SOCIETAL DRIVERS
(Net Zero & Sustainability, Low Carbon Places & Systems, Renewable Energy, Clean Growth, Green Infrastructure, Digitalisation)

PRODUCT
(Output)

DESIGN
(product definition)

VERIFICATION

IMPLEMENTATION
(Manufacturing)

INTEGRATION

Securing our cyber future

RESULTS AND THE DIGITAL OPPORTUNITY

To defuse the security threat, organisations are already implementing services to mitigate the potential risk. DETI is helping to develop and demonstrate commercially viable solutions and investigating secure technologies and practices to protect digital communications- which will stop potential hackers of the future.

DETI, BT and Toshiba have created a highly secure communications network that will protect voice, email and data traffic. This is the first network of its kind in the UK, known as a 'Quantum Key Distribution' network. This capability has been largely untested until now.

The network is designed to be used in conjunction with existing cyber security services and software. The initial phase of the network exists between the National Composites Centre (NCC) and the Centre for Modelling & Simulation (CFMS), to be extended into the University of Bristol, and beyond.

In April 2021, the network was successfully tested where it was used to share live information, change product designs and remotely manufacture part of a product. The network is integrated with the DETI industrial test bed, where companies in the West of England can investigate digital technologies, knowing that their design and manufacturing data is secure.

The network has been used to demonstrate the potential for operating a 'smart factory' which is a digitalised manufacturing shop floor that collects data and shares this through machines, devices and production systems, optimising manufacturing output.

The market for Quantum technology is predicted to drive the creation of a £1billion industry, with further commercial opportunities being realised within many sectors (source: UK National Quantum Technologies Programme). The UK is ideally placed to lead the global market, with Bristol fast establishing the region as a UK research and commercial playground for Quantum organisations. One of the fastest growing technology areas, it is one of the top growth areas for digital skills.

CHALLENGE

New powerful, fast computers referred to as 'Quantum' computers, are predicted to come online in the next few years. They will enable us to solve problems, create new inventions and improve the way that we do things. They will help us to look at and understand large amounts of data, and solve sustainability challenges to help us find better way of living that will be better for our people, planet and the environment.
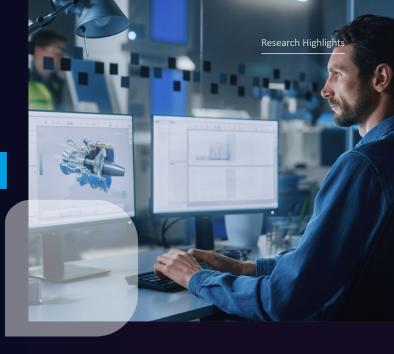
However, they will also be capable of obtaining and reading sensitive information such as emails, phone messages and financial data. Companies that use digital technologies will need to find a secure way of protecting their commercial information.

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Partners

cfms

NATIONAL COMPOSITES CENTRE

BT

TOSHIBA

deti.uk