

EDITOR'S UPDATES — DECEMBER 2022

Welcome to the December 2022 Edition of the *IEEE Communications Standards Magazine*.

This edition features the Special Issue (SI), "Time-Sensitive Networking," together with the two Series, "Wireless and Radio Communications" and "Cloud and Edge Computing." There are four articles published in the SI and four articles published in the two Series, respectively. All the articles above will be introduced by their editor teams in the corresponding editorials.

There are three papers accepted in the Open Call and two papers under the Series Topics, "IoT and Machine-Type Communication" and, "Management and Orchestration," respectively.

The three articles under the Open Call address various issues in the 5G systems. Specifically, the first article, entitled "Architecture, Protocols, and Algorithms for Location-Aware Services in Beyond 5G Networks," introduces the 5G positioning framework developed for the transport industry in the Third Generation Partnership Project (3GPP) standards. The architecture and protocols are also discussed in support of fusing cellular measurements and onboard sensor measurements in order to achieve high-accuracy localization.

The second article is a team work from industry and academia with the title, "Standardization of the 5th Generation Fixed Network for Enabling End-to-End Network Slicing and Quality-Assured Services." It provides an overview on the overall architecture of F5G with three interacting planes. Furthermore, it is demonstrated that the F5G is capable of supporting various use cases satisfying their requested Quality of Services (QoS).

The third article, "Security Threats and Cellular Network Procedures for Unmanned Aircraft Systems: Challenges and Opportunities," presents advances in 3GPP standardization on Unmanned Aircraft Systems (UAS). Specifically, the network security requirements and threats related to UAS, location information, and Command and Control signaling are identified and the architecture, interfaces, and security procedures to address them are elaborated, followed by discussions on future research and standardization opportunities.

The article in the Series, "IoT and Machine-Type Communi-



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cation," is entitled, "3GPP Release-17 Physical Layer Enhancements for LTE-M and NB-IoT." As suggested by the title, it describes the physical layer enhancements introduced in the Release 17 for NB-IoT and the Category M1 User Equipment. Evaluation results and future works are also included.

The title of the article in the Series "Management and Orchestration" is "A 6G Agent-Based Intelligent Network Architecture." This article provides the design and the characteristics of an agent-based, softwareized, and intelligent architecture. Interestingly, it coherently condenses and merges the independent architectural works by different standardization working groups.

In addition, two short articles are presented in the Standards News column. One introduces a new established Technical Interest Group on the Artificial Intelligence Machine Learning within the IEEE 802.11 Working Group, while the other provides insights on how a customizable Wi-Fi architecture is helping remote workers.

I would like to thank all the authors for submitting their papers to the *IEEE Communications Standards Magazine* and the peer reviewers for reviewing the manuscripts. Morgan Carleton, Jennifer Porcello, and Christina Keller on the communications Society staff have been limitless in their support of this publication. Glenn Parsons, the Founding EiC, has been helping handle the IEEE Commentary Column, and Carlos Cordeiro, the AEiC, has been pulling together articles for both the Industry Commentary Column and the News Column. As 2022 has come to an end, I would like to take this opportunity to wish all a healthy, peaceful, and prosperous 2023!

BIOGRAPHY

ZANDER LEI (lei.zhongding@huawei.com) is a senior researcher at Shield Lab, Huawei Singapore Research Center. He has been working on 5G security for 3GPP networks since 2016. Prior to joining Huawei, he had been a Lab Head and senior scientist with the Agency for Science, Technology, and Research (A-STAR) of Singapore, doing research and participating in standardization activities on/for various aspects in wireless systems and networks. He was the Associate Editor-in-Chief of *IEEE Communications Standards Magazine* from 2017 to 2019, the Chair/co-Chair and Chief Editor for the Task Forces developing Singapore Standards on IoT and ITS respectively, from 2014 to 2018, the Vice Chair of IEEE 802.11ah Task Group from 2014 to 2016, and PHY Technical Editor of the IEEE 802.22 Working Group from 2006.

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