

2024 IEEE 35th International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2024)

**Valencia, Spain
2-5 September 2024**

Pages 1-595



**IEEE Catalog Number: CFP24PIM-POD
ISBN: 979-8-3503-6225-1**

**Copyright © 2024 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:	CFP24PIM-POD
ISBN (Print-On-Demand):	979-8-3503-6225-1
ISBN (Online):	979-8-3503-6224-4
ISSN:	2166-9570

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

TABLE OF CONTENTS

Design of Coarse-Fine CSI Feedback for Beamforming in Next-Generation WLANs.....	1
<i>Gaole Long, Gang Xie</i>	
Joint Trajectory Design and Resource Allocation Strategy for Underwater AUV-Aided MEC System.....	7
<i>Chaohua Song, Yisheng Zhao, Tengting Li, Zhiyi Hu, Peng Liu</i>	
FLIT: Multidimensional Data Fusion Localization System Based on Vision Transformer in Single Base Station Mode.....	13
<i>Jingyi Du, Luhan Wang, Zhaoming Lu, Haiwen Niu, Xiangming Wen</i>	
Interference Reduction Design for Improved Multitarget Detection in ISAC Systems.....	20
<i>Mamady Delamou, El Mehdi Amhoud</i>	
Joint FMCW Radar and 5G/6G Communications.....	26
<i>Markku Kiviranta, Ilkka Moilanen</i>	
RIS Phase Optimization for Near-Field 5G Positioning: CRLB Minimization.....	32
<i>Carla Macías, Montse Nájjar, Pau Closas</i>	
Radio Simultaneous Localization and Mapping with Moving Object Tracking in Dynamic Environments.....	38
<i>Xue Lv, Wan Xiang, Yawen Chen, Zhaoming Lu, Xiangming Wen</i>	
D ² -JSCC: Digital Deep Joint Source-Channel Coding for Semantic Communications	44
<i>Jianhao Huang, Kai Yuan, Chuan Huang, Kaibin Huang</i>	
Joint Communication and Computation Design for Probabilistic Semantic Communication System	51
<i>Jingjing Li, Jianxin Dai, Zhouxiang Zhao, Xu Gan, Zhaohui Yang, Zhaoyang Zhang, Mohammad Shikh-Bahaei</i>	
When Sign Language Meets Semantic Communications.....	57
<i>Vasileios Kouvakis, Stylianos E. Trevalakis, Alexandros-Apostolos A. Boulogeorgos, Theodoros Tsiftsis, Keshav Singh, Nan Qi</i>	
Neural Layer Design of Pragmatic Communication: Inspiration of the Structure of Natural Languages.....	62
<i>Enlun Yang, Ruilong Yin, Zhen Chen, Tianhao Guo</i>	
Sparsity-Based Channel Estimation for RIS-Aided MIMO mmWave Communication Systems	68
<i>Yash Motwani, Kali Krishna Kota, Praful D. Mankar</i>	
Beyond Diagonal IRS Assisted Ultra Massive THz Systems: A Low Resolution Approach.....	74
<i>Wali Ullah Khan, Chandan Kumar Sheemar, Zaid Abdullah, Eva Lagunas, Symeon Chatzinotas</i>	
Enhancing Indoor and Outdoor THz Communications with Beyond Diagonal-IRS: Optimization and Performance Analysis	79
<i>Asad Mahmood, Thang X. Vu, Symeon Chatzinotas, Björn Ottersten</i>	
WiFineTrack: Enabling Fine-Grained Position Tracking Using Commodity WiFi.....	85
<i>Gaolong Jiang, Zijun Han, Zhaoming Lu, Xiangming Wen, Jiawei Jiang</i>	

Beamforming Design for RIS-Aided MIMO ISAC Systems Based on Mutual Information	91
<i>Jin Li, Gui Zhou, Tantaog Gong, Nan Liu</i>	
Backscatter Communication System for Integrated Sensing and Communications	98
<i>Yuanming Tian, Dan Wang, Chuan Huang, Wei Zhang</i>	
Transmit Beamforming and User Selection for Multi-Static Integrated Sensing and Communications.....	104
<i>Dan Wang, Yuanming Tian, Chuan Huang, Hao Chen, Xiaodong Xu</i>	
CoWiPS: Cooperative Wireless Positioning to Identify Position Mis-Reports in Vehicular Scenarios.....	110
<i>Luis Javier Puente Lam, Pedro M. Santos</i>	
Assessing BLE RSSI Fingerprinting for Product Tracking in a Warehouse.....	116
<i>Moises Ramires, Ana Campaniço, Filipe Meneses, Adriano Moreira</i>	
Geo-Position Estimation and Navigation Under Satellite-Out-Of-Coverage Area Through UAV-Assisted Model	122
<i>Tirthankar Halder, Kirtan Gopal Panda, Aunullah Qaiser, Debarati Sen</i>	
User Throughput Optimization Via Deep Reinforcement Learning for Beam Switching in mmWave Radio Access Networks	128
<i>Ramin Hashemi, Vismika Ranasinghe, Teemu Veijalainen, Petteri Kela, Risto Wichman</i>	
AI Receiver Design with Deep Learning Based Channel Estimation and MIMO Detection	134
<i>Xiangzhao Qin, Sha Hu, Jiankun Zhang, Jing Qian, Hao Wang</i>	
Deep Neural Network-Based Phase Reconfiguration for Spectral Efficient IRS-Enabled mmWave Communication System.....	141
<i>Swastik Chakroborty, Soujanya Thallapalli, Debarati Sen</i>	
Priority-Focused Trajectory Planning for UAV-Assisted Full-Duplex OWC Systems.....	148
<i>Jiawei Hu, Zongyao Zhao, Xinke Tang, Yuhan Dong</i>	
Realistic Optimization Framework for UAV-BS Deployment in Integrated Aerial-Terrestrial Networks	154
<i>Balaji Kirubakaran, Elham Younesian, Jiri Hosek</i>	
Energy-Efficient UAV-Relayed High-Altitude Platform to Ground User Communication.....	161
<i>Yijia Zhang, Deepak Mishra</i>	
Low-Complexity Joint Power and Spectrum Management for Non-Terrestrial Networks.....	167
<i>Thang X. Vu, Cuong Le, Ashok Bandi, Symeon Chatzinotas</i>	
An SDN-Based Solution for Mega-Constellation Routing.....	173
<i>Marius Corici, Hauke Buhr, Hemant Zope, Manar Zaboub</i>	
Novel Radio Frame Design for Efficient Integration of Wireless Links into Time-Sensitive Networks	179
<i>Youssef El Kaisi, Javier Villares, Olga Muñoz</i>	
Distributed Performance Evaluation of 5G and Wi-Fi for Private Industrial Networks.....	185
<i>Christian Arendt, Steffen Fricke, Stefan Böcker, Christian Wietfeld</i>	
Federated Multi-Agent DRL for Radio Resource Management in Industrial 6G in-X Subnetworks.....	192
<i>Bjarke Madsen, Ramoni Adeogun</i>	

A Framework for Dynamic Configuration of Cellular Industrial Networks in Mobile Robotics Applications.....	199
<i>Junaid Ansari, Jordi Biosca Caro, Refik Soyak</i>	
Towards Beyond Communication 6G Networks: Status and Challenges.....	206
<i>Vasileios Tsekenis, Sokratis Barmounakis, Panagiotis Demestichas, Stefan Wänstedt, Mohammad Asif Habibi, Hans D. Schotten, Ozgur Umut Akgul, Hamed Hellaoui, Apostolos Kousaridas, Milan Zivkovic, Panagiotis Botsinis, Sameh Eldessoki, Milan Groshev, Torgny Palenius</i>	
Beam Training Optimization by Exploiting Sensing Information at MAC Layer.....	212
<i>Yiyun Jian, Lukasz Lopacinski, Nebojsa Maletic, Eckhard Grass</i>	
A Conditional Diffusion Model Based WiFi Sensing Enhancement Method.....	218
<i>Mingfeng Xu, Yang Li, Kaifeng Han, Yichen Zhao, Jiamo Jiang, Ying Du</i>	
Improving ISAC System Long-Range Sensing with Alternating Cyclic Prefix and Postfix Signals	224
<i>Yanni Zhou, Chaojun Xu, Jianguo Liu, Wenjian Wang, Fei Gao</i>	
A Technical Overview of Current “New Space” LEO-PNT Initiatives and Their Application Potential.....	230
<i>Wout Van Uytsel, Thomas Janssen, Maarten Weyn, Rafael Berkvens</i>	
Fast Expectation Propagation for Sparse Signal Reconstruction with a Fourier Dictionary	236
<i>Fangqing Xiao, Dirk Slock</i>	
Using Environmental Light and Wireless Signals for Enhanced Mobility Relationship Analysis	242
<i>Kai-Chun Huang, Sok-Ian Sou, Fang-Jing Wu</i>	
Dual-Functional Waveform Design for STAR-RIS Aided ISAC Via Deep Reinforcement Learning.....	248
<i>Jifa Zhang, Shiqi Gong, Weidang Lu, Chengwen Xing, Nan Zhao, Derrick Wing Kwan Ng, Dusit Niyato</i>	
Trajectory Optimization for Connectivity-Aware Inspection UAV: A Hybrid Algorithm of DRL and SA.....	254
<i>Wei Wang, Jiangling Cao, Dingcheng Yang, Fahui Wu, Yu Xu, Lin Xiao</i>	
Dynamic Beam Hopping and Resource Management Optimization Based on Deep Reinforcement Learning for Interference Avoidance	261
<i>Zeyuan Lv, Wenpeng Jing, Ziyuan Zheng, Zhaoming Lu, Changhao Liu, Xiangming Wen</i>	
Cooperative Wideband Spectrum Sensing: A Variational Bayesian Inference Approach.....	267
<i>Luca Arcangeloni, Enrico Testi, Andrea Giorgetti</i>	
Full-Duplex Massive MIMO Systems with RSMA	273
<i>Abdul-Manan Zakari Adams, Jonathan Obeng Agyapong, Suho Shin, Prince Anokye, Kyoung-Jae Lee</i>	
On Outage Performance of Backscatter NOMA System Under Imperfect DLI Cancellation.....	279
<i>Shubham Bisen, Justin Jose, Sandesh Jain, Aryan Kaushik, Vimal Bhatia</i>	
Latency-Aware Design for Computation Offloading and Content Caching in F-RANs.....	285
<i>Xuwei Zhang, Hongkun Yan, Yuan Ren, Fan Jiang, Junxuan Wang</i>	
Secure UAV-IRS Communication: A Hybrid Genetic Algorithms and Gradient Descent Approach.....	291
<i>Zina Chkirbene, Ala Gouissem, Ridha Hamila, Unal Devrim, Arafat Al-Dweik</i>	

Differentiated End-To-End Security Provisioning Mechanism for 5G Systems	298
<i>Vadim Gromovoy, Dmitri Moltchanov, Srikanthayani Srikanthaswara, Yi Zhang, Roman Glazkov, Nageen Himayat</i>	
Authentication at Physical Layer in 5G/6G Systems.....	304
<i>Robert Zakrzewski, Stephen Wales, Mark A. Beach</i>	
Advanced eHealth with Explainable AI: Secured by Blockchain with AI-Empowered Block Sensitivity for Adaptive Authentication.....	311
<i>Joy Dutta, Hossien B. Eldeeb, Tu Dac Ho</i>	
Robust and Energy Efficient Client Selection in Federated Learning Using Dynamic Gradient Filtering	318
<i>Francesco Colosimo, Floriano De Rango</i>	
Attention Aided Channel Prediction Scheme for Satellite-Terrestrial Networks.....	324
<i>Chuankai Cui, Wenpeng Jing, Zhaoming Lu, Xiangming Wen</i>	
Selective Early Retransmissions Based on Channel Classification for UAV Control Link.....	329
<i>Giulio Bartoli, Andrea Abrardo, Dania Marabissi, Andrea Stomaci</i>	
Low Complexity Deep Learning Models for LoRa Radio Frequency Fingerprinting.....	336
<i>Aqeel Ahmed, Bruno Quoitin</i>	
Towards Wireless Communications in Automation: An Overview	343
<i>Lisa Underberg, Michael Karrenbauer, Philipp Schulz, Qiaohan Zhang, Andreas Weinand, Niklas Bulk, Philipp Rosemann, Parva Yazdani, Armin Dekorsy, Gerhard Fettweis, Hans D. Schotten</i>	
Performance Impact of Co-Existing Indoor Private 5G NR Networks for Industrial Use	350
<i>Sebastian Bro Damsgaard, Ignacio Rodríguez, Preben Mogensen</i>	
Leveraging NOMA for Enhanced Uplink Throughput in Industrial Wireless Networks Over 802.11 DCF	357
<i>Sok-Ian Sou, Yinman Lee, Hao-Ting Wu</i>	
Observe to Sustain – How to Enable Beyond 5G Networks to Target Sustainability Goals	362
<i>Milad Akbari, Raffaele Bolla, Roberto Bruschi, Chiara Lombardo, Nicole Simone Martinelli, Beatrice Siccardi</i>	
Digital Twin Networks for Sustainable In-Network Computing in Future 6G Networks	369
<i>Marco Becattini, Giovanni Fontani, Leonardo Paroli, Antonio Iera</i>	
Joint Transceiver Design for Secure Full-Duplex Integrated Sensing and Communication.....	375
<i>Boxiang He, Fanggang Wang</i>	
Performance Analysis of Single Side Band Continuous Phase Modulation in Rayleigh Fading Channel.....	381
<i>Abhishek Kumar, Pranav Ghag, Naveen Gupta</i>	
Advancing Indoor Radar Sensing: Non-Stationary Channel Modelling, Cross-Section Estimation, and Validation Through Arm Movement Experiments.....	387
<i>Hasan Najjar, Rym Hicheri, Matthias Pätzold</i>	
On Characterization of Angular Dispersion and Fading Statistics of THz Communication Channels.....	394
<i>Maimoona Asad, Ernestina Cianca, Syed Junaid Nawaz, Tommaso Rossi, Mauro De Sanctis</i>	

Deep Hypernetwork-Based Robust Localization in Millimeter-Wave Networks.....	400
<i>Roman Klus, Jukka Talvitie, Benjamin Domae, Danijela Cabric, Mikko Valkama</i>	
Low Complexity Position Estimator for DL-AoD and UL-AoA for B5G and 6G Networks.....	407
<i>Abhijeet Abhimanyu Masal, Vikram Singh, Radhakrishna Ganti, J. Klutto Milleth</i>	
Efficient Industrial Sensor Networks: Passive Coherent Location for 6G-Based ISAC Systems	414
<i>Lukas Brechtel, Christoph Fischer, Hans D. Schotten</i>	
Joint Design of Recommendation and Caching in D2D-Assisted Edge Caching Networks	420
<i>Xuewei Zhang, Huang Zhang, Yuan Ren, Fan Jiang, Junxuan Wang</i>	
Digital Wireless Image Transmission Via Distribution Matching	426
<i>Pujing Yang, Guangyi Zhang, Yunlong Cai</i>	
Deep Learning-Based Mitigation of Nonlinear Hardware Impairments for THz Communication	432
<i>Vaishali Sharma, Prakhari Keshari, Sanjeev Sharma, Kuntal Deka, Sandesh Jain, Vimal Bhatia</i>	
DRL-Based Resource Management for Task-Centered Semantic Communication	439
<i>Ishtiaq Ahmad, Ramsha Narmeen, Mohamad A. Alawad, Yazeed Alkhrijah, Vincenzo Sciancalepore</i>	
Frequency and Time Shifting Strategies in Concurrent Transmission Under LoRa Networks.....	445
<i>Denis Andrés Maigualema Quimbata, Floriano De Rango</i>	
Optimal Beamforming and Outage Analysis for Max Mean SNR Under RIS-Aided Communication.....	451
<i>Kali Krishna Kota, Praful D. Mankar, Harpreet S. Dhillon</i>	
Indoor Radio Environment Map Construction Using Node Position Estimation for Smart Factories	457
<i>Hayato Mukasa, Kohei Yuzawa, Takeo Fujii, Koichi Adachi</i>	
Enhanced Intrusion Detection System for Multiclass Classification in UAV Networks	463
<i>Safaa Menssouri, Mamady Delamou, Khalil Ibrahim, El Mehdi Amhoud</i>	
Multi-Bit Secret Key Generation for LoRaWAN Based 6G mMTC Using Autoencoders.....	469
<i>Andreas Weinand, Sachinkumar B. Mallikarjun, Christoph Lipps, Michael Karrenbauer, Hans D. Schotten</i>	
Statistical CSI Based Robust and Secure Transmission Via Reconfigurable Intelligent Surfaces with Eavesdropper Location Uncertainty	475
<i>Tianbei Chen, Na Li, Xiaofeng Tao</i>	
Completion Time Minimization for Adaptive Semi-Asynchronous Federated Learning Over Wireless Networks.....	481
<i>Shiyi Gan, Kui Chen, Jing Zhang, Lin Xiang, Derrick Wing Kwan Ng, Xiaohu Ge</i>	
Decentralized Multi-State Q-Learning for NOMA-ALOHA Systems	488
<i>Xueyu Wu, Youngwook Ko, Andy M. Tyrrell</i>	
IPhone Satellite Waveform: An Experimental Performance Evaluation	494
<i>Hung Le Son, Robert T. Schwarz, Matthias G. Schraml, Andreas Knopp</i>	
IoT-NTN Communications Via Store-And-Forward Core Network in Multi-LEO-Satellite Deployments.....	499
<i>Victor Monzon Baeza, Giovanni Rigazzi, Sergio Aguilar Romero, Ramon Ferrus, Josep Ferrer, Suvidha Mhatre, Marco Guadalupi</i>	

Satellite Adaptive Onboard Beamforming Using Neuromorphic Processors	505
<i>Wallace A. Martins, Eva Lagunas, Nicolas Skatchkovsky, Flor Ortiz, Geoffrey Eappen, Osvaldo Simeone, Bipin Rajendran, Symeon Chatzinotas</i>	
End-To-End Delivery in LEO Mega-Constellations and the Reordering Problem.....	511
<i>Rasmus Sibbern Frederiksen, Thomas Gundgaard Mulvad, Israel Leyva-Mayorga, Tatiana Kozlova Madsen, Federico Chiariotti</i>	
Green UAV-Enabled Internet-Of-Things Network with AI-Assisted NOMA for Disaster Management	517
<i>Muhammad Ali Jamshed, Ferheen Ayaz, Aryan Kaushik, Carlo Fischione, Masood Ur-Rehman</i>	
Relief for the AMF – Transferring the Relay Functionality to a New Service	523
<i>Dennis Krummacker, Benedikt Veith, Christof Rauber, Lukas Brechtel, Daniel Lindenschmitt</i>	
Age of Information Minimization in QoS-Aware UAV-Assisted Wireless-Powered Data Collection	529
<i>Yijia Zhang, Deepak Mishra</i>	
A Deep Dive into KVIs for Ethics-Aware Networks	535
<i>Joannes Sam Mertens, Laura Galluccio, Alfio Lombardo</i>	
Gaps in Value-Driven Connectivity: A Case Study on Connectivity Challenges in Northern Europe	541
<i>Pasi Karppinen, Sameera Bandaranayake, Lotta Haukipuro, Yomn Elmistikawy, Harri Saarnisaari</i>	
Building the Foundations of Ethical Networks: Integrating Key Value Indicators for Social, Economic, and Environmental Impact	547
<i>Lucia Pintor, Luigi Atzori, Antonio Iera</i>	
A Multi-Armed Bandit Approach for User-Target Pairing in NOMA-Aided ISAC	553
<i>Ahmed Nasser, Abdulkadir Celik, Ahmed M. Eltawil</i>	
Cooperative Sensing Optimization Over Multiple Access Channel with Limited Backhaul Capacity	559
<i>Mingxin Chen, Ming-Min Zhao, An Liu, Min Li, Ming Lei</i>	
Fast Algorithm of Passive Bistatic Radar Detection for Weak Targets.....	565
<i>Kai Cui, Changlong Wang, Yongchan Gao, Chunheng Liu, Weike Feng, Feng Zhou</i>	
Joint Antenna Position and Transmit Signal Optimization for ISAC System with Movable Antenna Array.....	572
<i>Wan Xiang, Yawen Chen, Xuanrui Zhang, Zhaoming Lu, Xiangming Wen</i>	
EMF-Aware Waveform for Dual-Functional Radar Communication Systems.....	578
<i>Mariem Chemingui, Ahmed Elzanaty, Rahim Tafazolli</i>	
Comprehensive 3GPP-Compatible Channel Model for FR2-2 Short-Range Communications for Various Indoor Environments.....	583
<i>Yusuke Koda, Norichika Ohmi, Hiroaki Endo, Hiroshi Harada</i>	
Improved Time Cluster Stochastic Channel Model for mmWave Indoor Short-Range Communications.....	590
<i>Mihiro Hashimoto, Yusuke Koda, Hiroshi Harada</i>	
Comparative Analysis of Pathloss at 28 GHz and 140 GHz Frequencies in Identical Environment.....	596
<i>Jinyoung Lee, Jihoon Kim, Yunhwa Shin, Jeongsik Choi, Jaehyun Lee, Minsoo Na</i>	

Analysis of the Impact of Antenna Height on Path Loss in Factory Scenarios at 3.5 GHz	602
<i>Ignacio Rodriguez, Preben Mogensen, Fabiano Chaves</i>	
Correlation-Based Dual-Band THz Channel Measurements and Characterization in a Laboratory.....	609
<i>Yuanbo Li, Yiqin Wang, Yi Chen, Ziming Yu, Chong Han</i>	
Performance Analysis of Multistatic Integrated Sensing and Communication in the Near/Far Field	615
<i>Lorenzo Pucci, Saeid K. Dehkordi, Peter Jung, Enrico Paolini, Andrea Giorgetti, Giuseppe Caire</i>	
Bayesian Framework for Multi-User Cooperative Radio SLAM.....	622
<i>Hang Que, Jie Yang, Tao Du, Shuqiang Xia, Chao-Kai Wen, Shi Jin</i>	
Novel Approach to Dual-Channel Estimation in Integrated Sensing and Communications for 6G	628
<i>Alejandro Castilla, Saúl Fenollosa, Monika Drozdowska, Alejandro Lopez-Escudero, Sergio Micò-Rosa, Narcis Cardona</i>	
Optimizing Radio Resources for Radar Services in ISAC Systems by Deep Reinforcement Learning	634
<i>Carsten Smeenk, Zhixiang Zhao, Christian Schneider, Joerg Robert, Giovanni Del Galdo</i>	
Enhanced ToA Estimates with Positioning Reference Signal in Delay-Doppler Domain	640
<i>Mohammad Javad Emadi, Sha Hu, Hao Wang</i>	
Performance Trade-Off Between Communication and Sensing Based on AFDM Parameter Adjustment	647
<i>Hongjie Bao, Hongcheng Zhuang, Zhaocheng Wang, Gaokun Pang</i>	
A Machine Learning-Based Approach for Interference Mitigation to Enhance QoS and QoE in 5G O-RAN Networks.....	653
<i>Devanshu Anand, Mohammed Amine Togou, Gabriel-Miro Muntean</i>	
Edge/Cloud Slice Resource Allocation for Beyond 5G Networks with Distributed LSTM.....	659
<i>Ali Ehsanian, Thrasyvoulos Spyropoulos</i>	
Enabling Emerging Applications in 5G Through UE-Assisted Proactive PHY Frame Configuration	666
<i>Moinak Ghoshal, Subhramoy Mohanti, Dimitrios Koutsonikolas</i>	
Leveraging Reinforcement Learning for a Novel Traffic-Aware Scheduler in 5G NR IIoT Networks.....	673
<i>Luciano Miuccio, Salvatore Riolo, Giampaolo Cuzzo, Riccardo Marini</i>	
Precise Timing Over Beyond 5G Networks for Intelligent Transport in the Smart City	679
<i>Hongxing Li, Guochu Shou, Yaqiong Liu, Yihong Hu</i>	
Base Station-Enabled PBFT Consensus Network: An Outlook and Performance Analysis	685
<i>Ziyi Zhou, Yixuan Fan, Xinyi Lin, Lei Zhang, Muhammad Ali Imran, Oluwakayode Onireti</i>	
Dynamic Medium Access in Clustered NOMA IoT Networks Based on Reinforcement Learning	691
<i>Abhishek Kumar, Jorge Martinez-Bauset, Frank Y. Li</i>	
Edge Selection Non-Cooperative Game in IoT Edge Computing	697
<i>Kinda Khawam, Hussein Taleb, Hassan Fawaz, Samer Lahoud, Dominique Quadri, Steven Martin</i>	
Target Wake Time Scheduling for Time-Sensitive Networking in the Industrial IoT.....	703
<i>Corrado Puligheddu, Fabio Busacca, Riccardo Rusca, Francesco Raviglione, Claudio Casetti, Carla Fabiana Chiasserini, Sergio Palazzo</i>	

Zero-Touch Authentication for Device Deployment and Configuration in Industrial Internet of Things.....	710
<i>Roald Van Glabbeek, Ruben De Smet, Kris Steenhaut, An Braeken</i>	
Integrated Radio Resource and Cluster Allocation for Scalable mmWave Distributed MIMO.....	717
<i>Daichi Shirase, Jun Shikida, Kazushi Muraoka</i>	
Joint AP-UE Association and Power Factor Optimization for Distributed Massive MIMO	723
<i>Mohd Saif Ali Khan, Samar Agnihotri, R. M. Karthik</i>	
Optimizing Power Control and Pilot Allocation in Cell-Free Massive MIMO Via Deep Learning	729
<i>Muhammad Usman Khan, Enrico Testi, Marco Chiani, Enrico Paolini</i>	
Sociality Regime in User-Centric Clustering for Energy-Efficient Cell-Free MIMO Networks.....	735
<i>Ala Eddine Nouali, Mohamed Sana, Jean-Paul Jamont</i>	
On the Potential of Dynamic RF Channel Configuration for Energy Efficiency Optimization	741
<i>Antoine Dejonghe, Safaa Driouech, Zwi Altman, Francesco De Pellegrini</i>	
Multi-Gigabit Interactive Extended Reality Over Millimeter-Wave: An End-To-End System Approach	747
<i>Jakob Struye, Filip Lemic, Jeroen Famaey</i>	
Experimental Evaluation of a Millimeter Wave 4×2 Distributed MIMO-OFDM	754
<i>Antony Pottier, Jean-Baptiste Doré, Valérian Mannoni</i>	
Reconfigurable Intelligent Surface for Industrial Automation: mmWave Propagation Measurement, Simulation, and Control Algorithm Requirements	761
<i>Hamed Radpour, Markus Hofer, David Löschenbrand, Lukas Walter Mayer, Andreas Hofmann, Martin Schiefer, Thomas Zemen</i>	
Spatial Diversity Effect of Wireless Two-Way Interferometry for Spot Detection in mmWave Drone-To-Drone Communication.....	768
<i>Phuc Duc Nguyen, Ryosuke Isogai, Aire Suzuki, Keitarou Kondou, Satoshi Yasuda, Nobuyasu Shiga, Yozo Shoji</i>	
5GSliceStream-5G New Radio-Enabled Advanced MPEG-DASH Adaptive Streaming Solution with Active RAN Slicing.....	774
<i>Abid Yaqoob, Gabriel-Miro Muntean</i>	
Extended Reality (XR) Codec Adaptation in 5G Using Multi-Agent Reinforcement Learning with Attention Action Selection	781
<i>Pedro Enrique Iturria-Rivera, Raimundas Gaigalas, Medhat Elsayed, Majid Bavand, Yigit Ozcan, Melike Erol-Kantarci</i>	
IPA-DASH: Intelligent Proactive Adaptation for DASH Video Streaming at 5G Network Edge	787
<i>Shun-Ting Lei, Yu-An Chen, Ren-Cheng Chen, Chih-Chien Lo, Chi-Yu Li</i>	
QoS-Aware Route Navigation for Pedestrians Using 5G Cellular Networks.....	794
<i>Qiyu Jiang, Xing Tang, Jing Wang</i>	
Goal-Oriented Estimation of Multiple Markov Sources in Resource-Constrained Systems	800
<i>Jiping Luo, Nikolaos Pappas</i>	
GLIP: Electromagnetic Field Exposure Map Completion by Deep Generative Networks.....	806
<i>Mohammed Mallik, Davy P. Gaillot, Laurent Clavier</i>	

Transfer Learning with Less Negative Transfer for Multi-Agent Reinforcement Learning: Application and Evaluation in Base Station Control	811
<i>Masanobu Namiki, Yoshihiro Okawa, Natsuki Morita, Jun Kakuta, Masatoshi Ogawa</i>	
Evolving Semantic Communication with Generative Modelling	818
<i>Shunpu Tang, Qianqian Yang, Deniz Gündüz, Zhaoyang Zhang</i>	
AI-Empowered Mode Selection and Beamforming for STAR-RIS-Assisted Communications.....	824
<i>Mianyi Zhang, Yunlong Cai, A. Lee Swindlehurst</i>	
Deep Learning Based Uplink Power Allocation in Multi-Radio Dual Connectivity Heterogeneous Wireless Networks.....	830
<i>Md. Habibur Rahman, Mayukh Roy Chowdhury, Abida Sultana, Asheesh Tripathi, Aloizio Pereira Da Silva</i>	
Robust Model Ensembling Against Wireless Adversarial Attacks for Semantic Communications.....	836
<i>Kequan Zhou, Guangyi Zhang, Yunlong Cai, Qiyu Hu, Guanding Yu</i>	
Hybrid Beamforming for ISAC Systems with Reconfigurable Subarray Architecture	842
<i>Xin Jin, Tiejun Lv, Wei Ni</i>	
Exploiting Active RIS for Covert Communication in mmWave ISAC with Finite Blocklength.....	848
<i>Zhipeng Liu, Xi Li, Heli Zhang</i>	
On Beamforming Design for ISAC Transceiver in Presence of Self-Interference	854
<i>Mohammad Javad Emadi, Sha Hu, Jing Qian, Hao Wang</i>	
Spectral and Spatial Transformer for Multi-Target Estimation in ISAC	861
<i>Bowen Zhang, Geoffrey Ye Li</i>	
Staggered Comb Reference Signal Design for Integrated Communication and Sensing	867
<i>Rui Zhang, Shawn Tsai, Tzu-Han Chou, Jiaying Ren</i>	
Neural Network Aided TeraHertz Backhaul Communications Using One-Bit ADCs.....	874
<i>Sahar Molla Aghajanzadeh, Ming Jian</i>	
Transformer Neural Network-Based Behavioral Modeling and Predistortion for Wideband Power Amplifiers.....	880
<i>Lesthuruge Silva, Ambagahawela Rathnayake, Hossein Rezaei, Nandana Rajatheva</i>	
Goal-Oriented CSI Feedback for MRT-Precoded Massive MIMO Communication Systems.....	886
<i>Lei Chen, Li Sun, Yuwei Wang, Yichen Wang</i>	
A Flexible Low-Complexity DNN Solution for Power Control in Cell-Free Massive MIMO	892
<i>Guillermo García-Barrios, Manuel Fuentes, David Martín-Sacristán</i>	
Deep Learning-Aided Phase Noise Mitigation for Backhaul Communication: A Model-Driven Approach	898
<i>Peyman Neshastegaran, Ming Jian</i>	
Learning-Based Beam Steering for Long-Range Orbital Angular Momentum Mode Multiplexing.....	904
<i>Mahtab Ataeshojai, Peyman Neshastegaran, Ming Jian</i>	
A ResNet Approach for AoA and AoD Estimation in Analog Millimeter Wave MIMO Systems.....	910
<i>Diego Lloria, Sandra Roger, Carmen Botella-Mascarell, Maximo Cobos, Tommy Svensson</i>	

Capacity-Net-Based RIS Precoding Design Without Channel Estimation for mmWave MIMO System	916
<i>Chun-Yuan Huang, Po-Heng Chou, Wan-Jen Huang, Ying-Ren Chien, Yu Tsao</i>	
Constrained Deep Actor-Critic Based Transmission Power Scheduling for Delay-Sensitive Applications.....	922
<i>Kexuan Wang, An Liu</i>	
Channel Charting Based Pilot Allocation in MIMO Systems	928
<i>Bushra Shaikh, Pere Garau Burguera, Hanan Al-Tous, Markku Juntti, Bilal Muhammad Khan, Olav Tirkkonen</i>	
Gridding Based Reconfigurable Intelligent Surface-Aided Wireless Network Optimization	935
<i>Haoyu Lu, Hongcheng Zhuang, Lin Zhang, Zhaocheng Wang</i>	
Enhancing Urban Mobile Communications with Dynamic 3D Beam Tracking: A 2-Bit Phase-Quantized Adaptive RIS Approach.....	941
<i>Yufei Zhao, Xiaoyan Ma, Ziyue Wang, Yile Liu, Chau Yuen, Yong Liang Guan</i>	
RIS-Assisted Multicasting Through Novel Group Formation for Highly-Directional Communications.....	946
<i>Gianluca Brancati, Olga Chukhno, Antonella Molinaro, Giuseppe Araniti</i>	
Capacity Enhancement for D2D Relay Communications Based on UE-Specific RIS	952
<i>Xufeng Ma, Hongcheng Zhuang, Lin Zhang, Gaokun Pang</i>	
Impact of Spatial Rejection and Temporal Traffic Dynamics on Interference Correlation	958
<i>Yi Zhong, Zhuoling Chen, Xiaohu Ge, Junliang Ye</i>	
Radio Resource Allocation for Extreme URLLC Under Partial Knowledge of Arrival Distributions	965
<i>Mohammed Abdullah, Salah Eddine Elayoubi, Tijani Chahed, Abdel Lisser</i>	
Reliability-Oriented Uplink Resource Management in Ultra-Low Latency Mobile Networks	972
<i>Xing Lu, Xiong Li, Qimei Cui, Xuefei Zhang, Xiaofeng Tao</i>	
Multi-Agent Proximal Policy Optimization for Dynamic Multi-Channel URLLC Access.....	978
<i>Benoît-Marie Robaglia, Marceau Coupechoux, Dimitrios Tsilimantos</i>	
Achieving Latency-Aware V2V Communication with Distributed Antenna Systems.....	985
<i>Vishakha Shukla, Hugues Tchouankem, Joerg Robert</i>	
Age-Of-Information in Tandem Queues with Delayed Feedback: Zero-Wait Vs. Pipelining	991
<i>Mahsa Noroozi, Markus Fidler, Jaya Prakash Champati, Joerg Widmer</i>	
Carbon Efficiency Modeling and Analysis of Renewable-Energy-Powered Cellular Networks	998
<i>Yuxi Zhao, Junliang Ye, Xiaohu Ge, Iztok Humar</i>	
Energy-Efficient Internet of Things Monitoring with Content-Based Wake-Up Radio.....	1004
<i>Anay Ajit Deshpande, Federico Chiariotti, Andrea Zanella</i>	
Multi-Agent Deep Reinforcement Learning Based Information-Energy Collaboration in Vehicle Edge Computing Networks	1010
<i>Yaoyu Feng, Biling Zhang, Jung-Lang Yu</i>	
Batteryless BLE and Light-Based IoT Sensor Nodes for Reliable Environmental Sensing.....	1016
<i>Jimmy Fernandez Landivar, Khojiakbar Botirov, Hazem Sallouha, Marcos Katz, Sofie Pollin</i>	

Zero-Mobility Assistance Information for Power Saving in Beyond 5G Static IoT Devices	1022
<i>Miguel Cantero, David Martín-Sacristán, Manuel Fuentes</i>	
Simulation of an ARP Spoofing Attack on the E2 Interface in Open RAN.....	1027
<i>Jihye Kim, Jaehyoung Park, Jong-Hyouk Lee</i>	
Experimental Approach to Internal Security Threats for 5G-Advanced Core Networks.....	1033
<i>Jaehyoung Park, Jihye Kim, Seungchan Woo, Kyungmin Park, Jonghyun Kim, Jong-Hyouk Lee</i>	
Towards 6G-UAV Disaster-Resilient Networks	1039
<i>Youssef Drif, Abhishek Bera, Jorge Querol, Miguel Olivares-Mendez, Symeon Chatzinotas</i>	
Protection Zone Requirement of FSS for the Coexistence of 5G-FSS in the C-Band (Case Study of Indonesia)	1045
<i>Ignatius Daru Kristiadi, Ar Risqi Herlambang Raharjo, Kemal Nasir</i>	
Disturbance-Avoidant Wireless Gesture Recognition with 5G-NR Cellular Signal.....	1051
<i>Rui Peng, Yafei Tian, Shengqian Han</i>	
Beamforming and Trajectory Design for Active IRS-Assisted UAV Relaying Systems	1057
<i>Qiulei Huang, Zhaohui Song, Zehui Xiong, Guanjun Xu, Nan Zhao, Dusit Niyato</i>	
Joint Computation Offloading and Trajectory Planning for Multi-UAV Cooperative Target Search	1063
<i>Yifei Liu, Xiaoshuai Li, Junan Yang, Hui Liu, Pengjiang Hu, Yuanrui Chen</i>	
Leveraging Meta-DRL for UAV Trajectory Planning and Radio Resource Management.....	1069
<i>Leonardo Spampinato, Enrico Testi, Chiara Buratti, Riccardo Marini</i>	
Long-Term Utility Optimization-Based Mission Assignment and Trajectory Planning for Multi-UAV Cooperation Scenarios.....	1075
<i>Xinyu Ai, Xuan Li, Ningyu Yang, Rong Chai</i>	
Dynamic 3D UAV Placement Optimization: Improved Bonobo Optimizer for Enhanced Coverage and Communication.....	1081
<i>Selma Yahia, Sylia Mekhmoukh Taleb, Valeria Loscri, Amylia Ait Saadi, Tu Dac Ho, Van Nhan Vo, Hossien Eldeeb, Sami Muhaidat</i>	
Enabling Ultra-Dense, Open-RAN, Vehicular Networks with Non-Linear MIMO Processing	1088
<i>George N. Katsaros, Konstantinos Nikitopoulos</i>	
Outage Probability Analysis of Multi-Connectivity in UAV-Assisted Urban mmWave Communications.....	1094
<i>Zhengxin Cao, Jing Zhang, Lin Xiang, Xiaohu Ge</i>	
Enhancing 6G mmWave Beam Prediction in V2I with Class Imbalance Mitigation	1101
<i>Omikumar B. Makadia, Dhaval K. Patel, Mehul S. Raval, Mukesh Zaveri, S. N. Merchant</i>	
Exploiting RF-EH to Power FSO Communications: A Vehicular Network Scenario.....	1107
<i>Federico Librino, Francesca Martelli, Giovanni Resta</i>	
Distributed Resource Allocation for D2D Multicast in Underlay Cellular Networks	1114
<i>Mohd Saif Ali Khan, Ajay Bhardwaj, Samar Agnihotri</i>	
Enhancing Pre-Copy Strategy for Efficient Containerized Stateful Service Migration in MEC	1120
<i>Jiaxuan Chen, Yinglei Teng, Shijun Ma, Teng Zhong, Man Yi</i>	

Adaptive Routing Protocol for Mobile AdHoc Networks Based on Topology and Node Change	1126
<i>Jingjing Zhang, Hongcheng Zhuang, Lin Zhang</i>	
Experimental Demonstration of Contact-Free Localisation Using Real-Time Backscatter Sensing.....	1132
<i>Alexander Nicholas Koch-Lowndes, Amus Chee Yuen Goay, Yirui Deng, Deepak Mishra, Aruna Seneviratne</i>	
An Empirical Study of QoE Estimation for Video Streaming Services Using Crowdsourcing.....	1138
<i>Adrián Pérez Aguilar, Mattia Lecci, Almudena Díaz Zayas, Germán Corrales Madueño, Hua Wang</i>	
5G NR V2V Communications for Enhanced Collision Avoidance: The EEBL Application Case	1144
<i>Aziza Ben-Mosbah, Yishen Sun, Samantha Gamboa, Wesley Garey, Chunmei Liu</i>	
Label Expansion Through Walking Trajectories for Wi-Fi CSI-Based Indoor Localization	1151
<i>Wei-Rong Chen, Chih-Yu Lin, Yu-Chee Tseng</i>	
Effective and Efficient Beam Tracking with Green Learning	1157
<i>Chen Chung, C.-C. Jay Kuo, Shang-Ho Lawrence Tsai</i>	
Green-Learning Based Design of RIS-Assisted MIMO Systems Based on Implicit CSI	1163
<i>Tzu-Ching Liao, Wan-Jen Huang, C.-C. Jay Kuo</i>	
RIS-Augmented Millimeter-Wave MIMO Systems for Passive Drone Detection	1169
<i>Jiguang He, Aymen Fakhreddine, George C. Alexandropoulos</i>	
STAR-RIS for Reliable Multi-User Networks: Outage and Diversity Analysis.....	1175
<i>Mostafa Samy, Hayder Al-Hraishawi, Abuzar B. M. Adam, Konstantinos Ntontin, Symeon Chatzinotas, Björn Ottersten</i>	
Bit Error Analysis of a Dual-Hop Mixed RF-THz Wireless System with AF Relaying.....	1182
<i>Anil Yadav, Ranjan K. Mallik</i>	
3D Reconfigurable Intelligent Surfaces for Satellite-Terrestrial Networks.....	1188
<i>Islam M. Tanash, Risto Wichman</i>	
Performance Analyses of Satellite Cluster System in Mega-Constellations.....	1194
<i>Miyeon Lee, Suchoel Kim, Minje Kim, Dong-Hyun Jung, Junil Choi</i>	
Adaptive Carrier Aggregation for Enhanced Reliability in Multi-Band GEO Satellite Systems	1200
<i>Mohammed Al-Ansi, Jorge Querol, Madyan Alsenwi, Eva Lagunas, Joan Bas, Symeon Chatzinotas</i>	
User-Centric Beam Selection and Precoding Design for Coordinated Multiple-Satellite Systems.....	1206
<i>Vu Nguyen Ha, Duy H. N. Nguyen, Juan C.-M. Duncan, Jorge L. Gonzalez-Rios, Juan A. Vásquez Peralvo, Geoffrey Eappen, Luis M. Garces-Socarras, Rakesh Palisetty, Symeon Chatzinotas, Björn Ottersten</i>	
Coverage Analysis Under Multi-Altitude Orbits for Multi-Layer Low Earth Orbit Satellite Constellations Using Stochastic Geometry	1212
<i>Jiapei Ma, Zhiquan Hu, Yujing Zhang, Zhaoming Lu, Xiangming Wen</i>	
Distributed Deployment of Aerial Base Stations Considering LoS/NLoS Conditions.....	1218
<i>Makitaro Furuta, Tatsuaki Kimura, Tetsuya Takine</i>	
OTFS System-Based on WFrFFT with Optimal Design Complexity	1224
<i>Renikunta Mallaiah, Ganesh Miriyala, Venkata Mani Vakamulla, Sudhan Majhi</i>	

Energy-Aware Trajectory Design for UAV-Mounted Full-Duplex Relays	1230
<i>Dimitrios Tyrovolas, Nikos Mitsiou, Thomas Boufikos, Sotiris Tegos, Prodromos-Vasileios Mekikis, Panagiotis Diamantoulakis, Sotiris Ioannidis, Christos Liaskos, George Karagiannidis</i>	
ConPA: A Contention-Free Mechanism with Power Adaptation for Beyond Listen-Before-Talk.....	1236
<i>Francesco Wilhelmi, Paolo Baracca, Gianluca Fontanesi, Lorenzo Galati-Giordano</i>	
Information Carrying Slotting Principles for Unsourced Coded Slotted Random Access	1242
<i>Mahdi Bayanifar, Shahab Ghasemi, Renaud-Alexandre Pitaval, Branislav M. Popovic, Olav Tirkkonen</i>	
MAC Address De-Randomization Using Multi-Channel Sniffers and Two-Stage Clustering	1248
<i>Giovanni Baccichet, Corrado Innamorati, Alessandro E. C. Redondi, Matteo Cesana</i>	
NCSMA: A NOMA-Based CSMA/CA Protocol for Ad Hoc Networks.....	1254
<i>Guangqian Peng, Dongxu Fang, Boao Fu, Ningbo Zhang</i>	
Cooperative Multicast for Multi-Connected XR Devices with Joint HARQ Processing	1260
<i>Muhammad Ahsen, Boyan Yanakiev, Claudio Rosa, Carles Navarro Manchon, Ramoni Adeogun</i>	
Joint Server Activation and Network Slice Deployment in Mobile Edge Computing Networks	1266
<i>Yijian Hou, Kaisa Zhang, Zibin Chen, Xuewen Liu, Gang Chuai, Weidong Gao, Xiangyu Chen</i>	
Knowledge-Driven Rendering Task Offloading Strategy for Virtual Reality in MEC-Enabled Wireless Networks.....	1273
<i>Ge Qi, Ruijin Sun, Nan Cheng, Wei Quan, Haibo Zhou, Zhou Su, Changle Li</i>	
Pareto Optimal Task Offloading and Mobile Robots Paths in Edge Cloud Assisted mmWave Networks	1279
<i>Yijing Ren, Vasilis Friderikos</i>	
Joint Transmission Rate and Cost Network Switching Mechanism Based on DQN for High-Speed Vehicle.....	1285
<i>Yufang Zhang, Chunze Jia, Ruyi Xu, Peng Wang</i>	
Com ² : An Integrated Framework for Communication and Computation Delay Trade-Off.....	1291
<i>Yuhao Pan, Xiucheng Wang, Zhisheng Yin, Nan Cheng, Yuchuan Fu, Haixia Peng, Changle Li</i>	
Microservice Deployment for Satellite Edge AI Inference Via Deep Reinforcement Learning.....	1297
<i>Zhiyong Yu, Hei Victor Cheng, Zhanpeng Yang, Xin Liu, Yuning Jiang, Yong Zhou, Yuanming Shi</i>	
On the Role of Non-Terrestrial Networks for Boosting Terrestrial Network Performance in Dynamic Traffic Scenarios	1303
<i>Henri Alam, Antonio De Domenico, Florian Kaltenberger, David López-Pérez</i>	
Packet Collision Probability Analysis in Contention-Based Direct-To-Satellite IoT Uplink	1310
<i>Enrico Testi, Enrico Paolini</i>	
DRL-Based Task Scheduling and Edge Collaboration for LEO Satellite Networks	1316
<i>Zehui Zhao, Heli Zhang, Kailin Wang, Xi Li</i>	

Next-Generation Satellite IoT Networks: A HAPS-Enabled Solution to Enhance Optical Data Transfer	1322
<i>Ethan Fettes, Pablo G. Madoery, Halim Yanikomeroglu, Gunes Karabulut Kurt, Colin Bellinger, Stéphane Martel, Khaled Ahmed, Sameera Siddiqui</i>	
A Parametric Power Model of Multi-Band Sub-6 GHz Cellular Base Stations Using On-Site Measurements.....	1328
<i>Louis Golard, Youssef Agram, François Rottenberg, François Quitin, David Bol, Jérôme Louveaux</i>	
Photonics-Based Sub-Terahertz Band Wireless Fronthaul with Commercially Available Optical Fiber-Based Fronthaul Equipments and Optical Transceivers.....	1335
<i>Seung-Hyun Cho, Sang-Rok Moon, Sooyeon Kim, Wonkyoung Lee, Minkyu Sung, Seung Hwan Kim, Hyun Jae Lee, Joon Ki Lee</i>	
A Two-Stage Spatial-Oversampling Codebook and Field Trials of RIS-Aided Wireless Communications.....	1341
<i>Xilong Pei, Haifan Yin, Li Tan, Lin Cao</i>	
Direct Satellite Access Using Multi-Dimensional Constellations	1347
<i>Erkai Chen, Renaud-Alexandre Pitaval, Branislav M. Popovic, Yi Qin</i>	
Experimental Validation of a Bluetooth-Based Speech Audio Broadcasting Model.....	1354
<i>Mathias Baert, Jowan Pittevils, Bart Moons, Jeroen Hoebeke</i>	
A Unified Deep Transfer Learning Model for Accurate IoT Localization in Diverse Environments.....	1361
<i>Abdullahi Isa Ahmed, Yaya Etiabi, Ali Waqar Azim, El Mehdi Amhoud</i>	
Systematic Performance Monitoring and Examination of ZigBee Networks.....	1367
<i>Abhigya Parashar, Firew Siyoum, Ferry Barrois, Majid Nabi</i>	
A Robust TCN-Based Energy Forecasting Framework for IoT-Controlled Smart Buildings in Smart Cities.....	1373
<i>Jin-Xian Liu, Jenq-Shiou Leu</i>	
Biocompatible Low-Cost Antennas Over Flexible Substrates for IoT-Health Applications.....	1379
<i>Sergio Castelló-Palacios, Eva Antonino-Daviu, Antonio Vila-Jiménez, Ana Vallés-Lluch, Narcís Cardona, Concepcion Garcia-Pardo</i>	
Performance and Statistical Characterization of Stochastic Diffusion-Based Molecular Communication System.....	1385
<i>Nihit Bhatnagar, Sandeep Joshi</i>	
Channel Estimation in OFDM Systems Using Coherence Distance Regions	1391
<i>Daniel Brown, Brian Salmon, Evan Franklin</i>	
Channel Measurements at 6.4 GHz for IEEE 802.11be WLAN.....	1397
<i>Nida Chaudhry, Simon L. Cotton, Nidhi Simmons, Claudio R. C. M. Da Silva, Okan Yurduseven, Paschalis C. Sofotasios, Michail Matthaiou, Trung Q. Duong</i>	
An Adaptive Shooting and Bouncing Rays Method for Ray-Tracing Channel Modeling Assisted by Environmental Prior Information for 6G.....	1404
<i>Yubin Luo, Li Yu, Yinghe Miao, Yuxiang Zhang, Jianhua Zhang</i>	
Attenuation Modeling for Atmospheric Turbulence in Terahertz UAV Channels	1410
<i>Weijun Gao, Chong Han, Zhi Chen</i>	

Performance of Slotted ALOHA in User-Centric Cell-Free Massive MIMO.....	1416
<i>Dick Maryopi, Daud Al Adumy, Osman Musa, Peter Jung, Agus Virgono</i>	
Cost-Effectiveness Analysis and Design of Cost-Efficient Cell-Free Massive MIMO Systems.....	1422
<i>Wei Jiang, Hans D. Schotten</i>	
Non-Uniform 3D Massive MIMO Arrays Topology Optimization for Near-Field Communications	1428
<i>Yunhui Guo, Yang Zhang, Lihua Pang, Yuanwei Liu, Zhiguo Ding</i>	
Low-Complexity Block-Krylov-Beamspace Beamforming for Extreme Massive MIMO.....	1433
<i>Nuan Song, Tao Yang</i>	
Performance Evaluation of Downlink IRS and Uplink Cluster NOMA-Aided WPCN	1439
<i>Reza Jafari, Abraham O. Fapojuwo</i>	
Beamforming Design for Two-Antenna MISO-NOMA System with Statistical CSI.....	1445
<i>Shenhong Li, Mahsa Derakhshani, Chung Shue Chen, Jun Zhang, Sangarapillai Lambotharan</i>	
Superdirective Beamforming Under Limited Excitation Power Ranges	1452
<i>Jingcheng Xie, Haifan Yin, Liangcheng Han</i>	
Material Permittivity and Conductivity Estimation from 2 to 260 GHz and Extension of the ITU-R P.2040 Model at Frequency Above 100 GHz	1458
<i>Jean-Marc Conrat, Mohamed Abdelbasset Aliouane, Jean-Cristophe Cousin, Xavier Begaud</i>	
Radio Propagation Graph Representation Learning: An Implementation in Multi-Hop Path Representation	1464
<i>Shimon Takagi, Shinsuke Bannai, Koya Sato, Takeo Fujii, Katsuya Suto</i>	
ELAA Near-Field Localization and Sensing with Partial Blockage Detection	1471
<i>Hui Chen, Pinjun Zheng, Yu Ge, Ahmed Elzanaty, Jiguang He, Tareq Y. Al-Naffouri, Henk Wymeersch</i>	
Holistic Mobility Management Leveraging Risk Averse Reinforcement Learning.....	1477
<i>Muhammad Umar Bin Farooq, Shahrukh Khan Kasi, Marvin Manalastas, Chunhui Zhu, Baoling Sheen, Ali Imran</i>	
L1/L2 Triggered Mobility (LTM) as Baseline for Mobility in 6G.....	1483
<i>Antonino Orsino, Rida Khan, Claes Tidestav, Ioanna Pappa</i>	
Towards Deriving Analytical Model for Optimal Cell Overlap to Reduce Handover Signaling.....	1489
<i>Muhammad Umar Bin Farooq, Syed Muhammad Asad Zaidi, Azar Taufique, Ali Imran</i>	
Analyzing Multi-Hop WSN Connectivity Using Poisson Point Processes: A Layered Model for Quality of Service Assurance	1495
<i>Arash Sahbafard, Fjolla Ademaj-Berisha, Davide Dardari, Andreas Springer, Martin Voigt Vejling, Hans-Peter Bernhard</i>	
CNN Autoencoder Resizer: A Power-Efficient LoS/NLoS Detector in MIMO-Enabled UAV Networks	1501
<i>Azim Akhtarshenas, Navid Ayoobi, David Lopez-Perez, Ramin Toosi, Matin Amoozadeh</i>	
Joint Communication-Motion Planning for UAV Swarm Against Jamming with Multi-Agent Deep Reinforcement Learning.....	1507
<i>Zhenxin Guo, Yiming Liu, Yipeng Wang, Yue Meng, Baoling Liu</i>	

Joint ADS-B in 5G for Hierarchical Aerial Networks: Performance Analysis and Optimization	1514
<i>Ziye Jia, Yiyang Liao, Chao Dong, Lijun He, Qihui Wu, Lei Zhang</i>	
Aerial IRS with Robotic Anchoring: Novel Adaptive Coverage Enhancement in 6G Networks	1521
<i>Xinyuan Wu, Vasilis Friderikos</i>	
Energy Efficient Delay-Aware Design for MEC-Enabled DT-Assisted Air-Ground Network	1527
<i>Muhammet Hevesli, Abegaz Mohammed Seid, Aiman Erbad, Mohamed Abdallah</i>	
Joint Green and Deadline-Aware Path Planning for Rotary-Wing UAV-Assisted Internet-Of-Things.....	1533
<i>Akram Khelili, Halima Elbiaze, Essaid Sabir</i>	
Collaborative Offloading with Temporal Tolerance in Cybertwin-Enabled 6G	1540
<i>Kaiyue Luo, Yumei Wang, Yu Liu</i>	
Digital Twin for Advanced Network Planning: Tackling Interference	1546
<i>Juan C. Estrada-Jiménez, Valdemar R. Farré-Guijarro, Diana C. Alvarez-Paredes, Marie-Laure Watrinet</i>	
Hybrid Quantum-Classical Computing in Federated Learning with Data Heterogeneity	1552
<i>Keita Hisamori, Yi-Han Chiang, Hai Lin, Yusheng Ji</i>	
An AI-Driven Framework for Enhancing Resilience in Propagation Models to Enable Digital Twin	1558
<i>Waseem Raza, Fahd Ahmed Khan, Haneya Naeem Qureshi, Usama Masood, Ali Imran</i>	
On the Impact of PRB Load Uncertainty Forecasting for Sustainable Open RAN	1564
<i>Vaishnavi Kasuluru, Luis Blanco, Cristian J. Vaca-Rubio, Engin Zeydan</i>	
Learning-Based Hand Gesture Classification Using Channel Impulse Response with UWB.....	1571
<i>Clément Samanos, Han Miao, Sitian Li, Alexios Balatsoukas-Stimming, Andreas Burg</i>	
Modeling Configuration-Performance Relation in a Mobile Network: A Data-Driven Approach	1577
<i>Michal Panek, Ireneusz Jablonski, Michal Wozniak</i>	
Road Anomalies Detection Using Low-Cost Sensors and Machine Learning	1583
<i>Mattia Pasti, Enrico Ridolfo, Andrea Zanella</i>	
Data-Driven Radio Resource Allocation Relying on Domain Adversarial Neural Networks	1589
<i>Yuyang Zheng, Youjia Chen, Yuchuan Ye, Xi Wang, David López-Pérez, Jinsong Hu, Haifeng Zheng</i>	
Economics of Integrated Sensing and Communication Service Provision in 6G Networks.....	1595
<i>Luis Guijarro, Maurizio Naldi, Vicent Pla, Jose R. Vidal</i>	
Improving Interpolation Accuracy of Path Loss in Kriging Using Anisotropy of Shadowing Correlation.....	1602
<i>Motoharu Sasaki, Naoki Shibuya, Kenichi Kawamura, Mitsuki Nakamura, Minoru Inomata, Wataru Yamada, Tomoaki Ogawa</i>	
Area Coverage Assessment and Optimisation by Mesh-Connected Mobile Robots	1608
<i>Marius Jurt, Adnan Aijaz, Yichao Jin</i>	
Weighted Ergodic Sum Secrecy Rate Maximization in a NOMA System with Untrusted User Terminals.....	1613
<i>Pradosh Kumar Hota, Deepak Mishra, Ravikant Saini, Ankit Dubey</i>	

ResCTC: Resilience in Wireless Networks Through Cross-Technology Communication	1619
<i>Anatolij Zubow, Isabel Von Stebut, Sascha Rösler, Falko Dressler</i>	
Similarity of Wireless Multiband Propagation in Urban Vehicular-To-Infrastructure Scenarios	1625
<i>Markus Hofer, David Löschenbrand, Faruk Pasic, Danilo Radovic, Benjamin Rainer, Jiri Blumenstein, Christoph F. Mecklenbräuker, Seun Sangodoyin, Hussein Hammoud, Gerald Matz, Andreas F. Molisch, Thomas Zemen</i>	
RF Chain-Free mmWave Transmission: Modeling and Experimental Verification.....	1631
<i>M. Yaser Yagan, Ibrahim Hökelek, Ali E. Pusane, Ali Görçin</i>	
Nonlinear Sparse Channel Estimator for Hybrid MIMO Millimeter Wave Communication	1637
<i>Sandesh Jain, Praveen Kumar Singya, Vidya Bhasker Shukla, Sudhan Majhi, Vimal Bhatia</i>	
Power Angular Spectrum and Spatial Covariance Estimation for Wideband mmWave RIS Channels	1644
<i>Hakan Ozen, Gokhan M. Guvensen</i>	
IRS-Aided Over-The-Air Image Processing: Single Antenna Imaging.....	1650
<i>Sora Tahira, Takuya Fujihashi, Takumi Takahashi, Shunsuke Saruwatari, Takashi Watanabe</i>	
Characterization of the Near-Field Focusing Region in the Radial Domain for Phased-Array Antennas.....	1657
<i>Mehdi Monemi, Mehdi Rasti, Matti Latva-Aho</i>	
Why to Use the Phase in Time-Encoding Modulation and Its Effect on the Spectral Efficiency	1663
<i>Florian Roth, Meik Dörpinghaus, Stephan Zeitz, Florian Gast, Gerhard Fettweis</i>	
Probabilistic Shaping for Rotationally Symmetrical Two-Dimensional Constellations	1669
<i>Ruimin Yuan, Xinyuanmeng Yao, Jiayi Yang, Baoming Bai, Xiao Ma</i>	
Wavelet-Based Adaptive Network for Automatic Modulation Recognition Under Low SNR.....	1675
<i>Yu Li, Haoyue Tan, Xiaoran Shi, Wanting Zhou, Feng Zhou</i>	
Enhanced OTFS Using Channel Modulation	1681
<i>Nabarun Roy, A. Chockalingam</i>	
A Novel Trellis-Coded Binary Modulation for Extreme Coverage in 6G	1687
<i>Markku Renfors, Oskari Tervo, Esa Tirola, Kari Hooli, Mikko Valkama</i>	
Efficient Soft-Output List Decoding of Polar Codes for Iterative Detection and Decoding in MIMO System	1693
<i>Huiyu Feng, Suwen Song, Zhongfeng Wang</i>	
Beyond Seismographs: A Consensus Algorithm for Earthquake Early Warning at the Edge.....	1699
<i>Leonardo D'Errico, Claudia Rinaldi, Carlo Centofanti, Fabio Franchi, Fabio Graziosi</i>	
Hierarchical Deep Reinforcement Learning with Information Freshness in Smart Agriculture Applications.....	1705
<i>Luciana Nobrega, Atefeh Termehchi, Tingnan Bao, Aisha Syed, William Sean Kennedy, Melike Erol-Kantarci</i>	
CPU Throttling-Aware AI-Based Autoscaling for Kubernetes.....	1712
<i>Menuka Perera Jayasuriya Kuranage, Elisabeth Hanser, Ahmed Bouabdallah, Loutfi Nuaymi, Philippe Bertin</i>	
Quantum-Safe Edge Applications: How to Secure Computation in Distributed Computing Systems	1719
<i>Claudio Cicconetti, Dario Sabella, Pietro Noviello, Gennaro Davide Paduanelli</i>	

Initial Characterization of Healthy and Malignant in Vivo and Ex Vivo Human Colon Tissues Under Surgery Procedures.....	1725
<i>Sergio Micó-Rosa, Concepcion Garcia-Pardo, Matteo Frasson, Narcís Cardona, Vicente Pons-Beltrán, Pedro López-Muñoz</i>	
Enhancing Robotic Arm Activity Recognition with Vision Transformers and Wavelet-Transformed Channel State Information.....	1731
<i>Rojin Zandi, Kian Behzad, Elaheh Motamedi, Hojjat Salehinejad, Milad Siami</i>	
Privacy-Preserving Federated Learning for Coverage Prediction	1737
<i>Congyu Fang, Akram Bin Sediq, Hamza Sokun, Israfil Bahceci, A Ahmed Ibrahim, Nicolas Papernot</i>	
Telecom Language Models: Must They Be Large?	1744
<i>Nicola Piovesan, Antonio De Domenico, Fadhel Ayed</i>	
Multi-Task Learning for Resource Allocation in Wireless Networks of Dynamic Dimensionality.....	1750
<i>Nikos A. Mitsiou, Pavlos S. Bouzinis, Panagiotis D. Diamantoulakis, Panagiotis G. Sarigiannidis, George K. Karagiannidis</i>	
FLEXIBLE: Forecasting Cellular Traffic by Leveraging Explicit Inductive Graph-Based Learning	1756
<i>Duc-Thinh Ngo, Kandaraj Piamrat, Ons Aouedi, Thomas Hassan, Philippe Raipin</i>	
Gateway Planning for the Long-Range Wireless Networks in Smart Cities	1762
<i>Arash Rezazadeh, Mehdi Naderi Soorki, Yousef Seifi Kavian, Sara Ranjbaran, Michele Nitti</i>	
Data-Driven Profiling of Inland Areas: Studying Changes in Mobile Users Presence After COVID-19.....	1769
<i>Andrea Pimpinella, Cristina Boniotti, Carmelo Ignaccolo, Fabio Martignon, Andrea Pavon, Luisa Venturini</i>	
When Processing Time Exceeds Applicative Timeouts: Concurrent Zigbee/Thread Stack Evaluation	1775
<i>Lucien Dinh, Emmanuel Dreina, Élodie Chargy</i>	
Overhead-Free People Counting in mmWave Networks Using IEEE 802.11bf Passive Sensing	1781
<i>Tanguy Ropitault, Anirudha Sahoo, Steve Blandino, Nada Golmie</i>	
Node Activation for SI-Based xG Localization: 3GPP Case Studies Using xG-Loc Dataset.....	1787
<i>Carlos A. Gómez-Vega, Gianluca Torsoli, Moe Z. Win, Andrea Conti</i>	
Joint Phase Noise Estimation and Data Detection in Millimeter-Wave OTFS Systems.....	1793
<i>Lang Zhuo, Min Li, Liyan Li, Minjian Zhao</i>	
Sensing and Mitigation of Far-Field Self-Interference for Full-Duplex MIMO Systems	1799
<i>Anil Kurt, Gokhan M. Guvensen</i>	
Effect of Correlated Turbulence on Integrated SAG-FSO/SH-FSO/RF Transmission for Satellite Communications.....	1805
<i>Ramy Samy, Hassan Ahmed, Hong-Chuan Yang, Mohamed-Slim Alouini</i>	
Characterization of Spatial-Temporal Channel Statistics from Indoor Measurement Data at D Band.....	1811
<i>Chathuri Weragama, Joonas Kokkonen, Mar Francis De Guzman, Katsuyuki Haneda, Pekka Kyösti, Markku Juntti</i>	
Ergodic Capacity Analysis for a STAR-RIS-Segmented Symbiotic Backscatter NOMA System.....	1817
<i>Zhen Wen, Haiyang Ding, Maged Elakashlan, Chau Yuen, Jules M. Moualeu</i>	

Optimal Partitioning of Reconfigurable Intelligent Surfaces for Uplink NOMA Networks	1823
<i>Madi Makin, Abdulkadir Celik, Sultangali Arzykulov, Ahmed M. Eltawil, Galymzhan Nauryzbayev</i>	
Harnessing Relay Selection and Fluid Antenna Systems (FAS) for Enhanced Cooperative Terahertz Networks	1829
<i>Leila Tlebaldiyeva, Sultangali Arzykulov, Galymzhan Nauryzbayev</i>	
Uplink Soft Handover for LEO Constellations: How Strong the Inter-Satellite Link Should Be	1835
<i>Houcem Ben Salem, Alberto Tarable, Alessandro Nordio, Behrooz Makki</i>	
Near-Field Line-Of-Sight MIMO Precoding with Distributed Antennas	1842
<i>Xiang Li, Xiaolin Hou, Lan Chen</i>	
Simultaneous Interference Graph Estimation and Resource Allocation in Multi-Cell Multi-Numerology Networks	1848
<i>Daqian Ding, Wei Lou, Hong Hu, Haorui Li, Yibo Pi</i>	
Resource Optimization for Tail-Based Control in Wireless Networked Control Systems.....	1855
<i>Rasika Vijithasena, Rafaela Scaciota, Mehdi Bennis, Sumudu Samarakoon</i>	
Beam Alignment for IEEE 802.11be Powered by Task Oriented Indoor UWB Localization	1861
<i>Semih Serhat Karakaya, Talip Tolga Sari, Elif Ak, Berk Canberk, Gökhan Seçinti</i>	
Optimal Slot Utilization in IEEE 802.15.4e TSCH Networks Using Reinforcement Learning	1867
<i>Tarana Ara, Ramiro Liscano</i>	
MIST: An Efficient Approach for Software-Defined Multicast in Wireless Mesh Networks.....	1874
<i>Rupei Xu, Yuming Jiang, Jason P. Jue</i>	
Human Detection Based on Learning and Classification of Radio Scattering Parameters and Para-Hermitian Eigenvalue Decomposition.....	1880
<i>Frank E. Ebong, Nicola Novello, Andrea M. Tonello</i>	
Ultra-Low-Complexity, Non-Linear Processing for MU-MIMO Systems.....	1886
<i>Chathura Jayawardena, Konstantinos Nikitopoulos</i>	
Joint Activity Detection and Channel Estimation for MIMO Grant-Free Random Access Through Bayesian Learning.....	1892
<i>Boran Yang, Xiaoxu Zhang, Li Hao, George K. Karagiannidis, Pingzhi Fan</i>	
Matched-Filter Precoded Rate Splitting Multiple Access: A Simple and Energy-Efficient Design	1898
<i>Hui Zhao, Dirk Slock</i>	
Power Control for Resilient Communication Systems with a Secret-Key Budget.....	1905
<i>Karl-Ludwig Besser, Rafael F. Schaefer, H. Vincent Poor</i>	
Superdirectivity-Enhanced Multi-User Wireless Communications: Power Scaling Law and Interference-Nulling Precoding	1911
<i>Liangcheng Han, Haifan Yin</i>	
ORBGRAND: Achievable Rate for General Bit Channels and Application in BICM	1917
<i>Zhuang Li, Wenyi Zhang</i>	

Author Index