

# IEEE CONFERENCE ON STANDARDS FOR COMMUNICATIONS AND NETWORKING

**28 - 30 October 2019 // Granada, Spain**

## CALL FOR PAPERS

On behalf of the Organizing Committee, we have great pleasure in inviting you to submit your work to the 2019 IEEE Conference on Standards for Communications & Networking (IEEE CSCN'19). The fifth edition of this highly successful conference will be held in Granada, Spain, the city of the world-famous Alhambra, one of the ten most visited monuments around the world.

Standards play a key role in the success of the communications industry, as enablers of global systems inter-operability and economies of scale. The finalization of the 3GPP release 15 in June 2018 was a major milestone. With the first 5G specifications now complete, the industry has achieved critical progress on technology readiness, and operators around the world are starting the commercial rollout. This represents the culmination of years of concerted industry and academia efforts in scoping out and designing the next generation of mobile systems. Past editions of IEEE CSCN have played their own part in these efforts.

IEEE CSCN is a unique conference on the networking circuit in that it aims to close the gap between researchers, scientists and standards experts from academia, industry and different standardization bodies. It will serve as a platform for presenting and discussing standards-related topics in the areas of communications, networking and related disciplines, facilitating standards development as well as cooperation among the key players. IEEE CSCN 2019 will deliver high quality technical as well as visionary papers, which will be reviewed and selected by an international technical program committee (TPC) representing both academia and industry, with a strong standardization background.

In 2019, IEEE CSCN will be divided into 4 tracks designed to cover the diverse space of technologies – not limited to cellular systems–. New, original and previously unpublished papers are invited that address the emerging connectivity solutions and the standardization approaches and strategies that these may take, as well as the relevant business models and use-cases.

Additionally, after the recent completion of 3GPP release 15, of special interest are papers that assess the wireless landscape in light of the recently completed release of NR standard. Not only the Non-Standalone version, but also the Standalone version which delivers the potential for 5G deployments independent of LTE.

New proposals of end-to-end network architectures and protocols enabling new business models and paving the way for a new breed of services targeting enterprise customers and vertical industries are also welcome. Moreover, papers that look at what lies ahead in terms of technical and business challenges for successful 5G deployments are also invited. Furthermore, papers that examine new research topics and technical challenges as the work on release 16 begins and start looking at beyond 5G are also welcome.

### IMPORTANT DATES

#### Submission Deadline

20 June 2019

4 July 2019

#### Acceptance Notification

01 September 2019

#### Camera Ready

01 October 2019

### ORGANIZING COMMITTEE

#### General Co-Chairs

Prof. Tarik Taleb (Aalto University, Finland)

Prof. Juan M. Lopez-Soler (University of Granada, Spain)

#### TPC Co-Chairs

Prof. Arturo Azcorra (IMDEA Networks Institute, Spain)

Prof. Narcis Cardona (Universitat Politècnica de València, Spain)

Dr. Imen Grida Benyahia (Orange Labs, France)

**For more information, visit <http://cscn2019.ieee-cscn.org>**

Authors of selected papers from IEEE CSCN 2019 will be invited to submit an extended and improved version to IEEE Standards Magazine special issue.

For each track, paper topics may include (but are not limited to):

#### **Track on IoT, URLLC and V2X**

- IoT architecture design options and system optimizations
- IoT security and privacy of IoT devices and services
- System optimization to support ultra-low complexity devices
- Radio access optimizations for ultra-low power devices
- Standardized semantic data description framework and technologies
- IoT communication procedure enhancements
- Experience and lessons learnt from IoT large-scale pilots
- IoT standards platforms interworking
- IoT interoperability methodologies
- IoT standards gap analysis
- 5G Networks, IoT and Tactile Internet
- Software Defined Network (SDN) and IoT
- Industrial Internet of Things
- Factory of Things
- Edge Computing, Fog Computing and IoT
- IPv6-based IoT Networks
- IoT protocols such as IPv6, 6LoWPAN, RPL, 6TiSCH, WoT
- IoT security aspects for massive IoT deployments, e.g., embedded SIM management
- Ultra-Reliable Low-Latency Communications (URLLC)
- URLLC for mission-critical IoT
- V2X standards and architectures
- Private LTE/5G networks

#### **Track on Softwarization, Slicing, Automation and Network Management**

- Architectures and protocols for network automation and zero-touch management
- Intelligent, intent-based and cognitive networking and network management
- Programmable architectures and systems for 5G services and verticals
- Analysis and considerations for common VNFs across fixed and mobile networks
- 5G service-based architecture evolution
- Network functions placement in distributed clouds
- 5G functional decomposition and deployment
- Secure operations in future virtualized networks
- Resource management and sharing for network slicing
- Scalability and reliability in 5G networks and 5G network slicing
- Dedicated and shared network functions in network slices
- Cross-slice management for end-to-end QoS
- Progress on network slicing standardization (e.g. 3GPP, GSMA, etc.)
- Evaluation of network softwarization and fundamental trade-offs
- Test-bed experience in softwarization and network slicing
- SDN architectures and interfaces
- SDN programming languages and data models
- Progress and future challenges in standardization (e.g. ETSI NFV, IETF/IRTF, etc.)
- Orchestration and management in SDN and NFV
- Multi-domain and multi-tenancy considerations in SDN and NFV
- Open Source efforts in relation to SDN and NFV (e.g., ONAP, OPNFV, OpenStack, Open Source MANO)
- QoS/QoE aspects related to SDN and NFV based network services

#### **Track on 5G Radio and Wireless Communications**

- Physical layer and MAC layer design for 5G-enabling wireless networks
- Dynamic scheduling, power control, interference management, and QoS management in 5G
- Techniques for latency reduction in 5G
- Resource management and control in 5G RAN
- Service-oriented user-plane design concepts
- Topology, deployment, and optimization of wireless networks
- Wireless technology for high speed
- mmWave access, backhaul and self-backhauling
- Application of SDN, NFV, and cloud computing to 5G (and legacy) RAN and core network architectures and implementations, such as network slicing
- 3GPP phased work on NR
- Green and energy efficient wireless networks
- Solutions for battery-conserving, interference-mitigating terminal design
- Massive and FD-MIMO communications, hybrid and coordinated beamforming technology
- New control signaling for heterogeneous networks
- Next-Generation Wi-Fi (IEEE 802.11 ax/ay)
- 5G-LTE interworking and 5G/LTE -- Wi-Fi/Wi-Gig interworking technology
- 5G operation and coexistence in unlicensed and shared spectrum bands
- Next-generation non-RF communications systems
- 5G Radio Results from simulation, prototyping, and experiments
- Emerging candidate technologies and business use-cases for Beyond 5G

#### **Track on Access Network, Edge Computing and Transport for 5G**

- Multi-Access Edge Computing, Edge-Fog Computing
- Routing protocols, segment routing and VPN extensions for 5G slicing
- Multi-tenancy, slicing, and control of multi-domain heterogeneous infrastructures
- SDN and NFV in access, edge, and transport for 5G
- Transporting 5G mobile services over optical access networks
- SDN solutions for mobile networks and fixed IP cross layer transport and routing
- 5G architectures supporting Cloud-RAN and functional split options
- 5G architectures supporting fronthaul/middlehaul/backhaul integration
- Network slicing issues with multi-RATs devices
- End-to-end resource optimization for 5G mobile services: from radio head to data center
- Integrated backhaul/middlehaul/fronthaul
- Backhaul/middlehaul/fronthaul considerations for dynamic capacity and mobility management
- Delivering services over ICN in 5G within a framework enabling network slicing
- Enhancing 5G backhaul/middlehaul/fronthaul with ICN
- Mechanisms and protocol enhancements for Hybrid Access networks
- Introduction of ETSI MEC technology and applications on vertical market segments
- New user applications at the edge of the communication network
- Vertical industry implications to transport, edge computing, and 5G access networks
- Insights on pilots, proof-of-concept, and prototypes on access, edge, and transport networks