

2022 IEEE International Workshop Technical Committee on Communications Quality and Reliability (CQR 2022)

**Arlington, Virginia, USA
13 – 15 September 2022**



**IEEE Catalog Number: CFP22CQR-POD
ISBN: 978-1-6654-1067-0**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22CQR-POD
ISBN (Print-On-Demand):	978-1-6654-1067-0
ISBN (Online):	978-1-6654-1066-3
ISSN:	2163-5595

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

All times listed are in Coordinated Universal Time (UTC).

Tuesday, September 13 8:30 - 8:40

Welcome

Peter Thermos & Vijay K. Gurbani

Tuesday, September 13 8:40 - 9:20

Morning Keynote Address 1

Debra Jordan, US FCC Bureau chief for public safety and homeland security

Tuesday, September 13 9:20 - 9:30

Segment 1 Intro

Jason Boswell (Ericsson)

Tuesday, September 13 9:30 - 10:55

Session 1

Scott Poretsky, Ericsson

Tuesday, September 13 11:15 - 12:25

Technical Papers Session 1

Eric Burger, VA Tech

Chair: Eric W. Burger (Georgetown University & Former CTO, Federal Communications Commission, USA)

Impact of Device Thermal Performance on 5G mmWave Communication Systems...1

Muhammad Iqbal Rochman (University of Chicago, USA); Damian Fernandez and Norlen Nunez (Florida International University, USA); Vanlin Sathya (University of Chicago, USA); Ahmed S. Ibrahim (Florida International University, USA); Monisha Ghosh (University of Notre Dame, USA); Bill Payne (University of Chicago, USA)

Distributed Compressed Sensing Karhunen-Loève Expansion -

Application to Millimeter-Wave Resource Allocation Through Group Beamforming...7

Mohammadreza Robaei and Robert Akl (University of North Texas, USA)

Multi-User Reconfigurable Intelligent Surface-Aided Communications Under Discrete Phase Shifts...13

Wei Jiang (German Research Center for Artificial Intelligence (DFKI GmbH), Germany); Hans D. Schotten (University of Kaiserslautern, Germany)

Tuesday, September 13 13:30 - 14:40

Session 2

Scott Poretsky, Ericsson

Tuesday, September 13 15:00 - 16:00

Technical Papers Session 2

Vijay Gurbani, Vail Systems

Chair: Vijay K Gurbani (Vail Systems, Inc. & Illinois Institute of Technology, USA)

Modeling of NR C-V2X Mode 2 Throughput...19

Collin D Brady, Liu Cao and Sumit Roy (University of Washington, USA)

Change Detection Method Using Cluster Transition Probability...25

Shoko Takahashi (NTT Corporation, Japan); Kei Takeshita and Kazuhisa Yamagishi (NTT, Japan); Masataka Masuda (NTT Corporation, Japan)

Measuring and Modeling Aggregate LTE Connection Reliability for Train Operations...31

Johan Garcia (Karlstad University, Sweden); Claes Beckman (KTH Royal Institute of Technology, Sweden); Rikard Reinhammar (Chalmers University of Technology, Sweden); Anna Brunstrom (Karlstad University, Sweden)

Tuesday, September 13 16:15 - 16:50

Executive Panel

Next Generation Public Safety: How do we get there?

Kelly Krick, Ericsson

Wednesday, September 14 8:00 - 8:10

Welcome

Peter Thermos & Vijay K. Gurbani

Wednesday, September 14 8:10 - 8:50

Morning Keynote Address 2

Drew Morin, T-Mobile

Wednesday, September 14 9:00 - 10:00

Emerging Technologies Panel

Machine learning for real-time network optimization: What can go wrong?

Carol Davids, Illinois Tech

Wednesday, September 14 10:30 - 12:30

Session 3

Miguel Carames (Vz)

Wednesday, September 14 14:15 - 15:10

Session 4

Jason Boswell (Ericsson)

Wednesday, September 14 15:20 - 16:00

Technical Papers Session 3

Eric Burger, VA Tech

Chair: Eric W. Burger (Georgetown University & Former CTO, Federal Communications Commission, USA)

Anomaly Detection with Autoencoders for Spectrum Sharing and Monitoring...37

Stefan Tschimben (University of Colorado Boulder, USA); Kevin Gifford (University of Colorado, USA)

Coexistence of Delay-Based TCP Congestion Control: Challenges and Opportunities...43

Ashutosh Srivastava (New York University, USA); Fraida Fund (NYU Tandon School of Engineering, USA); Shivendra Panwar (New York University & Tandon School of Engineering, USA)

Thursday, September 15 8:00 - 8:10

Welcome

Peter Thermos & Vijay K. Gurbani

Thursday, September 15 8:10 - 8:50

Morning Keynote Address 3

Dawn Manga, US DHS CISA

Thursday, September 15 8:50 - 9:10

Segment 3 Intro

Ashutosh Dutta, Johns Hopkins University, Applied Physics Lab

Thursday, September 15 9:10 - 10:40

Session 5

Thursday, September 15 11:00 - 11:45

Session 6

Harry Bhasin (Vz)

Thursday, September 15 11:45 - 12:10

Invited Talk

David Lu, AT&T

Thursday, September 15 13:00 - 14:15

Panel

Network Resiliency and Augmentation During Crisis

Abby Knowles