No images? Click here

QUANTUM COMMUNICATIONS HUB

Welcome to the EPSRC Quantum Communications Hub Newsletter!

Hi there, welcome to the EPSRC Quantum Communications Hub Quarterly Newsletter. Here you can keep up to date with the latest news, events and opportunities associated with the Hub!

QKD Community Response to the NCSC 2020 Quantum Security Technologies White Paper

Executive Summary

The QKD community* welcomes the NCSC's revised White Paper on Quantum Security Technologies [7] published March 2020. We are pleased that the NCSC has updated its guidance to allow the use of QKD in Industry and Critical National Infrastructure. We believe this significant change from the 2016 position, whilst cautioning against sole reliance, is recognition of the considerable progress made in QKD technologies over recent years.

It is widely recognised that businesses must prepare now for the emergence of quantum computers. Retrospective decryption is a very real threat and critical information which requires long-term security should be protected now. Quantum Key Distribution and quantum-resistant algorithms** (QRA) are critical technologies that businesses concerned with long-term data protection should begin deploying with urgency.

The NCSC does not currently endorse QKD for use in Government & military applications. We believe early engagement in trials and testing however will enable the development of QKD systems for this specialist sector.

The NCSC rightly observes that QKD (as a means of securely distributing encryption keys) is a component of a secure system which must be securely integrated with authentication mechanisms and quantum-resistant algorithms. The industry has well-established approaches for authentication with QKD and we fully agree that QKD should be used alongside quantum-safe cryptography as that technology matures.

Assurance is essential and we are pleased the NCSC has recognised the significant research and standards activity that is underway. We would welcome the NCSC's endorsement of key programmes e.g. through ETSI and encourage direct involvement in this important work.

*ADVA, BT, ID Quantique, KETS, Quantum Communications Hub, M Squared Lasers, Senetas, Thales, Toshiba Europe Limited

**The NCSC White Paper uses the term quantum-safe cryptography which includes QKD. For clarity this paper uses the term quantum-resistant algorithms to refer specifically to *cryptographic algorithms believed to be secure against attack by quantum computers*.

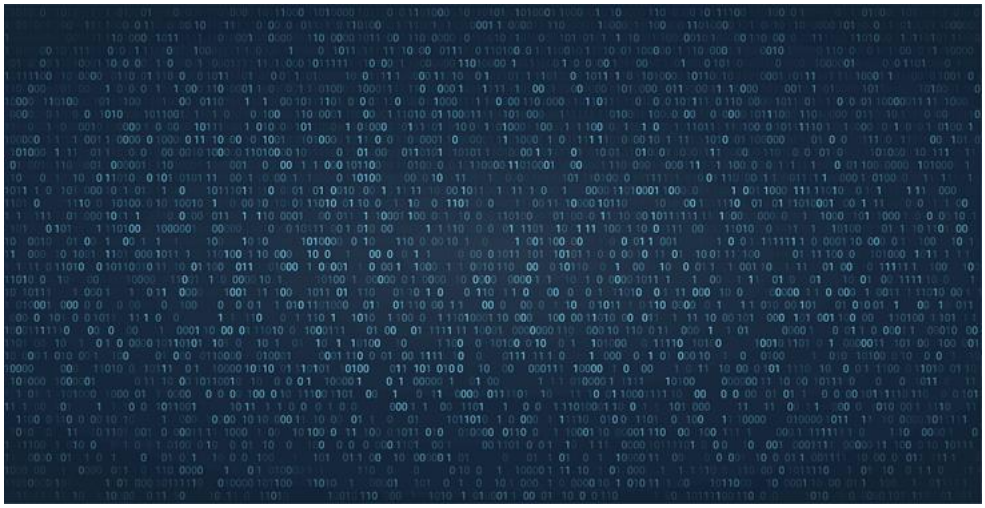
You can read and download the whole response here.

Major project on assurance of Quantum Random Number Generators awarded £2.8M of funding from the Industrial Strategy Challenge Fund

A major inter-disciplinary project has been successful in the "*Commercialising quantum technology: technology projects round one"* funding competition run by Innovate UK, the UK's Innovation Agency, as part of the Industrial Strategy Challenge Fund (ISCF).

The successful consortium is led by the National Physical Laboratory (NPL), the UK's National Metrology Institute. Quantum Communications Hub investigator Dr Roger Colbeck is leading the Hub's input in the project and Hub Director, Prof Tim Spiller, will also be contributing. The Hub, through its partnership resource, previously helped to fund a feasibility study on QRNG assurance, which served as the model underpinning this new programme of work. Key partners are the UK's leading developers of optical quantum random number generators (QRNGs) – Cambridge Quantum Computing, Crypta Labs, KETS Quantum Security, Nu Quantum, Quantum Dice, Toshiba Europe Limited – and Swiss market-leader ID Quantique. Academic expertise is provided by University of York and University of Kent.

Read more about the project here



OSA Industry Development Associates Quantum Photonics Roadmap

Hub Director, Professor Tim Spiller, contributed to the recently published OSA Industry Development Associates (OIDA) Quantum Photonics Roadmap. The Roadmap, which can be downloaded via the link below, was produced to clarify the market applications and timing for quantum technologies and to specify improvements in optics and photonics components needed to enable advancement.

Download a copy of Roadmap here

Quantum Information Processing Landscape 2020: Prospects for UK Defence and Security

Dstl has recently published an official report on quantum information processing landscape and its prospects for the UK defence industry. You can read the report via the link below.

Read the report

Women in Quantum LinkedIn Group

As a result of the recent KTN webinar about Women in Quantum, a LinkedIn Group for Women in Quantum has been launched (by two entrepreneurs). The aim of the group is to develop a community for women working in the Quantum space to connect, share, mentor and support each other. You can join the group via the link below.

Visit the LinkedIn Group

Women in Innovation Awards

The KTN has announced that the new wave of the Women in Innovation Awards, funded by Innovate UK will open this Autumn.

Through the Women in Innovation Awards, established by Innovate UK, £500,000 will be provided to pioneering female entrepreneurs to develop innovations such as those to tackle climate change, developing new treatments and services for healthcare patients and cleaner transport.

Ten female inventors will be awarded with a cash injection of £50,000 each, as well as receive coaching and mentoring.

Since the launch of the Women in Innovation programme in 2016, the number of women leading applications to Innovate UK has increased by 70%.

To find out more about the awards visit the link below.

Find out more

Knowledge Transfer Network

Events

EPIC World Industrial Quantum Photonics Technology Summit

3-4 September 2020, University of Glasgow, UK

The purpose of the EPIC Industrial Quantum Photonics Technology Summit is to bring together the companies in the supply chain towards the commercialization of upcoming products resulting of the current R&D initiatives. The event includes sessions on: the quantum industrial revolution; quantum communication and QKD; quantum clocks technology and applications; quantum sensing and metrology; quantum imaging; quantum computing and also includes networking opportunities.

More info

UK National Quantum Technologies Showcase

6 November 2020 - Business Design Centre, 52 Upper Street, London, N1 0QH, UK

The UK National Quantum Technologies Showcase 2020 will build on the success of previous years, demonstrating the progress made by the National Programme, as it enters its second 5-year phase, and the growing commercialisation and industrialisation of quantum technologies in the UK.

The UK National Quantum Technologies Programme (UKNQTP) is a UK Government investment in excess of ~£1b over 10 years, aimed at accelerating the translation of quantum technologies into the marketplace, boosting UK business and making a real difference to our everyday lives.

To attend, please express your interest now. The KTN will be running the event in accordance with the UK Government's safety guidelines and more information on this will be released shortly. If you are interested in exhibiting at this year's event, an expression of interest process is underway. There are a range of opportunities to exhibit at this year's event. For more information, please see the link below

NB. This is a highly specialist user engagement event for participants from government and the public sector, industry and business; it is not intended for academic audiences and is not suitable for educational or public attendance.

More info

New Scientist Live North

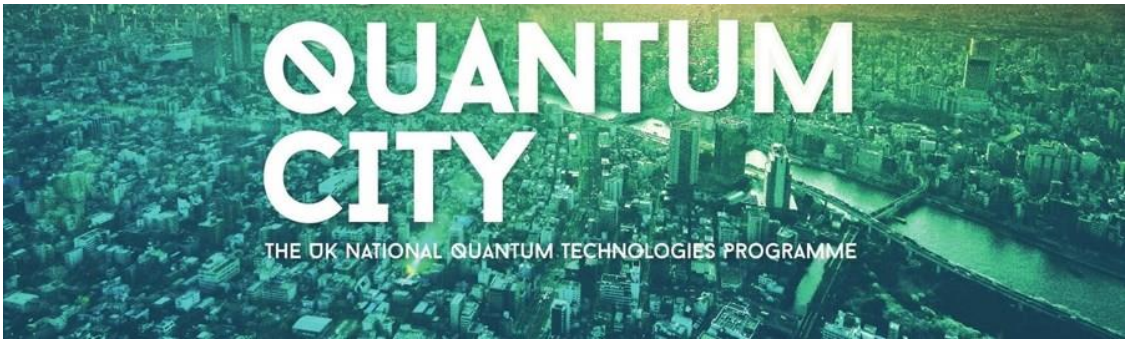
5 - 7 February 2021, Exchange Hall, Manchester

The Hub (as part of Quantum City) will be attending New Scientist Live North, in Manchester, from 5 - 7 February 2021. The Hub has previously attended the award-winning science festival 'New Scientist Live' in London, however, for the first time, the festival is being held in the north of England and we are delighted to be attending. It is expected that around 9000 people will attend the festival across the three days to view exhibits and listen to talks. We are holding an **open call** for project team members to express an interest in taking a demo to the festival or indeed express an interest in developing a new demo to take. **If you'd be interested in taking a demo to New Scientist Live North or creating a new one, please get in touch with us.**

Quantum City Twitter Feed

Quantum City, a multi-partner public engagement initiative funded through the UK National Quantum Technologies Programme, joined Twitter with the handle @Quantum_City, on 1 June 2020. The Quantum City Twitter feed aims to appeal to a wide range of audiences: from interested audiences with no technical background to science enthusiasts, and from teachers to young students, who want to find out more about quantum related career pathways. Followers can look forward to videos of fun demonstrations, blogs, educational materials and resources, interviews with quantum physicists, interesting reads, event listings & much, much more!

Visit the Quantum City Twitter feed



Quantum Shorts

Three short stories that give their characters access to other timelines have claimed prizes in the 2019-20 edition of the Quantum Shorts flash fiction competition.

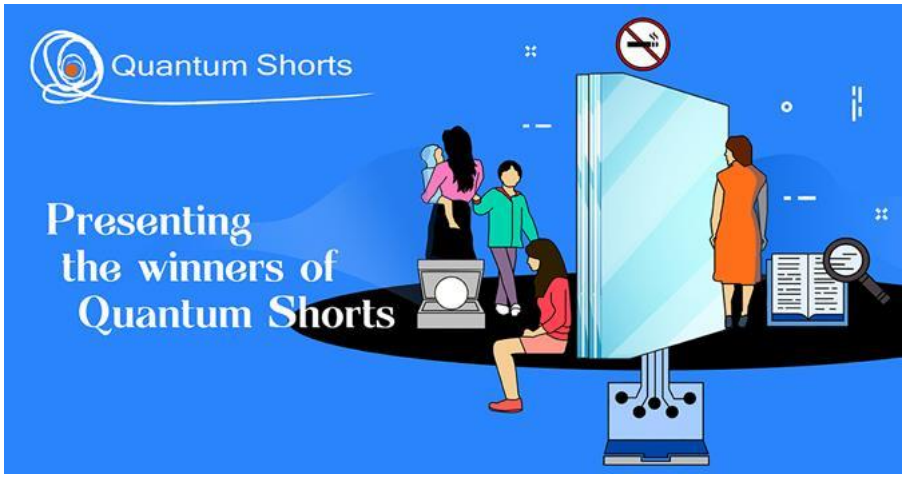
Quantum Shorts is an annual competition for creative works inspired by quantum physics. It is run by the Centre for Quantum Technologies (CQT) in Singapore with media partners *Scientific American* and *Nature*, and leading quantum research centres around the world as scientific partners. The UK National Quantum Technologies Programme through its Quantum City stakeholders was a scientific partner and Hub Project Manager, Georgia Mortzou, was on the panel.

Earning first prize of $1500, "Fine Print" by C R Long which tells the story of a woman prepared to pay a hefty price to buy her way into a new reality.

The runner up prize went to "The Collapse" by Meg Sipos. In this edgy tale, rips in the fibres of reality see a couple being confronted by different versions of themselves and each other.

Decided by online public voting on the shortlisted entries, the People's Choice Prize was awarded to "Shinichi's Tricycle" by Ariadne Blayde, the story retells a small piece of the history of the atomic bomb.

We'd like to wish congratulations to the winners! You can find all the stories, more background on the judges and interviews with the winning authors at shorts.quantumlah.org.



Quantum Communications Hub
Information Centre, Market Square
(Department of Physics)
University of York
York YO10 5DD
enquiries@quantumcommshub.net