



# EMC Standards Activity

*Don Heirman, Associate Editor*

EMC Standards Activity was busy as usual during the 2020 IEEE International Virtual Symposium on EMC+SIPI. While many of us look forward to our annual face-to-face meetings of our Working Groups and Technical Committees during the annual symposium, this year was not to be. With the pandemic, our meetings became virtual during the month of August. This enabled many guests and others interested in our activities to attend and learn more – virtually! Following you will find a summary of some of the significant activity that took place during the symposium. We also received good news about the approval of two of our standards that were approved shortly before (P1848) or shortly after (P370) the symposium. We hosted our first IBIS Summit, sponsored by the IBIS Open Forum – an organization driving the simulation and modeling of integrated circuit inputs and outputs, which are used in PCB functional verification, timing

closure, and EMI/SI prediction. Following the symposium, the Standards Development and Education Committee (SDECom) Chair, Ross Carlton, delivered a System-level ESD Tutorial and EMC Expert Panel, sponsored by the EMC Society, at the 2020 EOS/ESD Symposium. EMC luminaries Bob Scully and Colin Brench joined Ross as tutorial speakers and panelists. During the Expert Panel, they discussed the need for the ESD Association and the EMC Society to work on a standard regarding how to test ICs for their system-level characteristics. As you can see from the articles below, EMC Standards are alive and well! We invite you to join us in developing standards and/or collaborating with other organizations, such as the ESD Association and the IBIS Open Forum. Please contact our EMC Society Vice President for Standards, Ed Hare, at [w1rfi@arrl.org](mailto:w1rfi@arrl.org) for more information on how you can get involved.



# Standards Development and Education Committee (SDECom) Update

*By Ross Carlton, SDECom Chair*

The Standards Development and Education Committee (SDECom) last met on August 8 and 27 during the 2020 IEEE International Virtual Symposium on EMC+SIPI. The current membership of SDECom consists of 21 individual experts in EMC standards development. In attendance were 11 members of SDECom, Jennifer Santulli of the IEEE Standards Association, and several guests. SDECom meetings are open to the public so that any interested person may attend.

SDECom currently sponsors 14 active projects with the IEEE Standards Association (IEEE-SA). Information about our standards and standards projects can be found at the IEEE-SA website at <https://standards.ieee.org>. Working Groups are open to anyone to participate. For almost all SDECom-sponsored projects, neither IEEE nor IEEE-SA membership is required to participate. Please join us if you are interested. During our meetings in August, the following topics were discussed.

### • Published Standards

- o **P1848 “Techniques & Measures to Manage Functional Safety and Other Risks with Regard to Electromagnetic Disturbances”** should be published by the time you read this article. Congratulations are in order for the Working Group Chair - Keith Armstrong. Please his accompanying article on this breaking news!

### • New Standards Nearing Publication

- o **P370 “Electrical Characterization of Printed Circuit Board and Related Interconnects at Frequencies up to 50 GHz”** has resolved all comments received from three rounds of balloting. The standard should proceed to final editing before the end of the year. Publication is expected in the near future. Congratulations are in order for the Working Group Chair – Xiaoning Ye. Please his accompanying article on this breaking news!

### • New Projects Looking for Members

- o **P2855 “Recommended Practice for the Electromagnetic Characterization of Cable/Connector Assembly Shielding Effectiveness in Frequency Range of Direct Current to 40 GHz”**. This project was recently approved in March 2020. The working group chair is Huadong Li. We are seeking interested parties to participate.
- o **P2838 “Standard for Aircraft Component Lightning Strike Direct Effects Qualification”**. This project was recently approved in November 2019. The Working Group Chair is Fred Heather. We are seeking interested parties to participate.

The meeting on 8 August 2020 was focused on Symposium planning. After working through the typical Committee administrative

items, we got down to business with a discussion of plans for the 2020 Virtual Symposium. Like most of the Symposium content, our Standards Week was spread out over the month of August. SDECom expanded its content this year with the addition of the IBIS Summit, sponsored by the IBIS Open Forum. (See the accompanying article on this special event by Zhiping Yang.) We next discussed several topics of interest to SDECom including the creation of Standards Continuity Groups to identify when standards need revision, working closer with the Technical Committees of the EMC Society, working closer with other IEEE Societies and non-IEEE organizations such as the ESD Association, and our long-range plan to address future challenges and directions in standards development.

The meeting on 27 August 2020 began with the approval of extensions for projects expiring in 2020: P473, P1897, P2710, P2715, and P2716. The next topic discussed was the status of the standards overseen by SDECom. We reviewed the status of each standard

and received Working Group reports, where available. SDECom is already considering extensions to P1848 to focus on industry- or application-specific guidance for functional safety with respect to EMC such as military, medical, rail, nuclear, etc. Interested parties should attend a future SDECom meeting to get involved. We closed the meeting with observations from our EMC Society VP of Standards, Ed Hare.

The next meeting of SDECom will be held in the November 2020 time frame. Dates are still under consideration. Check the SDECom website for details.

Meeting announcements, agendas, minutes, status of EMC standards, and other documentation are open to all and available at the SDECom website located at: <https://www.emcs.org/development-and-education.html>. Please feel free to contact me directly with any questions at [ross.carlton@ets-lindgren.com](mailto:ross.carlton@ets-lindgren.com). Your involvement is most welcome!

**EMC**



## Managing Functional Safety (and Other) Risks Caused by EMI: Notes on the Final Meeting of the IEEE P1848 Working Group, August 24, 2020

*By Keith Armstrong, P1848 Working Group Chair, [karmstrong@ieee.org](mailto:karmstrong@ieee.org)*

IEEE STD 1848 is approved for publication, expected in September 2020 when it will probably replace the Approved Draft currently posted at <https://standards.ieee.org/standard/1848-2020.html>.

The P1848 Working Group met for the last time on August 24, virtually of course, during the 2020 IEEE International Virtual Symposium on EMC+SIP1. Twenty-two people attended, not all of them were members of the Working Group.

Alistair Duffy, the current President of the IEEE EMC Society, described his plans to create a 'Continuity Group' (CG) to keep the technical awareness of 1848's topics up-to-date until it is time to create a new Working Group for its Second Edition.

I am retiring from standards work, but as no Chair has yet been appointed for this CG please email me if you want to take part in it, at [karmstrong@ieee.org](mailto:karmstrong@ieee.org).

At this meeting, we also discussed creating industry/application-specific versions of IEEE STD 1848:2020. I anticipate that creating these 'spin-offs' would not require the technical content to change by very much, but that most of the changes would be in the introductory and descriptive material, and in the terminology, to make the new version particularly relevant to the application/industry concerned.

The IEEE EMC Society's TC-1 was the sponsor for IEEE P1848, and

Tom Braxton (the current Chair of TC-1) has said that they would be pleased to sponsor any spin-offs.

No proposals (called 'PARs') have yet been created, or Chairs appointed, for any new versions, but if you are interested in joining a Working Group on one of the topics below, or creating a new topic, please communicate with the people named below, or with me at [karmstrong@ieee.org](mailto:karmstrong@ieee.org).

There was strong interest in the following topics:

- NATO/military – Greg Hiltz (NATO's EMC co-ordinator): [GREGORY.HILTZ@forces.gc.ca](mailto:GREGORY.HILTZ@forces.gc.ca)
- Railways – Ken Webb: [Ken.Webb@mottmac.com](mailto:Ken.Webb@mottmac.com)
- Medical devices and systems – Warwick Wong: [warwickwong@google.com](mailto:warwickwong@google.com)
- Avionics – Warwick Wong: [warwickwong@google.com](mailto:warwickwong@google.com)
- Automotive – Kai Borgeest: [Kai.Borgeest@th-ab.de](mailto:Kai.Borgeest@th-ab.de)

Other possibilities for which some support has been expressed, are (so far):

- Machinery
- Agricultural machinery
- Radio/wireless communications
- Process Industry
- Nuclear