

# RESTART Plenary Dissemination Workshop

Posters & Demos

## January 30<sup>th</sup>

- 1 Enhancing LoRaWAN Networks with Edge Computing: A Demonstration on a Large-Scale Scenario**  
Lorenzo Frangella, Stefano Milani, Domenico Garlisi, Ioannis Chatzigiannakis
- 2 IoT Digital Twins for Smart Water Distribution Networks**  
Gabriele Restuccia, Fabrizio Giuliano, Ilenia Tinnirello, Domenico Garlisi
- 3 Virtual Adventures: A Digital Human in Action**  
Giulia Martinelli, Nicola Conci
- 4 Industrial Internet of Things (IIoT)-oriented Multi-Interface Gateway (MIGate) with Embedded Intelligence**  
Luca Davoli, Laura Belli, Armin Mazinani, Gianluigi Ferrari
- 5 Rethinking XR-UX: a methodology for assessing User eXperience in eXtended Reality services**  
Cosimo Miraglia, Domenico Schillaci, Roberto Filippi, Andrea Baiocchi, Paola Panarese, Stefania Colonnese
- 6 Telecommunication Technologies for Biomedical Applications in Challenging Environments**  
Anna Marcucci, Pietro Savazzi, Fabio Dell'Acqua, Anna Vizziello
- 7 The Evolution of EU Data Protection Law and Business Challenges: Navigating the Dilemma Between Horizontal and Sector-Based Regulation**  
Marco Orofino, Antonio Foti, Lavinia Del Corona
- 8 Differentiable Feedback Delay Networks for Room Impulse Response Modeling**  
Riccardo Giampiccolo, Alessandro Ilic Mezza, Alberto Bernardini
- 9 A THz receiver test chip based on CMOS-55nm technology**  
Francesco Centurelli, Alessandro Trifiletti, Orlandino Testa, Renato Cicchetti, Carlo Santini, Fabrizio Palma, Antonio d'Alessandro
- 10 Coded Spatial Random Access in the Near Field**  
Enrico Testi, Giulia Torcolacci, Nicolò Decarli, Davide Dardari, Enrico Paolini
- 11 Ternary Neural Networks for Gait Identification in Wearable Devices**  
Giacomo Agnetti, Andrea Migliorati, Daniele Mari, Tiziano Bianchi, Simone Milani, Enrico Magli
- 12 Fast Convolution Schemes for Digital Twin: Efficient Modeling of Reconfigurable Intelligent Surfaces with Piecewise Approximations**  
Giuseppe Pettanice, Roberto Valentini, Piergiuseppe Di Marco, Giulio Antonini, Fortunato Santucci
- 13 Target Wake Time Scheduling for Time-sensitive Traffic and Energy Saving in Wi-Fi Networks**  
Corrado Puligheddu, Fabio Busacca, Riccardo Rusca, Francesco Raviglione, Claudio E. Casetti, Carla F. Chiasserini, Sergio Palazzo
- 14 Service Placement, Routing, and Resource Allocation with Queuing Delay Constraints**  
Pietro Spadaccino, Paolo Di Lorenzo, Sergio Barbarossa, Antonia M. Tulino, Jaime Llorca

- 15 | A Mirror-based Jamming scheme against eavesdropping in Underwater Optical Communication**  
Andrea Petroni, Muhammad Shoaib Khan, Valeria Loscrì
- 16 | Context-aware argumentation in conversational recommender systems: a case study**  
Marco Grazioso, Martina Di Bratto, Mario Barbato, Azzurra Mancini, Valentina Russo
- 17 | Security Monitoring for 5G Core Networks: A Specialized Platform for Traffic and Protocol Analysis**  
Francesco Mancini, Giuseppe Bianchi
- 18 | Cost-Effective Cloud-Edge Elasticity for Microservice Applications**  
Andrea Detti, Alessandro Favale
- 19 | Electrically Controlled Liquid Crystal Gratings for Programmable Optical Interferometry**  
N. Hanine, A. Buzzin, V. Ferrara, R. Asquini
- 20 | Integrating Digital Twin Federation and Intent-Based Networking for Optimized Performance in Ethical Next-Generation Networks**  
Giancarlo Sciddurlo, Federica de Trizio, Giuseppe Piro, Gennaro Boggia
- 21 | Multimodal parameter analysis for rainfall estimation and classification: a real-time live demonstration**  
Roberta Avanzato, Francesco Beritelli
- 22 | Network Digital Twin Framework for Industrial Environment**  
Francesca Conserva, Maurizio Fodrini, Simone Bizzarri, Giacomo Leonardi, Enrico Buracchini, Riccardo Marini
- 23 | An Architecture for Reliable and Energy-Efficient Spatial Optical Access Networks**  
Andrea Marotta, Carlo Centofanti, Dajana Cassioli, Ibrahim Ramadan, Cristian Antonelli
- 24 | Integration of SD-WAN technology into the WatchEDGE orchestrator**  
Mengyao Li, Giacomo Sguotti, Sebastian Troia, Guido Maier, Giada Landi, Pietro G. Giardina, Leonardo Lossi
- 25 | Dual Slant  $\pm 45^\circ$  polarized planar array for 5G Base Station**  
Mohammad Abdul Hannan, Marco Simone, Gino Sorbello
- 26 | High-Throughput Multi-Decoder FEC System with Area-Efficient RCQ Paradigm**  
Vincenzo Petrolo, Guido Montorsi, Guido Masera
- 27 | Real-Time Tracking and Classification of Multiple Targets**  
Alessandro Vaccari, Andrea Conti
- 28 | Graphene Terahertz receivers with record efficiencies on an integrated optical platform and applications in free space optical communications**  
Vladimir Pushkarev, Leonardo Viti, Miriam Serena Vitiello
- 29 | 5G Traffic Flow Confidentiality: APP's pattern classification**  
Alessandra Dino, Ivan Palamà, Stefano Mangione, Ilenia Tinnirello, Giuseppe Bianchi
- 30 | PANDA5: Platform Advancing Near-RT RIC Deployment Architecture inside 5G RAN**  
Sofia Montebugnoli, Andrea Sabbioni, Luca Foschini

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## January 31<sup>st</sup>

- 31 | LoRa Mobility and Coverage Dataset (LoRaMC)**  
Lorenzo Frangella, Stefano Milani, Domenico Garlisi, Ioannis Chatzigiannakis
- 32 | Optimizing Sliding Window Decoders for SC-LDPC Codes**  
Massimo Battaglioni, Mauro Michele Maria Costantino
- 33 | 3D Electromagnetic Signal Processing**  
Davide Dardari
- 34 | Time-based radiators for dynamic and real-time wireless powering**  
Tommaso Tiberi, Lorenzo Bastia, Lorenzo Poli, Paolo Rocca, Diego Masotti
- 35 | ITALYSIG: Open National Database of IQ Captures**  
Luca Chiaraviglio, Lorenzo Maria Monteforte, Sadeq Bani Melhem, Hina Tabassum
- 36 | Quality of Experience for immersive media: from content creation to rendering with a focus on volumetric video streaming**  
Sara Baldoni, Federica Battisti
- 37 | Learning Energy-Efficient MAC Protocols Using MARL in Industrial Networks**  
Anita Schilirò, Luciano Miuccio, Salvatore Riolo, Daniela Panno
- 38 | Network Sharing for resilient Radio Access Networks**  
Maoquan Ni, Daniela Renga, Michela Meo, Marco Ajmone Marsan
- 39 | Physics-informed Machine Learning for Spatial Audio Processing**  
Mirco Pezzoli, Fabio Antonacci, Augusto Sarti
- 40 | Guaranteeing the Right to Be Forgotten via On-Device Federated Unlearning**  
Alessio Mora, Lorenzo Valerio, Paolo Bellavista, Andrea Passarella
- 41 | Digital Constitutionalism and Telecommunications: Harmonizing Laws for Tech Giants, TELCOs**  
Giovanna De Minico, Fulvia Abbondante, Maria Francesca De Tullio, Lucilla Gatt, Marco Orofino, Stefania Serafini
- 42 | An Interpretable Approach to Channel Status Prediction in UAV-based Non-Terrestrial Networks**  
Ladan Gholami, Pietro Ducange, Pietro Cassarà, Alberto Gotta
- 43 | Towards Communication Network Virtualization: Asset Administration Shell and AI-Powered Cloud-to-Edge Integration for Realizing a Digital Twin of a Coherent Network"**  
Salvatore Quattropani, Raffaele Di Natale, Detrizio Federica, Simona Rossitto, Corrado Caia, Salvo Gambadoro, Giovanni Fontani, Leonardo Paroli, Becattini Marco, Giancarlo Sciddurlo
- 44 | Challenge-Response Strategies for Drone Physical Layer Authentication: A Game-Theoretic, Energy-Aware Analysis**  
Ardizzon Francesco

- 45 Physical layer security at THz: exploiting the noise of the communication**  
Stefano Caputo, Giacomo Borghini, Gianni Pasolini, Nicolò Longhi, Giampaolo Cuzzo, Lorenzo Mucchi
- 46 Mega-Antennas as a Key Enabler for Terrestrial and Non-Terrestrial Communication Network Integration**  
Giacomo Bacci, Riccardo De Gaudenzi, Marco Luise, Luca Sanguinetti, Simone Morosi
- 47 Towards Defining Key Value Indicators for Sustainable Networks**  
Lucia Pintor, Luigi Atzori, Antonio Iera
- 48 A Multi-Band 3GPP Wireless Access Backhaul (WAB) Testbed: Implementation and Experiments**  
C. Rubaltelli, M. Morini, E. Moro, D. De Donno, I. Filippini
- 49 RadioDL: Deep Learning-Based Signal Intelligence of IQ Captures**  
Pierpaolo Loreti, Alessandro Amici, Luca Chiaraviglio, Lorenzo Maria Monteforte, Lorenzo Bracciale
- 50 Architectures for Immersive Networked Music Performances Over 5G: Enhancing Remote Collaboration**  
Claudia Rinaldi
- 51 ADAPTO: Scaling and Offloading Cloud-Native Network Functions in Future Mobile Networks**  
Alessio Botta, Roberto Canonico, Annalisa Navarro, Giovanni Stanco, Giorgio Ventre, Antonio Buonocunto, Antonio Fresa, Enzo Gentile, Leonardo Scommegna, Enrico Vicario, Enzo Mingozzi, Antonio Virdis, Marcello Cucurachi
- 52 Generation of Second Harmonic in an Etched X-Cut Lithium Niobate on Insulator Waveguide based on Type I Phase Matching**  
Ahmadreza Alaeddini, Simone Ferraresi, Gaetano Bellanca, Daniele Modotto, Eugenio Fazio, Stefan Wabnitz
- 53 Stateful Handling of Critical Events: Leveraging eBPF to Realize eXtended Finite State Machine Abstractions**  
Arianna Quinci, Giacomo Belocchi, Francesco Quaglia, Giuseppe Bianchi
- 54 A SIEM-Integrated Kubernetes Architecture for Secure Multi-Access Edge Computing**  
Carlo Centofanti, Ibrahim Ramadan, Andrea Marotta, Dajana Cassioli
- 55 Unlocking the potential of THz links for 6G Aerial Communications and Sensing**  
Dajana Cassioli, Alex Piccioni, Maimoona Asad, Ernestina Cianca
- 56 IN-Rep: a new open data repository for AI-based positioning in Industrial Networks**  
Nadir Bouzar, Luca De Nardis, Maria-Gabriella Di Benedetto, Enrico Maria Vitucci, Marco Chiani, Stefano Caputo, Lorenzo Mucchi
- 57 The Evolution of EU Data Protection Law and Business Challenges: Navigating the Dilemma Between Horizontal and Sector-Based Regulation**  
Marco Orofino, Antonio Foti, Lavinia Del Corona
- 58 APEIRON: a Multimodal Drone Dataset Bridging Perception and Network Data in Outdoor Environments**  
Nunzio Barone, Walter Brescia, Saverio Mascolo, Luca De Cicco
- 59 Cooperative Spectrum Sensing for Beyond-5G Networks in Fading Environments**  
Farzam Nosrati, Roberto Corallo, Silvia Schilleci, Alessio Vicario, Daniele Croce
- 60 Microgrid for Radio Access Network Resilience**  
Greta Vallero, Michela Meo