

## Future Telecommunications: Infrastructure and Sustainability

### *Preliminary program*

Thursday September 29.th

*Sala del Chiostro – PLENARY SESSION*

- 9:00 **Welcome messages and presentation of the event**  
**Roberto Gualtieri** (or delegate) - Major of Rome, virtual presence or registered message  
**Fabio Grasso** - Dean of the Faculty of Engineering, Sapienza University of Rome  
**Massimo Cerri** - President of the Order of Engineers in Rome  
**Alois Miedl** - President of FITCE  
**Giovanni Cancellieri** - President of AICT
- 9:30 **Maurizio Mayer** - General Chair, 61.st International FITCE Congress, “Congress presentation”
- 9:45 **Nicola Blefari Melazzi** - Director of CNIT, “The Italian Approach to Next Generation EU, in Telecommunication Researches: Telecommunications of the Future”
- 10:10 **Paolo Prinetto** - Director of the Italian CINI Cybersecurity National Lab “The Organization of Research and Skill Growth on Cybersecurity in Italy”

10:30 *Coffee break*

*Sala del Chiostro*

- 10:50 Industrial Technology Session 1 **5G for Digital Transformation in Industrial Track**  
Chair: **Andrea Penza** - AICT and Ex President FITCE, Italy  
**TBD**  
Sirti  
**5G for digital transformation in industrial sector**  
Andy Valdar - President Fitce UK  
**IS 5G the key to digital transformation (and why)?**  
Marta Minozzi - ASSTEL
- 12:00 Industrial Technology Session 2 **5G for Sustainable & Smart Cities**  
Chair: **Andrea Penza** - AICT and Ex President FITCE, Italy  
**Maximum electromagnetic field levels and the development of wireless networks**  
**Francesco Pugliese**  
**How 5G and IoT move towards smarter cities in Greece**  
**George Agapiou** - FITCE Greece  
**5G NETWORKS and the digital infrastructures of the smart city: risks and opportunities**  
**Giovanni Gasbarrone** - President of the Telecommunications Commission of the Order of Engineers of Rome  
**TBD**  
**Alessandro Perrino** - Fastweb, Italy  
**TBD**  
**Kurt De Lange** - Proximus

*Sala degli Affreschi*

- 10:50 Technical Session 1 **Pervasive and Photonic Network Technologies and Infrastructure**  
11:35 Technical Session 2 **Integration of Networks and Services**  
12:20 Technical Session 3 **Green and Smart Environments**

13:10 *Lunch*

*Sala del Chiostro*

14:10 Industrial Technology Session 3 **Cyber Security**

Chair: **Giovanni Cancellieri** - AICT, Italy

15:20 Special Session 1 **Intelligence at the Network Edge**

Chairs: **Giovanni Schembra, Laura Galluccio** - University of Catania, Italy

**SS01\_01 Pedestrian and vehicular tracking based on Wi-Fi sniffing: a real-world case study**

Marco Bertolusso, Giovanni Pettorru and Michele Spanu (University of Cagliari, Italy); Mauro Fadda (University of Sassari, Italy); Mariella Sole, Massimo Farina, Matteo Anedda and Daniel Giusto (University of Cagliari, Italy)

**SS01\_02 An AI Framework for Fostering 6G towards Energy Efficiency**

Raffaele Bolla, Roberto Bruschi, Franco Davoli and Lorenzo Ivaldi (University of Genoa, Italy); Chiara Lombardo (CNIT-S2N National Lab - Genoa, Italy); Beatrice Siccardi (CNIT-S2N National Lab - Genoa and University of Genoa, Italy)

**SS01\_03 A FANET to Provide Blockchain On Demand at the Extreme Edge of a 6G Network**

Christian Grasso, Raoul Raftopoulos and Giovanni Schembra (University of Catania, Italy)

**SS01\_04 Sociality-as-a-Service: A new platform for networked Digital Twins**

Alfio Lombardo and Giacomo Morabito (University of Catania, Italy); Salvatore Quattropani (CNIT, Italy); Carmelo Ricci (University of Catania, Italy)

**SS01\_05 Comparison of Deep Reinforcement Learning Approaches for FANET Optimization**

Christian Grasso, Raoul Raftopoulos and Giovanni Schembra (University of Catania, Italy)

*Sala degli Affreschi*

14:10 Technical Session 4 **Programmable Networks and Future Services and Media**

14:55 Technical Session 5 **Industrial and Digital Transition Networks**

15:40 Technical Session 6 **Innovative Architectures and Extreme Environments**

16:40 *Coffee break*

*Sala del Chiostro*

17:00 Industrial Technology Session 4 **Competences and Skills**

Chair: **Maria Rita Spada** - AICT

**Introduction to describe the European situation, considering ICT as an emblematic sector**

**Maria Rita Spada** - AICT

**Compared Vision of the transition based on the "NextGenerationEU" program, cultural as well as pertaining to the world of work for different countries: the case of Germany, Greece, UK and Italy**

**Katrin Helber** - AHK Italy-Germany

**George Liodakis** - Hellenic Mediterranean University Dept. of Electronic Engineering - Greece

**Nigel Linge** - Salford University - UK

**Antonietta Zancan** - Ministero dell'Istruzione - Italy

**Tools for the assessment of individual transversal competences**

**Roberto Verdone** - DEI, University of Bologna, & WiLab, CNIT, Italy

**Conclusions**

**Maria Rita Spada** - AICT

*Sala degli Affreschi*

17:00 Technical Session 7 **Wireless Networks and Technologies**

17:45 Technical Session 8 **Intelligent and Autonomous Systems**

18:30 *Tourist program in Rome*

21:00 *Gala Dinner*

## Friday September 30.th

### *Sala del Chiostro*

- 9:00 Special Session 2 **Communication systems and technologies for the transport sector**  
Chairs: **Franco Mazzenga** - University of Rome Tor Vergata, Italy, **Fortunato Santucci, Elena Cinque** - University of L'Aquila, Italy
- SS02\_01 LoRa-Based Railway Signalling System for Secondary Lines**  
Danila Ferretti, Paolo Lanci and Buket Torun (WiLab/CNIT and University of Bologna, Italy); Davide Amato (Sadel, Italy); Roberto Verdone (WiLab/CNIT and University of Bologna, Italy)
- SS02\_02 Mobile Wireless QoS Monitoring along Italian highways**  
Arianna Rufini, Luca Costantini, Sergio Pompei, Luca Rea and Francesco Matera (Fondazione Ugo Bordoni, Italy); Michele Cinque (Autostrade Per L'Italia, Italy)
- SS02\_03 Experimental Validation of C-V2X Mode 4 Sidelink PC5 Interface for Vehicular Communications**  
Giammarco Di Sciullo and Luca Zitella (University of L'Aquila, Italy); Elena Cinque (Radiolabs Consortium & University of L'Aquila, Italy); Fortunato Santucci and Marco Pratesi (University of L'Aquila, Italy) and Francesco Valentini (Radiolabs Consortium & University of L'Aquila, Italy)

- 10:10 Special Session 4 **Techniques for Signal Protection**  
Chair: **Silvello Betti** - University of Rome Tor Vergata - Italy
- SS04\_01 High Security Optical Metropolitan Area Network based on Advanced Modulation Techniques**  
Giuseppe Giulio Rutigliano, Chiara Lodovisi, Pierluigi Perrone and Silvello Betti (University of Rome Tor Vergata, Italy)
- SS04\_02 Punctured Binary Simplex Codes as LDPC codes**  
Massimo Battaglioni and Giovanni Cancellieri (University Politecnica delle Marche, Italy)
- SS04\_03 Optical Fingerprint: a Possible Direction to Physical Layer Security, Authentication, Identification, and Monitoring**  
Luca Potì (CNIT, Italy); Pantea Goki, Thomas Teferi Mulugeta and Nicola Sambo (Scuola Superiore Sant'Anna, Italy); Roberto Caldelli (CNIT, Italy)

### *Sala degli Affreschi*

- 9:00 Special Session 3 **Antennas and devices for future millimeter-wave communications**  
Chairs: **Raffaele Solimene** - University of Campania Luigi Vanvitelli, Italy, **Marco Donald Migliore** - University of Cassino and Southern Lazio, Italy, **Leonardo Viti** - National Council of Research, Nanoscience Institute, Italy
- SS03\_01A 18-40 GHz Full Connected Vivaldi Antenna Array**  
Antonio Manna, Alessandro Calcaterra and Pietro Bia (Elettronica, Italy)
- SS03\_02 Phase drift correction for digital radar test benches**  
Antonio Ciociola, Leopoldo Infante and Nicholas Ricciardella (Leonardo, Italy)
- SS03\_03 Miniaturized Supershaped Sinuous Antennas for UWB Applications**  
Gianvito Mevoli (Polytechnic of Bari, Italy); Claudio Maria Lamacchia (IAMATEK, Italy); Pietro Bia and Antonio Manna (Elettronica, Italy); Diego Caratelli (The Antenna Company, The Netherlands); Luciano Mescia (Polytechnic of Bari, Italy)
- SS03\_04A Novel THz CMOS Chip Composed of 64 Antenna-Detectors Array toward 6G Applications**  
Renato Cicchetti and Massimo Petrarca (Sapienza University of Rome, Italy); Stefano Perticaroli (RAME, Italy); Orlandino Testa and Fabrizio Palma (Sapienza University of Rome, Italy)
- SS03\_05 5G/6G Technologies and Biological Interactions: State of the Art**  
Rita Massa (University Naples Federico II, Italy); Maria Rosaria Scarfi (CNR, Italy)

- 11:20 *Coffee break*

*Sala del Chiostro*

- 11:40 Regular Session 1 **Infrastructure, Devices and Sustainability**  
Chair: **Antonio D'Alessandro** - Sapienza University of Rome, Italy
- RS01\_01 Removing the Wires in Time-Sensitive Networks**  
Pablo Avila-Campos, Jetmir Haxhibeqiri, Xianjun Jiao, Ingrid Moerman and Jeroen Hoebeke (Ghent University - imec, Belgium)
- RS01\_02 NS-3 simulations on Smart Grid Networks performance adopting mmWave communications**  
Ludovico Ferranti, Samuela Persia, Luca Rea and Francesco Matera (Fondazione Ugo Bordoni, Italy)
- RS01\_03 Earthquake Early Warning Services Based on Very Low-Cost Internet of Things Devices**  
Paola Pierleoni, Alberto Belli, Marco Esposito, Roberto Concetti and Lorenzo Palma (University Politecnica delle Marche, Italy)
- RS01\_04 Hybrid VLC/WiFi Architectures with Priority Feedback Channels**  
Kien Ngo Trung, Fabrizio Giuliano, Daniele Croce, Stefano Mangione, Ilenia Tinnirello and Giovanni Garbo (University of Palermo, Italy)
- RS01\_05 Secure and Intelligent Smart Home Controlling System for better life**  
Chamath Hettiarachchi M, Dilshan Abeysiriwardhana W C, Eshandi Aththanayaka A M R and Dinithi Panangala L (Sri Lanka Institute of Information Technology, Sri Lanka)

*Sala degli Affreschi*

- 11:40 Poster Session and Student Contest
- SC01\_01 Coarse Frequency Bands Classification Using Machine Learning**  
Inna Valieva (Malardalen University, Sweden); Bharath Shashidhar (Wireless P2PTechnologies, Sweden); Mats Björkman, Johan Åkerberg and Mikael Ekström (Mälardalen University, Sweden); Iurii Voitenko (Wireless P2P Technologies AB, Sweden)
- SC01\_02 Blockchain on Embedded IoT Devices: a Viable Marriage?**  
Giulia Rafaiani, Paolo Santini, Marco Baldi and Franco Chiaraluce (University Politecnica delle Marche, Italy)

*Sala del Chiostro – PLENARY SESSION*

- 13:40 Student Contest Award Ceremony  
13:50 End of the Congress  
14:00 Lunch  
15:30 Assembly of FITCE  
16:30 Tourist program in Rome