INDUSTRY ENGAGEMENT IN STANDARDIZATION

Welcome to the final edition of *IEEE Communications Standards Magazine* for 2018. 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.

Industry engagement in standardization has always been strong, especially in the ICT industry. While the broader IEEE has established the Industry Engagement Committee to identify and act on opportunities, gaps and overlaps, it is interesting to consider why such an initiative has not been needed for ICT standards activities in IEEE or elsewhere. The ICT industry is especially consumer focused. As it has grown over the past few decades, consumers who may have started out content with proprietary interfaces from vendors grew fickle. Whether it was a dislike of a big vendor's indifference or the reality of a small vendor's disappearance, they both drove the consumer to require product interoperability. While initially this manifested as the big vendor having small vendors simply implement their interface, it grew toward multiple vendors getting together and discussing a new common interface that they would all implement. The market was more accepting of, and thus drove interoperable standards.

Glenn Parsons

Today there are multiple established standards ecosystems (e.g., Ethernet, Wi-Fi, USB, 4G/5G) that have no single vendor in control of the interface, but instead whose evolution is based on the input and agreement of multiple players from industry. In these ecosystems, the return on investment (ROI) is so clear that industry gladly funds its standards professionals to attend and drive the evolution. The ROI varies by the industry player but could include leading the market, positioning or depositioning intellectual property, getting early visibility on direction, gathering competitor insights, and even identifying new markets and customers. These ecosystems have proved so valuable (with billions in product revenue for the vendors in various markets) that there are now numerous "copy cat" activities. That is, a new industry constituency gets together to develop a standard on some new interface or protocol either in an existing standards setting organization, or a newly created organization fit for the purpose. While not all will be market success stories, they are all developed in a consensus standardization environment that has proven to be a success in driving market acceptance. It is this track record over decades that has solidified industry engagement in standardization.

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, five of these series are featured. You

Series Topics and Editors Featured in This Issue	
Series Topic	**Series Editors**
Wireless and Radio Communications	Todor Cooklev Masayuki Ariyoshi Leif Wilhemson
Kaliedoscope	Mostafa Hashem Sherif Kai Jakobs Yoichi Maeda
Management and Orchestration	Huub van Helvoort Scott Mansfield Toktam Mahmoodi
Vehicular Networking	Xiaodong Lin Anwer Al-Dulaimi
IoT and Machine-Type Communication	Afif Osseiran JaeSeung Song Omar Elloumi Jose F. Monserrat

will enjoy an editorial from each team of series editors as well as a summary of the articles in this issue.

Readers will notice a recurring commentary from the IEEE-SA President. The IEEE Standards Education section continues to create awareness and understanding of the importance of standardization to industry and society. The Standards News section offers the status of standards work in multiple leading standards development organizations (SDO), 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 *IEEE 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 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

SUBMISSIONS

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 Magazinestrongly 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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