Adastral Park in Martlesham, Ipswich, the epicentre of BT's research, technology and IT operations. Image: VisMedia

BT says its new network will be secure against threats from quantum computers.

Today (12 June), BT announced the construction of a practical quantum-secured, high-speed fibre network between the BT Labs in Adastral Park in Ipswich and Cambridge.

The project is led by the Quantum Communications Hub, which is part of the UK National Quantum Technologies Programme.

Constructed by researchers from BT, the University of York and the University of Cambridge over the past two years, the secure connection was built as part of a project co-funded by the Engineering and Physical Sciences Research Council, and will connect to the Cambridge Metropolitan QKD (quantum key distribution) Network.

First real-world deployment in the UK

The quantum-secured link runs across a standard fibre connection, which runs through numerous BT exchanges over a distance of 120km. This, BT claims, makes it the first high-speed, real-world deployment of quantum-based network security in the UK.

The network link is capable of data transfer speeds of 500Gbps and will explore and validate use cases for QKD technologies.

The link is said to be 'unhackable' due to its reliance on the use of single particles of light (photons) to transmit encryption keys across the fibre. If this communication is intercepted, the sender will be able to detect that the link has been tampered with.

The stolen photons will then be unable to be used as part of the key, rendering the data stream totally incomprehensible. Equipment from ID Quantique is being used to transmit the encryption key as a stream of single photons.

Quantum computing brings new threats

Quantum computing will undoubtedly bring benefits for society, from advances in disease research to examining the mysteries of space, but the computing power on the horizon can also be deployed in some pretty nefarious ways.

Health and financial records, as well as top-secret government information, could be unlocked thanks to the increased efficiency of quantum computing.

Quantum computers can factor in large numbers much more swiftly than traditional computers. This particular power puts encryption standards widely used today under threat.

As opposed to current computers, which process data in binary bits, quantum computers exploit the ability of quantum bits (qubits) to exist at the same time in multiple states, allowing unimaginable calculation and problem-solving speeds.

Prof Ian White, head of photonics research at the University of Cambridge, said: "This quantum-secured network is an excellent example of the large-scale collaborative research that is feasible because of the creation of the UK's Quantum Communications Hub. The network will allow detailed analysis of the potential for this new technology to enhance security in advanced communication networks."

Prof Tim Whitley, BT's managing director of research and innovation, added: "With the huge growth in cyberattacks across the UK, it's more important than ever before that we continue to develop ways to protect the most critical data."

Related: networks, infosec, security, BT, Fibre

Ellen Tannam is a writer covering all manner of business and tech subjects

editorial@siliconrepublic.com

-

You May Also Like

You May Also Like

Companies

Three Irish tech companies merge to become Paradyn

15 Mar 2018982 Views

Hiring Now

- KEMP

  A dynamic and rapidly expanding company

- pwc

  2016 Graduate Employer of the Year