The future of aviation security: apply for innovation funding

Innovative organisations can apply for a share of up to £1 million to develop new ways of improving aviation security screening.

As the aviation sector continues to grow, the threat to aviation security continues to evolve.

The Department for Transport and the Home Office are to invest up to £2 million in improving aviation security screening.

As the aviation sector continues to grow, the threat to aviation security continues to evolve. The aim of this competition is to develop new technologies and approaches to enhance threat detection.

At the same time, they should reduce the inconvenience of undergoing screening and of carrying out that screening. There should be a positive impact on the customer and the operator. Solutions should be in line with the government’s aim of creating a safer, more secure and sustainable transport system.

This will help the government, the Civil Aviation Authority and the aviation industry continue to improve airport security processes. It will help them stay ahead of evolving threats and maintain a high level of confidence in threat detection.
The future of aviation security: apply for innovation funding

This competition seeks proposals to the following 2 challenges:
1. screening people and their hand luggage
2. screening aviation cargo and hold luggage

This is a Small Businesses Research Initiative (SBRI) competition run in partnership with Innovate UK. The Centre for Defence Enterprise (CDE) is running this competition which is part of the £25.5 million Future Aviation Security Solutions (FASS) programme. By 2021, the FASS programme aims to have made significant improvements to existing aviation security capabilities. It will do this by developing and exploiting technology, capabilities and knowledge.

This competition is in 2 phases:
• phase 1 – funding of between £40,000 and £80,000 per project with total funding of £1 million available. We expect projects to last up to 6 months and be complete by the end of October 2017
• phase 2 – £1 million will be available. Only projects funded in phase 1 will be eligible to take part

Competition information
• phase 1 of this competition opens on Thursday 20 October 2016
• the application deadline is 5pm on Thursday 19 January 2017
• there will be a briefing for potential applicants on Thursday 17 November 2016

Find out more about this competition and apply online
Get guidance from the CDE website on how to submit your proposal
Innovate UK has up to £15 million to invest in business projects that seek solutions to technical and commercial challenges in the field of manufacturing and materials.

The UK is the 9th largest producer in the world with an output of $247 billion, and new manufacturing processes and materials can be a source of global competitive advantage.

This competition aims to support projects that lead to increased productivity, competitiveness and growth for UK businesses, especially small and medium-sized ones.

Projects must cover one of the following areas:

• innovation in a manufacturing system, technology, process or business model. For example, in process engineering, industrial biotechnology, mechanical conversion processes, coatings, surface engineering, textiles, supply chain management, new product introduction processes or remanufacture

• innovation in materials development, properties, integration or reuse. For example, for light-weighting, energy generation and storage (heat and electricity), electronics/sensors or operation in demanding environments

Materials could include nanomaterials, ceramics, metals and inter-metallics, polymers, composites, coatings, smart materials and joining of dissimilar materials.

Find out more about how we support manufacturing and materials

Competition information

• the competition opens on 21 November 2016, and the deadline for registration is at noon on 18 January 2017

• we expect to support a range of project types lasting between 6 months and 3 years and with total costs of between £50,000 and £2 million

• projects must be led by a business and involve at least one SME

• projects lasting more than 12 months or with costs of more than £100,000 must involve 2 or more partners working together

• businesses could attract up to 70% of their total project costs

• a briefing event for potential applicants will be held on 23 November 2016

Find out more about this competition and apply
Innovate 2016: event offers guidance for innovative businesses

Learn from the experts in a series of practical ‘how to’ workshops on scaling up, getting funding, marketing yourself and going global.

Businesses attending this year’s Innovate 2016 can take part in a programme of ‘how to’ workshops to get top tips on how to innovate and go global. These include:

**How to… get connected**
Attend this session to find out how to connect with support providers and peers to take your business to the next level. We’ll also cover how to tap into the UK's regional expertise and access international corporations.

**How to… go international**
This session will help you discover which export markets are right for you. You’ll learn how to attract foreign investment and how to prepare to go global.

**How to… be pitch-tastic**
Watch the cream of UK innovators and active investors in this fast-paced pitching session. The innovators will be sharing their ambitions for growing their businesses and how to make the right investment.

**How to… think future**
Discover how to enhance your understanding of your market. Find out what the Horizons tool can offer you and how to stay ahead of megatrends. We’ll also show you how to refine your future strategies.

**How to… handle intellectual property (IP)**
This session will tell you what you need to know before you go international and how to protect your IP.

**How to… scale your business**
Find out how to structure a business model that works for you. We’ll also show you how to make the transition from innovator to CEO and put in place team structures that work.

**How to… get funding**
Ever wanted to know how to secure private investment? We’ll show you how, plus how Innovate UK can help you to innovate. You’ll also discover new investment sources and how to perfect your pitch.

**How to… market yourself**
Optimise your online presence and discover the power of social media. Make sure your pitch hits the perfect note and find out where your audiences are.

Find out more about this year’s programme
Businesses do battle at boot camp for Duke of York’s ‘Pitch@Palace’

Businesses have been battling it out in front of HRH Prince Andrew, Duke of York for a prestigious spot in front of global leaders at St James’s Palace next month.

A Dragon’s Den style event, ‘Pitch@Palace’ has seen more than 40 technology companies pitch to a panel of business judges. The prize is a place in the national final of HRH the Duke of York’s campaign, in front of an audience of judges from the world of entrepreneurship, technology, media and investment.

In the three years that Pitch@Palace has been running it has already helped over 205 businesses grow, with some now enjoying huge global success.

The boot camp is held twice a year. This event was held at STFC’s Rutherford Appleton Laboratory and supported by Harwell Campus Management as well as STFC.

“Events like this open up a whole world of opportunity. Regardless of making it on the stage at the Palace or not, being connected to the people in this room has given us an excellent start.” Rachel Druce, Easy Video

Welcoming the attendees, HRH Prince Andrew, The Duke of York said: “Today is about raising your profile with Pitch@Palace, so we have a better idea how we can make a difference to your business. Today is about you and about adding value to you.”

All of the companies attending were offered tips on how to develop and sharpen their pitch as well as advice on what their business needs to succeed, whether that is investment, introductions or strategic guidance.

Angus Horner, Director at Harwell Campus said: “Harwell is delighted to help its Patron, HRH Duke of York, to accelerate the growth of UK SMEs, to build an even more powerful Knowledge Economy. As founder of my own business, which is invested in Harwell, I understand how difficult and rewarding it is to plant an acorn and grow it successfully. Harwell and its friends have been fascinated to learn more about the exciting companies visiting Campus today and we will offer as much help as we can to help them realise their ambitions.”
Dr Tim Bestwick is the Executive Director of Business and Innovation at STFC. He said: “STFC and the Harwell Campus are thrilled to host the Pitch@Palace event today. This is a great opportunity for the UK’s thriving entrepreneurial community, which STFC actively supports, and which is so important to the future of the UK economy.”

From today’s attendees, up to 15 will be offered the chance to pitch to global leaders at St James’s Palace on 2 November, hoping their idea will be catapulted to the next level. All of those attending today are also invited to the final networking event at the Palace.

“Today we have developed connections that we will carry through our business life. The networking opportunities with other business advisors is invaluable.” Wes Sugden-Brook, Drenched

“This is an excellent event for early stage start-ups. Pitch@Palace provides the right connections. There is a missing link between start-ups and industry, and events like this have the potential to help us bridge that gap.” Haidin Rashid, Materialize.X

More information is available on the Pitch@Palace website.

Further information for businesses hoping to work with STFC.
Knowledge and Technology Transfer (SME) Network – CERN

The CERN Knowledge Transfer (KT) Group are actively looking for Small and Medium Size Enterprise (SME) Companies to join their network for potential collaboration.

Their mission is to maximize the technological and knowledge return to Society, especially towards the CERN's Member States. In order to achieve that, it is essential to actively communicate with the industrial community especially SMEs.

As a large international R&D organization CERN offers many different opportunities to collaborate with the industrial community and especially with Small and Medium Size Enterprises. It also gives you the opportunity to express in more detail what your particular interests are to potentially establish a more specific contact for Knowledge and Technology Transfer purposes.

It offers the CERN openlab which is a unique public-private partnership between CERN and leading ICT companies. Its mission is to accelerate the development of cutting-edge solutions to be used by the worldwide LHC community.

They also have the IdeaSquare which is a dedicated test facility at CERN that R&D projects, and facilitates MSc student programs. The purpose of IdeaSquare is to bring together people to generate new ideas and work on conceptual prototypes in an open environment.

The website intends to be an initial communication tool for sharing R&D information and eventually promote further collaboration.

If you are interested in potential Knowledge Transfer collaborations based on mutual interests, you can see more details here.
Daresbury innovation winners will bring life-enhancing products to market

Three innovative products that have the potential to give incredible benefits to people in their day to day lives have won free access to more than £3 million of cutting edge facilities to ensure they get to market as quickly as possible.

A home monitoring device for kidney disease; a portable test for diagnosing TB in undeveloped countries; and an anti-pollution mask for athletes are fantastic new products in development by the three winners of the I-TAC Challenge Competition at Daresbury in Cheshire.

Open to small R&D businesses that are developing a new product or service, the competition winner receives six months free access to more than £3 million of cutting edge facilities, with a fully self-contained laboratory at the Innovations Technology Access Centre (I-TAC) at Sci-Tech Daresbury. The prize also includes specialist technology and design support through Daresbury’s new Campus Technology Hub as well as the necessary business advice that is so essential when developing and bringing a new product to market. Two very close runners up also win three months and one month access.

**IF Sensing – Winner!**

A spinout from the University of Manchester and Central Manchester University Teaching Hospital Trust, IF Sensing is developing an innovative and inexpensive home monitoring device for kidney disease, the first of its kind to be used in out-of-clinic settings. The device is bloodless, pain-free and will be used by kidney-disease patients, as well as the general public for monitoring kidney health. Kidney disease is a major disease area across the globe, with a correspondingly high cost to healthcare systems. Empowering patients to take control of their healthcare at home, as with diabetic patients, not only improves their quality of life, it is also becoming a higher priority as pressures on healthcare systems continue to increase.

Andrew Roberts, Operations Manager at IF Sensing said: “We are absolutely thrilled to win the I-TAC Challenge Competition. Having access to all the technology, expertise and business support available at I-TAC means that over the next six months we will significantly enhance our range of prototypes and test ideas that may not otherwise have been possible, or affordable. The huge networking opportunities available at Daresbury are also a major attraction for us as we look to connect to potential development partners in the coming months.”
Global BioDiagnostics

Every year more than 9 million people develop TB and nearly 2 million people worldwide are killed by it. Global Bio Diagnostics is developing low cost, hand-held tests for TB, and other infectious diseases, suitable for use in all countries of the world, which could have a huge humanitarian impact for under-developed countries.

Having already based its strategic Operations Centre at Sci-Tech Daresbury a few years ago, access to the fully equipped lab space and expertise at I-TAC means that Global BioDiagnostics will now refine their design to specifically meet the needs of resource constrained healthcare environments in under-developed countries around the world – for use by doctors that could work from a mobile unit with results in 30 minutes, instead of several days.

Hemsted & Co

A study commissioned last year by Greater London Authority and Transport for London suggested that twice as many people as previously thought die prematurely from pollution, with more than 9,500 deaths in London every year as a result. Poor air quality in cities is a major issue. People are becoming increasingly aware of the negative effects on air pollution on our health, and this is a particular concern for the millions of runners, cyclists and fitness enthusiasts who train in the city.

Technology entrepreneur, Philip Hemsted, is a triathlete and marathon runner who found that the anti-pollution training masks currently available were uncomfortable and restrictive to use for longer duration running and cycling training. With access to the fully equipped labs at I-TAC, he’ll be developing the proof of concept for a brand new type of anti-pollution mask specifically suited for use during heavy aerobic activities that will help protect against the harmful effects of pollution, whilst being comfortable and therefore without affecting performance.

I-TAC is part of the Science and Technology Facilities Council (STFC) business incubation offering to support the start-up and growth of technology businesses and provides flexible and ready access to more than £3 million of cutting edge laboratory facilities supported by world leading science expertise.

Michael Norris, Head of Business Incubation at STFC said: “The sheer diversity of applications we received for the challenge is proof that I-TAC can provide real tangible benefits to small technology companies with exciting ideas, regardless of the sector they are in. We are really looking forward to supporting our winners all the way to ensure that they get the most out of their time here as they work towards addressing some of society’s key challenges.”
Healthcare Innovation at Harwell

Harwell Campus hosted a dynamic ‘Accelerating Healthcare Innovation’ event on 21st September 2016, attracting over 250 delegates to the Rutherford Appleton Laboratory.

The day started with Tim Peake meeting students and teachers from local schools who all had the opportunity to ask questions relating to his time on the International Space Station. This was followed by a guided tour around the exhibitors who were showcasing their expertise and hardware relating to the life science sector.

During the conference programme Dr Barbara Ghinelli introduced Major Tim Peake, Sir John Bell, George Freeman MP and Lord Drayson who each shared their views on this exciting sector and each explained how interdisciplinary collaboration and research is bringing about new discoveries in healthcare. This was followed by an informative question and answer session with a panel chaired by Lord Drayson, comprising the above speakers together with James Noble (Adaptimmune), Gordon Sanghera (Oxford Nanopore), Tim Luker (Eli Lilly) & Sara Wells (MRC Harwell). This highlighted the Campus’s unique capabilities in collaborative research and its expanding role in accelerating healthcare innovation, a field of global significance in addressing key issues including environmental exposure and human diseases, ageing and drug discovery.

Tim Peake has a personal interest in life sciences and during his time on the International Space Station he undertook numerous experiments in space. These have informed many research projects, helping to provide solutions including applications that will aid the detection, prevention and management of different threats to human health. Major Peake said “Keeping humans healthy in space is an extraordinary achievement. This is only possible through collaboration across different disciplines - a winning approach which also works to keep humans healthy on Earth.”

Major Peake also introduced the UK’s Human Spaceflight Capitalisation Office (HUSCO) at Harwell, which was launched by Dr. Simon Evetts at the event. HUSCO will help to harness the endeavours of all UK space activities and assets related to human space flight, with the specific aim of contributing to meeting the Government’s ambition to expand the UK’s share of the space market to £40bn by 2030 and to create over 100,000 new jobs.

Dr Ghinelli, Director of Business Development at Harwell, said “Collaboration at Harwell between key science facilities, academia, the public sector and industry is now feeding the growth of a research and innovation cluster in healthcare that's set to complement the existing..."
Delegates networked with exhibitors over lunch, before an invitation was extended to delegates to attend an Oxfordshire Local Enterprise Partnership (OxLEP) workshop addressing how the considerable Life Sciences capabilities in Oxfordshire and Harwell, in particular, can be further developed for national benefit. Over 100 of the remaining delegates chose to attend a structured tour of some key facilities at Harwell, including ISIS, the Research Complex at Harwell, RAL Space, Diamond, MRC and the Satellite Applications Catapult.

This event strengthened the Harwell Campus position as a widely recognised centre within Oxfordshire with unique facilities and skills and highlighted the emerging HealthTec Cluster at Harwell that will facilitate cross-disciplinary collaboration for healthcare innovation, promoting collaborations between academia, the public sector and Industry.

The conference webcast is available to view at www.stfc.tv username: Harwell password: User2016

Sir John Bell, Regius Professor at the University of Oxford and keynote speaker at the Accelerating Healthcare Innovation event says “The Oxfordshire life science cluster is one of the most successful in the world and we are keen to exploit Harwell’s unique research capabilities in the physical sciences and data analysis to accelerate innovation in this vital field.”

As part of the event, a Memorandum of Understanding (MoU) to provide a framework for collaboration and cooperation between the International Space University and Harwell Campus was officially signed by representatives of the International Space University, STFC, Harwell Campus and the Satellite Applications Catapult.
Work completes at flagship Sci–Tech

A major milestone has been reached with the completion of a new state-of-the-art business facility at the flagship Sci-Tech Daresbury Enterprise Zone.

Practical completion of Techspace Two, a two-storey, self-contained building comprising 10,000 sq ft of modern, flexible office space, took place this week.

The milestone comes as work continues on a larger sister building, Techspace One, which is a three-storey structure with 46,000 sq ft of modern office space along with wet and dry laboratory facilities, each on its own floor. Techspace One’s completion is imminent.

The completion of both buildings will see a further 350 jobs created at the campus, which is one of the UK’s leading centres for science and technology businesses.

Together the two buildings are part of a £20m investment into the Enterprise Zone, including development of new public realm and campus infrastructure. Techspace One has been supported by the ERDF programme 2007–2013 while Techspace has received support from the Regional Growth Fund.

The first tenant to occupy Techspace Two will be Conveyor Networks, a leading software and automation solutions provider.

The new facilities are also attracting interest from other businesses in sectors such as biomedical, material science, instrumentation and clean technology.

The buildings include high-speed internet connectivity and can provide accommodation of up to 4,000 sq ft.

The Enterprise Zone status of both buildings means that tenants will be eligible for a number of financial incentives including reduced business rates over a five-year period.

Sci-Tech Daresbury is a private-public joint-venture partnership between developer Langtree, the Science and Technology Facilities Council (STFC) and Halton Borough Council.

Neal Biddle, Group Development Director at Langtree and Board Director of the Sci-Tech Daresbury joint venture company, said: “Techspace Two will provide grade A office accommodation on the state of the art Sci-Tech Daresbury campus. It’s designed to accommodate businesses operating in the science, technology and innovation sectors. The new building’s striking design and the modern landscaped setting reflects the innovative character of the businesses attracted to the campus. We’re delighted to have secured our first tenant and it’s particularly encouraging to see the volume of interest in the two buildings which the property team are securing from other potential tenants.”

Jayne Furnival, Group Property Director at Langtree added: “Sci-Tech Daresbury has a unique offer in terms of its scientific facilities, its location and the quality of the accommodation it offers. It also offers very distinctive and valuable opportunities for collaboration with research, educational and business organisations so that the commercialisation of innovation can be accelerated.”
Firms asked to show if satellite data can improve rail resilience

Businesses can take part in a Network Rail challenge to show how satellites could identify ground movement across the UK rail network.

Network Rail is challenging businesses to come up with ways of using satellite technology to improve the understanding of the UK’s rail network and identify potential deterioration and movement of the earth. The opportunity is for businesses to work with Network Rail in the future.

The organisation has teamed up with Innovate UK and the Satellite Applications Catapult to invite businesses to show how data from satellites could alert it to potential events including:

- embankment or cutting failures
- subsidence resulting from disused mine workings
- natural landslides
- changes of land use that increase risk to the infrastructure
- damage to sea defences designed to mitigate coastal erosion

Recent winters have been some of the wettest on record and have provided a significant challenge to the resilience of the rail network.

Ongoing improvements in satellite technology have led Network Rail to explore new ways of identifying where problems could occur.

Network Rail hopes to one day remove repeat visual inspections of earthworks from its routine work and replace it with data streams that alert engineers to the sites they need to visit.

Businesses will get access to satellite data

Eligible businesses will be given access to a range of satellite data, free of charge.

They will be asked to demonstrate their solutions for a series of real-world incidents outlined by Network Rail.

Those with promising solutions could have an opportunity to work with Network Rail in the future.

The challenge is now open, and participating businesses will demonstrate their solutions to a panel on 28 November 2016.

For more information on the Network Rail challenge email: NRchallenge@sa.catapult.org.uk
Inspiring girls to study STEM

Approximately 80 female students from eight high schools around the North West recently had the chance to find out what it’s like to work in science and technology first hand at a STEM outreach event at the Sci-Tech Daresbury campus.

The event, which took place on 12 October 2016, was jointly organised by the Science and Technology Facilities Council (STFC) and IBM, aiming to inspire and promote careers in science and technology – with as emphasis on computing – to girls from Year 9 and 10 in high school.

The students spent the day taking part in various activities including an innovation workshop, a 3D visualisation demonstration – which took place in the Hartree Centre visualisation suite – and a 3D printing demonstration.

Careers Q&A sessions were held in smaller groups with computational scientists from IBM and STFC – giving the girls a chance to ask real people working in a technical field their advice and learn about their experiences.

Director of the Hartree Centre, Alison Kennedy, also presented a short talk about her own experiences of a career in technology, identifying that women have been involved in computing expertise from the very beginning – from 19th century mathematician Ada Lovelace to the communications operators and code breakers during World War II.
Inspiring girls to study STEM

Katharina Reusch, an IBM Research data scientist based at Sci-Tech Daresbury, co-ordinated the event with support from IBM and STFC staff.

“We had a really positive response from the students, who approached the activities with great energy and enthusiasm,” said Katharina. “It’s important for young girls to recognise science and technology as options that are open to them – and that they can be exciting, fulfilling career choices. I didn’t know I would end up working in computing, but technology is all around us. Almost every job you can think of will benefit from a STEM background.”

Phill Day, Public Engagement Manager at STFC, commented: “Today’s event went really well. There was a real buzz as the girls engaged with activities promoting innovation. The day enabled the students to engage with real women in STEM in a welcoming and inspiring environment. Over 85% of the participants indicated that they might find out more about science and computing when they got home and 88% said that the day had made them more likely to consider working in science or computing in the future.”
External Innovations and Innovations Club

The External Innovations team manages the activities that aim to realise the impacts and benefits that flow from STFC’s investments in science and technology towards commercialisation through one to one brokering, events and a range of funding schemes.

If you wish to contact the teams for more information please see the following contacts and email addresses.

Innovations club: innovationsclub@stfc.ac.uk
IPS: ipsfunding@stfc.ac.uk

External Innovations – Global Challenges

Jason Green Head of External Innovations
Tel: + 44 (0)1793 442 014 Email: Jason.green@stfc.ac.uk

Ling Xu Knowledge Exchange Manager
Tel: + 44 (0)1793 442 104 Email: ling.xu@stfc.ac.uk

Katharine Hollinshead 21st Century Challenges Programme Manager
Tel: + 44 (0)1793 442 068 Email: katharine.hollinshead@stfc.ac.uk

Stephen Loader 21st Century Challenges Programme Manager
Tel: +44 (0)1793 442 111 Email: stephen.loader@stfc.ac.uk

Administration

Andi Kidd Office Manager
Tel: +44 (0)1793 442 059 Email: andi.kidd@stfc.ac.uk

Pauline Thompson: Programme Support
Tel: +44(0)1793 442 650 Email: pauline.thompson@stfc.ac.uk

Chris Woolford Grants Manager
Tel: +44(0)1793 442 162 Email: chris.woolford@stfc.ac.uk

The Innovations Club newsletter contains a selection of articles drawn from our partner organisations that we think you will find interesting. We welcome your comments innovationsclub@stfc.ac.uk