

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

**Meeting held at IEEE Globecom 2021**

November 30, 2021

9am – 11am EDT

Virtual

## **Meeting Minutes**

Minutes taken by: Andrea Conti

## Participants

The total of participants was 41, as listed at the end of this document.

### 1. Welcome and Opening

The Chair Lajos Hanzo opened the meeting at 9am EDT.

The 4 founding members are: Lajos Hanzo, Andrea Conti, Michael Ng, and Peter Mueller.

The Chair presented the agenda as below

1. Welcome and Opening
2. Approval of the Agenda
3. IEEE Quantum Week 2022
4. Meeting Technical Talks
5. Approval of Previous Meeting Minutes
6. Report on ETC Technical Activity Council Meeting
7. Report on Workshops & Conferences
8. Report on Keynotes, Invited Talks, Publications, and Future Events
9. Standards Liaison
10. New Business Items
11. Next QCIT-ETC Meeting
12. Adjourn

The QCIT-ETC website is <http://qcit.committees.comsoc.org/>

There are two e-mail distribution lists (450+ members):

- [qcit@comsoc.org](mailto:qcit@comsoc.org)

for internal announcements only (e.g., ICC, Globecom, Committee meetings like today, and Awards)

- [qcit-announce@comsoc.org](mailto:qcit-announce@comsoc.org)

for CFP email distribution list. It is open to all signed-up members to distribute QCIT related CFPs

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

Unsubscribe: Send “SIGNOFF QCIT” message to [list@comsoc.org](mailto:list@comsoc.org)

## 2. Approval of the Agenda

The agenda was approved.

## 3. IEEE Quantum Week 2022

The participants have been invited to participate to the IEEE Quantum Week 2022 by the General Chair Prof. Greg Byrd.

## 4. Meeting Technical Talks

The following technical talk was given by Prof. Pascal Vontobel, The Chinese University of Hong Kong:

“Tutorial on a graphical-model-based approach to quantum information processing”

Abstract - The aim of this presentation is to give an introduction to a post-graduate course on quantum information processing (QIP) that we taught earlier this year and whose course materials (lecture slides, homework assignments, and lecture videos) are available here: [https://sites.google.com/site/pascalvontobel/qip\\_course](https://sites.google.com/site/pascalvontobel/qip_course)

A special feature of this QIP course is that it uses, as far as possible, graphical models. This allows for a unified and more accessible treatment of various topics, along with highlighting the

differences between classical and quantum information processing. (The graphical models that are used are very similar to tensor networks. However, one advantage of the graphical models that are used is that they are compatible with graphical models used in classical information processing.) This QIP course is designed to be accessible to a broad audience. Therefore, we only require a solid understanding of linear algebra, classical probability theory, and complex numbers. Relevant background from quantum physics, graphical models, information theory, etc., are introduced as necessary to make this course as self-contained as possible. In the first part of this presentation, we will discuss some of the "highlights" of this QIP course; in the second part, we will discuss some of the underlying technical details.

## 5. Approval of Previous Meeting Minutes

The minutes of previous meeting (held at IEEE ICC 2021), circulated via QCIT website, were approved.

## 6. Reports on ETC-TAC Meeting

No significant novelty for this meeting.

## 7. Reports on Workshops and Conferences

Announced the second time the QCIT ETC will organized a Track in the IEEE International Conference on Communications (ICC): *SAC Quantum Communications and Computing Track*, dedicated session in the main conference.

Please use the QCIT-ANNOUNCE distribution list to send your CFPs and report your conferences, workshops, sessions, etc.

If you are looking for IEEE ComSoc support for your event, please ask anyone of the officers.

## 8. Reports on Keynotes and Invited Talks Report on Keynotes, Invited Talks, Publications, and Future Events

QCIT members continued to offer keynotes, invited talks, and tutorial in different venues.

QCIT is 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.

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

QCIT is 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 officers.

## 9. Standards Liaison

No news from previous meeting. 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 \(pmu@zurich.ibm.com\)](mailto: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 \(pmu@zurich.ibm.com\)](mailto:pmu@zurich.ibm.com)

## 10. New Business Items

None.

## 11. Next QCIT-ETC Meeting

Next QCIT ETC meeting will be held at IEEE ICC 2022.

## 12. Adjourn

The meeting was adjourned at 11am EDT.

## Participants List

Name	Affiliation	Email
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