

IEEE Communications Society Quantum Communications and Information Technology - ETC (QCIT-ETC)

Meeting at ICC 2020

Room: *Virtual Conference*

Date/Time: July 7, 2020, 2pm – 6pm

Dublin, Ireland

Mission

The Emerging Technical Committee (ETC) on Quantum Communications and Information Technology (QCIT) promotes all types of communications theory and engineering to foster quantum technology. Our field of interests start from the basic radio frequency technology, addresses aspects of control instrumentation, error correction, coding theory, system architecture, simulation, algorithms, and eventually applications. The committee will connect people from Industry and Academia by supporting conferences, symposia, technical sessions, publications, etc., where information is exchanged within the scope of interest of the QCIT-ETC.

Meeting Agenda

1. Approval of the Agenda
2. Welcome / Introduction
3. Opening remarks by the ComSoc President - Vincent Chan, MIT
4. QCIT Talks
5. Approval of Previous Meeting Minutes
6. Report on ETC Meeting
7. Report on Workshops & Conferences
8. Report on Tutorials, Keynotes & Invited Talks
9. Report on Publications & Future Events
10. Standards Liaison
11. New Business Items
12. Next QCIT-ETC Meeting
13. Adjourn

2. Welcome / Introduction I

QCIT-ETC Officers

Chair: Lajos Hanzo (U. of Southampton, UK)

Vice-Chair: Peter Mueller (IBM Zurich Research Lab, Switzerland)

Secretary: Andrea Conti (U. of Ferrara, Italy)

Standards and Media: Michael Ng (U. of Southampton, UK)

Membership: 450+

2. Welcome / Introduction II

The QCIT-ETC website:

- <http://qcit.committees.comsoc.org/>

- Two mail distribution lists:

- qcit@comsoc.org

Internal announcements only

ICC, Globecom, Committee meetings like today, Awards

- qcit-announce@comsoc.org

CFP email distribution list

Open to all signed-up members to distribute QCIT related CFPs

Sign-up: Send “join QCIT(-ANNOUNCE)” message to list@comsoc.org

Unsubscribe: Send “SIGNOFF QCIT” message to list@comsoc.org

3. Opening remarks by the ComSoc President Vincent Chan, MIT

4. QCIT Talks

- Akbar M. Sayeed, “From Millimeter-Wave to Quantum Communication: A Call for Cross-Disciplinary Research and Technology Innovation”
- Dominic O'Brien, “The UK Quantum Technology Hub in Computing and Simulation; programme overview and research challenges”
- Rob Malaney, “CV-QKD From Space – It Will Work!”
- Gui-Lu Long, “Overcoming the lack-of-practical-quantum-memory obstacle in quantum secure direct communication: quantum-memory-free protocol using classical coding”
- Mohsen Razavi, “The prospects and challenges of long-distance quantum communications”
- Julian Cheng, “Quantum Discrimination”

5. Approval of Previous Meeting Minutes

The most recent QCIT meeting was held at IEEE Globecom 2020.

The meeting minutes and slides are published on the QCIT URL (use tab “Meetings”):

<http://qcit.committees.comsoc.org/>

6. Report on ETC-TAC Meeting

We will be evaluated during Globecom 2020 for possible elevation to Technical Committee

7. Report on Workshops & Conferences

Since last meeting:

The 6th edition of the QCIT workshop, held in Globecom 2020, has been approved. Deadline for paper submission is July 15.

QCIT/ComSoc have become the official sponsor of the IEEE Quantum Week, 12 – 16 Oct. 2020, Denver <https://qce.quantum.ieee.org/>

8. Report on Keynotes & Invited Talks

Keynotes and Invited Talks reported in the minutes

Since the last meeting:

IEEE Signal Processing Society Webinar by L. Hanzo, URL:
<https://rc.signalprocessingsociety.org/webinars/SPSWEB00373.html>

QCIT Tutorials delivered at ICC 2020 & ICASSP'2020 and accepted for GC'2020

9. Report on Publications & Future Events

Please use the QCIT-ANNOUNCE distribution list to send your CFPs and report your special issues, book chapters, and so on.

QCIT is actually looking for a member who would be willing to serve in the position of an Appointed Representative of Publications. If you are interested, please contact the newly elected officers.

- The QCIT ETC has contributed to the formation of the new IEEE-level Open-Access journal, namely the IEEE TRANSACTIONS ON QUANTUM ENGINEERING;
- Upcoming JSAC special issue on *Advances in Quantum Communications, Computing and Cryptography*, by Soon Xin Ng, Lajos Hanzo, Peter Mueller, Andrea Conti, Gui-Lu Long, Akbar Sayeed, Jinhong Yuan: **63 submissions, 19 published papers**
- A new IEEE ComSoc Communications Magazine Special Section has been proposed and it is under consideration by the EIC;

10. Standard Liaison

The QCIT-ETC is supporting standards work within the field.

IEEE SA - 1913 - Software-Defined Quantum Communication

<http://standards.ieee.org/develop/project/1913.html>

IEEE SA - 1913 - Software-Defined Quantum Communication IEEE.org IEEE Xplore Digital Library IEEE Standards...

Liaison: [Steven Bush \(bushsf@research.ge.com\)](mailto:bushsf@research.ge.com)

IEEE SA - 7131 - Standard for Quantum Computing Performance Metrics & Performance Benchmarking

<http://standards.ieee.org/develop/project/7131.html>

IEEE SA - 7131 - Standard for Quantum Computing Performance Metrics & Performance Benchmarking IEEE.org IEEE Xplore...

Liaison: Peter Mueller (pmu@zurich.ibm.com)

IEEE SA - 7130 - Standard for Quantum Computing Definitions

<http://standards.ieee.org/develop/project/7130.html>

IEEE SA - 7130 - Standard for Quantum Computing Definitions IEEE.org IEEE Xplore Digital Library IEEE...

Liaison: Peter Mueller (pmu@zurich.ibm.com)

11. New Business Items

The QCIT ETC is contributing to the IEEE-level Quantum Initiative:
<https://quantum.ieee.org/about>

QCIT/ComSoc have become the official sponsor of the IEEE Quantum Week, 12 – 16 Oct. 2020, Denver <https://qce.quantum.ieee.org/>

NAE report <https://www.nap.edu/catalog/25196/quantum-computing-progress-and-prospects>

Worldwide Large Regional Programs

- US IARPA and others
- China Secure Backbone
- EU Flagship and Quanterra

European Efforts:

- European Flagship Program on Quantum Technologies

12. Next QCIT-ETC Meeting & Workshop

The next IEEE ComSoc's Quantum Communications and Information Technology ETC (QCIT-ETC) meeting will be held at

IEEE Globecom 2020

13. Adjourn

Thank you for attending!