

Table of Contents

Special Session 1: Open RAN, and Wi-Fi for Critical Communication

- 01 An Innovative Smart Collection & Forwarding (SCF) Mechanism to Support Local Breakout Services in O-RANBased 5G Non-Public Networks 1**
 Wan-Ru Yao, Jui-Tang Wang and Hsin-Yi Lin (National Taiwan University of Science and Technology, Taiwan); Bagus Jati Santoso (Institut Teknologi Sepuluh Nopember, Indonesia)
- 02 ProSafe: Wi-Fi Beaconing for Proximity-Based Safety in Coastal Environments 9**
 Cesare Corsi, Gaia Maselli and Federico Mingardi (Sapienza University of Rome, Italy)

Special Session 6: Quantum Technology

- 03 Quantum Byzantine Multiple Access Channels 15**
 Minglai Cai (Technische Universität Braunschweig, Germany); Christian Deppe (Technical University of Braunschweig, Germany)
- 04 Efficiency of Distributed Myopic Routing in a Quantum Memory-Free Network 21**
 Hilal Sultan Duranoglu Tunc (TU Dresden, Germany); Leonardo Badia (Università degli Studi di Padova, Italy); Joachim Notker, Milad Ghadimi and Riccardo Bassoli (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)
- 05 Secure Hybrid Key Growing via Coherence Witnessing and Bipartite Encoding 27**
 Natalia Bastos de Sousa, Leonardo Silva, Daniel Bernardon, Vinicius Jacques Garcia and Martin Wolter
- 06 Quantum Limits of LEO Satellite Beacon Reading 34**
 Pere Munar-Vallespir (Technical University of Munich, Germany); Marc Geitz (Deutsche Telekom AG, Germany); Angeles Vazquez-Castro (Universidad Autónoma de Barcelona, Spain); Janis Nötzel (Technische Universität München, Germany)
- 07 Identification or Key Exchange via Neutrino Transport Channels 40**
 Marc Geitz, Matheus Ribeiro-Sena, Michaela Ritter, Ming Yin and Ronny Döring (Deutsche Telekom AG, Germany); Ralf-Peter Braun (Orbit GmbH, Germany); Oliver Holschke (Deutsche Telekom AG, Germany); Janis Nötzel (Technische Universität München, Germany)

Special Session 2: Resilience in Communication Systems

- 08 When Every Symbol Counts: Resilient Wireless Systems Under Finite Blocklength Constraints 46**
 Kevin Weinberger (Ruhr-Universität Bochum, Germany); Aydin Sezgin (RUB, Germany)
- 09 OneCode Architecture: A Single RLNC Regenerating Code for Storage and Transport..... 52**
 Juan A. Cabrera and Isikcan Yilmaz (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

10 Optimizing Resource Allocation for Resilient Networks: a Beam Management and Network Slicing Approach.....	58
Amber Hina (Politecnico di Torino, Italy); Daniele Brevi (Fondazione LINKS, Italy); Carla Fabiana Chiasserini (Politecnico di Torino & CNIT, IEIIT-CNR, Italy); Alessandro Nordio (CNR-IEIIT, Italy); Claudio Pastrone (LINKSFoundation, Italy); Alberto Tarable (CNR-IEIIT, Italy)	
11 Toward Hybrid Satellite-Terrestrial Networks for Power Grid Control Under Weather Disturbances.....	64
Anna Volkova (University of Passau, Germany); Jacek Rak (Gdansk University of Technology, Poland); Hermann de Meer (University of Passau, Germany)	
12 A Hybrid NOMA-OMA Framework of Adaptive Rate-Splitting Multiple Access for URLLC Services.....	70
Tianshi Liu (Wuhan University, China); Yao Zhu (RWTH Aachen, Germany); Yulin Hu (RWTH Aachen University, Germany); James Gross (KTH Royal Institute of Technology, Sweden)	
13 Pilot Testing for a Mentoring Program: Teaching Quantum Basics to Industry Employees and School Students.....	76
Vivian S. Hoffmann (Dresden University of Technology, Germany); Jessica S. Gollmann, Lisa M Küssel and Riccardo Bassoli (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany); Holger Boche (Technical University Munich, Germany)	
14 Design Process of a Demonstrator for Quantum Communication in Science Communication.....	81
Henriette Uhlig, Vivian S. Hoffmann and Angela Müller (Dresden University of Technology, Germany); Riccardo Bassoli (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany); Holger Boche (Technical University Munich, Germany)	
15 AI-Generated Videos in Online Education on Quantum Communication Networks.....	87
Marta Di Fronzo and Riccardo Bassoli (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany); Holger Boche (Technical University Munich, Germany)	

Poster Session 1

16 Interoperability Assessment of Fronthaul and E2 Interfaces for Multi-Vendor Open RAN Systems.....	91
Farhad Mehran, Charles Turyagyenda and Dritan Kaleshi (Digital Catapult, United Kingdom (Great Britain))	
17 Experiments on Detecting and Counting People via Ambient Wi-Fi.....	97
Muhammad Nasar Jamal and Christian Bettstetter (University of Klagenfurt, Austria)	
18 Performance Analysis of OTFS-RSMA for LEO-ISAC: Ergodic SINR and Sensing Bounds	103
Bruno Felipe Costa (UEL - Londrina State University, Brazil); Taufik Abrão (State University of Londrina, Brazil)	
19 Sum Rate Analysis of Cell-Free Massive MIMO with 1-Bit ADCs and Comparator Networks .	109
Jessica Marie and Lukas T. N. Landau (Pontificia Universidade Católica do Rio de Janeiro, Brazil)	

- 20 Adaptive Learned Message Passing Algorithms for Decoding Error Correcting Codes..... 115**
Alireza Tasdighi and Mansoor Yousefi (Telecom-Paris, France)
- 21 Continuous-Variable Quantum Key Distribution System Design Leveraging Silicon Photonics 121**
Arezoo Zarif, Abdou Shetewy, Samuel Leyikun Birhanu, Yilun Hai and Yingjian Wang (Technische Universität Dresden, Germany); Marco Dietrich, Ronny Priemer, Jorg Hopfe and Christoph Keller (aconnic system Germany GmbH, Germany); Stefan Reichmuth (aconnic system Switzerland AG, Switzerland); Philipp Neuber (aconnic system Germany GmbH, Germany); Riccardo Bassoli (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany); Kambiz Jamshidi (Technische Universität Dresden, Germany)
- 22 Optimized Design of Graphene-Based RIS Unit Cell at THz with Reduced Specular Reflection 127**
Maimoona Asad (University of Rome Tor Vergata, Italy); Ilaria Marasco (Politecnico di Bari, Italy); Fabio Maggio (University of Rome Tor Vergata, Italy); Tommaso Rossi and Mauro De Sanctis (University of Rome "Tor Vergata", Italy); Antonella D'Orazio (Politecnico di Bari, Italy); Ernestina Cianca (University of Rome Tor Vergata, Italy)
- 23 CSI Compression Beyond Latents: End-To-End Hybrid Attention-CNN Networks with Entropy Regularization..... 132**
Maryam Ansarifard (Eindhoven University of Technology, The Netherlands); Mostafa Rahmani (University of York, United Kingdom (Great Britain)); Mohit Kumar Sharma (Technology Innovation Institute, United Arab Emirates); Kishor Chandra Joshi (TU Eindhoven, The Netherlands); George Exarchakos (Eindhoven University of Technology, The Netherlands); Alister G. Burr (University of York, United Kingdom (Great Britain))
- Main Session 1**
- 24 Cross-Comparison of Neural Architectures and Data Sets for Digital Self-Interference Modeling..... 138**
Gerald Enzner, Niklas Knaepper and Aleksey Chinaev (Carl von Ossietzky Universität Oldenburg, Germany)
- 25 Resilient Full-Duplex ISAC in the Face of Imperfect SI Cancellation: Globally Optimal Timeslot Allocation and Beam Selection..... 143**
Luis F. Abanto-Leon (Ruhr Universität Bochum, Germany); Setareh Maghsudi (Ruhr University Bochum, Germany & Fraunhofer Heinrich Hertz Institute, Germany)
- 26 Optimized Integration of a VHF Dual-Polarized Probe Antenna for UAV-Based Measurements..... 150**
Abdo Salah and Denis Unruh (Technical University of Munich, Germany); Thomas F. Eibert (Technical University of Munich (TUM) & Chair of High-Frequency Engineering (HFT), Germany)
- 27 Interference Mitigation for OFDM-Based Integrated Sensing and Communications with Arbitrary Modulation Formats..... 154**
Felix Artmann (Karlsruher Institute of Technology (KIT), Germany); Daniel Gil Gaviria and Benedikt Geiger (Karlsruhe Institute of Technology, Germany); Laurent Schmalen (Karlsruhe Institute of Technology (KIT), Germany)

28	Deterministic Identification in Maximally Asymmetric Error Regimes	160
	Pau Colomer (Technical University of Munich, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Holger Boche (Technical University Munich, Germany); Andreas Winter (University of Cologne, Germany & ICREA & Universitat Autònoma de Barcelona, Spain)	
29	A Pyramid-Shaped Receiver for VLP	166
	José Miguel Menéndez Sánchez and Heidi Steendam (Ghent University, Belgium)	
30	Power Allocation for Average Consensus in Wireless Networks with Link Failures	172
	Daniel Pérez Herrera, Angelo Rodio, Zheng Chen and Erik G. Larsson (Linköping University, Sweden)	

Virtual session 1

31	Enhancing Outdoor-to-Indoor mmWave Coverage Using Static Transmissive Surfaces: Experimental Results	178
	Recep Baş (Millimeter Wave and Terahertz Research Laboratories (MİLTAL), Turkey); İlhami Unal (University College Dublin, Ireland); Aysun Sayinti (Tubitak, Turkey); Melis Can Özdemir Yanık, Yusuf Öztürk and Aydın Süleyman Güzel (TUBITAK MAM, Turkey); Batuhan Kaplan, Samed Keşir, Zehra Yigit and Ahmet Faruk Coskun (Turkcell, Turkey); Emre Arslan (Koc University, Turkey); Sefa Kayraklık (Koç University & Tübitak Bilgem, Turkey); Ibrahim Hokelek (Tubitak Bilgem, Turkey)	
32	ViCAM-DFL: Visual Explanation-Driven Defenses Against Model Poisoning in Decentralized Federated Learning-Enabled CyberEdge Networks.....	184
	Jingjing Zheng (CISTER Research Centre -ISEP, Portugal); Yu Gao (University of Porto, Portugal); Kai Li (University of Cambridge, United Kingdom (Great Britain) & CISTER Portugal, United Kingdom (Great Britain)); Bochun Wu (Fudan University, China); Wei Ni (CSIRO, Australia); Falko Dressler (TU Berlin, Germany)	
33	GPS Spoofing Attacks on Automated Frequency Coordination System in Wi-Fi 6E and Beyond	190
	Yilu Dong and Tianchang Yang (The Pennsylvania State University, USA); Arupjyoti Bhuyan (Idaho National Laboratory, USA); Syed Rafiul Hussain (The Pennsylvania State University, USA)	
34	Deep Reinforcement Learning for Maximizing Downlink Spectral Efficiency in Non-Stationary RIS-Aided Multiuser-MISO Systems	196
	Haoze Zhang (University of Florida, USA); Xiang Huang (University of Utah, USA); Zhangyu Guan (University of Minnesota - Twin Cities, USA); Rong-Rong Chen (University of Utah, USA); Arman Farhang (Trinity College Dublin, Ireland); Mingyue Ji (University of Florida, USA)	

Special Session 4: Tactile Internet in the 6G era

35	Data-Driven Context-Aware Traffic Prediction and Modeling for Tactile Internet.....	202
	Yu Yeh (CentraleSupélec, France); Selin Nur Özsert and Domenico Prattichizzo (University of Siena, Italy); Vineeth S Varma (CRAN, CNRS, France); Salah Eddine Elayoubi (CentraleSupélec, France)	
36	Perceptual Coding of High-Resolution Fingertip Tactile Feedback	208
	Wenxuan Wei, Xiao Xu, Lars Nockenberger and Daniel Rodriguez-Guevara (Technical University of Munich, Germany); Selin Nur Özsert and Domenico Prattichizzo (University of Siena, Italy); Eckehard Steinbach (Technische Universität München, Germany)	

- 37 Data-Driven Kinaesthetic Action Classification for Remote Teleoperation over the Tactile Internet..... 214**
 Daniel Rodriguez-Guevara (Technical University of Munich, Germany); Fernando Hernandez-Gobertti (Universitat Politècnica de València, Spain); Wenxuan Wei, Xiao Xu and Basak Gulecyuz (Technical University of Munich, Germany); David Gomez-Barquero (Universitat Politecnica de Valencia, Spain); Eckehard Steinbach (Technische Universität München, Germany)

Special Session 5: Experimental Wireless Communications

- 38 Experimental Performances of mmWave RIS-Assisted 5G-Advanced Wireless Deployments in Urban Environments..... 220**
 Ahmet Faruk Coskun and Alper Tolga Kocaoğlu (Turkcell, Turkey); Emre Arslan (Koc University, Turkey); Zehra Yigit, Samed Keşir and Batuhan Kaplan (Turkcell, Turkey); Jianwu Dou and Yijun Cui (ZTE Corporation, China)
- 39 From Signal to Signature: Enhanced BLE Device Fingerprinting with Environmental Context..... 226**
 Camilla Magnelli, Fabio Palmese, Marco Cominelli and Alessandro E. C. Redondi (Politecnico di Milano, Italy)
- 40 5G-Compliant Integrated Sensing and Communication at Sub-6 GHz: Experiments with SDRs and OpenAirInterface 232**
 Salvatore Carbonara, Daniele Pugliese and Alessio Fascista (Politecnico di Bari, Italy); Angelo Coluccia (University of Salento, Italy); Gennaro Boggia (Politecnico di Bari, Italy)
- 41 High-Precision Wireless Clock Synchronization for Distributed Wireless Networks: a Comparative Study Using Software Defined Radios 238**
 Adham Sakhnini (Technology Innovation Institute (TII), United Arab Emirates); Igor V. Zhilin (Technology Innovation Institute, Abu Dhabi, United Arab Emirates); Osama M Bushnaq (Technology Innovation Institute, United Arab Emirates); Jennifer Simonjan (Technology Innovation Institute UAE, United Arab Emirates); Ian F. Akyildiz (Georgia Institute of Technology, USA)
- 42 Addressing SDR Impairments for Wideband Channel Characterization Using Multiband Splicing..... 246**
 Sigrid Dimce (TU Berlin, Germany); Anatolij Zubow (Technische Universität Berlin, Germany); Falko Dressler (TU Berlin, Germany)

Special Session 3: 6G Connected Robotics for Cooperative Communication, Sensing, and Control

- 43 Bayesian Localization of a Moving Source via Map-Informed Sensing Using a Low-Altitude UAV..... 252**
 Hao Sun (City University of Hong Kong, Hong Kong); Mu Jia (The Chinese University of Hong Kong, Shenzhen, China); Xianghao Yu (City University of Hong Kong, Hong Kong); Juntong Chen (The Chinese University of Hong Kong, Shenzhen, China)
- 44 Evaluating 5G Networks for U-Space Applications: Insights from Dense Urban Measurement Campaign..... 258**
 Ricardo Nicanor Barrios Muñoz, Matteo Bernabè, David López-Pérez, David Gomez-Barquero and Israel Quintanilla-Garcia (Universitat Politecnica de Valencia, Spain)
- 45 Aerial Monitoring with Drones: Experimental Insights on Communication Challenges..... 264**
 Micha Sende and Christian Raffelsberger (Lakeside Labs GmbH, Austria); Christian Bettstetter (University of Klagenfurt, Austria)

46	Semantic-Aware Edge Intelligence for UAV Handover in 6G Networks.....	275
	Aubida Al-Hameed, Mohammed M. H. Qazzaz, Maryam Hafeez and Syed Ali Raza Zaidi (University of Leeds, United Kingdom (Great Britain))	
47	Evaluating the Impact of Mobile Network Quality on Robot Teleoperation Using a Remote Experience Center.....	269
	Adam Janes (Czech Technical University in Prague, Czech Republic); Dong Yang (Technical University of Munich & Chair of Media Technology, Germany); Jan Danek (Czech Technical University in Prague, Czech Republic); Xiao Xu (Technical University of Munich, Germany); Zdenek Becvar (Czech Technical University in Prague, Czech Republic); Eckehard Steinbach (Technische Universität München, Germany)	
48	Reliable and Long-Term Service Enhancement via Robotic Aerial IRS in 6G Wireless Networks.....	281
	Xinyuan Wu and Vasilis Friderikos (King's College London, United Kingdom (Great Britain))	

Main session 2

49	Actual Out-of-Band Emissions from Massive MIMO Antennas.....	286
	Christ Rizk (Sorbonne University, France & Orange, France); Eric Seguenot (Orange Labs, France); Florian Kaltenberger (Eurecom, France); Dominique Nussbaum (Orange, France); Andrea Moro and Alessandro Sinicco (Andrew Corporation, Italy); Sagar Arora (Eurecom, France)	
50	Spectrum Allocation for Terahertz-Based Integrated Access and Backhaul.....	293
	Christ Rizk (Sorbonne University, France & Orange, France); Eric Seguenot (Orange Labs, France); Florian Kaltenberger (Eurecom, France); Dominique Nussbaum (Orange, France); Andrea Moro and Alessandro Sinicco (Andrew Corporation, Italy); Sagar Arora (Eurecom, France)	
51	ChickCount: ML-Enhanced Visible Light Sensing for Smart Poultry Monitoring.....	299
	Morteza Alijani (University of Ghent/IMEC, Belgium); Jorn Schampheleer (University of Ghent, Belgium); Wout Joseph (Ghent University/IMEC, Belgium); Eli De Poorter (Ghent University & Imec, Belgium); Margot Deruyck (Ghent University - IMEC, Belgium); David Plets (Ghent University - imec, Belgium)	
52	Network Energy Saving Techniques Aided by AI/ML in 5G Networks.....	305
	André H Cunha (INESC-INOV, Portugal); Luis M Correia (IST/INESC INOV - University of Lisbon, Portugal); António Grilo (INESC INOV-Lab, Portugal); Diogo Martins and Wael B Hasan (Vodafone, United Kingdom (Great Britain))	
53	The 5G-OPERA Approach: a Roadmap Towards an European OPEN RAN Ecosystem for 6G	312
	Mauri Seidel and Sebastian A. W. Itting (Technische Universität Dresden, Germany); Thomas Hoeschele (Technische Universität Dresden, Germany); Florian Kaltenberger (Eurecom, France); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)	
54	O-RAN Mobility Management: Demonstration of xApp-Orchestrated Handover with OpenAirInterface.....	317
	Tano Bischoff (Fraunhofer HHI, Germany); Khanh-Toan Pham (Fraunhofer Heinrich Hertz Institut, Germany); Shrinish Donde (Adtran Networks SE, Germany); Kenan Turbic (Fraunhofer HHI, Germany); Martin Kasparick (Fraunhofer Heinrich Hertz Institute & Technical University Berlin, Germany); Slawomir Stanczak (Technische Universität Berlin & Fraunhofer Heinrich Hertz Institute, Germany)	

- 55 Modularizing the Virtual Distributed Unit: Enabling Efficiency in Cloud-Native 5G RAN 322**
Umar Toseef, Ralf Klotsche and Peter Schefczik (Nokia Bell Labs, Germany); Edward Berliner (Nokia Bell Labs, USA); Meng Zhao (Nokia Bell Lab Murray Hill, USA); Jean Ho and Reshma Patel (Nokia Bell Labs USA, USA); Rupert Rheinschmitt (Nokia Bell Labs, Germany); Dragan Samardzija (Nokia Bell Labs, USA)
- 56 Offline Reinforcement Learning for Mobility Robustness Optimization 328**
Pegah Alizadeh and Anastasios Giovanidis (Ericsson Research, France); Pradeepa Ramachandra (Ericsson Research, Sweden); Vasileios Koutsoukis (France); Osama Arouk (Ericsson France, France)