-Scale Solar Farms	£48,938	£48,938

Neuville Grid Data is developing new complex hardware and 'big data' systems that will enable individual workers in the UK solar farm operations and maintenance (O&M) industry to monitor the operational health of their solar sites remotely and in real time. Not only does this enable individual workers to undertake a large amount of their duties remotely at home, it also provides them with early-warning condition monitoring of solar farm equipment that is currently not available with existing monitoring and communications equipment within the sector. The condition monitoring early-warning element of Neuville's system is of benefit to society at large as it will enable solar farm operators to minimise downtime that results from unplanned equipment failures, thereby ensuring that a greater proportion of the UK's installed solar assets are available for communities' power consumption needs.

Whilst the hardware aspect of Neuville's innovative grid monitoring system is already in development thanks to private funding, support via public funds through this InnovateUK grant would enable Neuville to accelerate the data processing and information dispatch aspects needed to automate the processing of the vast amounts of electrical grid data generated from each site every second.

This 'big data' processing is key to enabling O&M tech to resolve many issues and answer questions remotely without need to visit the solar farm. Thereby avoiding Covid-19 exposure and maintaining social distancing by avoiding lengthy journeys to sites across the UK in shared vehicles and working in confined spaces with other persons.

Beyond the societal health benefits, this project's results will also: lower utility-scale solar farms operating costs; enhance solar energy generation; encourage more renewable energy; reduce O&M travel associated carbon emissions; reduce road traffic; improve job satisfaction; and raise skills.

Electrical power is an essential service. There are over 1,200 utility-scale solar farms (larger than 1 megawatt) across the UK totaling more than 8 gigawatts (GW). During April 2020, solar energy's contribution to the total UK electricity supply repeatedly reached 20% or more at times.

Keeping this supply of solar energy operating and fully productive requires the highly skilled labour of an estimated 1,400 British solar O&M technicians performing one of the fastest growing jobs in Britain.

Neuville is perfecting and commercializing this disruptive technology in the UK. The UK is a relatively small solar market, but the export opportunity is huge. The project's resulting tools and systems can be easily exported.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PLYABLE LTD	Supply-side automation and component diversification of Plyable's online manufacturing marketplace: efficient and agile CNC manufacturing	£49,705	£49,705

Virtually everything that is manufactured requires CNC machining at some point; more than £80bn worth of components are produced every year. While modern processes like 3D printing have enabled rapid prototyping and spurred innovation, the real business of manufacturing relies on decades-old spreadsheets, late-night phone calls and hand-wringing, making the process slow and incredibly inefficient. As a result, CNC-machined components are time-consuming and expensive to make, requiring experts in design, tooling and manufacture to work together to produce a final product. Nowhere is this more true than in composites manufacturing, where a significant amount of time and 40--60% of upfront cost for a part is in tooling design and manufacture.

Plyable recognised that there is a large amount of underutilised capital assets in the high-performance/low-volume manufacturing industry and the business model aggregates this capacity via a free-to-use online manufacturing platform. Plyable built an automated, instantaneous quote package based on calculated component properties and calculated CNC information which they then incorporated into an existing frontend web interface. Essentially, this brought mould design and manufacture under one roof for the first time with first-of-its-kind digital manufacturing technology to allow immediate pricing and ordering. By maximising machine utilisation and minimising needless human-to-human interactions, a recent study by GKN aerospace demonstrated that, on average, the resulting Plyable process reduces upfront costs by 20% and lead times by 44%.

In this project, Plyable will introduce supply-side automation to its business model for the first time, delivering further efficiencies to the benefit of both sides of the marketplace, while simultaneously opening the online platform to non-composite components. The resulting enhanced offering will automatically select and alert potential manufacturers based on product information, aggregating and utilising the capacity of Plyable's vast network of CNC machine shops housing in excess of 1000 CNC machines to allow high-volume production runs; an innovation that leverages existing outsourced CNC machine capability and capacity across the UK that competitors cannot achieve with in-house manufacturing (e.g. protolabs) or by selling autonomous CNC manufacturing hardware (e.g. CloudNC). As a result, the first-of-its-kind industrial digital technology (IDT) developed in this project will tackle the urgent societal need for rapid high-performance/high-volume manufacture of custom CNC-made components that go into life-saving healthcare equipment like the ventilators and CPAP devices being developed by VentilatorChallengeUK, Dyson, Babcock, Science Group, MercedesF1 and many more; thereby supporting efforts to accelerate government and private procurement of urgent equipment via domestic supply chains.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEWCODE UK LTD	Sono Payment Platform	£49,038	£49,038

This payment platform is your online payment service provider of choice. We offer you a simplified, immediate payment method for your customers to use online and In App at a very low cost to you. Forget about the days of waiting for days to receive transactions. Receive the whole amount of the transaction and not what is left after someone has taken their share. See an overview of all your transactions and make intelligent business decisions with our intuitive business management solution.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHARMIDEX PHARMACEUTICAL SERVICES LIMITED	Creation of a rapid in-silico predictive screening model targeting Coronavirus SARS-CoV-2 to treat COVID-19	£49,906	£49,906

Worldwide as of 16 April 2020, COVID-19 has infected over 1,954,726 people, killed over 126,140, caused social and economic disruption. COVID-19 could wipe \$4trillion from global economy. The Office for Budget Responsibility (OBR) predicts COVID-19 could by June 2020 shrink UK economy by a record 35% triggering a 'big recession'.

Epidemiologist are suggesting a one-time lockdown will not be sufficient to bring the pandemic under control and that secondary peaks could be larger than the current one. Physical distancing measures may need to be in place intermittently until 2022\. Worst could be the believe by some authoritative medics and virologist that that "asymptomatic transmission is occurring", someone who has no symptoms from infection with virus, can still infect others.

Scientists do not yet have a clear understanding of the virus's behaviour, transmission rate, and the full extent of contagion. There are currently no antiviral drugs with proven efficacy nor are there vaccines for its prevention. Vaccines will take time to develop and manufactured at doses to be of immediate benefit. The most likely way out of the pandemic and help NHS heroic efforts is identification of a combination of small anti-(viral, infective, hypertensive), etc drugs that slows the virus to allow time for immune system to control it before it triggers pneumonia and cytokine storm.

Every lost day in not having an treatment has a huge impact on lives lost, families involved, lost productivity as well as create a heavy economic burden. This project aims to help fast-forward the identification of drug treatments for COVID-19\. Pharmidex already has comprehensive _in-vitro_, _in-vivo_ and bioanalytical capabilities. Pharmidex is establishing a rapid translational drug screening platform to identify and reposition potential combination therapies to treat COVID-19 and other viral and inflammatory conditions.

The key objective of this proposal is to rapidly introduce _in-silico_ prediction capability to the Pharmidex team. The main area of focus will be to utilise the recently reported protein structures of SARS-CoV-2 to help identify/select putative drug candidates', using a drug repositioning approach.

The project is innovative since only recently the 3D Map of SARS-CoV-2's Spike Protein part of virus that attaches to and infects human cells has been created in USA and Japan. We can establish these _in-silico_ structures at Pharmidex and utilise these in tandem with a database of known drugs to identify putative drug candidates with favourable docking scores for drug repositioning to help NHS heroic efforts.


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
GREENER GAMES LIMITED	Nature Treks VR: Together	£48,247	£48,247

Nature Treks - Together is a multiplayer virtual reality experience that encourages people to express themselves, relax and communicate in a simple but powerful manner. An innovative tool for assisting the well being and mental health of individuals that may exacerbated during periods of lockdown or isolation.

During times of isolation social media usage increases dramatically, increasing the problem. Nature Treks: Together encourages the user into an environment of 'being' not 'doing'. A place to express fundamental emotions that can build up during confined. A place to create and share, free from consequence or judgement, contrary to traditional social media.

It will potentially reduce the individuals need for medication.

Individuals can access the software via digital download, requiring no contact delivery, not reliant on a physical supply chain or requiring any assistance for the use.

Transport and immerse yourself in a large beautiful, detailed natural world, alive with the sounds, colors and shapes of nature.

Express your emotions and communicate with others using the 'emotion halo'. Release a storm to express anger or envelop others in a soft radiant pulse to express your love.

Summon the 'Creator Halo' to influence and modify the environment as you feel. Surround yourself in a meadow of flowers, create a forest of trees or ancient stone circle.

Unleash your creative side by painting your own visualization. Package these up in a 'thought seed'. Share these with others within the environment or simply leave them in the world for others to discover and release.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
CONSUMER CODE FOR ONLINE DISPUTE RESOLUTION LTD	Consumer Code for Mediators online mediation platform.	£48,410	£48,410

As a direct consequence of Covid-19 lockdown and social distancing measures, the UK Mediation/Arbitration industry, worth £9 billion annually to the UK economy (Sixth CEDR Mediation Audit, 2020) is in hiatus. UK businesses and public individuals seeking access to justice through this legal route, are hopelessly stuck. Traditionally operated as a face-to-face industry, Mediation/Arbitration practitioners have found themselves plunged into a world where they can no longer travel nor meet clients. Often self-employed sole traders, they face imminent financial ruin. In a desperate attempt to work, practitioners are resorting to the only medium available -- non-compliant, inadequate and security compromised "social media" platforms.

Covid-19 has inadvertently created the ideal environment in which transformational change can be embedded with minimal institutional resistance, as the industry now understands the consequences of the over-reliance it previously placed on face-to-face practices.

It needs to return to operation with immediacy.

Our innovative Remote Working Resolution (RWR) Platform and Code differs from any other product available, in that it is:

* the first and only technological platform partnered with a Consumer Code which is Mediation/Arbitration Industry specific.

* servicing every process involved in Mediation/Arbitration practice.

- * consumer and practitioner led.
- * enabling streamlined and efficient case management.
- * GDPR and regulatory compliant.
- * digitally secure and fully encrypted.

* developed specifically to up-skill practitioners by driving the behaviours, practices and standards specified in the UK Consumer Code for Mediators (2020).

* designed to enhance and standardise the UK industry practices.

* targeted at improving the UK business and public's consumer experience.

In addition, our leading-edge technological RWR Platform features: 24/7 user access, secure on-boarding, integrated encrypted secure file-sharing; advanced video conferencing and recording; virtual rooms; event scheduling; invoicing and payments; templates and agreements; electronic signatures; communication aggregation tools; and practitioner/specialism directory to ensure streamlined and efficient case management.

Prior to the pandemic, the industry was experiencing significant challenges, including: a high variation in the background and quality of practitioners; the lack of standardisation of approach; drawn-out, time consuming, and costly processes driven by outdated industry-wide working practices.

The RWR Platform and Code responsibly, disrupts the industry's operational practices and standards. As the foundational framework of the RWR Platform is driven by the UK Consumer Code for Mediators (2020), user-practitioners are channelled to adopt and embed the associated behaviours, practices and standards.

In effect, the RWR Platform and Code drives industry-wide standards of excellence and transforms the Mediation/Arbitration industry into a future-focused digital, remote-working public service.



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Total available funding £34m.

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
MOUNT PACKAGING SYSTEMS LIMITED	Development of a precision, micro dosing system to facilitate dispensing and mixing of multiple liquid components	£49,984	£49,984

We believe that there is a need for a piece of equipment for use in the production of different products at a micro dosing level. By utilising the latest pump technologies, as well as proprietary control software, we have created a concept for a system that can be cost effectively used in the manufacture of any batch size of product, using a "mix on demand" principle.

Instead of bulk mixing then filling, our concept in this project is a system that can take individual raw ingredients, dispense and mix them accurately while monitoring the process and using our own proprietary software that is designed for this purpose and offers additional capabilities to the overall system.

We believe that there are many benefits to this solution, namely, cost savings based on minimal installation requirements, cost savings from the reduction in fixed hardware to distribute ingredient withing a production environment and the potential to rapidly change the batch volumes of products manufactured and switch from product to product.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
8BY8 VIDEO LTD	Ultra Low Latency Video Streaming Platform	£49,087	£49,087

8by8 are developing a web platform which enables the streaming of high-quality video, to large numbers of viewers at ultra-low latency (less than 3 seconds).

Existing user-friendly services such as YouTubeLive run at a high quality, but with a high latency. Additionally, the ability for users to brand their output is limited. Real-time conferencing runs at low latency but with poorer quality. Existing ultra low latency solutions require significant hardware and software configuration, and may require an on site presence.

8by8's video platform aims to fill this gap in the market by working with cloud providers and hardware manufacturers to help bring ultra low latency to non technical users, and to a wide range of industries. This will help address the immediate needs businesses are facing as a result of Covid-19, as well as enabling more jobs to be carried out remotely - reducing environmental impact.

8by8 is a technology company, predominantly working in the sports space. Their online video management and distribution platform is used by some of the largest leagues in the world to assist with the training and assessment of match officials.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SAKER SOLUTIONS LIMITED	Using the cloud to make better decisions in shorter timescales to maximise business performance	£40,301	£40,301

Making the right decisions at the right time is fundamental in all industrial sectors. Regardless of whether an organisation is a public or private company, and irrespective of the industrial sector in which it operates, there is a clear need to deliver value for money in a cost-effective manner. Simulation modelling is widely used in industry to improve the quality of decision making. Models allow users to ask 'what-ifs' to identify how performance can be maximised. Benefits include greater confidence, cost avoidance and reducing capital and operational expense. However, without the necessary computer resources the timeframes for decision making are elongated. This has the potential to tempt users into taking shortcuts which may result in poor decision making. The Covid-19 pandemic has intensified this risk; with simulation professionals working from home, access to computing resources is severely limited.

Simulation models are representations of real systems; they include numerous aspects of variability. For example, the time taken to undertake a manual operation or the outcome of an event (e.g. passing or failing a test). A model must therefore be run repeatedly, and conclusions must be drawn from an aggregated set of results based on multiple runs to ensure that are statistically valid. With industrial models taking hours to run, this gives rise to a need for a High-Performance Simulation Architecture (HPSA) where replications are run in parallel to compress timescales. Simulation analysts working from home do not have access to a HPSA - there is a clear need to address this in order to protect the ability for British Industry to make quality decisions in a timely fashion.

This project will create a cloud-based high-performance computing service for simulation professionals. Companies that have already made a significant investment in simulation will be able to continue to realise benefits whilst working remotely. Additionally, companies that already use simulation and want to make quality decisions in compressed timescales could do so without the usual hardware and software upfront costs. Saker is uniquely qualified to create this service having already successfully prototyped a desktop grid equivalent in a cloud. We have the motivation, expertise and know-how to bring this disruptive digital technology to market this year and seek Innovate UK's assistance to do so. Although it is difficult to quantify the scale of the savings that the service will deliver, we estimate that clients will save millions of pounds through better, timely decision making.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOURCING PLAYGROUND LIMITED	Deep Supplier Insights For Resilient Retail Supply Chains	£42,088	£42,088

Sourcing Playground aims to improve the resilience and mitigate risks of UK retailers supply chains that have largely been affected by the Coronavirus.

The UK retail market has 208,760 companies generating 5% of the total GDP with a total £394 billion of sales (2019) employing over 2.9 million people. Retail is a key sector and backbone to British economy.

Coronavirus has highlighted the industry's reliance on outdated, offline methods of sourcing and qualifying manufacturers for their own brand products with companies being slow to react to changing customer spending because of supply chain issues.

Sourcing Playground is an online platform improving the way in which buyers and manufacturers connect and collaborate online for new product development.

The projects's goal is to develop and launch an innovative, AI driven sourcing and procurement web app for the UK retail market, used by buying and sourcing teams for the development of private label products.

The innovative project has three main objectives:

- 1. improving UK retailers' competitiveness and speed to market reducing 5% of companies' associated sourcing costs
- 2. increasing their supply chains' resilience through diversification
- 3. improving companies' digital capabilities ensuring buying roles and jobs remain within the UK.

The product will ensure retailers developing within the fast moving consumer goods sectors, can qualify new manufacturers at scale in 75% less time. The first in the industry online web app will also provide deeper market insights so that retailers can make more confident buying decisions and increase their speed to market for new products from six months down to two months.

The pandemic has highlighted that companies with production of products in one country open themselves up to huge risks. The project aims to allow UK retailers to quickly diversify their supplier base in days as opposed to months, by discovering and qualifying new secondary and tertiary vendors helping to mitigate risk and reliance on one country for their production. Only 7% of retailers say they had enough flexibility in their supply chains during the pandemic to be able to switch suppliers. We are aiming to increase this figure to 30%. (Retail Economics, 2020).



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MINDSTRETCHERS LTD.	Virtual Nature School	£40,872	£40,872

VIRTUAL NATURE SCHOOL

With many young children at home during the coronavirus crisis, parents could have access to a stress-free way of filling up each day with positivity, collaboration, engagement and learning.

Virtual Nature School shares daily provocations and live interaction for children aged between 3 and 11 years old to ensure curriculum progression through differentiated teaching while connecting with their peers using video technology.

The key benefit is that while the learning is delivered via the internet, the material is designed to **minimise the amount of screen time** that children are exposed to. Most of the time will be spent on **inquiry-based learning** using their hands and getting creative both inside and outside the home.

Here is what a typical day of Virtual Nature School looks like:

- 1. Enter the live virtual classroom at the start time to discuss the day's focus.
- 2. Get off the screen and work on the day's inquiry it involves being active and designing/making something!
- 3. Come back to the virtual classroom after a few hours and share the group learning.
- 4. At the end of each day, families receive a video summary of the day's key learning and additional information on how to support their children further.
- 5. The same theme is explored all week to allow children to build on their learning each day.

Real-life example of a week at Virtual Nature School

During the first week of April, the focus was "STEM learning through marbles". Children collaborated to design and make marble runs and mazes. On each day, a new challenge was set to extend children's thinking and it was a pleasure to see their confidence and quality of work improve throughout the week.

In advance of the week, parents were equipped with information on how they could best support their children, as well as the knowledge that throughout the time that their children were "playing" with marbles, they were actually learning important aspects of the curriculum including forces, density, mass, speed, measuring, angles and shapes.

Some feedback from the parents at the end of the week included:

"...we've had a great first week and have thoroughly enjoyed the marble challenges set, the learning is first-rate, thank you."

"Thank you for a wonderful week. Nature school is the highlight of our day."

"It's been amazing to see how all three of my children are playing and learning together in our weekly projects."_



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TUPIX LTD	Dig!	£37,500	£37,500

Dig! is best described as Disney+ for the heritage sector. We enable heritage organisations of all shapes and sizes to :

- * Find and engage with new and existing audiences online, both during and after the Covid19 crisis.
- * Drive non-core revenue generation (replacing lost visitor spend and supporting discretionary donations), again both during and after the crisis.
- * Ensure visitor numbers bounce back once restrictions are lifted (and can be maintained if we enter a series of lockdowns being implemented/lifted).

Dig! brings content from heritage organisations of all shapes and sizes (from small independent museums to national bodies) together into one portal. Anyone can explore and access digital content of all descriptions (video, images, games, worksheets, guides etc) through our website, mobile apps and Smart TV app.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TISOUR LIMITED	SMASH	£49,845	£49,845

Following the increased demand for content from UK audiences, coupled with the effects of the shutdown on the entertainment industry's ability to fulfill that demand, there is a desperate need to find new, diverse and potentially lucrative projects that can go into production as soon as it's safe to do so.

SMASH has developed a new generation of digital tools to empower content creators to reach markets quickly and monetise efficiently. SMASH has created a sharable and trackable pitch presentation tool to transform how projects are assessed. SMASH has developed a standardised Pitch Builder to enable decision makers to select and discover new projects easily and efficiently. This interactive tool enables content creators to design project pitches including dynamic finance plans, mood boards, cast and crew links which can then be easily shared with team members and decision makers.

SMASH mitigates risks for the content hungry creative industries and opens the door to diversity and new talent.

Our mission is to make content development processes faster and smarter to enable the creative industries to get back into business.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ASTOR-BANNERMAN (MEDICAL) LIMITED	Hygienic Handles	£49,932	£49,932

Hygienic Handles

We want to replace handles that your hands touch, because these are sites for infection to be spread. Coronavirus can survive on a handle for 3 to 9 days*. Our devices will operate doors etc but interface with other parts of our body where we are less likely to transmit viral infection between people eg. using your shoe.

This will increase public confidence by reducing the level of cross-infection as it enables everyone to move around and interact with the world without the need to put your hand onto a handle, or similar item, that is likely to have been touched by other people before you.

*Ref: Kampf, G., Todt, D., Pfaender, S., Steinmann, E. (19.03.20) 'Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents', Journal of Hospital Infection Volume 104, Issue 3



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GDS DIGITAL SERVICES LIMITED	CoCore - Covid Community Resilience and Engagement	£49,404	£49,404

GDS Digital (GDSD) are leading a project to address societal challenges and potential life-enhancing opportunities, magnified by the impact of the Covid-19 crisis. Working with Walsingham Support and Cisco we intend to provide assistive technology and applications to make a significant difference in the following areas:

* Enabling individuals to connect and communicate with professionals, family and friends, with minimal personal F2F visits -- for remote support, welfare, public service information, education, skills and reminders.

* Enabling individuals to broaden their interests and social connections easily and safely, creating communities of interest that are sustainable and reduce isolation, retaining professional and family support.

* Enabling delivery of basic and essential services remotely and securely -- such as online shopping, banking, paying bills, doctor appointments, rehabilitation advice and medicine reminders.

It is estimated that the UK has a disabled population of 13.3m people. According to the UK Digital Consumer Index (2019), only 11% of people with a registered disability use assistive technologies, and 21% say that technology is unsuitable for their condition to help them go online. The "We are Purple" organization estimate that the 4.3 million disabled shoppers who are online in the UK, who click away from inaccessible websites, have a combined spending power of £11.75 billion.

Over the next six months, we will work together to find and enhance solutions to help make our disabled communities become more resilient and engaged in this time of lockdown, future isolation periods and for the longer term benefit of society as a whole.

GDS Digital are an SME based in Bristol, who as a service-integrator has delivered public and private sector contracts including smart connectivity, assistive care and health technology and digital programmes for citizens.

Walsingham Support are a national charity that has been supporting people with learning disabilities, autism, brain injuries and complex needs across England and Wales since 1986\. We pride ourselves on putting the individuals we support at the centre of everything that we do enabling us to deliver truly person-centred support solutions that provide independence and happiness.

Cisco are helping to create a digital society that works for everyone. After over 30 years of connecting the UK&I, we're in a great place to help accelerate its digital future. Nearly every Internet connection touches Cisco technology and we're investing in projects to support innovation, from smart cities to transport, healthcare and manufacturing, to cyber-security and digital skills.



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Total available funding £34m.

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
LOGIFECT LIMITED	Integrated mobile indemnity passport platform	£37,216	£37,216

The lockdown is having chronic consequences across the board; for the general population, to the companies they work for, and across all industrial and government sectors, and also for the government itself and the future economic prosperity of the country.

As we move forward, after medical evidence shows that we can begin to return to a healthy life, it is vital that testing is massively stepped up. Otherwise, we are taking giant steps in the dark. We require testing from PCR, rapid testing and antibody testing. We have no way of knowing (apart from NHS 111 data and some calls to GPs), how many have had symptoms of infection. We also at present have no way of comparing those with and without symptoms, with or without test results. Achieving the above also begins to indicate those individuals who are symptomatic and asymptomatic. All this data informs us of the history of each patient in respect of tests and symptom history, but to be practical, it incorporates the track and trace. We need to provide a trusted platform, and comprehensive app starting with ultra-secure user verification and authentication, A single clinical repository, that uses open, interoperable standards, and has a range of relevant features including track and trace in one easy to use the application on both apple and android. It must be massively scalable and must have a simple means of certificate validation.

Only by deploying the right architecture is it possible to deliver an easy to use indemnity passport that can be fully trusted. Logifect has all the elements to rapidly build such a platform.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
EXEGESIS SPATIAL DATA MANAGEMENT LTD.	Safe Access Booking for Recreation (SABRe)	£43,382	£43,382

Social distancing, travel restrictions and the closure of many business and countryside sites and attractions has been an essential part of the management of Coronavirus. However, these restrictions have severely disrupted people's normal pattern of countryside visits and recreational activities and this in turn is having a detrimental impact on the incomes of businesses, tourism enterprises and local economies. It is vitally important for the economy and for health and well-being that access to such sites is reinstated as soon as this is safely possible.

It is clear though that an overnight lifting of all restrictions in all places would lead to crowding and excessive social contact and a solution is needed that enables access to be reinstated in a managed and progressive way. It may be many months or longer before all sites are completely back to normal. This project will create a site management and safe booking system that can be used through this transition period.

The system is called 'SABRe' - Safe Access Booking for Recreation. SABRe is a map-based, visit booking website developed specifically to allow recreational access to be restored as quickly as safely possible. People that manage greenspace and countryside sites will list their sites on SABRe, set any opening and closing times and say how many people they think can safely visit each site. People wishing to visit a site will be able to locate their local sites and see what the availability is and make a booking. SABRe will issue a confirmation that can then be used as proof of booking.

SABRe will be available for any land or site manager to use and it should be helpful for a range of different types of sites including:

- * Parks and urban greenspace
- * Playing field facilities
- * Nature reserves
- * Gardens, private and public
- * Countryside sites, particularly where access is associated with parking provision

Listing of sites in SABRe doesn't in any way diminish existing legal rights of access, rather it provides a way to manage access to public paths and open spaces, for instance through managing access to parking spaces.

This project will enable the system to be built and piloted in a field trial and then make it available as a scalable, cloud-based service. The plan is for the system to be in trials before the end of May, leading progressively toward full national launch.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
CITY I.D. LIMITED	CoMap – A prototype city dashboard mapping activities in realtime in support of city resilience	£49,775	£49,775

COVID-19 is new to everyone and as yet, there is no blueprint for how to respond. Quite rightly, UK Government is focused on the national agendas of supporting the NHS and the economy. Regional and Local Authorities are focussed on the local emergency response, ensuring vulnerable residents receive essential care and support, maintaining critical infrastructure and signposting businesses to economic safeguarding packages.

In addition, hyper local WhatsApp and Facebook groups are rapidly springing-up, sometimes accompanied by off-line offers of help.

Both "Top Down" and "Ground-Up" responses are vital to managing the crisis - but there is also an opportunity to create additional value by focussing on "the Middle" ground and the need for cities themselves to respond on behalf of all their citizens.

Our proposal -- CoMap-- is a prototype in-the-moment civic dashboard and map based digital resource that supports the people of Bristol and businesses in new ways. In short, helping the city get back on its feet.

The dashboard will provide an accurate in the moment picture of what services are open where and when in the city. It will provide answers to peoples everyday questions:

What's happening in Bristol right now? In my street, my neighbourhood, or across the city? Are the parks open for exercise? Can I still buy lipstick at the pharmacy? What is reopening now? What morning is NHS only at Marks and Spencers? Which streets have been made traffic-safe? Who is operating a deliverery scheme for groceries?

Challenges will be both big and small -- creating and updating a list of shop opening hours in the local area, compiling a central register of local WhatsApp groups users -- or they could be citywide, creating a platform to advertise available housing to key workers. These are just indicative of the type of challenges that could be addressed.

The longer term impact could be to build new connections that helps cities to adapt and grow in new ways in the future, for example by:

- * Re-localising relevant digital public services
- * Re-socialising the city
- * Re-energising the local economy



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
Concept PLastics Ltd	Mask for the Masses	£38,501	£38,501

A proposal to develop a new concept for a PPE mask 'system' for the general public which is affordable, accessiable and practical for all, and which ultimately focuses on reducing transmission rates of Covid 19 until a point that an effective vaccine is developed and deployed.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
PAGODA PROJECTS LTD	China Remote Internships Programme	£36,919	£36,919

Our vision is to build crucial international ties at a time when global relations are being severely tested. Every year our organisation enables young people from the UK to gain experience overseas. We have a particular focus on China, which has helped build meaningful partnerships during the Golden Era of UK-China relations.

Pagoda Projects is a leading UK organisation in the International Higher Education sector. We have been awarded for innovation in our sector and our role in building links with key overseas partners since 2007\. Each year we organise work experience and cultural immersion programmes in China, Vietnam and Mexico for UK students, funded by the British Council and UK universities. We would ordinarily send around 700 students on our programmes in 2020, but now we are likely to send 0\. After accounting for programmes which can be postponed, we expect to lose over £250,000 in revenue due to COVID-19 related cancellations.

We aim to develop an innovative online platform which will prevent a generation of students from missing the chance to build meaningful connections overseas.

The project has three key objectives:

- 1. To continue to strengthen bilateral relations through cultural exchange and business links.
- 2. Assist UK students from a low-income background to develop a global mindset and enhance their employability.
- 3. Develop a sustainable online platform to ensure a continued positive impact in our field.

The project's main area of focus is a comprehensive Remote Internship programme for undergraduate students and recent graduates. Participants on the programme are selected on a means-tested basis and must be UK passport holders. At the core of our programme is an internship, which is completed online. Alongside the internship our team will organise an extensive range of online events, networking opportunities, support and a cultural mentor assigned to each participant.

We aim to use the Innovation funding to:

- * Reinforce the technology upon which the programme takes place
- * Retain employees to work on the project who might otherwise have lost their job due to the financial impact of COVID-19
- * Fund a number of eligible participants whose in-person programme has been cancelled.

A Remote Internship was a little-known concept until recently. This project is highly innovative within this growing market by using technology and focusing on the social mobility of participants, whilst achieving an unrivaled level of cultural understanding without physically travelling overseas.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
POMELO COLLECTIVE LTD	Reath - Digital Infrastructure for Reusable PPE	£37,981	£37,981

COVID-19 has made Personal Protective Equipment (PPE) a household phrase. The UK Government flagged an acute in-country supply shortage of PPE and a reduced ability to re-supply. Meanwhile, reusable PPE designs are emerging every day (e.g. PET plastic face shields). Our project, _Reath - Digital Infrastructure for Reusable PPE_, aims to enable responsible reuse of PPE. Our vision for this project is to support the NHS and UK Government in slowing the spread of COVID-19 by keeping frontline workers protected with vital PPE.

Our Key Objective for this project is to demonstrate the benefits of digital tracking and enhanced traceability of reusable PPE. We will accomplish this goal by adapting and piloting our software with frontline industry PPE.

Our project focusses on supporting industry leaders to deploy reusable PPE, quickly and at-scale.

Our innovation lies in using Track & Trace software for an entirely new purpose: logging critical sanitation and use data of reusable PPE. The current _Reath_ software tracks reusable assets through a closed loop system, keeping a ledger of where they've been. This digital ledger would enable roll-out of reusable PPE with the highest standard of traceability, control and accurate supply-chain management.

Track & Trace software for business assets exists, but such software is typically optimised for high-value assets, oftentimes requiring expensive hardware or fully bespoke software.

Reath, established in 2019 and funded by Atomico Angels Program, Zero Waste Scotland and Scottish Enterprise, applies Track & Trace technology to reusable packaging in order to facilitate replacement of single-use packaging. Our experience positions us well to work with 'single-use' (i.e. low value, high frequency products) such as PPE. An example of reusable PPE is the plastic face shield. When we designed _Reath_ software, we did so with the intention of serving many different end-users. Our user-friendly interface can be accessed via a progressive web application (PWA), requiring just a mobile phone and computer to use. Consequently, it can be deployed rapidly, and to many users.

Offering an innovative, cost-effective solution to this unprecedented PPE shortage, _Reath_ offers good value for money.


Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
ROCKPOOL LIMITED	SME Productivity Improvement Platform	£49,992	£49,992

Productivity Improvement is a key pillar of the Industrial Strategy. UK businesses were 15% less productive than the G7 average; now, productivity is core to our national survival. Working in lockdown many people are only achieving 30% of previous productivity, with UK productivity already low due to Brexit uncertainty (ONS). Likewise, a significant mental health burden is anticipated from COVID-19 (Lancet).

Following COVID-19, the UK's SMEs must re-enter the economy in a sustainable, resilient manner. These SMEs must adapt to the fundamental restructure our economy, now and for the longer-term. Working methods have changed; individuals will work more from home; prioritise their health; and must rise to the challenges of isolation and virtual working.

Hence, there is an immediate need for combined productivity, resilience and wellbeing solutions. These must tailor to individuals' home/work environments and personal characteristics. Ideally, everyone would receive the personalised training that brings out optimal results for every individual. Personal-PIP will deliver this: a subscription platform for individuals providing bespoke content (delivered through a coaching content-creator experts marketplace) and development tools, delivering proven results.

We have received InnovateUK, SBRI and STFC B4I funding to bring our Productivity Improvement Platform (PIP) to launch. The PIP is a powerful workplace performance tool, which identifies and links the underlying human factors that drive productivity, wellbeing and resilience. Our unique solution connects >1,700 academically-validated performance factors from 9-million samples, atomising human and organisational productivity, wellbeing and resilience. Using bespoke AI algorithms it generates hyper-personalised development pathways for individuals, teams and whole organisations. Users are provided with bespoke content and development tools supporting their personal development.

Work to date has focused on developing the solution for large, corporate organisations. This project will transform the PIP into Personal-PIP a tool for SMEs and owner-managed businesses. We will provide a hyper-personalised AI Coach for every employee.

For individuals, receiving bespoke coaching maximises developmental and earning potential. Individual coaching can increase individual productivity by >20% (Olivero).

Our approach also helps prevent and address mental health problems, reducing absence related costs: UK employers spend ~£2.4bn p.a. to replace staff lost because of mental health problems, costing the economy ~£99 billion a year (Mind).

In the context of a post-pandemic global society with a growing 'digitally enabled' imbalance/conflict between work/free time, there is a significant need for technology-based solutions to support individuals and teams to build productivity and resilience while maintaining wellbeing.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OXON.TECH LTD	dynamo.tools - local food produce ordering and delivery as a service	£49,568	£49,568

The COVID-19 Pandemic and lockdown has created a significant challenge to all of us - how to get food from our farms to our plates. This challenge doesn't effect us all equally - those most at need of care already, those in rural areas are significantly impacted. On top of this, many companies set up to supply food directly to our restaurants and cafes have suddenly lost almost all of their customers

Where we're based in Oxford we're lucky to be surrounded by excellent local food producers if you know where to look - within 5 miles are farms where you can go and collect beef, pork and eggs. Despite shortages in the supermarkets these farms have an excess of produce that would normally be going to local restaurants. Without significant investment though these producers can never expect to scale to meet the massive influx of demand.

On the other end of the scale, local catering butchers and other food suppliers whose restaurant customers have been forced to close their doors are having to furlough delivery staff leaving refridgerated vans sitting unused. Some larger food producers are even throwing away perfectly good food produce that has no infrastructure in place to deliver.

Our project is all about creating a platform that puts together these 3 groups - home customers, food producers and suppliers. This will allow home customers to discover and order local, fresh produce at the same time as enabling farmers to meet the need without having to set up the required systems and invest in their own delivery capacity. Finally, it will allow local food suppliers to get their vans back on the roads getting our food from our local farms to our plates following an approach inspired by the Dunkirk Evacuation, giving our platform the name "dynamo.tools".



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
AAASPORTS LIMITED	Development of interactive sports delivery system under lockdown conditions	£49,282	£49,282

The development of a delivery system for sports based on the current lockdown climate, where participants of all ages and abilities can progress safely and effectively using a scheme of work specifically designed for use at home.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ASK INCLUSIVE FINANCE LIMITED	Open Banking Lending Platform for micro- loan financing of SMEs	£49,841	£49,841

The **project outcome** will develop an **innovative automated Credit Grading Tool**, using data derived from recently implement Open Banking protocols, enabling **micro-SME cash flow forecasting based loan affordably analysis**, helping CDFI lenders quickly assess loan viability for loans in the sub-£100k range and aid SME business owners understand/ assess the risks/opportunities associated with taking out loans.

As a **CBILS authorised lender (with own Community Development Finance Institution, CDFI, to make loans)**, and proprietary micro-financing platform for CDFIs, developed since February 2016, we are uniquely placed to understand the urgent need for technology to expedite micro-finance loans to SMEs.

Current solutions offered by larger lenders are by necessity driven by automated algorithms poorly suited to evaluate critical small business decision making e.g. a café owner considering a second espresso coffee machine purchase. Typically, automated decisions are driven by data from credit bureaus and Companies House which is out-of-date and for a rapidly evolving micro-business bears little relationship to their current status.

Current solutions offered by CDFIs are often based on manual reviews of loan affordability, not suited to the rapid decision making needed to approve large volumes of loans to SMEs.

Prior estimates of the SME funding gap were £2.2bn+ pa. Post Covid-19 this will be substantially higher.

Despite manual processes supporting SME applicants, business owners lacking the experience/skills in finance are naturally cautious about accepting a loan they may not be able to afford and lack the tools to fully understand the loan affordability risks.

The emergence of Open Banking protocols has opened up new possibilities in terms of automation. However, most existing development has focussed on consumer focussed applications. In the aftermath of Covid-19, SME solutions will be a necessity to enable the survival of many thousands of micro-SME's in need of urgent loan financing.

The **project outcome** will be to develop an **innovative automated Credit Grading Tool**, using data derived from Open Banking protocols, enabling **micro SME cash flow forecasting based loan affordably analysis**, helping CDFI lenders quickly assess loan viability for micro-loans and aid business owners understand/assess the risks/opportunities associated with borrowing.

The game-changing **business outcome** will be that SME business owners, rejected by algorithm driven mainstream lenders, will now have **opportunities to access loan financing provided by CDFIs far quicker** and be able to fully understand the business logic, risks and opportunities presented by such a loan, based on real-time data available through Open Banking.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
FIIT LIMITED	Fiit Club Community Classes	£49,590	£49,590

We are building innovative functionality to unite friends and families in their fitness goals --- "Fiit Club Community Classes". Bringing people together drives better wellness, superior fitness results and installs positive long term habits.

This is a progression of what we already do. Fiit was founded in 2017 with a mission to make exercise a habit for everybody through our app.

We designed our app to help users build long lasting wellness habits. We offer excellent value for money and accessibility, with costs from £10 per month and are for everyone.

We are pleased with the positive engagement we have with our users and want to play an even more significant role in supporting people adjust to the constraints and maintain their wellness during Covid-19\.

Just some of the initiatives we have recently introduced:

* Support essential workers and government initiatives eg free memberships to the NHS, partnered with Sport England on their \#StayHomeWorkout campaign

* Launched new classes, eg low impact classes for use in flats

* Partnered with gym groups who have had to freeze their members access to their gyms

* Providing people with guidance on transforming their living room into a studio.

We want to continue our positive impact by building new functionality which will counter the disruption from Covid-19 and enhance users' wellbeing both during the crisis and beyond. We will do this by building innovative community aspects into our app.



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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ALCYOMICS LIMITED	Immune response to COVID-19 ;Predicting Susceptibility	£50,000	£50,000

Very little is known about why certain individuals are more susceptible to COVID-19 while others are asymptomatic or have few symptoms.

In this study we aim to investigate the viral proteins (molecules on the surface of the virus which bind to human cells) associated with COVID-19 and test what their affect is on the human immune system. By analysing samples from 50 different randomly selected donors and assessing the response of their cells to the COVID-19 virus, we aim to report a pattern of molecules (cytokines/chemokines) which identify those who are more susceptible (giving rise to a 'cytokine storm') compared to those who develop a beneficial immune response, leaving them with mild symptoms or asymptomatic. The results will not only inform which individuals are more susceptible to the disease but also allow a pattern of genes to be identified which may aid in drug discovery.

The project will generate data for the development of a simple blood screen for COVID-19 susceptibility.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GO JAUNTLY LTD	Smartphone based 'green prescription' to support a natural health service	£49,462	£49,462

Walking and nature connection is good for us and is a gateway to many health benefits. The country's Chief Medical Officer, Chris Whitty stated that "being outside in the park is a very good thing to do". He is basing this on hundreds of scientific studies and quantitative research across continents that show the profoundly positive consequence of exposure to green space. Despite this, being active outdoors is limited and not possible for all.

Go Jauntly is a health and wellbeing technology company with an award-winning walking app. Our new project will test the case for an engaging smartphone based 'green prescription' app that provides a method of nature connection during these increasingly challenging times. We will build upon a baseline we are creating that prompts people to record 'good things' they see in nature in urban settings. This is based on the results from a successful research study with the Nature Connectedness Research Group at the University of Derby which found that an app prompting users to record 'good things' in nature can bring clinically significant improvements in mental health.

This global pandemic experience is forcing us to re-evaluate our place and space in this world. Even if we're not somewhere with a lot of trees or direct access to green space, it is possible that we may be able to notice birdsong, the sun, the sky and moving clouds or weather.

Our project will look to build upon this strong evidence base to focus on how we can immerse people in nature whilst either socially isolated, in lockdown or with restricted access to green space. Whilst being advised by Dr Miles Richardson (the UK's lead nature connection expert) and his team we seek to develop innovative tools to support users in the delight and benefits of nature connection. We will provide unparalleled access to our extensive image library, insightful facts and playful data brought into peoples home via their smartphone. Where possible we will look to collaborate with other like-minded charities and organisations to enhance engagement and impact.

As Lucy Jones, author of 'Losing Eden' laments, 'whilst industrialisation, commodification, and urbanisation have all played a part in widening the gulf between humans and nature, just because we are being forced even further to live in isolation from others and nature by being confined to our homes, doesn't mean that our nature disconnect should grow further'.



Competition Code: 2003_CRD_CO_COVID19_P1

Total available funding £34m.

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
SPOTTITT LTD	The use of self service, fully automated, low cost, near real time flood extent satellite analytics to compensate for reduced Environment Agency flood incident response staffing levels caused by COVID-19	£47,919	£47,919

This project will tackle societies need for emergency response agencies to maintain their pre-COVID-19 response times and capacity while operating with significantly reduced manpower levels, due to COVID-19\. This project will specifically tackle flood incident response, which is coordinated by the Environment Agency (EA) in England, by developing and trialling fully automated, low cost, near real time remote flood monitoring using satellite imagery from SAR sensors that 'see' through the rain clouds.

This project aims to enable the EA to:

* gather flood extent data remotely, more quickly, accurately and at a greater scale than the army of EA flood observers can

* better distribute their reduced resources thus ensuring that a significant reduction in EA staffing levels does not translate to a significant increase in the number of properties, economic impact and lives lost due to flood incidents

If achieved, Spottitt will be in a position to deliver self-service, near real time flood extent monitoring, at scale across the UK, and ultimately other geographies.

This project will be delivered by Spottitt, a UK based startup which specializes in the development of fully automated satellite analytics. Customer support, input, analysis validation, and feedback will be provided by the EA. Among their many responsibilities, the EA are responsible for issuing all flood warnings and coordinating flood preparation and response activities for over 500 flood incidents a year across England.



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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
WINTERS GRACE CONSULTING LTD	Virtual Reality and Augmented Reality solutions to Medical Training and Information during Covid-19	£36,464	£36,464

The MyHealthcare team aim to save lives by providing effective and efficient training to Healthcare workers. We have started with our video on Diabetic Foot Training and we will roll that out quickly with an aim to produce more video on treating patients with Covid-19, this will be on Hygiene use and Ventilator use. We will do this in an innovative way by using Virtual Reality and Augmented Reality.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SW FRUIT AND VEG LIMITED	Donate a Box Scheme	£48,921	£48,921

SW Fruit & Veg ([www.swfruitandveg.com][0]) delivers fresh produce to the homes of vulnerable members of our community.

We bring together two important groups affected by the pandemic:

* We deliver fresh fruit and vegetables to the door of vulnerable people in the community who are staying home, unable to access these products. * We buy our produce directly from suppliers in and around London's New Covent Garden Market who have seen demand for their produce drop dramatically.

Our 'Donate a Box' scheme is unique. It allows our customers to directly help those who are most vulnerable within our community. Many customers want to help their local community, but can't while staying home. We enable our customers to help yet still follow government guidelines. We've partnered with local charities to ensure that fresh produce is delivered to the most vulnerable.

[0]: http://www.swfruitandveg.com



Competition Code: 2003_CRD_CO_COVID19_P1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NQUIRINGMINDS LIMITED	Remote Additive Manufacturing Control for Uninterrupted Facility Management - (RAM-Ctrl)	£49,803	£49,803

The **RAM-Ctrl** project will develop agnostic, remote-control systems and procedures for Additive Manufacturing (AM) operations and facility management. A local, scalable central control platform (CCP) will be developed to manage multiple AM systems from different machine manufacturers. A remote control hub (RCH) will be implemented to access the CCP and manage AM builds remotely. Remote commands will be delivered from the RCH to manipulate AM systems and launch build files. The aim is to improve efficiency and productivity of AM shop floors and enable technicians to implement Remote Working (RW) procedures during health and societal crises such as the Covid-19 pandemic. A metal medical demo part will be manufactured remotely via CCP and RCH. The **RAM-Ctrl** project will enable efficient and secure procedures for remote transferring of AM build files in different AM platforms. It is expected that the **RAM-Ctrl** solution will shorten production time and simplify supply chain complexities in the manufacture of critical medical components that cannot be manufactured locally at the medical facilities. Furthermore, the **RAM-Ctrl** solution will help protecting technical jobs across the AM industry enabling implementation of RW procedures at the shop floor, especially during health crises that demand social distancing at the work environment or even social lock downs. Also, the proposed solution will improve productivity and facility management efficiency in AM shop floors, especially when these operate with different AM platforms.



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Total available funding £34m.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PBG LONDON LLP	Practical, Pro-Bono, On-Demand Support for Social and Environmental Start-Ups	£49,073	£49,073

A collaborative project between PGB Capital and Fast Forward 2030 to use technical and business model innovation to provide practical, pro-bono and ondemand support for social and environmental start-ups.