



ICUMT 2020 Committee

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ICUMT 2020 Committee

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Important Dates:

Deadline for Full Paper Submission: **August 14, 2020 (FINAL DEADLINE)**

Notification of Paper Acceptance: **September 6, 2020**

Final Paper Submission: **September 15, 2020**

Authors' Registration and Payment: **September 25, 2020**

The accepted and presented papers will be sent for the indexing in IEEE Xplore, SCOPUS and Conference Proceedings Citation Index (CPCI) of Thomson Reuters databases.

Call for papers: <https://www.icumt.info/2020/CfP.pdf>

The 12th International Congress on Ultra Modern Telecommunications and Control Systems – **ICUMT 2020 is an IEEE technically co-sponsored (approval pending)** premier annual international congress providing an open forum for researchers, engineers, network planners and service providers in telecommunications, control, automation and robotics targeted on newly emerging systems, standards, services, and applications. ICUMT 2020 organized jointly by Brno University of Technology, Czech Republic, Tampere University and several industrial partners, will be hosted this time as a **virtual event on 5 – 7 October, 2020**. The aim of ICUMT is to bring together international players in telecommunications, robotics and control systems. The congress consists of two open call tracks, technical workshops and tutorials. Prospective authors are invited to submit papers including technical novelties and tutorial overviews in the areas including but not limited to:

Telecommunications track (ICUMT-T)

NEXT GENERATION WIRELESS SYSTEMS AND SERVICES

- 5G and beyond wireless technologies
- 5G+ applications and services (UAVs, AR/VR, wearables, autonomous driving, Tactile Internet)
- Centralized-RAN, Cloud-RAN, and Fog-RAN architectures
- Network functions virtualization (NFV) and network slicing
- Mobility, handoff protocols and management in 5G
- Mobile Cloud Computing (MCC) and Multi-access Edge Computing (MEC)
- 6G visions and concepts

ACCESS SYSTEMS AND NETWORKS

- Next generation 802.11 and 802.15 including mesh, PAN, BAN, etc.
- Ultra-wideband communications (UWB)
- Underwater communications
- Flexible and on-demand access networks
- Integrated wired/wireless access
- Power line communications (PLC)
- Digital satellite access technology

SMART AND GREEN COMMUNICATIONS

- Energy-efficient networking, circuits, devices and transmission technologies
- Energy efficiency of data centers and intelligent cloud computing
- Cross-layer optimizations to minimize energy consumption on a network scale
- Cognitive, cooperative and reconfigurable networks
- Protocols and protocol extensions for energy efficient networks
- Network load balance and smart information storage
- Harvesting distributed energy generation
- Smart Grids
- Information theory on energy efficiency
- Energy evaluation and comparison of different network technologies

LOW-LAYER WIRELESS TECHNOLOGIES

- Cognitive Radio Networks and Systems
- Spectrum sensing and spectrum management
- Dynamic spectrum access
- Cooperation and Game-Theoretical Protocols for Cognitive Radios
- Software defined radio
- Cross-Layer Protocol Design
- Regulations and standards
- Cooperative communications and networking
- Multi-Carrier Systems & Solutions
- MIMO and multi-antenna communications

INFORMATION AND CODING THEORY

- Cryptography
- Big Data and cloud computing
- Coding for noisy channels and erasure channels
- Source coding and data compression
- Joint source-channel coding
- Network coding and coding for multi-terminal systems
- Cooperation, competition and cognition in wireless networks

INTERNET OF THINGS

- Interoperability in IoT
- Industry 4.0 technologies and applications
- Security and privacy issues in IoT
- Industrial IoT networks
- Low-Power Wide Area (LPWA) communications: Sigfox, LoRa/LoRaWAN, NB-IoT, LTE Cat. M1
- Smart City and Smart Home services and applications
- Application of Fog/Edge computing to IoT: architectures and implementations
- Massive MTC (mMTC)

DIGITAL BROADCASTING TECHNOLOGIES AND SERVICES

- System architectures
- Security in broadcast and multicast communications
- Internet broadcasting
- Mobile broadcasting and mobile TV
- Emerging broadcasting standards, services and applications

PERVASIVE COMPUTING AND SMART ENVIRONMENT

- RFID and Sensor Network Technologies
- Architecture and platforms
- Distributed and pervasive services
- Personal and body networks, wearable computing
- Semantic analysis
- Business models
- Digital Home Network Technologies

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) AND VEHICULAR AD-HOC NETWORKS (VANETS)

- Vehicle-to-vehicle, vehicle-to-roadside communications
- Intra-vehicle communications
- Mobility and vehicular traffic models
- Information collection and dissemination
- Analytical and simulation techniques
- Experimental systems and field operational testing
- Safety and non-safety related applications
- Recent standardization efforts and problems (e.g. 802.11p)
- Overview of the activities and status of the ongoing projects
- Deployment strategies and predictions

P2P TECHNOLOGIES

- Advances in theoretical foundations of P2P
- Security, trust and reputation in P2P
- Performance analysis of P2P systems, applications and services
- Quality of experience in P2P systems
- Mobile P2P
- P2P for sensors
- Economic, business models and charging mechanisms in P2P
- Legal and regulatory issues

SOCIAL NETWORKS

- Computational aspects of social Network
- e-Society applications
- Network evolution and growth mechanisms
- Network geography
- Search in network
- Security, data protection inside communities
- Evaluation and benchmarking

E-COMMERCE, MOBILE COMMERCE, E-GOVERNMENT, E-LEARNING AND E-HEALTH

- Bio-inspired/Bio-oriented Networks
- Body-area networks
- Cryptocurrency technologies
- Wireless telemedicine and E-health services

GENERAL IP-BASED NETWORKING ISSUES

- Location techniques and location-based services LBS
- Broadband Satellite and HAPS (High Altitude Platform Station) Technologies
- Information Security Technologies
- Web Technologies
- Multimedia & Internet Systems, Services and Standards

- Mobile Internet, Internet Telephony (VoIP, MoIP) and IPTV
- Network Management, Operation and Maintenance
- Optical communications and applications
- FTTx and Passive/Active Optical systems and networks (PONs and AONs)
- Open Programmable Networks and Active Networks
- Communication Network Topology and Planning
- User experience and usability studies in ICT
- Systems & Software Engineering Aspects
- GRID, Distributed Computing Technologies and Services
- IT Services Technologies

Control Systems, Automation and Robotics track (ICUMT-CS)

CONTROL SYSTEMS

- Adaptive control
- Robust control
- Process control
- Complex systems
- Mechatronic systems
- Modern analogue and digital circuits and their applications
- Identification and estimation
- Nonlinear systems
- Intelligent systems
- Hybrid systems
- Networked control systems
- Neural networks
- Fuzzy systems
- Genetic algorithms
- Evolutionary computation and control
- Precision motion control
- Control applications

ROBOTICS AND AUTOMATION

- Robot design, development and control
- Human-robots interfaces
- Mobile robots and autonomous systems
- Human augmentation and shared control
- Space and underwater robot
- Telerobotics and Teleoperation
- Industrial networks and automation
- Multi-agent systems
- Intelligent warehouses
- Modeling, simulation and architectures
- Vision, recognition and reconstruction
- Virtual Reality
- Control and supervision systems
- Instrumentation systems
- Biomedical instrumentation and applications
- Web-based control
- Autonomous agents
- Petri nets

Potential authors for regular papers, workshops and industrial sessions, please visit the conference website <https://www.icumt.info> for more details. For regular sessions, authors are invited to submit 6-page full papers according to the posted guidelines.

Only electronic submissions will be accepted via the EDAS system at: <https://edas.info/N27685>. Authors of accepted papers are expected to present their papers at the Congress and at least one author of each paper MUST register for the Congress in order to have paper(s) included in the proceedings.

