QUANTUM COMMUNICATIONS HUB

EPSRC Quantum Communications Hub Partnership Resource Fund now open and the National Quantum Technologies Showcase is just days away!

The latest round of Partnership Resource funding is now open!

Deadline: 5pm, 15 January 2021

The Quantum Communications Hub is pleased to announce a new round of Partnership Resource funding, which aims to support new collaborations that are closely aligned with the work of the Hub.

The vision of the Quantum Communications Hub, which is funded through the UK National Quantum Technologies Programme, is to deliver integrated secure quantum communications at all distance scales. The Hub intends to do this by developing existing prototype quantum secure technologies beyond their current limitations; to thus contribute to the establishment of quantum communications technology industries in the UK; and to feed their future expansion, competitiveness, diversification and sustainability.

Proposals which would fall under the scope of this fund may include: feasibility studies, proof of concepts, preliminary developments and demonstrators. The Hub is also keen to support activities that may seed future work in research, R&D and innovation (e.g. Industrial Strategy Challenge Fund proposals). Some examples of projects previously funded can be explored on the Collaboration Opportunities section of the Hub website.

Further details on the scope of the fund and application requirements can be found in the submission guidelines. Any interested parties are encouraged to contact the Hub's Business Development Manager (Klitos Andrea – klitos.andrea@york.ac.uk) for a preliminary discussion in the first instance.

UK National Quantum Technologies Showcase

6 November 2020, Online

The UK National Quantum Technologies Showcase, which is being hosted by the Knowledge Transfer Network in collaboration with Innovate UK, aims to highlight the expertise, capabilities and advances of quantum technologies in the UK and its real-world impact, along with the progress made so far in the second phase of the UK National Quantum Technologies Programme.

The Quantum Communications Hub will be exhibiting at the virtual Showcase, highlighting recent breakthroughs and giving demonstrations of some of our prototype technologies.

The Hub will have three virtual stands:

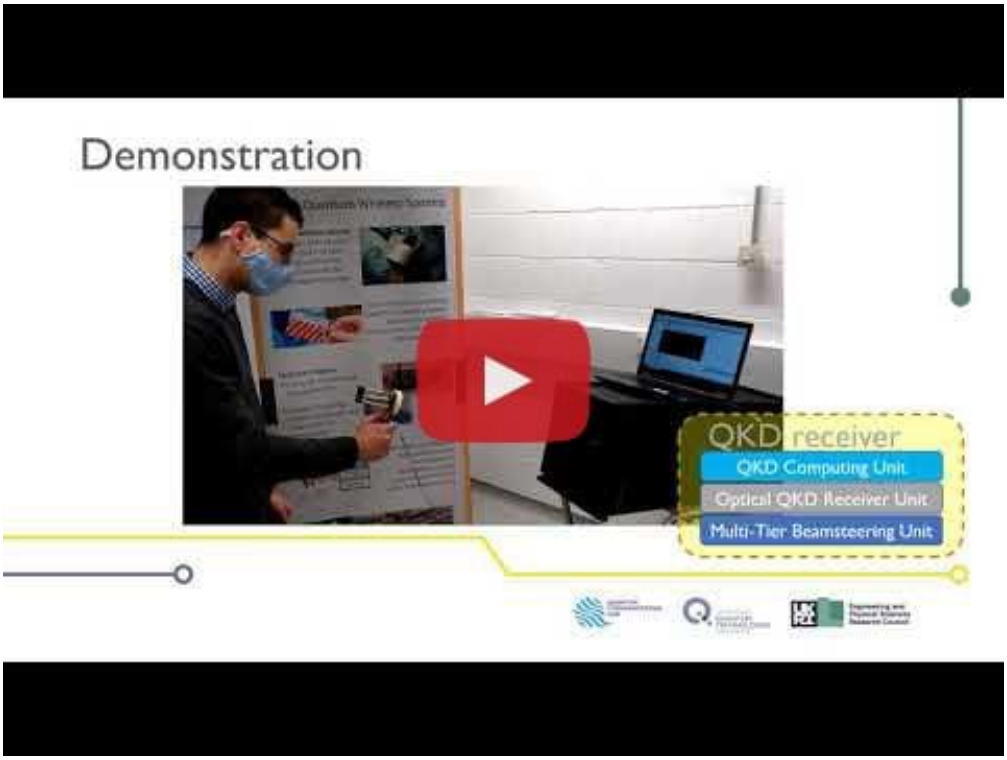
- The Vision of the Quantum Communications Hub (with links to virtual booths)
- Quantum Communications Hub: Consumer Quantum Key Distribution
- Quantum Communications Hub: Quantum Random Number Generators

The Hub will also have two virtual booths in the agenda. Within the booths, technical demonstrations of some of our technologies will be taking place, information on these can be found below:

Quantum Communications Hub demonstrations - part 1 - core technologies :

Consumer Quantum Key Distribution

For quantum communications to be commercialised for consumer use, quantum keys need to be distributed to personal handheld devices, through short-range free-space (i.e. without fibre). At the UK National Quantum Technologies Showcase, Hub partners – the Universities of Oxford and Bristol – will be showcasing the latest prototype version of a handheld QKD system, which will enable free-space QKD transmissions between consumers and institutions to be undertaken.



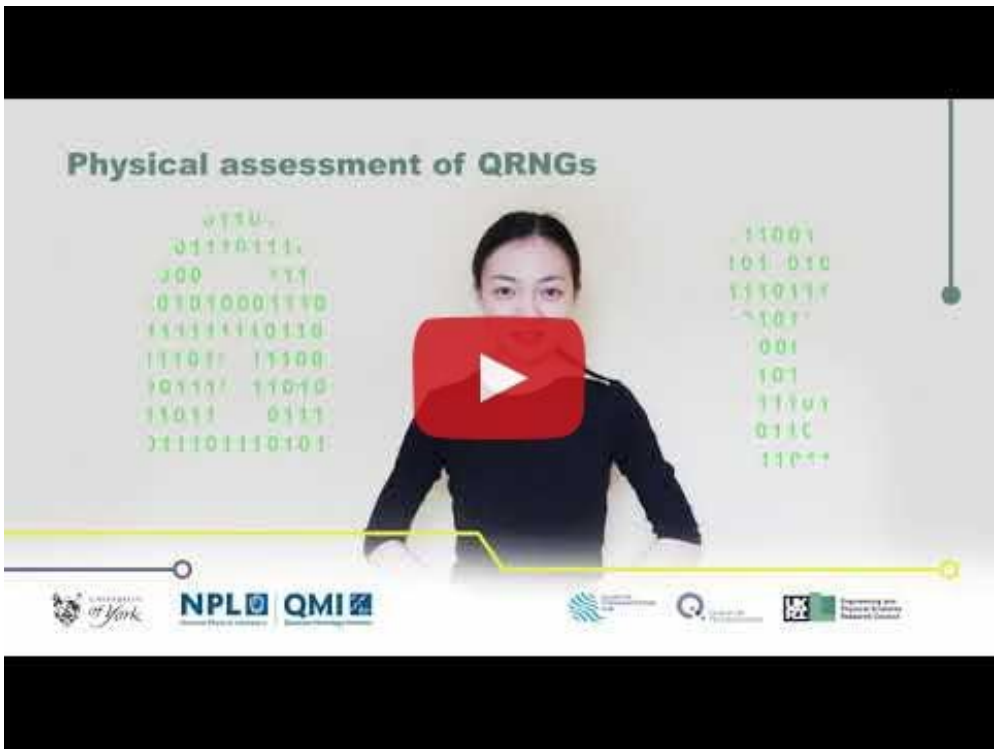
Quantum Networking

Given the serious cybersecurity threats imposed by major advances in quantum computing, there is a growing need to incorporate new security technologies into fibre networks. Quantum network technologies offer solutions to this problem. At the UK National Quantum Technologies Showcase, our Hub partner – the University of Bristol – will be showing prototype technologies for an entanglement-based network and highlighting recent developments on the UK Quantum Network.

Quantum Communications Hub demonstrations - part 2 - funded collaborations and partnerships:

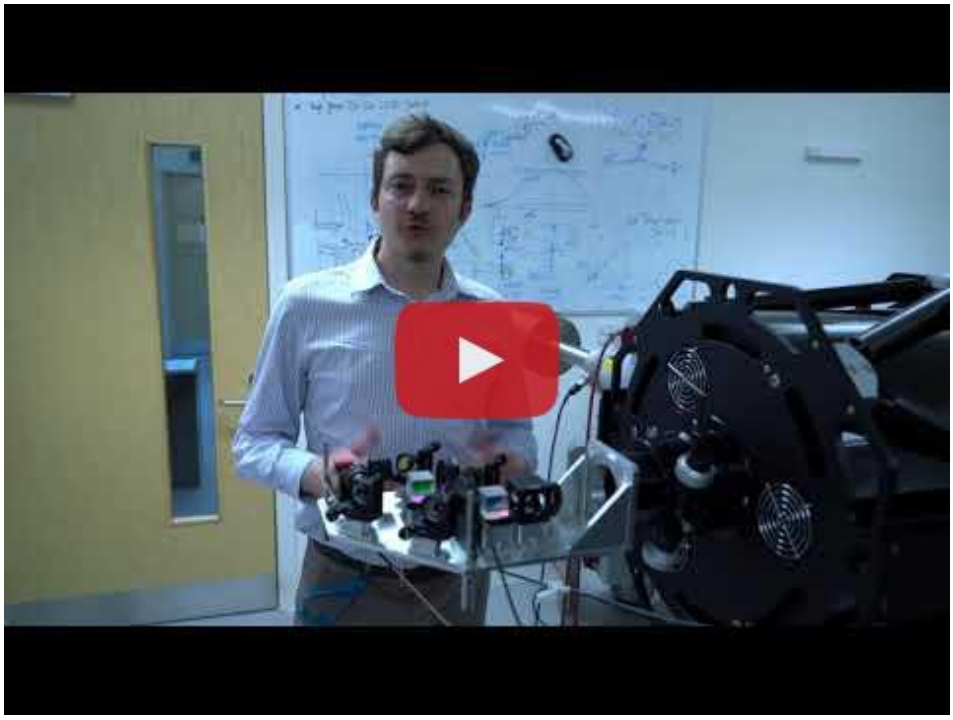
Quantum Random Number Generators

Quantum Random Number Generators (QRNGs) are essential components for quantum-secured communications systems and could become the prevailing method to generate random numbers for cryptography. Certification is a prerequisite to deployment, but an authoritative method to assess the unique randomness produced by QRNGs does not currently exist. At the UK National Quantum Technologies Showcase, Hub partners – NPL and the University of York – will be showcasing the assessment of a QRNG. The method, a physical assessment of the device, can be the basis for certifying all types of QRNGs.



Satellite QKD Ground-Based Receivers

Satellite Quantum Key Distribution (QKD) addresses distance limitations of fibre for sending keys to users over long distances. Such distribution requires ground-based systems – receivers attached to optical ground stations – from which keys may be forwarded for use. At the UK National Quantum Technologies Showcase, Hub partner – the University of York – will be showcasing a prototype receiver for a free-space QKD system.



Quantum Communication with CubeSats

Using satellites for Quantum Key Distribution is a proven way to overcome distance limits and provide quantum secure communication on a global scale. Our low cost Cube Satellite approach, along with a mobile optical ground station, is designed to optimise coverage across the UK and provide cost effective secure keys. Join us at the Showcase to find out more.

To register for the Showcase, visit the link below. We look forward to seeing you there!

Register to attend

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