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

Meeting at GC 2023

Room: *Virtual*
Date/Time: Nov. 27, 2023, 9am EST

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. Welcome and Opening
2. QCIT Talks
3. Approval of Previous Meeting Minutes
4. Discussion on ETC and Quantum Initiatives
5. Discussion on Workshops & Conferences
6. Discussion on Tutorials, Keynotes & Invited Talks
7. Publications & Future Events
8. Next QCIT-ETC Meeting
9. Adjourn

1. 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+

1. 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

- 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

1. ICC 2023 / IEEE Quantum Week 2022

Next **Quantum Track at SAC Symposium**

Dec. 4 – 8, 2023, Kuala Lumpur, Malaysia

Track Chairs: Gui-Lu Long, Tsinghua University, P.R. China; Michael Ng, University of Southampton, UK.

https://globecom2023.ieee-globecom.org/sites/globecom2023.ieee-globecom.org/files/CFP%20-%20SAC%20Quantum%20Communications%20and%20Computing.pdf

Invitation to participate in the **IEEE Quantum Week 2024**

https://qce.quantum.ieee.org/2023/

2. QCIT Talks

1/ Prof. Gui-Lu Long, Tsinghua University:

Recent advances in quantum secure direct communications

Quantum secure direct communication (QSDC) has attracted a lot of attention, which exploits deep-rooted quantum physical principles to guarantee unconditional security of communication in the face of eavesdropping. We first briefly review the fundamentals of QSDC, and then present its evolution, including its security proof, its performance improvement techniques, and practical implementation. Finally, we discuss the future directions of QSDC.

2. QCIT Talks

2/ Dr Zunaira Babar, Viavi, Cambridge, UK

Quantum Error Correction Codes (QECCs) can be constructed from the known classical coding paradigm by exploiting the inherent isomorphism between the classical and quantum regimes, while also addressing the challenges imposed by the strange laws of quantum physics. In this spirit, insights into the duality of quantum and classical coding theory will be offered. Finally, we conclude with an outlook concerning the potential evolution of QECCs.

3. Approval of Previous Meeting Minutes

The most recent QCIT meeting was held at IEEE ICC 2023.

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

4-8. Next QCIT-ETC Meeting & Workshops

1/ The next IEEE ComSoc's Quantum Communications and Information Technology ETC (QCIT-ETC) meeting will be held before IEEE ICC'2024

2/ IEEE Network Magazine SI

Adjourn

Thank you for attending!