

# THE IMPORTANCE OF NATIONAL STANDARDS

Welcome to the third edition of *IEEE Communications Standards Magazine* for 2019. This edition is the result of the work of many people committed to the creation and development of a magazine that focuses on standards relevant to the information and communication technology (ICT) industry.

Many of us in industry see standardization as international. This seems perhaps obvious since most companies sell products destined for the international market. There are clear economies of scale when you can build one product that meets ICT standards worldwide. It has been suggested that it was the inconvenience of connectivity while travelling in the laptop modem age that drove this convergence. Many standards professionals may recall the bag of adaptors required to ensure their laptop connected to the telephone jack in international meeting hotels. It was the laptop manufacturers, and of course all ICT manufacturers, that wanted to have a global standard interface on their products that was the driver. Consumers resonated with the standard laptop jack and the previous regime of differing national telephone jack standards to protect the national ICT manufacturer faded away.

This does not mean, however, that national standards are no longer relevant. While some standards become ubiquitous (like the laptop RJ11 jack did for telephones), others are not as obvious. The well known quote from Andrew S. Tanenbaum again describes the problem: "The nice thing about standards is that there are so many of them to choose from." National standards bodies now find a new role in sifting through the international standards to identify which



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are the most appropriate for their country. This was always the process for international standards bodies like ISO and IEC, that have a structure based on national committees and encourage national adoption. However, there is no such structure in IEEE, IETF or the multitude of standardization forums (many of which are created for a single topic).

So how does a national standards body choose? They cannot choose and adopt everything. A common activity is bilateral or multi-lateral workshops hosted by national standards bodies. These activities give the national bodies an understanding of new and emerging

standardization areas, as well as the opportunity to have an exchange with other national standards bodies. In many cases, there are then MoUs (memorandums of understanding) between these bodies to allow them to collaborate and cross-reference to make the choices easier for everyone.

I have had the opportunity to meet with many national standards bodies over the years. What stands out is the desire to make things simpler for their country. Every country has at least one characteristic that makes it different, and these national bodies keep that in mind as they look to choose national standards. There is also a spirit of collaboration in choosing. They support working together with other countries to meet a common goal and support international standards.

The importance of standards to the work and careers of ICT practitioners continues to motivate the content of this publication. This magazine strives to provide summaries of new innovative standardization activities to spark creativity and enthusiasm. While proposals for standards feature topics are always welcome, we will focus *IEEE Communications Standards Magazine* on a recurring series of nine relevant standards topics. The technical editors for these series (<https://www.comsoc.org/comstandardsmag/series-editors>) seek out relevant articles on standardization in their areas, and several of these series will publish multiple times during the year. In this issue, two of these series are featured. You will enjoy an editorial from each team of series editors as well as a summary of the articles in this issue.

Series Topics and Editors Featured in this Issue	
Series Topic	Series Editors
Wireless and Radio Communications	Todor Cooklev Leif Wilhemson Peiyong Zhu
ITU Kaleidoscope	Mostafa Hashem Sherif Kai Jakobs

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**SUBMISSIONS:** The magazine welcomes tutorial or survey articles that span the breadth of communications. Submissions will normally be approximately 4500 words, with few mathematical formulas, accompanied by up to six figures and/or tables, with up to ten carefully selected references. Electronic submissions are preferred and should be submitted through Manuscript Central: <http://mc.manuscriptcentral.com/m-comstd>. Submission instructions can be found at the following: <http://www.comsoc.org/comstandardsmag/paper-submission-guidelines>. All submissions will be peer reviewed. For further information contact Associate Editor-in-Chief, Zander Lei ([lei.zhongding@huawei.com](mailto:lei.zhongding@huawei.com)).

Readers will find a recurring commentary from the IEEE-SA President. In addition, this issue features commentaries with updates from several industry standards forums and standards development organizations (SDO). The Standards News section offers the status of standards work in multiple leading SDOs, as well as pointers to additional SDO material. These articles are informative and illustrate the fundamental role standards play in the communications networking ecosystem.

I would like to take this opportunity to thank all the authors for submitting their papers to the Communications Standards Magazine and, of course, to the many peer reviewers who ensured the articles were of the highest quality. Zander Lei (Associate Editor-in-Chief) has been assisting me with the magazine, especially in pulling together the standards news section. Finally,

Joseph Milizzo and the Communications Society staff have been limitless in their support of this publication.

Please enjoy this insightful review of communications standards activities, along with leading articles in the field.

## BIOGRAPHY

GLENN PARSONS [SM] (glenn.parsons@ericsson.com) is an internationally known expert in mobile transport and Ethernet technology. He is a standards advisor with Ericsson Canada, where he coordinates standards strategy and policy for Ericsson, including network architecture for 5G transport. Previously, he has held positions in development, product management and standards architecture in the ICT industry. Over the past number of years, he has held several management and editor positions in various standards activities including IETF, IEEE, and ITU-T. He has been an active participant in the IEEE-SA Board of Governors, Standards Board and its Committees since 2004. He is currently involved with 5G transport standardization in MEF, IEEE and ITU-T and is chair of IEEE 802.1. Prior to being Editor-in-chief for this magazine, he was a Technical Editor for *IEEE Communications Magazine* and co-editor of several *IEEE Communications Magazine* feature topics. He graduated in 1992 with a B.Eng. degree in electrical engineering from Memorial University of Newfoundland.

## CALL FOR PAPERS

IEEE COMMUNICATIONS STANDARDS MAGAZINE

## INTERNET-OF-THINGS

5G Radio Access Technologies (RAT) systems shall integrate three different components, namely, extreme mobile broadband capacity (eMBB), a massive amount of machines communicating (mMTC) and ultra-reliable communication (URC) capabilities. Internet-of-Things (IoT) specially refers to the last two pillars of the 5G concepts, in the sense that connectivity solutions will be conceived for tens of billions of network-enabled devices having diverse requirements. Beyond the current hype, IoT will undoubtedly affect all sectors of the economy such as automotive, construction, energy or manufacturing, wherein communication is a prerequisite to reach the "fourth industrial revolution". The reaction from standardization bodies has been immediate, producing a number of new standards in the last few years (EC-GSM, eMTC, NB-IoT, LTE-V, LoRa...).

In addition to the network communications related standards, various IoT protocol and platform (3GPP, IEEE, IETF, oneM2M, etc.) standards have been developed to address requirements for device management and secure data exchange between devices and applications. As the deployments pace accelerates to cover a wider scope of use cases, the industry will be looking for new waves of standards addressing emerging requirements such as cross industry domain communications and semantic interoperability.

This Series Topic (ST) seeks articles on recent developments and future directions for IoT standards. Papers describing original work are solicited. Topics of interest include, but are not limited to:

- Enabling standardized technologies and platforms for IoT for instance 5G networks, IoT Protocols (IPv6, 6LoWPAN, NB-IoT, CoAP, MQTT, DDS, OPC-UA, etc.), Vehicle-to-anything communications
- IoT standards related solutions to a specific sector of the economy e.g. Smart cities, e-Health, Automotive, Transport, Utilities, Consumer electronics and Manufacturing
- Enabling Standards for IoT e.g. 3GPP, oneM2M, IEEE, W3C, IETF, IIC, AIOTI, etc
- Field trials/demonstration of large-scale IoT standard based deployments

## SUBMISSION GUIDELINES

Articles should be tutorial in nature and written in a style comprehensible and accessible to readers outside the specialty of the article. Authors must follow the Paper Submission Guidelines for preparation of the manuscript. It is important to note that the *IEEE Communications Standards Magazine* strongly limits mathematical content, and the number of figures and tables. Paper length should not exceed 4,500 words. All papers to be considered for publication must be submitted by the deadline through IEEE Manuscript Central. Select "IoT and Machine-Type Communication" from the drop-down menu of submission options.

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