1. No major votes needed – decided to cancel meeting
2. Slides posted on CTTC website
3. Minutes from GC 2019 will be approved at GC 2020
4. If you have comments/questions on these slides, email ubli@usc.edu
5. We are still seeking information about CT projects related to Covid19, email ubli@usc.edu
   a. If you want to volunteer to help manage these pages, let us know
6. COMSOC election is ON – VOTE!
1. Welcome and Introduction
2. Approval of Minutes from 2019 GC meeting deferred to Globecom 2020 (available at http://committees.comsoc.org/comt/)
3. Chair Remarks
4. 2020 CTTC Awards – nominations upcoming
5. Communication Theory Symposium Reports:
   - ICC 2020 (Harpreet Dhillon)
   - Globecom 2020 (Rui Dinis)
   - ICC 2021 (Elza Erkip)
   - Globecom 2021 (Judy Zhu)
6. Workshop Reports:
   - CTW 2021 (Andrew Eckford)
   - CTW 2022 (Javi Lopez-Martinez)
   - CTW 2023 proposal (Peter Hong)
7. Student Competition
WHAT IS CTTC?

- We hold meetings twice per year:
  - At ICC and GLOBECOM.
- Become a member by joining the mailing list.
  - http://committees.comsoc.org/comt/mailinglist.html
- You are an active member if:
  - Attend 2 of the past 5 meetings (ignoring ICC 2020); or
  - Attend last two CTWs; or
  - Provide significant service to the committee.
- Currently, ~600 members, ~150 of which are active.
OFFICERS

- **Chair**
  - Urbashi Mitra
  - University of Southern California, USA

- **Vice-Chair**
  - Maite Brandt-Pearce
  - University of Virginia, USA

- **Secretary**
  - Meixia Tao
  - Shanghai Jiaotong University
OTHER POSITIONS

Standards Liaison
Amitava Ghosh
Nokia Bell Labs

Student Competition Program
Rui Dinis
New University of Lisbon
LOOKING AHEAD

- 2020 last year of service for current officers
- Will elect new chair at Globecom 2020
  - Chair selects Vice Chair and Secretary
  - Consider serving!
- 2020 Nominations and Election committee
  - Elza Erkip
  - Mike Honig
  - Erik Perrins
- Self-nominations!
- Note that the ComSoc Nominations and Election committee is drafting a slate for ComSoC BoG MaL – suggestions welcomed
MAILING LIST INFORMATION

- Email list is comm-theory@ieee.org
  - Must be subscribed to send
  - Moderated: Must be approved by an officer
- Is a “quiet” list with few postings per year
- Standard acceptable uses:
  - CTTC-business: Meeting announcements, minutes, etc.
  - CFP for CTTC sponsored events: CTW and CT Symposia
- Special uses:
  - CT-related job openings posted by CT members: Postdoc & faculty
  - Niche workshops targeted to the CT community
  - Connection to CTTC must be clear/CT community involvement
- Not-acceptable:
  - CFP’s for conferences and workshops that are widely known
  - Advertising of graduate programs and announcements of fellowships
MINUTES

Communication Theory Technical Committee (CTTC)
GC 2019, Waikoloa Hawaii
December 10, 2019
ATTENDANCE = 43

EXECUTIVE SUMMARY

1. The minutes from the ICC 2019 meeting were approved
2. CTTC structure and goals reviewed
3. An update was given on standards activities
4. CTTC awards again presented
5. Update of CTTC P&P provided; approved by attending members
6. Globecom 2019, ICC 2020, Globecom 2020 reports were given
7. CTW 2019, CTW 2020, CTW 2021, CTW 2022 reports were given
8. There was no new business
Want to become more involved?

- Volunteer to be on the TPC for an upcoming Comm Theory Symposium (typical TPC size is around 150 members)
  - GC’20: Contact Deniz Gunduz, Imperial College London
d.gunduz@imperial.ac.uk

- Volunteer to be a symposium chair
  - We have made nominations through ICC’22
  - (GC’22 – Rio de Janeiro, Brazil)
  - We need more volunteers!
  - Contact Ubli (ubli@usc.edu), and include your bio/CV

- Get involved with the organization of a CTW
  - Next proposal needed: CTW’24

- Organize a Best Readings
Best Readings is a curated collection of previously published books, articles, and papers on a featured topic
- Published quarterly at http://www.comsoc.org/best-readings
- Links to the source reference with short descriptions
- Helpful to those who wants to acquire a background on the topic

Examples
- Broadband Access
- Cloud Communications and Networking
- Cognitive Radio
- Communications and Information Systems Security
- Device-to-Device Communications
- e-Health
- Green Communications
- Internet of Things
- Massive MIMO
- Multi-Tier Cellular
- Nanoscale Communication Networks
- Optical Wireless Communications
- Physical Layer Security
- Power Line Communications
- Smart Grid Communications

M. Valenti is EiC
- Let him know if you would like to guest edit
CTTC gives out 3 distinct awards:
- Technical Achievement Award
- Outstanding Service Award
- Early Achievement Award

(can be multiple recipients or no recipients in a given category)

Call for Nominations sent in June/July
Awarded at following GLOBECOM, ICC, or CTW
Nominations due July 30 of every year
  - Web forms on CTTC website

NOW IS THE TIME TO THINK OF CANDIDATES to nominate
2020 CTTC AWARDS COMMITTEE

Maite Brandt-Pearce, Chair

Erik Perrins

Costas Georghiades

Gerhard Fettweis

Junshan Zhang
Recognizes young members of the CTTC who have achieved early career visibility in the field through research and service and who (i) have participated in the CTTC (e.g., attended CTTC meetings, attended CTW, served the CTTC in a significant capacity, been a member of the TPC for ICC/GLOBECOM) and (ii) are within 10 years of their Ph.D.

Past recipients:
- 2019: Walid Saad
- 2018: Ayfer Özgür
- 2017: Tony Q.S. Quek and Deniz Gündüz
- 2016: Marios Kountouris
Recognizes members of the CTTC who have been involved with the committee, have done outstanding work in communication theory, and have achieved a high degree of visibility in the field.

Past recipients:

- 2019: Mohamed-Slim Alouini
- 2018: Elza Erkip
- 2017: Behnaam Aazhang and Michael B. Pursley
- 2016: Jack Winters
- 2015: John Proakis
- 2014: Reinaldo Valenzuela and Norm Beaulieu
OUTSTANDING SERVICE AWARD

- Recognizes members of the CTTC who have a distinguished record of service to the communication theory community, including CTTC-sponsored symposia and workshop organization, leadership roles within the committee, and promoting committee activities and interests in the broader research community.

- Past recipients:
  - 2019: Andrea Goldsmith
  - 2018: None
  - 2016: Behnaam Aazhang
  - 2015: Sergio Benedetto
  - 2014: Ender Ayanoglu
  - 2013: Michael Rice
<table>
<thead>
<tr>
<th>Conference</th>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC’20</td>
<td>Dublin</td>
<td>7-11 June 2020</td>
</tr>
<tr>
<td>GC’20</td>
<td>Taipei</td>
<td>7-11 Dec 2020</td>
</tr>
<tr>
<td>ICC’21</td>
<td>Montreal</td>
<td>14-18 June 2021</td>
</tr>
<tr>
<td>GC’21</td>
<td>Madrid</td>
<td>7-11 Dec 2021</td>
</tr>
<tr>
<td>ICC’22</td>
<td>Seoul</td>
<td>16-20 May 2022</td>
</tr>
<tr>
<td>GC’22</td>
<td>Rio De Janeiro</td>
<td>4-8 Dec 2022</td>
</tr>
<tr>
<td>ICC’23</td>
<td>Rome</td>
<td>28 May - 1 June 2023</td>
</tr>
</tbody>
</table>
Co-Chairs:
- Harpreet Dhillon, Virginia Tech
- Deniz Gunduz, Imperial College London
- Mark Flanagan, University College Dublin

Statistics:
- TPC members recruited: 144
- Papers submitted: 120
- Papers accepted: 48 (40% acceptance rate)
- Sessions: 8 (virtual sessions)

All authors were required to upload a pre-recorded video of their paper presentation (deadline: May 25, 2020).

Any of the co-authors could record the presentation. These presentations were made available during the original dates of the conference and on-demand after the end of the conference.
7-11 December, 2020

Co-chairs
- Rui Dinis, Nova Univ. of Lisbon
- Marco Chiani, Universita di Bologna, Italy
- Paschalis Sofotasios, Khalifa University of Science and Technology, UAE

123 papers submitted, reviews ongoing

Website: https://globecom2020.ieee-globecom.org/

The current dates:
- Paper Submission: May 29, 2020
- Acceptance Notification: August 15, 2020
- Camera-Ready: September 1, 2020
ICC 2021 (MONTREAL, CANADA)

- 14-18 June, 2021
- Co-chairs
  - Elza Erkip, New York University
  - Achilleas Anastasopoulos, University of Michigan
  - Ranjan Mallik, IIT Delhi
- Call for Papers ready, website to go live soon
- Please contact co-chairs to volunteer for the TPC if you are interested.
- Current dates:
  - Paper Submission: 12 October 2020
  - Acceptance Notification: 25 January 2021
  - Camera-Ready: 22 February 2021
Xu (Judy) Zhu
The University of Liverpool
Liverpool
UK
xuzhu@Liverpool.ac.uk

Syed A. Jafar
University of California, Irvine, CA
USA
syed@uci.edu

Sofie Pollin
KU Leuven
Leuven
Belgium
Sofie.Pollin@kuleuven.be
### Topics of Interest

- Adaptive Modulation and Coding
- Channel Estimation and Synchronization
- Coding Theory
- Communication Theory Aspects of Ad Hoc and Sensor Networks
- Communication Theory Aspects of Distributed and Edge Computing
- Communication Theory Aspects of Networks and Cross-Layer Design
- Detection and Estimation Theory
- Distributed Coding and Processing
- Diversity and Fading Countermeasures
- Feedback in Communication Systems
- Fundamentals of Cache-Aided Communication
- Fundamentals of Heterogeneous and Small-Cell Networks
- Fundamentals of Low-Latency and Short-Packet Communications
- Fundamentals of Massive Connectivity
- Information Theory and Channel Capacity
- Interference Management, Cancellation, Alignment, and Avoidance
- Iterative Techniques, Detection, and Decoding
- MIMO and Massive MIMO
- Multiple Access, Radio Resource Management, and Scheduling
- Network and Multiuser Information Theory
- Orthogonal and Non-Orthogonal Multiple Access Techniques
TOPICS OF INTEREST

- Orthogonal Frequency Division Multiplexing (OFDM) and Multi-Carrier Systems
- Physical Layer Security
- Quantum Communications and Networks
- Radio Resource Management and Scheduling
- Random Access Theory and Techniques
- Source Coding and Data Compression
- Stochastic Geometry and its Application to System Analysis and Design
- Theoretical Aspects of Blockchain Networks
- Theoretical Aspects of Cognitive Radio
- Theoretical Aspects of Device-to-Device and Machine-to-Machine Communications
- Theoretical Aspects of Fiber Optical and Free-Space Optical Communications
- Theoretical Aspects of Machine Learning in Communications
- Theoretical Aspects of Powerline and Underwater Communications
- Theoretical Aspects of Simultaneous Wireless Information and Power Transfer
- Ultra-Wideband, Millimeter Wave and Terahertz Communication Theory
- Unmanned Aerial Vehicle (UAV) Communications
- Wireless Communications Powered by Energy Harvesting
- Theoretical Aspects of Cooperative Communications
By August 2020,

- Call for Papers will be publicized on the conference website and via email lists.
- TPC members will be confirmed.
## UPCOMING CTW VENUES

<table>
<thead>
<tr>
<th>Conference</th>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTW’21</td>
<td>Banff, Alberta, Canada</td>
<td>May 2021</td>
</tr>
<tr>
<td>CTW’22</td>
<td>Marbella, Spain</td>
<td>May 2022</td>
</tr>
<tr>
<td>CTW’23</td>
<td>Asia</td>
<td>May 2023</td>
</tr>
</tbody>
</table>
Same place, new dates
May 30 – June 2, 2021
- ICASSP will be in Toronto
June 6-12
- ICC will be in Montreal June 14-21

The following are the Globecom 2019 slides with COVID updates in boxes
- **General Chairs**
  - Andrew Eckford (York University, Canada)
  - Julian Cheng (University of British Columbia – Okanagan, Canada)

- **TPC Chairs**
  - Behnaam Aazhang (Rice University, USA)
  - Natasha Devroye (University of Illinois at Chicago, USA)

- **Finance Chair**
  - Anas Chaaban (University of British Columbia – Okanagan, Canada)

- **Poster Chairs**
  - Yindi Jing (University of Alberta, Canada)
  - Shahram Shahbazpanahi (Ontario Tech, Canada)

- **Data Competition Chairs**
  - Nariman Farsad (Ryerson University, Canada)
  - Jakob Hoydis (Nokia Bell Labs, France)

---

No changes – same committee
- **Keynote 1:** Frank Kschischang  
  University of Toronto, Canada

- **Keynote 2:** Merouane Debbah  
  Huawei, France

- **Keynote 3:** Sennur Ulukus  
  University of Maryland, USA

---

No changes to program as yet but minor changes may happen.

We plan to keep the same program to the extent possible; updates at Globecom.
Session 1: Neuromorphic sensing, learning, and communications  
Chair: Osvaldo Simeone (King’s College London, UK)

Session 2: Inference for graph-based information  
Chair: Negar Kiyavash (Georgia Tech, USA)

Session 3: Coding for Computing and Learning  
Chair: Daniela Tuninetti (University of Illinois at Chicago, USA)

Session 4: Machine Learning and Signal Processing for Network Data  
Chair: Santiago Segarra (Rice University, USA)

Session 5: Communication Theory Put into Practice  
Chair: Tara Javidi (University of California San Diego, USA)

No changes to program as yet but minor changes may happen  
We plan to keep the same program to the extent possible; updates at Globecom
Industry Panel 1

- 5G Use Cases
  - Chair: Ivo Maljevic (TELUS, Canada)

Industry Panel 2

- Convergence Bounds and Experimental Rigor: How can we know that machine learning systems will work?
  - Chair: Matt Nokelby (Target, USA)

No changes to program as yet but minor changes may happen

We plan to keep the same program to the extent possible; updates at Globecom
- **Poster Session**
  - Deadline: February 24, 2020
  - Award for best poster
  - (Reminder: No published proceedings)

- **Data Competition**
  - Outdoor localization challenge using a real-world dataset
  - Award for best performance

**No changes to program as yet but minor changes may happen**

We plan to keep the same program to the extent possible; updates at Globecom
How to get there:

Calgary International Airport (YYC)
Take the direct shuttle bus or rent a car

What to do (other than hear about world-class research):

Hiking, hot springs, gondola rides, whitewater rafting, golf, mountain biking, wildlife spotting, spas, dining ...

Very family friendly!

At present Banff National Park and Canada-US border are closed; international travelers to Canada must self-isolate for 14 days

These restrictions must be lifted to have a successful CTW
# Expected Costs

## Registration

<table>
<thead>
<tr>
<th>Status</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early ComSoc Member</td>
<td>US$549</td>
</tr>
<tr>
<td>Early ComSoc Student</td>
<td>US$299</td>
</tr>
</tbody>
</table>

*Early Registration Deadline: March 14, 2020*

## Accommodation

<table>
<thead>
<tr>
<th>Hotel</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairmont Banff Springs Hotel</td>
<td>US$258/night (CA$343/night)</td>
</tr>
</tbody>
</table>

*Costs will likely be the same Update at Globecom*
http://ctw2020.ieee-ctw.org/

We will probably change the URL to ctw2021
IEEE CTW’22 @ MARBELLA
PRE-COVID’19 SITUATION

- Budget was officially approved by ComSoc as of 22-Jan-2020

- Conference hosting services were activated as of 18-Feb-2020

- Hotel:
  - MMSA was agreed / SOW was close to be agreed (Hotel - agency - IEEE)
  - Contracts were to be signed along March 2020

- Technical program:
  - Some preliminary topics for sessions were discussed by TPC Chairs
  - Definition was postponed due to the uncertainty on CTW’20
IEEE CTW’22 @ MARBELLA
POST-COVID’19 SITUATION

- CTW’20 cancellation notice by Mike Honig (17-Mar-2020)
  - CTW’20 (Banff) → CTW’21 (Banff)
  - CTW’21 (Marbella) → CTW’22 (Marbella)
  - CTW’22 (Asia) → CTW’23 (Asia)

- Spain was hit VERY hard by COVID’19 (Tourism is 13% of nation’s GDP)
  - New conditions (dates/pricing) would need to be negotiated with the Hotel from scratch
  - Many luxury hotels are likely to be shut down because of COVID’19 (our venue?)
  - Budget needs to be redesigned (new worst-case scenario with lower attendance)
Our view as organizing (and also local) committee

- CTW in Marbella may not be feasible under the same conditions as before
- Downsizing the requirements could be an option
  - Less expensive hotel with cancellation flexibility (in Malaga, not Marbella?)
  - Use a University-owned (gorgeous and free) venue within walking distance of hotel
- IEEE/ComSoc need to consider easing the contract-signing procedures (nightmare!)
CTW2023 PROPOSAL

IEEE Communication Theory Workshop 2023
Taroko, Hualien, Taiwan

Tony Quek (Singapore University of Technology and Design, Singapore)
Yao-Win Peter Hong (National Tsing Hua University, Taiwan)
Wei Yu (University of Toronto, Canada)
## Dates

- **IEEE Communication Theory Workshop 2023**

- **CTW 2023** will be held on **May 14-17, 2023?**  
  **May 21-24, 2023?**

- **No conflict with other conferences**

<table>
<thead>
<tr>
<th>Conference</th>
<th>Dates</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC</td>
<td>28 May-1 June</td>
<td>@ Rome, Italy</td>
</tr>
<tr>
<td>ICASSP</td>
<td>7-12 May</td>
<td>@ Kos Island, Greece</td>
</tr>
<tr>
<td>ISIT</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>SPAWC</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>
Taiwan Taoyuan International Airport

- **Airport MRT**
  - 39~53 mins

Taipei Main Station

- **Train**
  - 2hrs 15 mins

Hualien Train Station

- **Tour bus or Car/Taxi**
  - ~1 hrs

Hualien Airport (via TSA or KHH)

- **Tour bus**
  - 3.5~4 hrs

*(need to meet in the airport and leave together)*
Location

Taroko, Hualien, Taiwan

- Amazing sights, beautiful trails, simplicity and pure nature.

Local Attractions

- Hsiang-Te Temple Trail
- Lushui Heliu Trail
- Cihmu Bridge
- Qingshui Cliffs
- Baiyang Trail
- Zhuiu Old Road
Hotel

Silks Place Taroko

- Indoor and outdoor dining options
- Aboriginal Music Festival - mini concert
- Hotel in the National Park
- Room price (standard):
  - EUR218 (USD247) / night
- Room price (standard):
  - 224 ~274 m²
  - max. 70~90 participants
Other Potential Locations

Anping, Tainan, Taiwan

- **Room price (standard):**
  - EUR118 (USD134) / night

- **Conference rooms (classroom style):**
  - 142 m², max. 80 participants

- **Airport → THSR Taoyuan Station → THSR Tainan Station → Venue**

![Sicao Mangrove Green Tunnel](image)

![Crowne Plaza Tainan](image)

![Conference Room](image)

![Dining](image)
Anping, Tainan, Taiwan

- Igniting a thirst for more knowledge about the colonial period.
- Beautiful sunset and canal tour.

Anping Fort (Anping Gubao)
Eternal Golden Castle
Anping Kaitai Tianhou Palace
Anping Sunset Platform
Anping Canal Tour
Communications Technology Changing the World

- Annual student competition for future leaders in communications and networking.
- Recognizes students or teams of students who demonstrate the capacity to improve the lives of people, through the application of communication technology and the development of projects that meet the human needs of people.
- The winning student (or student team) can earn up to US$2,000.
- Leader or the individual of the First prize invited to receive the prize at IEEE GLOBECOM 2020 (expenses paid).
- Submission deadline – Mid August 2020
- More details can be found in
  - [https://www.comsoc.org/education-training/ieee-comsoc-student-competition](https://www.comsoc.org/education-training/ieee-comsoc-student-competition)