Funding boost for UK tech innovators to seize opportunities of 5G technology

Projects in Sunderland, Preston, Liverpool, Manchester, Brighton and Suffolk will test what revolutionary high-speed connectivity can do for UK industries.

The use of AI-controlled traffic lights to reduce pollution and congestion will be tested in Manchester and the potential for remote music festivals using 5G will be tested by Brighton Dome.

A project in Preston will aim to deliver the RAF's Tempest fighter jet at half its current cost while BT Sport will explore how 5G can transform watching live sports through virtual reality.

With coronavirus requiring new ways of delivering health services, a private 5G network will be developed in Liverpool to provide remote NHS video consultations for low-income families unable to afford good connectivity.

Another trial at the Nissan factory in Sunderland will look at 5G's ability to boost productivity through use of autonomous trucks.

Matt Warman, Minister for Digital Infrastructure, said:

> We are helping innovative thinkers across Britain use their creativity to harness the power of 5G and boost economic productivity, cut pollution and congestion, and develop the next generation of entertainment.
>
> The new funding we are announcing today will help us pioneer new ways to seize the opportunities of 5G and bring tangible benefits for consumers and businesses across the country.

The projects will receive a share of £30 million through 5G Create, an open competition combining British creativity with innovative new uses for 5G as part of the wider £200 million 5G Testbeds and Trials programme (5GTT).

The government is pushing ahead with its plans to unlock new economic benefits and productivity boosts from 5G while commercial rollout continues at pace. It has now funded 24 5G testbeds across the UK, which have trialled almost 70 different 5G technologies, products and applications.

Today's £30 million package consists of £16.4 million from the government match-funded by organisations ranging from large tech and telecoms companies to SMEs and local authorities.

Seventeen UK SMEs are involved in the projects, including those that will help to drive forward the government's work to open up the UK's telecoms supply chains. Three of the six projects – 5G Edge-XR, 5G Smart Junctions and Liverpool 5G Create – will involve British SMEs trialling the use of open access 5G infrastructure and network solutions.

BT's 5G Edge-XR project will be tested in a platform that includes Samsung kit, marking the first time the South Korean telecoms vendor is participating in a UK-based 5GTT project.

A second round of new projects to receive funding through 5G Create will be announced in the autumn.

Further information on the winning projects and additional quotes:

5G FoF (Factory of the Future):

- Total project value: £9,517,019
- DCMS funding: £4,793,162
- Project location: North West

Project Summary:

BAE, Advanced Manufacturing Catapult and IBM will lead a large project in Preston that ultimately aims to deliver the Tempest fighter jet at half its current cost, and to drive UK global manufacturing competitiveness. The project aims to develop integrated solutions to some of the key challenges to deploying 5G technologies in manufacturing, using 5G to test use cases such as robotic assembly, reconfigurable product assembly lines and distributed and shared VR/AR. The programme will establish a primary site at the Advanced Manufacturing Research Centre (AMRC) North West and secondary sites in BAE Systems Warton and AMRC Sheffield.

Austin Cook, Lead Engineer for Emerging Technologies & Systems at BAE Systems said:

> 5G technology is core to enabling the next generation of digital manufacturing processes and the acceleration of digital technology adoption across the manufacturing sector. The 5G FoF programme will drive forward holistic connectivity and unlock the potential of industrial digitisation. It will define a new paradigm for how future factories will operate enabling connectivity and business agility both across manufacturing operations and beyond into the supply chain. The transformative potential of 5G technology will be developed and demonstrated via a strong consortium, including the UK Catapult Network and the BAE Systems Factory of the Future which is applying game-changing digital technologies to advance manufacturing on the UK's next generation combat aircraft system, Tempest.

5G Festival:

- Total project value: £3,438,497
- DCMS funding: £2,238,692
- Project location: South East

Project Summary:

The ‘5G Festival’ (5GF) project will demonstrate how 5G can enable the empowerment of the music industry to bring live festivals and music events to audiences no matter where they are in the world. Using a cutting edge, immersive platform that leverages high bandwidth and ultra-low latency 5G technology, audiences and artists will connect seamlessly across continents, driving new experiences from the home as well as major venues such as the Brighton Dome and the 02 Arena, using most advanced 5G facilities by Digital Catapult and Telefonica. For example a music fan in Edinburgh could experience their favorite artist live in LA, collaborating with another artist in London, all without having to leave their front room.

Jeremy Silver, CEO, Digital Catapult said:

> As live performers have been totally prevented from working because of the Coronavirus, a lot of bright minds have been focused on how to create exciting alternative experiences for a virtual world. The result of this work was an exciting bid into the 5GCreate competition to produce a virtual festival that could offer 5G enabled experiences in which performers could reach audiences in an entirely new way. We’re thrilled now to be able to bring the 5G Festival to life, working with world leading venues, organisations and artists to push forward with the next evolution of entertainment.

Smart Junctions 5G:

- Total project value: £2,336,392
- DCMS funding: £1,160,778
- Project location: North West

Project Summary:

Visionable, Weaver Labs (both UK SMEs) and Transport for Greater Manchester aim to deliver AI traffic control systems to reduce congestion and pollution as well as improving productivity by cutting waiting times at traffic signals. The project aims to use a 5G small cell networks to decrease infrastructure costs for the connection of sensors at every junction, removing the need to mount hardware onto buildings in district centre locations as well as supporting connected bus projects and other mobility based public services. This project fosters innovation in the telecoms using open architectures and a new network deployment approach that allows for new domestic SMEs to contribute.

Peter Mildon, Vivacity COO, said:

> Vivacity are delighted to be continuing our collaboration with TfGM on developing our Smart Junctions product. Small Cell 5G technology offers the perfect solution to our need for low latency communications between our sensors and junction control algorithms, making this a compelling proposition in its own right. Beyond the junction, the provision of 5G connectivity within a city centre offers opportunities to both Public and Private sector. We are looking forward to working with Weaver Labs, a new company formed from the team who were core contributors in delivering the UK's first 5G pre-standards compliant test-bed at King's College London. We first worked with this team in 2018, where Vivacity provided our sensors as a test use case for the 5G network that was demonstrated.

5G Edge-XR

- Total project value: £2,558,494
- DCMS funding: £1,486,004
- Project location: East Anglia

Project Summary:

BT's Media and Research teams are working with TheGridFactory, Condense Reality, Dance East, Bristol University and Salsa Sound. Among the work to be developed are virtual and augmented reality experiences to complement BT Sport's services. 5G Edge-XR will for example demonstrate how 5G networks, coupled with cloud graphics processing units, could enable people to view immersive sporting events from all angles across a broader range of devices including smartphones, tablets, AR and VR headsets and TVs. It will also help realise the vision and potential of 5G networks to create new opportunities for UK businesses at home and internationally, and encourage inward investment.

Tim Whitley, Managing Director, Applied Research, BT, said:

> 5G Edge-XR will combine cloud computing and EE's 5G network to support real time services that require uncompromised audio and visuals. We're excited to work alongside world-class British companies to develop a range of prototypes for virtual, mixed and augmented reality and create experiences that will transform culture, education, engineering and entertainment. Our prototypes will be designed at Adastral Park and showcased across the UK to demonstrate the benefits 5G technology can bring to people and businesses across the nation.

Liverpool 5G create

- Total project value: £7,146,261
- DCMS funding: £4,302,596
- Project location: North West

Project Summary:

A group of local healthcare bodies, the University of Liverpool, BluWireless (a UK 5G kit vendor) Broadway Partners (a small UK mobile operator) will build a 5G network designed to benefit local NHS, social care services and other public bodies in a post-Covid-19 world. It will use private 5G networks to develop affordable connectivity for remote health and social care, improving future resilience and reducing inequalities that arise from lack of affordable access. This builds on the existing 5GTT funded project in Liverpool and develops the commercial business case for and testing new applications in the health and social care sector. The project will stimulate the development of low-cost 5G technology as well as improving future pandemic resilience and reducing inequalities.

Professor Joe Spencer, Professor of Electrical Engineering and Electronics, University of Liverpool, said:

> The Liverpool 5G Create project will develop a private 5G network for health, social care and education services in selected areas of Liverpool. This network will reduce digital poverty for vulnerable people, providing safe, free and accessible connectivity to these services via 5G. We look forward to working with DCMS to take the project from small scale to a wider rollout for the benefit of the people of Liverpool and to inform the national strategy for digital health, social care and education services.

5G CAVL

- Total project value: £4,851,780
- DCMS funding: £2,422,370
- Project location: North East

Project Summary:

5G CAL will deliver a huge stride forward in Connected and Automated Logistics (CAL), taking 5G enabled solutions out of the testbed into an operational manufacturing environment. Nissan, Sunderland Council, the North East Motor Manufacturers Group and Three will deliver 5G-connected, autonomous 40-tonne trucks to distribute parts and assemblies across the Nissan plant, linking to many local SMEs in their supply chain. As with 5G FoF, this is about driving operational efficiencies and improving productivity. Their vision is to develop a globally unique centre of excellence and operational test facility for CAL at the Nissan Sunderland site.

Paul Butler, Chief Executive of the North East Automotive Alliance, said:

> Automated last mile logistics is one of the major innovation challenges, this is especially true in the automotive sector with its synchronous and highly complexed supply chains. This project will prove last mile delivery for an autonomous HGV, the 5G will uniquely enable the removal of the safety driver from the process, allowing remote teleoperations to overcome abnormal situations. Through our industrial base and the unique assets of our road transport sector the North East offers a globally unique location to support the design, development and manufacture of Connected and Automated Logistics solutions. This project represents a major opportunity to support and accelerate economic growth, creating an exemplar that will encourage further private and public sector investment.

ENDS

Notes to editors:

Call DCMS press office on 020 7211 2210.

5G Create

Launched in April, 5G Create called for proposals from sectors where the UK has a competitive advantage to use the unprecedented speed, coverage and capacity of 5G to explore and develop new commercial opportunities for it can be used for – including new prototype technologies, use-cases and business models – which could then be scaled up, used across the economy and exported.

5G will give consumers mobile internet speeds between ten and twenty times faster than 4G, enabling them to use their phones for a wide range of new services and apps on the go. But it’s about more than a speedier internet connection. It will allow thousands of new ‘smart’ devices in our homes and at work to speak to each other with much larger data transfers, ultra-reliability and minimal time lags.

This will give rise to innovative new services in manufacturing such as factory robotics, connected and autonomous vehicles (CAVs) and interconnected infrastructure in smart cities. It will also give mobile operators the ability to ‘slice’ parts of their network to create dedicated private virtual networks for industry to use for specific purposes.