



IEEE Magnetics Society Standards Committee (MG/SC)

2nd Meeting

31 May 2023

9:30 AM EDT (6:30 AM San Francisco, 2:30 PM London, 7 PM Delhi India, 9:30 PM Taiwan - Hong Kong - Singapore - Beijing, 10:30 PM Tokyo)

**This meeting is recorded solely for the purpose of taking minutes. The recording will be destroyed after the minute is taken and approved in the next meeting.*

Agenda

1. Call to Order
2. Introduction and Affiliation Declarations
3. Approval of the Agenda
4. Approval of minutes of the previous meeting
5. Report from Chair
6. Formation of Technical Subcommittees, chairs and officers appointment
7. Technical topics of Technical Subcommittees (content and boundary)
8. Work scope and future actions of Technical Subcommittees
9. Publication in TMAG / Newsletters regarding standard developments and activities
10. Liaisons with other IEEE Societies
11. Discussion(s)
12. New business
13. Future meetings
14. Adjourn

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1. Call to Order



Chair
Philip Pong
New Jersey Institute of Technology



Vice-Chair
Daniel Gopman
National Institute of Standards and Technology



Secretary
Vijaysankar Kalappattil
Colorado State University



Senior Program Manager
Malia Zaman
IEEE Standards Association

- IEEE SA Patent Policy
- IEEE SA Copyright Policy

24 Participants in the Previous Meeting on 27 Oct 2022

Philip Pong*
Daniel Gopman*
Vijaysankar Kalappattil*
Mingzhong Wu*
Plamen Stamenov*
Gen Yin*
Ravi Hadimani
Jan Kubik
Dmytro Bozhko
Sachiko Yamaguchi-Sekino

Yutaka Yoshida
Mohammad Yazdani- Asrami
Jingsheng Chen
Robert Carpenter
Kevin Garello
Michael Devine*
Min Zou
Masahiro Yamaguchi*
Alina Deac*
Robert Sattarov*
Steve Sprague
Atsufumi Hirohata*
Massimo Pasquale*
George Slama*

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2. Introduction and Affiliation Declarations

Could everyone please introduce yourself (as well for our records) by:

Chat box - First Name, LAST NAME, affiliation, email address

Alternatively, you can also send your details and email address to the Vijay

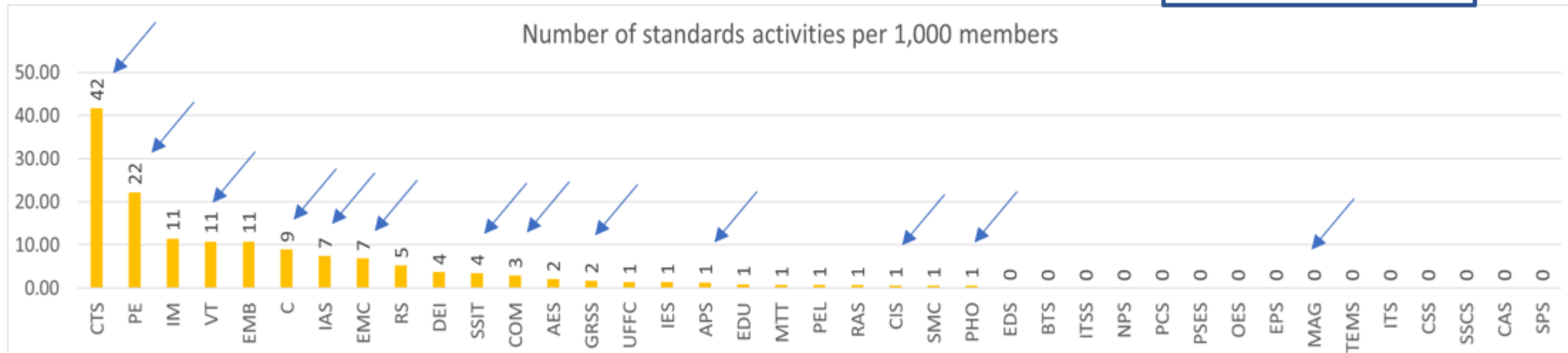
Kalappattil,Vijaysankar <vijay.Kalappattil@colostate.edu>

Attendance record is important because one has to attend at least 2 out of 4 recent meetings in order to retain voting right.

2. Introduction and Affiliation Declarations

Standards Activities levels per Society/Council as of May 2021

CoS Participant



Responsibilities of MG/SC (some examples):

- Oversee and coordinate the standards development of the IEEE Magnetics Society
- Make decisions on the standards documents by voting
- Bring colleague up-to-date with the latest technology and product development

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27 Oct 2022 - **Kick-off Meeting** ([Agenda](#))

-  Standards Development Process Overview Magnetic Society Standards Committee Workshop - Feb. 7th, 2023 
-  Policies and Procedures for Standards Development for the IEEE Magnetics Society Standards Committee 
-  Policies and Procedures for Standards Development for the IEEE Magnetics Society Standards Committee All Working Groups 
-  Working Group Standards Development Process Overview 
-  Draft Meeting Minutes for 27 Oct 2022 Kick-off Meeting 

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4. Report from Chair

Events organized:

Feb 7, 2023: Online Educational Workshop, “Standards Development Process Overview”, by Malia Zaman (IEEE Standards Association), around 50 participants

Apr 3, 2023: Online Educational Workshop (joint event with IEEE Education Week), “Value and Importance of IEEE Standards”, Edward Au (Chair, IEEE Technical Activities Board Committee on Standards), around 20 participants

Technical Subcommittees:

56 colleagues indicated interest to join

Chairs nominated:

- Spintronics & recording (Weigang Wang, University of Arizona)
- Power, energy, machine, and environment (Yunpeng Zhang, Shanghai University)
- Sensors, communications, instrumentation, and measurement (Philip Keller, Metrolab Technology)
- Materials and phenomena (Michael Devine, Adams Magnetic Products)
- Bio, interdisciplinary, and emerging topics (Cindi Dennis, NIST)

4. Report from Chair

Transactions on Magnetics (TMAG):

Discussed with Publication Committee and Editor-in-Chief of TMAG. In the category of “Advances in Magnetics”, TMAG can publish papers on: 1. introducing new standards initiatives in MagSoc, 2. discussing the need for new IEEE standards in magnetism, 3. explain some newly published standards endorsed by MagSoc. Each Technical Subcommittee will work on a paper to be submitted to TMAG.

TAB Committee on Standards Seed Funding Opportunities:

Submitted a proposal on behalf of the Magnetics Society to request seed funding for promote activities leading to a new standard development, publicize the importance of standards development through meetings, workshops or conferences, and cultivate the interest in contributing to IEEE standards.

1 PAR (P3387) submitted to IEEE Magnetics Society Standards Committee:

Project Title: Guide for Conducting Contactless Current Measurement for Multi-Phase Multi-Core Power Cables Based on Magnetic Field Sensing
Working Group Chair: Philip Pong

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- Spintronics & recording:
Chair: Weigang Wang, University of Arizona
Vice-Chair: Gen Yin, Assistant Professor, Georgetown University, USA
- Power, energy, machine, and environment
Chair: Yunpeng Zhang, Shanghai University
Vice-Chair: Joao Filipe Horta Belo da Silva, Universidade do Porto, Portugal
- Sensors, communications, instrumentation, and measurement
Chair: Philip Keller, Metrolab Technology
Secretary: Mahmoud Rasly, Central Metallurgical Research and Development Institutes, Egypt
- Materials and phenomena
Chair: Michael Devine, Adams Magnetic Products
Vice-Chair: Jiayan Law, University of Seville, Spain
Secretary: Sanjeev Gautam, Panjab University, Chandigarh, India
- Bio, interdisciplinary, and emerging topics
Chair: Cindi Dennis, NIST, USA

*All officers are highly recommended to be members of IEEE SA and IEEE Magnetics Society
Working groups → Technical Subcommittees → Standards Committee

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1. Scope of works of Technical Subcommittees

- Identify current and future technology standards specific to the topic of the subcommittee
- Promote standards activities, paper publications, conferences, meetings specific to the topic of the subcommittee
- Advise on evolutions of technical subcommittees (forming new subcommittee as technology evolves, old subcommittees phase out)
- <https://www.transformerscommittee.org/>

2. Future Actions of Technical Subcommittees

- Give update on subcommittee progress to Standards Committee
- Seek approval from the Standards Committee for major activities or events
- Report on liaisons with other standards organizations (IEC, ASTM) or entities or conferences or companies (if any, to be developed)

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Publication in TMAG / Newsletters regarding standard developments and activities

Publication in TMAG (“Advances in Magnetism”) / Newsletters regarding standard developments and activities:

1. Introducing new standards initiatives in MagSoc (e.g. what are the Technical Subcommittees and Working Groups working on?)
2. Exploring and discussing the needs for new IEEE standards in magnetism (e.g. what are the potential gaps to fill?)
3. Explaining some newly published standards endorsed by MagSoc (e.g. what are these new standards about and what are their impacts?)

STANDARDS

Edward Au



New Standards Initiatives on Ultrawideband

The IEEE 802.15 Working Group on Wireless Specialty Networks is a working group of the IEEE 802 LAN/MAN Standards Committee of the IEEE Computer Society. It is chartered to develop interoperability standards addressing wireless networking for emerging Internet of Things applications. Among the many standards the working group has been developing, IEEE 802.15.4 IEEE Standard for Low-

IN ADDITION, THERE ARE NEW APPLICATIONS THAT CALL FOR ADDITIONAL FLEXIBILITY AND SCALABILITY, VARYING THE SIZE, SHAPE, AND NUMBER OF DEVICES IN A NETWORK FROM A FEW DEVICES WITHIN LESS THAN 1 M TO HUNDREDS OR MORE DEVICES WITH DISTANCES OF UP TO 100 M.

of precise ranging, localization, and sensing by defining MAC support of time-of-flight ranging procedures

1 m to hundreds or more devices with distances of up to 100 m.
IEEE 802.15 Study Group NG-11WB

IEEE VEHICULAR TECHNOLOGY MAGAZINE | SEPTEMBER 2021

TIME-SENSITIVE NETWORKING

SYNCHRONIZATION IN TIME-SENSITIVE NETWORKING: AN INTRODUCTION TO IEEE STD 802.1AS

Silvana Rodrigues and Jingfai Lv

ABSTRACT

Synchronization has become key in many applications. It is a key aspect of Industrial Automation networks, as those applications depend on synchronized time. It is also important for automotive applications, as synchronization is used for infotainment and handling sensor data. In Telecommunications networks, synchronization has been used for many years, and it is very important to fulfill 5G technology requirements. The Time-Sensitive Networking (TSN) Task Group (TG) of IEEE 802.1AS has developed several base standards to allow a deterministic network with bounded latency. IEEE Std 802.1AS, “Timing and Synchronization for Time-Sensitive Applications,” is part of these base standards developed by the TSN TG. This article gives an introduction of IEEE Std 802.1AS, and addresses synchronization concepts and its applications. IEEE Std 1588 defines a precision time protocol (PTP), and IEEE Std 802.1AS includes a profile of IEEE Std 1588; therefore, some concepts of IEEE 1588 are also described in this article.

first published in 2002, mainly addressing test and measurement applications. Soon after its publication, the development of IEEE 1588 version 2, published in 2008, was underway to address a wide variety of applications, such as Test and Measurement, Telecommunications, Power, Industrial Automation, and Military. In 2019, a new edition (version 2.1) of IEEE Std 1588 was approved, and was published in 2020.

The first version of IEEE Std 802.1AS was published in 2011, and is based on IEEE Std 1588-2008; its focus was audio and video applications. The second version of IEEE Std 802.1AS was published in 2020, and is based on IEEE Std 1588-2019; it was developed to include other TSN applications, such as Industrial Automation, Automotive, and Aerospace. Even though IEEE Std 802.1AS includes performance requirements intended for Audio and Video, the performance requirements for new applications will be addressed as part of new TSN profiles, such as IEC/IEEE 60802 TSN Profile for Industrial Automation.

The authors recognize the sensitive nature of some words used in IEEE Std 1588 and IEEE Std

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ACCEPTED FROM OPEN CALL

STANDARDIZATION OF THE 5TH GENERATION FIXED NETWORK FOR ENABLING END-TO-END NETWORK SLICING AND QUALITY-ASSURED SERVICES

Luca Pesando, Johannes K. Fischer, Behnam Shariati, Ronald Freund, Jose Cananano, Hongyu Li, Yi Lin, Olivier Ferveur, Ming Jiang, Jialiang Jin, David Hillerkuss, Marcus Brunner, Jun Zhou, Juan del Junco, Hakim Mkinsi, and Xiang Liu

ABSTRACT

Fixed networks play an increasingly important role in supporting broadband services to homes, offices, shopping centers, business buildings, factories, smart cities, and much more. Reaching closer to end-user access points in rooms, office desks, and even factory machinery, optical fiber will realize its full potential to support a fully connected, intelligent world with high bandwidth, high reliability, low latency, and low energy consumption. With the fiber-to-everywhere vision, the European Telecommunications Standards Institute (ETSI) established an industry specification group (ISG) dedicated to the definition and specification of the 5th generation fixed network (F5G) in 2020. In this article, we describe the overall architecture of F5G, which

of 5G are underway in the decade of the 2020s. In the 5G era, fixed networks, which include customer premises networks (CPNs), access networks (ANs), aggregation networks (AggNs), and core networks (CNs), are playing an increasingly important role in supporting broadband services. By the first half of 2019, 570 million fiber-to-the-home (FTTH) users have been registered worldwide [1]. It is also estimated that 700 million households will use optical access networks by 2023. Optical fiber is expected to realize its full potential to support a fully connected, intelligent world by reaching deeper into the CPN toward rooms, office desks, and even factory machines. It is with the fiber-to-everywhere vision that the European Telecommunications Standards Institute

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Liaisons with other IEEE Societies

PES Substations Committee

<https://cmte.ieee.org/pes-substations/standards/>

PES Transformers Committee

<https://www.transformerscommittee.org/>

Or other organizations:

ASTM, ISO, IEC, CIGRE

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Future meetings

1. If Technical Subcommittees are going to have meetings, please let Vijay and Philip know so that we can prepare the announcement via the Magnetics Society
2. Next Standards Committee meeting: around September, before MMM Dallas (Oct 30 – Nov 3)

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