

Call for Papers

Submission Deadline	15 May 2018
Acceptance Notification	01 September 2018
Camera Ready	01 October 2018

On behalf of the Organizing Committee, we have great pleasure in inviting you to submit your work to the 2018 IEEE Conference on Standards for Communications & Networking (IEEE CSCN'18). The fourth edition of this highly successful conference will be held in Paris, France.

Standards play a key role in the success of the communications industry, as enablers of global systems inter-operability and economies of scale. The year we leave behind us – 2017 – was crucial in producing the first version of the 5G standard – 3GPP New Radio (NR) – with the successful completion of the first implementable NR specification in December 2017. 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 CSCN have played their own part in these efforts.

IEEE CSCN is a unique conference on the wireless circuit in that it aims to close the gap between researchers, scientists and standards experts from academia, industry and different standardization bodies. As such it draws from a wide circle of authors, panelists and attendees, from research students and researchers in the early stages of their careers, to academics and experienced standards professionals, testing and hardware experts, as well as government representatives. 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 2018 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 2018, IEEE CSCN will be divided into 4 tracks designed to cover the diverse space of technologies – not limited to cellular systems – which together comprise modern communication systems which underpin our connected society. New, original and previously unpublished papers are invited that address the emerging connectivity solutions and the standardization approaches and strategies that these may take, as well as the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 and given the buzz created by recent completion of the first implementable 5G specifications, of special interest are papers that assess the wireless landscape in light of recently completed first release of NR standard (the Non-Standalone version), and look at what lies ahead in terms of technical and business challenges for successful 5G deployments. Moreover, papers that examine new research topics and technical challenges as we enter the Phase-II of 5G standardization and start looking at beyond 5G are also invited. For each track, paper topics may include (but are not limited to):

Track on Softwarization and Network slicing

- Programmable Architecture for 5G services and verticals.
- Central Cloud Computing vs Edge-Fog Computing.
- 5G Functional Decomposition and Deployment.
- Secure Operations in Future Virtualized Networks.
- Resource Management for Network Slicing.
- Dedicated core network functions and shared network slices.
- Network slicing issues with multi-RATs devices.
- Cross-slice management for End-to-end QoS.
- 3GPP progress on standardizing slicing
- Elastic Resource sharing in Virtualized Networks.
- Joint storage, computational, and communication resource optimization.
- Fundamental trade-offs in Network Softwarization.
- Test-bed experience in Softwarization and Network Slicing.
- SDN and NFV frameworks and architectures.

Track on Edge Computing, Protocols, routing and transport for 5G

- Programmable Architecture for 5G services and verticals.
- Multi-Access Edge Computing, Edge-Fog Computing.
- Analysis and considerations for common VNFs across fixed and mobile networks.
- Routing protocols, segment routing and VPN extensions for 5G slicing.
- Multi-tenancy and control of heterogeneous infrastructures.
- 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/backhaul integration.
- End-to-end resource optimization for 5G mobile services: from radio head to data center.
- Backhaul/fronthaul considerations for dynamic capacity and mobility management.

- SDN northbound, southbound and east-west interfaces.
- SDN programming languages and data models.
- Progress and future challenges in ETSI NFV.
- Progress and future challenges in IETF/IRTF related WGs/RGs.
- SDN and NFV in wireless and mobile networks.
- Orchestration and Management in SDN and NFV.
- Multi-domain considerations in SDN and NFV.
- SDN and NFV in multi-tenancy environment.
- Open Source efforts (e.g., ETSI NFV, OPNFV, OpenStack, and OpenMANO).
- QoS/QoE aspects related to SDN and NFV based network services.
- Inter/Intra Data Center considerations for hosting SDN and NFV based network services.
- Performance, Fault and Lifecycle management of virtualized network functions and network services.
- Infrastructure resource/capacity management.
- Carrier-grade performance considerations in SDN and NFV based infrastructures.

Track on IoT, massive MTC 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 and IoT.
- 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.
- URLLC for mission-critical IoT.
- V2X standards and architectures.

- Delivering services over ICN in 5G within a framework enabling network slicing.
- Enhancing 5G backhaul/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.

Track on 5G Radio and Wireless Communications

- Physical layer and MAC layer design for cellular and other 5G-enabling wireless networks
- Dynamic scheduling, power control, interference management, and QoS management in 5G wireless networks
- Techniques for latency reduction in 5G networks
- Resource Management and Control in 5G RAN (e.g. RAN Moderation, Traffic Steering, Mobility Control)
- Service-oriented user-plane design concepts (novel functions, functional placements, RAN/CN interface)
- Topology, deployment, and optimization of wireless networks, including heterogeneous, ultra-dense, and mesh networks, device to device (D2D) communication, relays and wireless backhaul
- Dynamic radio access and backhaul topologies based on moving and unplanned small cells
- Wireless access for terminals moving at high speeds
- 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
- C-RAN and flexible fronthaul / backhaul
- R&D and standardization activities towards 5G and IMT-2020
- 3GPP phased work on NR: Non-standalone and standalone solutions, Phase-I and Phase-II of 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 802.11ax/ay)
- 5G-LTE interworking: architecture options and likely deployment scenarios
- 5G/LTE -- Wi-Fi/Wi-Gig interworking and aggregation
- 5G operation and coexistence in unlicensed and shared spectrum bands
- Massive MTC (mMTC), Industrial Internet of Things (IIoT), and long distance communications
- Automotive/V2X and ultra-reliable communications
- Next-generation non-RF communications systems (Visible light, molecular, acoustic systems)
- Likely spectrum bands for early 5G deployments
- Spectrum regulation above 24GHz
- Results from simulation, prototyping, and experiments
- Beyond 5G: emerging candidate technologies and business use-cases



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Organizing Committee:

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For more information and submission instructions please visit the conference website: <http://sites.ieee.org/cscn-2018/>