

**APPROVED MINUTES**

**OF THE IEEE EMC SOCIETY BOARD OF DIRECTORS MEETING**

**Atlantis Hotel  
Reno, Nevada  
December 10, 2019**

**MEMBERS PRESENT (20)**

B. Archambeault  
H. Benitez  
T. Braxton  
C. Bunting  
R. Carlton  
C. Chan  
B. Davis  
A. Duffy  
Y. Fukumoto  
H. Garbe  
E. Hare  
S. Kaule  
J. LaSalle  
F. Leferink  
J. Norgard  
J. O'Neil  
V. Rajamani  
F. Sabath  
C. Sartori  
M. Violette

**ABSENT (8)**

J. Drewniak  
J. Fan  
K. Hatashita  
D. Lewis  
D. Pissoort  
G. Wiid  
T. Wu  
X. Ye

**GUESTS (4)**

M. Antyufeyeva (on line)  
D. Heirman (on line)  
M. Steffka (on line)  
K. Williams

## 1.0 THE PRESIDENT'S OPENING REMARKS

President Bruce Archambeault called the meeting to order at 9:00 am on Tuesday, December 10. A round of introductions was made. He asked each person present to identify their role on the Board (i.e. what activity they support). He reviewed Board meeting protocol, the IEEE code of ethics, the EMC Society Field of Interest and Strategic Plan Goals (see President's Introductory Remarks). He reminded Board members of the material on the Board Repository site and asked that everyone remember to review this prior to the Board meetings (<http://ieee.emc-center.org/emcbod/login.aspx>).

## 2.0 CONSENT AGENDA MOTIONS

The meeting agenda was presented for review. (See Draft Agenda.) The consent agenda included the following motions:

- Approve December 10, 2019 Meeting Agenda – Archambeault
- Approve Secretary's Report – July 21 and 25, 2019 Meeting Minutes – O'Neil

**The motion to approve the consent agenda was seconded and approved.** Kimball Williams abstained from voting.

## 3.0 PAST PRESIDENT'S REPORT

Frank Sabath presented the report as the Immediate Past President. (See Immediate Past President's Report.)

He welcomed the newly elected Directors-at-Large for the term 2020-2022:

Mariya S. Antyufeyeva	Frank Leferink
Don Heirman	Christian Schuster
Mark Steffka	Mike Violette

Frank Sabath proposed the following slate of members for the Nominations and Appointments (N&A) committee for 2020-2021:

Bruce Archambeault	(Chairperson, Immediate Past President)
Davy Pissoort	(BoD, 2019-2020) (BoD, 2020-2021)
Larry Cohen	(2019-2020)
Frank Gronwald	(2019-2020) (2020-2021)

**Frank Sabath moved to approve the appointment of these members to the N&A committee. The motion was seconded and approved.**

Regarding the Operations Policy and Procedures Handbook, Frank discussed the updates made to Sections 1 and 2. He is currently working on Sections 3 and 4. For Section 4, he needs input from the following standing committees:

- Awards and Recognition Committee
- Regional and Chapters Activities Committee
- Young Professionals Committee
- History Committee

- Technical Advisory Committee (TAC)
- Education Committee (EdCom)
- Conference Committee
- Standards Advisory & Coordination Committee (SACCom)

He expects the document will be updated by July 1, 2020. Frank noted no changes are needed to the Constitution and Bylaws.

Regarding the Financial Committee (FinCom), Frank reviewed the draft budgets for the upcoming annual EMC+SIPI Symposiums for 2021-2024. He noted that IEEE requires - prior to approval of a venue for a future IEMC & SIPI Symposium – that the General Symposium Chair and the Symposium Treasurer must be appointed and a draft budget submitted to FinCom. At the annual EMC+SIPI Symposium, the current budget of the following year’s Symposium must be presented to and reviewed by FinCom. FinCom then presents a summary review report of next year’s Symposium budget to the Board.

#### **4.0 PRESIDENT’S REPORT**

President Bruce Archambeault presented his report. (See President’s Report.) He noted there have not been any e-motions approved since the last Board meeting in July 2019. On the IoT Initiative, Bruce advised the EMC-S has discontinued funding this activity, but we will continue to monitor their reports.

Bruce announced that we have a new Ad Hoc Marketing and Communications committee. Susanne Kaule will Chair the committee with support provided by Mike Violette. This newly created committee will report to the EMC-S President.

#### **5.0 TREASURER’S REPORT**

John LaSalle presented his report. (See Treasurer’s Report.) He clarified the Board member travel reimbursement policy. For the Board meeting to be held in Reno, NV during the 2020 IEEE EMC+SIPI Symposium, a maximum of four nights hotel expenses are allowed. The total expense is limited to \$1000 maximum for Regions 1-6 and limited to \$2000 maximum for regions 7-10. Note these limits are applicable to hotel and airfare expenses only.

As a reminder, only travel (plane or equivalent) and hotel expenses are allowed. Board members must complete the Volunteer Travel Form and submit it to the President and the Treasurer at least one month before the Board meeting. IEEE has modified the due date for expense report processing. They will not accept an expense report after 60 days post travel. Regarding requests for reimbursement, IEEE is now using Concur to process expense reports, effective February 11, 2019. If you have questions on using Concur, please visit [concurfeedback@ieee.org](mailto:concurfeedback@ieee.org).

Regarding the 2019 EMC Society Operations Overview, the target budget is a positive \$12,700. There is no Initiative spending planned for 2019. As of the October report, the Society is currently at a positive \$181,100. November financial data is not yet available from IEEE.

The report includes tracking information on Symposium expenses and revenue as well as a review of the level of reserves. Since 2015, the net surplus of the Symposiums and the Society reserves have considerably declined in value.

John discussed 2020 budget planning, including \$38,000 in VP-proposed initiatives for webinars, advertising the new L-EMCPA, and the demonstration circuit boards. He reviewed the annual renewal of administrative and other support contracts that support the activities of the EMC Society.

John noted IEEE Finance has selected NetSuite, a cloud-based web application, to ensure that processes are streamlined and that audit requirements are met across the IEEE Enterprise. NetSuite will be in place for Distinguished Lecturers starting on January 1, 2020. IEEE has provided training resources, including:

- <https://corporate.ieee.org/resources/travel,-medical-and-insurance/ieee-expense-report/concur> training
- Questions: contact the Concur project team at [concurfeedback@ieee.org](mailto:concurfeedback@ieee.org)
- Link for Volunteer Expense Reimbursement Page: <https://corporate.ieee.org/resources/travel,-medical-and-insurance/ieee-expense-report>

## 6.0 STANDARDS SERVICES

Ed Hare, Vice-President for Standards, presented his report. (See Standards Report.) He noted leadership of the Standards Development and Education Committee (SDECom) includes Alistair Duffy as Chair, Ross Carlton as Vice-Chair, Henry Benitez as Secretary and Ed Hare as Liaison. Alistair will step down as Chair by the end of the year, to allow him to better concentrate on his duties as President. Ross Carlton is willing to step up to Chair, pending the results of an election to be held with an electronic vote after the December meeting. The Vice Chair position will be open at that time. The report includes a list of the 21 current SDECom members.

SDECom met on Monday, December 9. SDECom will continue to organize “Standards Week” at the annual EMC Symposium. Alistair Duffy, Ross Carlton, and Ed Hare will jointly lead the work needed to organize this. This will include workshops and submitted papers in a Standards Week track in the technical program in addition to holding Standards working group and committee meetings. SDECom discussed the need for better communication with other Standards Development Organizations (SDOs), through and coordinated with SACCom. They have created a maintenance committee to oversee continuity groups to ensure that standards are kept up-to-date post publication and that any developing issues are identified in time to address them. The maintenance committee is overseeing continuity groups on shielding measurements, emissions measurements, and intentional EMI.

Regarding “Standards Week”, Ed Hare has compiled an email list of all IEEE EMC-S and ANSI C63 working group Chairs. Ed, Ross and Alistair are contacting people they know who may be able to provide presentations, tutorials or other items related to standards. Next year, rather than being segregated in the program, all “Standards Week” events will be featured in whatever section of the program fits best and will be identified with a STANDARDS WEEK designator as part of their session description.

A breakout session on EMC Standards was held as part of the Long-Range Planning meeting on Monday afternoon, December 9. Ed Hare led the discussion joined by Jens Medler, John Norgard and Carlos Sartori. SDECom will seek to establish a formal liaison relationship with CISPR and TC77 – contact to be initiated by the end of January 2020. They will improve the balance of EMC-S standards and develop additional standards as needed. Most notably, they will leverage the strengths of the IEEE and EMC Society as SDOs. Some of these strengths include:

- Specialty standards that are practical applications of EMC in specific areas
- IEEE member engineers can easily form working groups and develop standards

- The process is much less complex than developing quasi-regulatory standards such as those developed by CISPR and IEC
- IEEE and EMC-S have access to worldwide expertise through its members
- As an SDO, EMC-S has access to a publications, education and sponsorship of symposia and related events

These strengths can be leveraged through improved contact and involvement with other SDOs

SDECom created “Maintenance Teams” in order to monitor completed standards and determine when and if changes are needed. These teams have the following tasks and are required to report out at every meeting.

- Monitor existing standards projects
- Seek new projects
- Ensure current standards are kept current
- Develop an “EMC Standards Week” at symposia
- Address Web and Social media
- Review operations and audit
- Act as a liaison to other Standards Development Organizations (SDO)

Ed noted these teams need to do more reporting at the SDECom meetings.

Ed reviewed the 25 standards that are the active responsibility of SDECom. These are listed in the report. He noted five standards are co-sponsored or co-sponsorship is desired (power/energy or nuclear power). Twelve standards are being developed or revised; two of these are in ballot. SDECom can now directly maintain the status of standards on the SDECom web page. Ed noted the working groups are making better use of webinar and other tools. As learned at the last meeting, SDECom and SACCom still need to work on the ability to hold webinars at its future meetings.

Regarding opportunities, most new and revised standards are under active and on-target development, but closer monitoring is needed for several of these. We still need to identify areas needing standardization work and find people able and willing to do such work. Examples include Internet of Things (IoT) and dynamic spectrum allocation.

Following is a list of the current stable standards:

1. Std. 139 (2022), Emissions from ISM on site
2. Std. 187 (2028), TV/FM receiver emissions
3. Std. 299 (2022), Shielding effectiveness
4. Std 299.1 (2023), Shielding effectiveness, small enclosures
5. Std. 475 (2022), Field disturbance sensors
6. Std. 1302 (2029), Conductive gaskets. (Just published)
7. Std. 1309 (2023), Calibration field sensors
8. Std. 1560 (2023), High-power filters
9. Std. 1597.2 (2020), Computational EM, applications
10. Std. 1642 (2025), Intentional EMI
11. Std. 1688 (2026), Module EMI testing

Following is a status report on the existing standards that are currently being updated:

1. Std. 473 (withdrawn), Site Survey (Chad Kiger): Work underway. Little progress being made. SDECom chose to pass responsibility for overseeing this standard to TC3. Significant common ground with C63.24, on-site immunity evaluation. Standard is on track. PAR expires 2020. A PAR extension will be needed.
2. Std. 1128 (2022), RF absorber (Zhong Chen): Being extended to 40 GHz, on target. Cosponsored by APS.
3. Std. 1302 (2018), Conductive gaskets to 40 GHz (Davy Pisssoort): In ballot.
4. Std. 1597.1 (2018), Computational electromagnetics (Alistair Duffy): This project is behind schedule and needs some dedicated attention. Ross Carlton will talk with Alistair Duffy to get a more complete report on how to get this back on track.

Following is an update on the new standards currently under development:

1. P370 (2019), Characterization of PB boards and interconnects to 50 GHz (Xiaoning Ye). In ballot, comment resolution. Over 400 comments!
2. P1848 (2020), Manage EM disturbance risks (Keith Armstrong). In ballot. Recirculation to begin immediately.
3. P1897 (2020), Power-line interference resolution (Mike Gruber). On target.
4. P2665 (2021), Statistical process control for EMC. (Kimball Williams). On target.
5. P2710 (2020), EM shielding for portable electronic devices (Alistair Duffy). On target, but progress is slow. A PAR extension will probably be needed.
6. P2715 (2020), Shielding effectiveness of planar materials (Alpesh Bhobe). On target.
7. P2716 (2020), Shielding effectiveness PC-level (Davy Pisssoort). On target.
8. P2717 (2021), Passive Intermodulation (Yihong Qi). On target.
9. P2718 (2021), Near-field characteristics, stochastic radiators (Dave Thomas). On target.
10. P2885 (2023), EM characterization of cables and connectors (Huadong Li). PAR submitted, awaiting NesCom approval.

Following is an update on the co-sponsored standards:

1. P1613 (2020), Smart Grid devices in T&D. Jointly sponsored with PES. On target.
2. P2425, Instrumentation in nuclear facility. Jointly sponsored with Nuclear Power Engineering Committee). Work is proceeding on target.
3. C37.90 series (three standards on protective relays). Jointly sponsored with PES. Work is proceeding on target.

Ed noted the Standards “with problems” include Std. 377, Spurious from Land-mobile. This standard expired in 2018 and has been administratively withdrawn. It is functionally obsolete (last revised in 1980) and only covers analog technologies. There is little interest in revising this standard. Std 473, Site Survey was administratively withdrawn in 2006. A new standard is being developed, but progress is slow. TC3 is assuming oversight responsibilities. This is parallel work with another SDO and so needs to be a higher priority. Std. 475, Field Disturbance Sensors, from 300 MHz to 40 GHz, expires in 2022. SDECom wants to extend this to <300 MHz, but no working group has been identified. Regarding Std. 1597.1, Computational EM, this was administratively withdrawn on Dec 31, 2018. Alistair Duffy Chairs the working group, but progress has been slow.

Regarding SACCom, leadership includes John Norgard, Chair; Vice-Chair vacant; and Don Heirman, Secretary. SACCom met on Sunday, December 9. Reports were received from nine of 18 organizations. You can find the membership list at <http://www.emcs.org/standards/saccom/sac-members.html>. The reports received will be uploaded to the SACCom web page at <http://www.emcs.org/standards/saccom/sac-memberreports.html>. SACCom is continually looking for new reporting members. The SACCom member reporting form specifically

asks about the applicability of their work to the EMC-S and what help the EMC-S can provide. The form is being updated to be very clear on our expectations.

SACCom is tracking and reporting members that do not routinely submit reports. They have requested a more complete review of reports and specific referrals to SDECom and to the working groups. Ed noted that it is important to remember that SACCom and SDECom are complimentary committees and both should be considered equally for all standards activities.

For more information on EMC Society Standards, see:

<http://www.emcs.org/standards/sdecomindex.html>

[http://www.emcs.org/standards/sdecom/Standards\\_Matrix.html](http://www.emcs.org/standards/sdecom/Standards_Matrix.html)

Ed's report concluded with a summary of work in progress, long range planning activity, and a financial summary showing the VP Standards budget and expenses incurred to date.

## 7.0 MEMBER SERVICES

Vignesh Rajamani, Vice-President for Member Services, presented his report. (See VP Member Services Report.)

Regarding membership development, Vignesh reported total IEEE membership is down 1.3%, since this time last year, total Society memberships are up 1.5%, since this time last year. EMC Society membership is down 4.4% (159) to 3,539 (with Affiliates), since this time last year. EMC Society Student membership is up 15% (46 students) since this time last year. We have had 13 senior grade elevations since July 2019.

Regarding EMC Society Awards, the 2019 awards were distributed at New Orleans during the Symposium. The remaining leftover plaques/certificates were shipped to the award recipients in August. A survey was completed on awards for the IEEE 2019 diversity report. Nominations for the 2020 EMC Society Awards are due March 1, 2020. An email solicitation of 2020 EMC Society Award Nominations will be sent out in early December 2019, and reminders will be sent in early February 2020. The Awards Committee Chair, Farhad Rachidi, has reviewed the awards descriptions and nominator statement guide.

Vignesh discussed the Leo L. Beranek Student Travel Grant. This grant was supported by the Beranek family since it was established in 2005; however, the funds have been used/depleted. **Vignesh moved to remove the Leo L. Beranek Student Travel Grant award from the TAB Awards manual. The motion was seconded and approved.**

On the Honorary Life Member Award, Vignesh noted we currently have 34 members who have received this award. To clarify the benefits of this award, **Vignesh moved to waive the registration fees for honored members at the North American or Flagship EMC Society Symposium. The motion was seconded and approved.**

Ram Achar's summary of Distinguished Lecturer (DL) activity is included in the report. The current plan is to offer the video DL talks only to EMC-S members via EMC-S membership number protection as a streaming video. The list of available DL video topics is included in the report. The DLs for 2018-19 include Zhong Chen (USA), Dr. Ihsan Erdin (Canada), and Gao Xian Ke Richard (Singapore). For the term 2019-2020, DLs include Prof. Dr. Marcos Rubinstein, Dr. Xiaoxiong (Kevin) Gu, Prof. Seungyoung Ahn and Prof. Liang Zhou. A summary of the DL presentations given in 2019 is included in the report. Vignesh proposed four new DLs for 2020-2021 and reviewed their respective areas of expertise and home region. Following discussion, **Vignesh presented a**

**motion to approve each DL separately: Dr. Bhyrav Mutnury, Dr. Alpesh U. Bhohe, Michael K. McInerney, and Dr. Dave Giri as DLs for 2020-2021. All motions were seconded and moved.**

On EMC Chapter activity, Chapter Coordinator Caroline Chan provided a detailed report. We currently have 87 Chapters plus two Student Chapters in India. Patrick Conway, pconway@ball.com, has successfully revived the Denver chapter! Angels are needed to help the chapters in distress; ANGELS MUST BE PRO-ACTIVE. The formation of a joint IEEE Electromagnetic Compatibility Society, IEEE Nanotechnology Council and IEEE Sensors Council Student Branch Chapter in the Colombia Section has been approved. Four Angel fund requests have been received to date and were awarded.

Vignesh Rajamani reported on the active Sister Society agreements, including:

- India - SEMCEI - Renewed at GEMCCon 2019
- UK – IET
- ESD Society
- EMC Society Australia – Renewed in 2019
- APS, MTT and EMC officially signed Sister Society agreements
- Japan – IEICE - Renewed in 2019
- PSES – Product Safety Engineering Society
- CPMT and URSI –Talks are on going

Regarding Young Professionals (YPs), committee Chair Louann Mlekodaj advised that meetings have not been taking place as regularly as planned. Louann will be transitioning her role to Patrick DeRoy being the face of the YPs as effective January 1, 2020. The YPs are trying to determine ways for the local chapters to attract YPs, such as planning webinars and other things that provide more mobile access for the YPs. They are currently planning the YP activities that will take place in Reno during the EMC+SIPI Symposium this July. The plans will be announced in an EMC Magazine article.

Kimball Williams' reported on PACE "Professional Activities Committee for Engineers" and reiterated their goal to "...promote the professional interests of the IEEE members..." He was not be able to attend the 2019 Symposium in New Orleans. He recommended that the annual Symposium venues should continue to feature small PACE (Soft Skills) related workshops and tutorial experiences for interested members under the guidance of TC1. He thanked to Tom Braxton, Chair of TC 1, and Dave Schaffer for getting TC1 moving toward a greater role in the overall Society activities beyond focusing only on the 'next' Symposium.

Regarding the Women in Engineering (WIE) activity, Susanne Kaule organized a successful WIE event during the Symposium in New Orleans. She sees great potential for EMC-S WIE growth in Asia and would like to build a network in 2020. She is planning a WIE event at the EMC + SIPI Symposium in Reno 2020 to strengthen the networking, create EMC-S WIE awareness, and provide mentorship.

Henry Benitez reported as the Sections Coordinator. He suggested having an EMC-S presence (booth and promotional materials) at the 2020 Sections Congress in Ottawa, Canada. This will be held in August.

On the Fellow Evaluation Committee, Heyno Garbe reported that the 2019 EMC-S Evaluation Committee includes Heyno Garbe – Chair; Chris Holloway - Vice Chair/Evaluator; and Evaluators Brice Achkir, Charles Bunting, Jim Drewniak, Jun Fan, Jan Luiken Ter Haseborg, Frank Leferink, and Er Ping Li. A minimum of five judges are required to evaluate each nominee; the Chair is not allowed to act as an evaluator. Ten Fellow nominations were submitted by the EMC-S for the Class of 2020. Unfortunately, no Fellows were elected from the EMC-S. Heyno recommended creating the evaluation committee for 2020 (Class 2021). The Board needs to

appoint the Chair and the vice Chair at the November Board meeting since Heyno is not allowed to serve a fourth term as Chair; he is willing to serve as Vice Chair/Evaluator. **Heyno moved to approve Chris Holloway as the Chair and Heyno Garbe as the Vice Chair of the Fellows Evaluation Committee for the year 2020. The motion was seconded and approved. Heyno abstained from voting.**

On the History Committee activity, Dan Hoolihan reported on the EMC Legacy Projects. For EMC Legacy III (EMC Europe 1975-2010), no further work is planned at this time due to the financial situation of the EMC Society. On Historical Photo Storage, this issue will continue to be worked on in the 2020-2021 timeframe. The EMC Society Museum contract for 2020 exhibits and equipment storage is being discussed with the National Electronics Museum in Maryland. Dan continues to write a 3-part article on EMC-S History for the EMC Magazine for every issue. He is using the column to post historic content from the forerunner conferences to the EMC Society Symposium on IEEE Xplore.

## **8.0 CONFERENCE SERVICES**

Alistair Duffy presented this report on behalf of Dennis Lewis. (See VP Conferences Report.) He started by reviewing the status of current Conference activities towards meeting the strategic goals of the EMC Society for 2016 –2020.

The report includes a review of the 2019 Symposium in New Orleans. This was the first time we used a structure with the appearance of three embedded conferences:

- EMC
- Signal and Power Integrity
- Standards Week

On registration for the 2019 Symposium in New Orleans, the report includes a complete breakdown on registration by category. The total shows 907 registrations (technical program, exhibitors, companions, etc.) generating \$342,095 in revenue. This committee was the first to actively engage social media to promote the Symposium. EMC-S existing platforms were used, such as Facebook and LinkedIn, but Twitter was added for the Symposium.

For the 2020 Symposium in Reno, Nevada, Chair Darryl Ray provided a summary of activity as part of the VP Conferences report. The Exhibitor Packet (with advertising and sponsorship information) is complete, the seven Call for Papers are complete, the EMC 2020 booth is ready take to shows, and the Web Site will be on line soon (initial portion). The tours were finalized in September. All social functions are in place; they are working to complete the contracts on these venues. No major issues arose during the recent site visit with conference management. The committee is looking at ways to reduce expenses (not quality) in publications and in the magazine barter arrangements.

Darryl advised they have revised the budget downward – to align with 2019 actuals. The current estimated surplus is 20.5% (subject to change) and is based on 130 (10' x 10') booths sold, with similar paid attendance and similar booth prices as for the Symposium last year in New Orleans. The committee is working hard on improving the exhibit hall floor plan and expanding publicity. As of Nov. 24, sixty-five 10'x10' booths have been sold. Darryl has planned for a tour of the Reno Sparks Convention Center for the Board in conjunction with this meeting to see the exhibition and meeting space.

The report then shows preliminary information on the Symposiums planned for 2021 (Glasgow/Raleigh), 2022 (Spokane), and 2023 (Grand Rapids). For 2024, several venues were contacted, including Chicago, San Jose,

Albuquerque and Phoenix. Chicago and San Jose declined offering a proposal. At the exhibitors' breakfast in New Orleans, the exhibitors overwhelmingly selected Phoenix as the location for the 2024 IEEE EMC+SIPI Symposium.

**Alistair presented the following motions, which were seconded and approved:**

- **\$30,000 loan to the 2021 Symposium Committee (Raleigh).**
- **\$30,000 loan to the 2021 International Symposium Committee (Glasgow).**
- **The draft budgets for the 2012-2024 EMC Symposia.**

Alistair noted that IEEE now requires that a general Chair and treasurer be appointed and a draft budget approved prior to the selected Symposium location being presented to the Board for final approval.

**Alistair moved to require that a general Chair and treasurer have been appointed and a draft budget prepared for the selected Symposium location prior to final BoD approval. The motion was seconded and approved. Caroline Chan abstained from voting.**

The report then reviewed the last regional event, i.e. tabletop show, organized by the EMC Chapters located in Regions 1-6 since the last Board meeting in July. The Santa Clara Valley EMC Chapter held a tabletop show on October 3, 2019 at the Embassy Suites in Milpitas, CA. Speakers included Jim Drewniak with MST, Consultants Mark Montrose and Doug Smith, Alpesh Bhoje with Cisco, Sandeep Chandra with Google, and Philippe Sochoux with Juniper Networks. Topics included Signal integrity, ESD, EMC and Wireless. There were approximately 80 attendees, including exhibitors, technical program attendees and speakers. There were 21 exhibitor tables and several sponsors for the lunch and reception. For 2020, the SE Michigan, Chicago, and Rockville EMC Chapters will hold their annual tabletop shows. These are advertised in the EMC Magazine and on the EMC-S website.

Regarding GEMCCon 2019, this was held in Bangalore, India over November 6-8. Many leading international companies in Bangalore (IBM, Intel, Cisco, Bosch, etc., to name a few) supported this conference, along with local industry (India Space Research Organization) and academia (Indian Institute of Science). The venue was the Sheraton Hotel, near the IEEE headquarters office for India located at the World Trade Center. Over 100 people attended the conference and there were some 20 exhibitors. A detailed report will be provided at the next meeting.

For GEMCCon 2020, this is proposed to take place in conjunction with the first "IEEE Ukrainian Microwave Week" in Kharkiv during the May-June timeframe. The week consists of several conferences, including MSMW (International Kharkiv Symposium on Physics and Engineering of Microwaves, Millimeter and Submillimeter Waves), DIPED (International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory), ICATT (International Conference on Antenna Theory and Technique), UWBUSIS, and MRRS (Microwave Radar and Remote Sensing Symposium).

Regarding online educational Webinars/eSeminars, this is a new activity under consideration. This allows members to regularly engage with technical content from the Society and provides EMC-S with a legitimate reason to email members on a monthly basis. Timelines, speakers and topics are under discussion.

Social media metrics were reviewed. This is also a new activity the EMC-S initiated with the 2019 IEEE EMC+SIPI Symposium. The goal with social media is to elevate IEEE\_ESP's social media presence and increase

new membership/renewal numbers by creating and sharing posts about Symposium pillars, Board, volunteers, employees, programs, presentations, social events, and attendee-based interests. We have only recently started the social media effort, but our numbers are increasing in terms of people engaged in our posts.

The report addressed the status of the Symposium Handbook and updating the document. The current draft is designed to be an on-line document. It consists of eight folders with roughly 30 documents waiting to be uploaded as soon as web space is made available.

The report provided a review of the EMC-S technical co-sponsored (TCS) conferences. The TCS committee includes Dennis Lewis, Ross Carlton, Alistair Duffy, Susanne Kaule, Frank Leferink, and Gideon Wiid. Dennis reviewed the purpose and review process of this committee. In 2019, the EMC-S supported the following conferences:

- Asia-Pacific Microwave (Barter)
- EEEIC / I&CPS Europe (Barter)
- GLOSPACE (Barter)
- EMC Turkiye (TCS or Barter)
- EMV Germany (Barter)
- INCEMIC (TCS)
- ESD (TCS)
- EMC Compo (TCS)
- ESA Workshop on Aerospace (TCS)
- EMC Sapporo & APEMC (TCS/FCS)
- EMC Europe (TCS/FCS)
- GEMCCON (EMC Society conference FCS)
- SPI Workshop
- RADIO (?)
- SIPDA (TCS?)

The process for technical co-sponsorship evaluation and benefits exchanged was reviewed. A proposal to streamline this activity will be presented at the next Board meeting.

The report concluded with discussion on replacing the Site Selection and Continuity Committee with a new Future Symposium Committee. Committee members would include the VP Conferences, EMC President, Past, Present and Future Chairs, Secretary and Treasurer. Responsibilities would include:

- Propose future location of Symposium
- Nominate key committee members (Chairman, Treasurer)
- Maintain Conference Handbook
- Develop first pass budget
- Benchmark cost benefit of external contracts (CM, Marketing, Graphics, etc.)
- Review/revise conference manual and define which decisions the Chairman should make and which are Board level decisions

More information on this new committee will be provided at the next Board meeting.

## 9.0 COMMUNICATION SERVICES

Heyno Garbe presented the Communications Services report. (See VP Communication Services Report.) He noted the IEEE Periodicals Review and Advisory Committee (PRAC) will review the three EMC-S publications in February 2021. The EMC Society must start the review preparation one year before. The responsible EiCs must conduct the review on our side. PRAC will ask how we handled various comments referenced in the last review. The last PRAC reviews of these publications may be found in the Board Repository.

Regarding "Open Access", in April 2019, the IEEE PerCom sent out a position statement entitled "Support for Open Science and Access to Publicly Funded Research". This statement is uploaded to the Board Repository. In August 8, 2019 a webinar took place to discuss the new IEEE Publications Strategy. The overall goal will be to move to open access for all IEEE Publications. This activity is driven by an initiative from the European Union, referred to as "Plan S". It means that all research, which is funded by public institutions, must be available to the public at no charge. European researchers are forced to use Open Access. Otherwise, they will no longer be funded. This Plan S is available in the Board Repository. The consequences for the IEEE EMC Society must be discussed as part of Strategic Planning as this affects all our publications, which are available on Xplore.

Heyno discussed the review process for conferences. The IEEE Publication Services and Products Board Operations Manual (a copy of the PSPB Manual is available in the VP Communications Repository) must be followed for all publications, which are available on IEEE Xplore. The editorial board for journals and conferences must follow paragraph 8.2.2. This means that each review board must have the following structure with the rights and duties according to the Operational Manual, including the Editor in Chief, Associate Editors, and Reviewers. Conference organizers are free to define their editorial board observing the following major rules:

- The EiC must be an IEEE Member or higher or a Graduate Student Member.
- The EiC is the decision-making person. He is not allowed to act as AE or Reviewer.
- The AE is not allowed to review papers assigned to him as AE.
- A plagiarism check must be done for each paper.
- The review process must be documented in detail.

Regarding the T-EMC, Editor-in-Chief (EiC) Tzong-Lin reports have received 132 new submissions in the 2nd quarter of 2019 and 142 submissions in the 3rd quarter of 2019. Among these new submissions in the 3rd quarter of 2019, the number of the manuscripts from China is 53, accounting for the largest portion with 37.3%. Submissions from Iran are the next highest number. Among these new submissions from the 1st to 3rd quarter of 2019, the highest number of the manuscripts is from China at 138, accounting for the largest portion with 34.8%. Submissions from the United States is in second place.

Trends for the number of submitted papers, accepted papers, and rejected papers in the past nine years were provided. The number of submitted papers to the T-EMC has steadily grown from 2010 to 2018. It reached the record high of 628 submitted papers in 2018. The acceptance rate, which is the ratio of the number of accepted papers to the successfully submitted papers has gradually increased in the past five years (2014-2017). It was back to a normal level of 47.8% in 2018. It should be noted that there are eight pending papers in 2018.

On time to publication, the 2nd and 3rd quarter issues of 2019 (last data available from IEEE) has excellent performance. T-EMC had the average number of weeks submitted to a first decision of 6.1 weeks and an average week submitted to online post of 29.6 weeks in the 2nd quarter of 2019, and in the 3rd quarter of 2019, T-EMC had the average number of weeks submitted to a first decision of 5.6 weeks and an average week

submitted to online post of 28.9 weeks. It is shorter than other related journals such as T-MTT, T-AP, T-CPMT, T-Mag, T-PD, and T-PE. Keeping the review cycle short is critical for potential authors in their decision-making on where to submit their papers.

Heyno discussed the impact factor (IF) and 5-year impact factor (5-yr IF) for the T-EMC and other EM related IEEE journals. The latest IF results for 2018 were provided. The IF has increased from an IF of 1.52 in 2017 to 2.274 in 2018. A similar trend is seen for the 5-yr IF which increased from 1.712 in 2017 to 2.167 in 2018. It is the first time that the impact factor of the T-EMC is over 2.0!

Regarding special issues, “Advances in lightning modeling, computation and measurement” proposed by Prof. Renato Procopio (I) with Guest Editors Prof. R. Procopio (I), Dr. Y. Baba (J) and Prof. A. Piantini (Br) was published in June 2019 with 25 papers. The Special Issue on the 2018 IEEE EMC Symposia in Singapore and Long Beach has completed the review. The Guest editors are Enxiao Liu, Xian Ke Gao, and John Mass. This issue includes 17 papers accepted and 6 papers rejected. It was published in August 2019. A special issue “EMC for Wireless Power Transfer and Power Electronics” was proposed by Guest Editors, Prof. Jun Fan, Prof. Joungho Kim, and Prof. Nuno Borges Carvalho. The deadline of full paper submission was May 30, 2019. The final report and publication will be available in December 2019. A special section on “IEEE International Symposium on EMC and SIPI 2019” has been proposed and a call for papers has been sent to the authors. The submission deadline is December 15, 2019. It is expected to be published in the August issue of 2020. The Guest Editor is Dr. Xiaoning Ye.

Janet O’Neil, EMC Magazine Editor-in-Chief, reported the 3rd Quarter 2019 issue was sent to the printer in early October. It was 116 pages with special content focused on the EMC+SIPI Symposium in New Orleans. The 4th Quarter 2019 issue is in progress. The target page length is 92 pages to meet the overall budget limit of 400 pages for 2019 (1st Qtr was 100 pages, 2nd Qtr was 92 pages, and 3rd Qtr was 116 pages). We have had trouble connecting with our new AE for Book Reviews, Frank Gronwald. With the page count limit for 2019, we have not actively pursued including this column this year. We will relook at this column for 2020. For the technical papers in the EMC Magazine, discussions are underway about implementing a more formal review process utilizing ScholarOne.

We have identified the following topics for the practical papers published in 2020:

- EMC test instruments (1st Qtr)
- EMC for wireless communications (2nd Qtr)
- High power electromagnetics (3rd Qtr)
- EMC Design (4th Qtr)

Each quarterly issue in 2020 will have two “Theme Papers” on the following topics:

- Aerospace EMC (1st Qtr)
- Wireless tests in reverberation chambers (2nd Qtr)
- Active compensation for EMC (3rd Qtr)
- Couplings and emissions under cyclo-stationary conditions (4th Qtr)

Regarding the bonus distribution of the EMC Magazine (this is important information for advertisers), we will have copies of the EMC Magazine at the following annual events in 2020:

- EMC Chicago: May 12
- EMCfest SE Michigan (greater Detroit area): May 14
- APEMC 2020 in Sydney, Australia: May 19-22
- IMS2020 in Los Angeles, CA: June 21-26
- APS2020 in Montreal, Canada: July 5-10

- IEEE EMC+SIPI Symposium in Reno, NV: July 27-31
- EMC Europe in Rome, Italy: Sept 7-11
- INCEMIC in Bangalore, India: Nov 10-13
- GEMCCon – Location and Dates TBD

EMC Magazine ad revenue has remained steady; while some previous companies have stopped advertising, we have some new companies that have started advertising. As reported at the last Board meeting, the IEEE has hired a new independent ad sales rep since selling direct (via Mark David) was not generating the target ad sales revenue. The new sales rep is Erik Henson with Naylor Association Solutions. Naylor Association Solutions has put together an on line Media Kit for ad sales in 2020. We put them in touch with Lesleigh Campanale of the IEEE who handles our membership and Symposium surveys to get information on EMC-S member demographics needed for the Media Kit. You can see an example of the online Media Kit they created for the Aerospace and Electronic Systems Society (AESS) at <https://www.officialmediaguide.com/ie03/>. With this targeted, professional approach, we are encouraged ad sales for the EMC Magazine will increase in 2020.

Ray Perez, IEEE Press Liaison, provided a report. He noted royalties received in 2018 totaled \$585.88. Royalties are only reported twice/year for the previous year and reported on June and December. The report includes a summary of Wiley published books in 2018, books in progress and plans for future books. A call for authors has been regularly promoted in the EMC Magazine.

Tom Braxton reported on the EMC Society website. Website traffic continues steadily. He provided some highlights from website metrics. From September 1 – November 17, 2019, there were 3,004 users, among which 2,753 were new, creating 8,762 page views. The top four countries accessing the site as a percentage of total included:

- US: 57%
- China: 11.6%
- UK: 4.7%
- Japan: 3.1%

There were 1,174 unique events (specific actions, such as clicking links). Symposium and conference related content were the most frequently visited pages. Keith Armstrong has recently made available several animations showing real-world EMI issues that we intend to load on the website. Lemonade Social Media, as a new EMC Society partner, will be working with us to tie together Facebook, LinkedIn, and Instagram with the website. Site-usage and social media outreach details can be seen in the website/post metrics provided in the extensive report.

Heyno reported on the following new publications:

- *IEEE Journal on Multiscale and Multiphysics Computational Techniques (JMMCT)* – The J-MMCT steering committee had a telephone conference on September 29, 2019. Christian Schuster and Heyno Garbe from the EMC-S attended. The EiC Costas Sarris wrote the minutes, which is included in the report. Several options to enhance the visibility of the journal were discussed such as articles and ads in Society magazines, invitations to high-profile authors to submit papers (regular or review). Costas will connect with Matthias Tröscher and Scott Piper to invite authors from the EMC-S (Christian Schuster’s suggestion). It was also suggested that J-MMCT be promoted through social media. The next meeting will be held early in January 2020.

- IEEE Letter on EMC Practice and Applications (L-EMCPA)* – EIC Frank Sabath reported the ScholarOne Manuscripts for the L-EMCPA has been set up and is operational. The site is available at <https://mc.manuscriptcentral.com/l-emcpa-ieee>. The March 2019 issue was published on 25 June 2019. The March 2019 issue consists of five technical letters. At present, those manuscripts are not accessible for EMC-S members, unfortunately. The June 2019 issue is with the editorial staff for production. At present, four letters are accepted and are with the Publishing Operations Production Portal. As soon as the editing process is finished, the first issue will be published. All accepted manuscripts are published as early access in IEEE Xplore. The September 2019 issue, due to the serious delay of letters submitted after the New Orleans Symposium, will not be published. All received letters are shifted to the March 2020 issue. The December 2019 issue will not be published as well due to the serious delay noted above. The March 2020 issue is dedicated to letters received as abstract reviewed papers from the 2019 EMC+SIPI Symposium in New Orleans. At present, we have received 11 manuscripts; six are with reviewers, three are pending revisions by authors and two have been rejected due to poor quality. The June 2020 issue is dedicated to letters that were presented at GEMCCon 2019. At present, we have received two manuscripts, which are currently with reviewers. Frank Sabath expects to receive more letters in the coming weeks. The September 2020 issue is dedicated to EMC Standards. The Call-for-Letters will be distributed at the standards committee meeting in December 2019. Frank Sabath also invited Keith Armstrong and Alistair Duffy to contribute an invited review paper to this issue. Frank plans to publish application letters on new equipment, products and software that will be displayed at the EMV 2020 Köln (organized by MESAGO) exhibition. The Call-for-Application Letters will be sent to the exhibitors soon. The list of current and proposed future Associate Editors was reviewed. **Frank Sabath moved to approve Alistair Duffy, Heyno Garbe and Vignesh Rajamani as Associate Editors for the L-EMCPA for the term 2019-2021. The motion was seconded and approved.** Heyno Garbe, Alistair Duffy and Vignesh Rajamani abstained from voting. The Guest Editors for the GEMCCon 2019 papers include Alistair Duffy (apd@dmu.ac.uk), De Montfort University, UK and Dipanjan Gope (dipanjan@iisc.ac.in), Indian Institute of Science, India. In summary, The L-EMCPA was launched, but is delayed by approximately six months. At present, we published nine of the planned 30 papers. At minimum, we need to publish 20 papers to start indexing. Therefore, we will miss this requirement in 2019.
- IEEE Transactions on Signal & Power Integrity (T-SIPI)* – Jim Drewniak reported that a letter of intent has been submitted to the IEEE Periodicals Committee to initiate the process for the Transactions on Signal Integrity and Power Integrity. Jim has reached out to Dale Becker who is the Senior Area Editor – Electrical Performance of Integrated Systems to coordinate this process with the Electronics Packaging Society. Dale reviewed and edited the Lol and the final submission is included in the report. The action is to develop MOUs with EPS and begin Phase I. Currently involved in the discussion among EMC and EPS colleagues are Heyno Garbe, VP Communications EMC-S; Ravi Mahajan, VP of Publications and Managing Editor-in-Chief of the IEEE Transactions of the CPMT; Jim Drewniak, lead for T-SIPI proposal, EMC-S and Dale Becker, Senior Area Editor, Electrical Performance of Integrated Systems. Plans are underway to work on the details of the MOU, and type of journal, i.e., Gold Open Access, hybrid, or traditional. We will work towards a Phase I proposal at the February 2020 TAB meeting.

## 10.0 MARKETING REPORT

Mike Violette presented a brief marketing report. Moving forward he will support Susanne Kaule and the efforts of the new Marketing Committee she will Chair.

## 11.0 TECHNICAL SERVICES

Chuck Bunting reported on Technical Services activities. (See Technical Services Report.) Regarding the Technical Advisory Committee (TAC), current leadership includes Chair Xiaoning Ye, Vice-Chair Zhiping Yang, Secretary Sam Connor and Immediate Past Chair Chuck Bunting. Officer succession is planned for the meetings held in conjunction with the 2020 IEEE EMC+SIPI Symposium in Reno. TAC reports are current on the EMC BoD Repository.

Chuck reviewed the major activity since his last report in July 2019. The IoT/5G initiatives were reviewed at the TAC meeting. The Young Professionals (YP) program was highlighted. A suggestion was made to contact local universities near Symposia sites and invite students to come learn about EMC/Sl/Pl. Another idea was to engage YP individuals for officer-at-large positions and have them drive new initiatives.

Regarding EMC-S Technical Co-sponsorship, TAC is concerned about workload if we have to be active in the paper the review process. TAC cannot be the reviewer of papers for TCS conferences. TAC recommends TCS for fewer conferences and to stay focused on key conferences. TAC should audit the conference quality before making a recommendation. The TCS application data should be improved; making sure the form is complete, accurate and reviewed before it is sent to TAC for evaluation.

For the 2020 IEEE EMC+SIPI Symposium in Reno, the paper review schedule has been confirmed. TAC put together a document on paper review criteria. TAC recommends no formal EMC-S Award for abstract reviewed papers. TAC has started an evaluation of the paper review system. They have evaluated two alternatives - one of these is ScholarOne. This has received positive feedback; TAC is waiting to receive feedback from the publication Chair (John Rohrbaugh) on cost and control file handling. A new system for paper reviews may be put into place for the 2021 Symposium. The TAC handbook improvement is completed and available at the TAC Repository.

Chuck reviewed the activities of the Education Committee (EdCom). The Chair is Bob Scully, Vice Chair is Frank Leferink, and Mark Steffka is the new Secretary. Regarding the Reno Symposium support, Frank Leferink is in charge of the EMC Fundamentals tutorial. For the Clayton R. Paul Global University, Lee Hill is in charge. Regarding the "Round Robin" demonstration project, Kris Hatashita is organizing this effort with assistance from Vignesh Rajamani. The equipment for the demonstration will be provided by rental companies. The goal is to have one demonstration set shipped to IEEE Sections for their regular Chapter meetings. A sample of the demonstration kit was shown at the Board meeting in New Orleans. EdCom intends to reinstate the University Grant Program in 2020. This is prudent in light of the demonstration board project. The Kunkel family has offered to donate/fund the University Grant Program. Chuck will have more information on this at the next Board meeting.

Regarding Strategic Planning, Chuck shared some of the goals of his team, including how to keep TAC and EdCom from thinking from one Symposium to the next to expand their "worldview". There are major technical themes to address to stay relevant and current, such as power integrity, 5G and mm wave testing, artificial intelligence and autonomous systems, IEMI impacts - smart grid, etc., and wireless co-existence. Technical Services would also like to have better oversight of the Youth Technical Program (part of EdCom outreach) and learn more about the IEEE Resource Center (content not on Xplore) and the IEEE Learning Network (quality educational material).

Chuck closed his report by showing the Technical Services budget; there has been discussion on the Board regarding a re-alignment of TAC meetings due to budget constraints. TAC is mindful of the budget constraints and aims to streamline and increase its effectiveness.

## 12.0 NEW BUSINESS

**Summary by VPs on Strategic Planning Meeting Discussion** – Alistair Duffy summarized the Planning Meeting discussion on December 9. This will be carried forward with a half-day session at the next Board meeting on February 9 in Orlando, FL.

**Next Standards Committee/Board Meeting Plans** – Alistair Duffy noted we will have three Board meetings in 2020. The first will be held in conjunction with the IEEE TAB meetings in Orlando, Florida. All Board members are welcomed and encouraged to attend any part of the IEEE TAB meeting of interest. The second meeting will be held on Sunday, July 26, prior to the start of the IEEE EMC+SIPI Symposium in Reno. Currently there is no plan to hold a second meeting on Thursday night, July 30 in Reno. The third and final meeting of the year will be held in the October/November timeframe on the east coast, near IEEE Headquarters in Piscataway, NJ. Details on these meetings will be announced shortly.

**George Kunkel Funding for University Grant Award** – Bruce Archambeault and Chuck Bunting discussed the financial offer from the Kunkel family to fund this award moving forward. George Kunkel has been a long time member of the EMC-S and was very active in his local EMC Chapter (Los Angeles) and the IEEE EMC Symposiums held in the greater Los Angeles area. He was active in the Standards Committee and contributed to the RF gaskets and shielding standards. George retired several years ago, but still attends the annual EMC-S Symposiums. Chuck will take the lead on this discussion with the Kunkel family and provide an update at the next Board meeting.

## 13.0 FINANCIAL IMPACT OF MOTIONS

Frank Sabath summarized the financial implications of the approved motions. This includes:

- Approve draft conference budget for NA EMC-S+SIPI 2021 Raleigh with a Target Budget Surplus - \$231,000 (26.8 %)
- Approve draft conference budget for IEMC-S+SIPI 2021 Glasgow with a Target Budget Surplus - \$91,000 (18.6 %)
- Approve draft conference budget for IEMC-S+SIPI 2022 Spokane with a Target Budget Surplus - \$242,000 (28.6 %)
- Approve draft conference budget for IEMC-S+SIPI 2023 Grand Rapids with a Target Budget Surplus - \$192,000 (21.4 %)
- Approve draft conference budget for IEMC-S+SIPI 2024 Phoenix with a Target Budget Surplus - \$216,000 (24.8 %)
- Approve a \$30,000 loan to the NA EMC+SIPI 2021 Raleigh Symposium Committee
- Approve a \$30,000 loan to the IEMC+SIPI 2021 Glasgow Symposium Committee
- Approve the alignment of Honored Member Award, waiver of annual Symposium dues ~\$10,000

## 14.0 ACTION ITEM REVIEW

Janet O'Neil reviewed the action items discussed during the meeting. An updated, consolidated list of action items will be sent to the Board members following the meeting.

## 15.0 SUMMARY AND CLOSING REMARKS

President Bruce Archambeault thanked everyone for attending the meeting. He advised that the next meeting series would be on Sunday, Monday, and Tuesday, February 9-11, 2020. The Standards Committees will meet on Sunday morning followed by the Operational Planning committee meeting in the afternoon. The Board of Directors will meet on Monday (all day) and Tuesday morning. These meetings will be held in Orlando, Florida, near the IEEE TAB Meeting hotel.

The meeting adjourned at 6:00 pm.

Submitted by:

A handwritten signature in cursive script that reads "Janet O'Neil".

Janet O'Neil  
Secretary, EMC Society Board of Directors