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### **Preface**

This guide is intended to assist conference chairs and conference committees in setting up and running a conference for the IEEE Aerospace & Electronic Systems Society (AESS). This is a supplement to the IEEE conference planning information, available here:

https://ieeemce.org/planning-basics/, where in particular you can download the organizer timeline.

#### 1. General

AESS Conferences are a significant effort to expand membership, provide technical content and networking for our members, and generate a surplus for our projects. All AESS conferences, financial or technically sponsored, must be approved by the AES VP-Conferences, as well as the AESS Board of Governors (Board). If this is an ongoing annual or bi-annual conference, the VP Conferences has the authority to grant approval authority for future iterations of the existing conference to the conference board or committee.

### 2. IEEE Conference Approval

All conference chairs shall fill out the IEEE Conference Application on the IEEE website (https://www.ieee.org/conferences/organizers/conf-app.html). Instructions are included on the site. The timeline for this is as soon as the preferred dates, venue and location are known; preferably, at least 2 years prior to the Conference start. This lists the conference in the IEEE conference database (called the ICX). Should the dates, venue or location change, IEEE Meetings Conferences & Events staff can make the change in ICX; it is not possible for the originator to make any changes.

The conference application will require full information on the conference, including a summary budget (total income, total expenses), names and full contact info for the Chair, Treasurer, Technical Program Chair, and conference information contact. It will also ask for keywords describing the conference topics, and this is very important as search engines will zero in on your keywords when potential conference attendees search for venues to present their work. Do not skimp on your keyword list, use every single topic keyword that you expect to be covered as well as typical variations on those.

A Memorandum of Understanding, when there is a financial or technical cosponsor, is generated by the data included in ICX. As such, any special agreements and financial arrangements should be clearly spelled out. This will include provisions for funding the fees for publishing the Proceedings in IEEE electronic library (IEL) for Xplore download.

# 3. AESS Conference Sponsorship

There are two types of Sponsorship under IEEE policy: Financial Sponsorship, and Technical Cosponsorship.

### Financial Sponsorship,

AESS will provide leadership in establishing the conference and membership on the Technical Committee to insure improved attendance. An approved budget is necessary for obtaining a Financial Cosponsorship with either another IEEE Operating Unit or other non-IEEE sponsor. AESS will provide seed money for establishing the conference and share in the proceeds under the provisions of the Conference Information Schedule. Where there is a shared financial sponsorship, either IEEE or non-IEEE, all sponsors shall provide seed monies equivalent to their financial share.

There should be a liaison between AESS Board of Governors and the Conference Committee to insure the Budget and Technical details of the Conference conform to IEEE and AESS policies.

#### Technical Cosponsorship

Technical Cosponsorship (TCS) are arrangements where there is a mutual benefit between AES and the other sponsoring entities, either IEEE or non-IEEE. IEEE policy stipulates that AESS must have substantial involvement in the technical content of the Conference to qualify for an AESS TCS in each conference.

As of 2016, a conference technical co-sponsorship fee is charged for any Conference that is not financially sponsored by an IEEE OU (AESS in this case). As of 2021, the fee is \$1450 per conference and \$22 per paper if proceedings are to be included in the IEEE Electronic Library (IEL) accessible via IEEE Xplore.. The AESS VP Conferences will contact the Conference Committee and determine whether the Conference will pay this fee, or AESS will pay. In general, if there is not a major involvement by AESS member in the organization and management of the Conference, the non-IEEE sponsor should pay the fee. It is generally accepted that having IEEE publish the papers is a significant benefit to the Conference in increased attendance, which more than covers the nominal cost.

The Memorandum of Understanding should define the shared funding responsibilities for the TCS Conference. If more than one IEEE OU is a TCS participant, and IEEE will be responsible for paying all or part of the fee, the fee is divided equally between the two OUs. These factors are to be negotiated before the MOU is approved.

# 4. Women In Engineering

There is a significant benefit to engage more women in Conference activities by enhancing the program with an additional session, panel or track that has this aim. This is an excellent opportunity to provide networking between women who are active in the technical fields, new members, and women in engineering local to the conference venue who are active in the technical areas of interest of the conference. One common, successful method is for the conference to include a Women in Engineering

luncheon with a few panel speakers. Conference Organizers should make these opportunities visible on the conference website, and welcome participation by some local members, particularly those who are active members of WIE and or AESS and look for opportunities to gain support from Corporate Partners.

### 5. Budget & Finance

All AESS financially-sponsored conferences must have a budget, to be submitted to the VP Conferences for approval as early as possible. The Conference Application will require submittal of overall budget data, as noted previously. All AESS conferences must be <u>budgeted to generate a minimum of 20% surplus</u> (of expenses) excluding any IEEE overhead assessed via the new NextGen accounting system. It is always wise to budget for contingencies. There are always last-minute things that pop up. The VP Conferences can assist with the budgeting process. One of the biggest variables in the budget is meals, and careful planning here can help maximize surplus while still providing a memorable experience for attendees. See the section on Onsite Planning for more information.

An AESS conference may receive seed money from the Society in the event that such is needed for advance spending prior to conference income from registrations or exhibits is needed. Such may be requested from the AESS Treasurer. Such seed monies will vary but are typically in the \$5,000 to \$10,000 range. Per IEEE rules, seed monies are to be repaid within 30 days after the close of the conference. Where there is a shared financial sponsorship, either IEEE or non-IEEE, all sponsors shall provide seed monies equivalent to their financial share as defined in the Memorandum of Understanding (MoU).

No expenses for future Conferences can be expended from funds provided by the current conference.

IEEE requires that a conference be closed within 6 months of the close of the conference. Should the conference in a calendar year not close prior to December 1 of that year, the conference chair will be asked to submit an estimate of overall conference income and expenses to AESS as well as IEEE; as IEEE finances are on an accrual basis and not an actual basis.

#### **Tutorials**

Adding select, on-topic tutorials on the day preceding the actual conference can be a good way to enhance your conference. We have found that when offered, somewhere between 25% and 40% of attendees will opt for the tutorials. Such tutorials should always be at extra cost, typically between \$150 and \$200 per tutorial. The Conference budget should include any facility costs and honoraria to the Tutorial presenter.

#### **Exhibits**

One good way to improve conference attendee experience is to hold exhibits along with the conference, and these can be from "tabletop" displays to full 10x10 or 8x10 pipe-and-drape booths. To go the full exhibit booths requires a substantial undertaking and exhibitors are selling their wares, so this applies pretty much to the applications-focused conference., and if not being done now is somewhat difficult to initiate but it can be done with some preparatory work. In an academic-focused conference, often table-

top displays can be initiated, with the benefit that such are lower in cost. Organizations that might exhibit in table-top environment are schools and tool vendors, for example, and those who sell services related to the conference topics. Full exhibit booths require a decorator company, and such are selling for between \$2,500 and \$4,000 (as of 2020) and even more in some cases. A table-top display sells for between \$1000 and \$1,500 (note these are just general estimates). If there are full exhibits, this is usually done in a separate hall of the venue and care must be taken to hold breaks in the hall to assure good foot traffic for exhibitors. It is also suggested that a free session be allowed (one with no technical breakouts) to draw traffic in the hall. One way to do that is to open the exhibit hall right after the opening keynote/plenary session and perhaps even do lunch in the hall, with a session fee after lunch for exhibit traffic if the exhibit hall and number of exhibitors is large enough to warrant such.

#### Corporate Partners

It has been shown that attendance of individuals from Industry or Academia by having their organizations be partners in the Conference. Furthermore, the organizations can gain wider recognition to the general attendees. The Corporate Partner program used by several Conferences is tiered in terms of the funding provided by the organization, e.g. \$2500 Bronze, \$5000 Silver, \$10,000 Gold (note these are suggested levels). The Corporate Partner is given placement of an advertisement in the Program and Proceedings, provided an ability to be recognized for support of one of the events, and offered a set number of complimentary registrations (depending on the Tier). This is not a widely used approach. But it can establish higher attendance, and provide the Conference a management reserve, to satisfy the surplus for the sponsoring organization units.

#### 6. Contracts

Typical contracts needed to run a conference are for the hotel, plus venue if such is separate from the hotel, a registration vendor, and other vendors as may be needed such as a vendor to manage and publish the technical program and similar. All contracts with a total obligation, including cancellation fees or attrition, that total \$25,000 USD or greater, must be negotiated and signed by IEEE MCE. The conference chair should do the preliminary work with the desired venue in terms of room block, food & beverage minimums, amenities and similar. Note that contracts with values of less than \$25,000 USD may be negotiated by the conference organizers but copies must be provided to IEEE. Furthermore, additional agreements between IEEE and the conference organizers, with respect to contract negotiations, can be specified in the MOU.

#### Contract Negotiations

ONLY IEEE can negotiate the terms and conditions, including attrition penalties and similar, for contracts with total value over \$25,000. And they will require use of the standard hotel templates available online (see the IEEE conference planning website). IEEE will also verify that any room block included in the venue contract is acceptable in terms of the total as well as the spread. If you are going to a resort-type venue where some attendees might wish to come early or depart later than the conference end date, always ask for a few of these "shoulder" nights. It is the responsibility of the Conference Committee to notify and work with IEEE MCE on these negotiations, early in the process. In locations where a large

number of hotels (with no shortage of available rooms) are within easy walking distance of the conference venue, it may be preferable not to negotiate a room block at all and thus not incur the budget liability.

The conference chair should do a preliminary negotiation with the proposed venue to ask for elements that are important to the conference (in some regions), such as:

- free suites for VIPs or conference principals, usually only possible at larger conferences
- suite upgrades at the conference rate for VIPs or conference principals
- Welcome amenities to select VIPs
- Free conference planning meetings (room rental, meal service, etc.) in advance of the conference
- Free parking if there is normally a charge for such
- Reduction or elimination of resort fees, if such are charged
- Free meeting room rental, or at least a reduced rate
- Free or very affordable Wi-Fi throughout the meeting space

In terms of the number of room-nights, always use prior history when available. Do NOT over-commit! Remember that for academic-focused conferences, attendees will tend to seek the cheapest accommodations available in the area, and they aren't too concerned about walking a few blocks. The same is true for industry members who are in hotel loyalty programs, with Marriott and Hilton being the most popular ones. If your venue is a Hyatt and there is a Marriott nearby, many attendees will simply stay at the Marriott. Always plan for this. The room-night pickup on peak nights will always be a fraction of attendees, typically as low as 50 to 60%

There is usually a food & beverage (F&B) minimum, so use history for your conference so you do not over-commit. And remember, there are always ways to save on F&B. See onsite planning later in this guide. The F&B commitment usually does not include the service charge and tax.

### Tax Exempt Status

IEEE is tax-exempt in the following states: Colorado, Florida, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Jersey, New Mexico, New York, Ohio, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin, and the District of Columbia, although in Virginia this does not apply to meals, lodging and meeting room rentals. The tax-exempt certificates are available from the AESS Treasurer and should be provided to the hotel and/or conference venue after contract negotiation. Enforcing the tax-exempt status will save the conference expense money and generate increased revenue.

#### Conflict of Interest

IEEE policy does not allow a conference official to be involved in decisions that may concern companies where the official has any sort of vested or personal interest, and all officials with decision-making authority, primarily the conference chair and conference treasurer, must sign a Conflict of Interest and Principles of Business Conduct form. An online form will be sent to the conference chair and treasurer once the conference application is completed.

# 7. Advertising, Promotion, Call for Papers

All AESS conferences are advertised in the AES Systems Magazine. There are two conditions for AES Systems Magazine advertisement:

- Financially Sponsored Conferences will be given a full page add.
- Technically Cosponsored Conferences will be given a half page add.

The Magazine will also publish the Call for Papers at the appropriate time relevant to the abstract due date. AESS has determined that paid advertising in commercial magazines does not tend to generate additional attendees, although exceptions may exist. The Call for Papers (CFP) should be prepared typically in sufficient time to be included in the materials for the previous year's conference.

### 8. Technical Program & Content Quality

AESS conferences tend to be of two types: academic/research, or industry/applications, and even in the industry/applications-focused conferences, we will get some academic/research content. There can be different approaches to handling submissions for these types of conferences, as described below.

### Industry/Applications:

An application-focused conference will tend to draw\_light submissions if a full manuscript is required, since many industry folks are far too busy with their job to go through the writing/reviewing/company approval process if there is a low chance of acceptance. For these conferences, it is more appropriate to require an abstract of between 300 and 500 words, with a manuscript to follow upon acceptance. IEEE conference policy requires all such abstracts to be reviewed by at least two reviewers who are expert in the field of the subject matter. AESS recommends using 3 qualified reviewers per abstract. And contrary to some opinion, IEEE conference policy does not require a full manuscript as initial submittal for a conference; an abstract is all that is required but within AESS, this should be for industry/applications focused conferences only and a full manuscript should be required for academic/research focused conferences as noted below.

### Academic/Research:

Conferences that are academic/research in nature should always require a full manuscript submittal, and with a review process by at least 2 reviewers who are expert in the field. Using 3 reviewers per manuscript is preferred by AESS when possible.

Pick abstract/manuscript submittal dates, notification of acceptance dates, and final manuscript submittal dates commensurate with your conference schedule. Always allow a cushion for those who can't seem to meet the required dates. It is noted that some conference organizers are exceptionally rigid in holding their dates; AESS believes that some flexibility should be extended, especially in view of

our overall primary focus on industry and applications, as opposed to the typical IEEE Society that has an academic/research focus.

Reviewers for the technical program committee should be solicited from prior conference attendees; a larger list is always preferred over a smaller list as some folks may accept a review assignment and then be unable to complete their review(s) in time.

#### 9. Contractor Selection

Contractors are typically needed for registration, and often for technical program abstract/manuscript system administration. Contractors can also be used to generate the onsite technical program. It is NOT appropriate to use "destination management" companies as they claim to negotiate good hotel contracts (IEEE contracts does this for us!) and they take a room commission, typically 7% to 10%. This raises the room rate to attendees, which is never a good idea. In fact, the standard IEEE hotel contract contains a "non-commissionable room rate" clause.

IEEE requires a competition for all contracts in excess of \$25,000 total (either fees or liability) and they can assist with such is needed. Vendor contracts should also be re-competed after 3 to 5 years. The AESS VP Conferences can provide listings of past and current vendors that have been good contractors for the Society.

# 10. Registration Fees

Setting the registration fees is an important step. IEEE requires that members get a reduced registration fee rate, and if government attendees are expected, they should be afforded the IEEE rate as well as an accommodating courtesy. The normal IEEE "discount" should be approximately the cost of IEEE membership, which is \$205 to \$208.00 in the US, except for Region 3 where dues are \$155, for 2021 and lower in other parts of the world (see

http://www.ieee.org/membership services/membership/join/join dues.html?WT.mc id=joi pro due for a complete listing). It is also appropriate to offer a small discount- typically no more that \$50 – for each category (member, non-member, etc.) for early registration, which should be set about 3 weeks before conference start. The reason for this small discount is to encourage attendees to register earlier so organizers get a better understanding of how much food/beverage to order, how many attendee bags to order, how many final programs to order, and similar.

The "going rate" for a 3-day (or 2.5 day) conference is about \$845 early, \$895 late for IEEE members, and \$995 early, \$1045 late for non-members in 2020 Studies have shown that the registration fee, if below \$1,000 - \$1,200, is not the primary factor in conference attendance. It is conference subject matter (relevant to the attendee's work or research) and location (some cities are preferred to others). For a 2-day conference, the rates would be about \$100 lower.

#### Complimentary Registrations

It is not appropriate to offer too many complimentary registrations to an AESS conference. This will vary a bit within the AESS conference portfolio, of course, but here are a few guidelines:

- Major committee chairs as defined previously could be given a full complimentary registration, to show some appreciation for their volunteer work.
- If tutorials are offered, the primary tutorial instructor for each tutorial could be offered a full complimentary registration.
- In select cases, the AESS President might be offered a full complimentary registration (but no other AESS officer or Board of Governors member)

#### Value Added Taxes

For all conferences held in the EU and many other countries, a Value Added Tax (VAT) is assessed on the total registration income, and should be factored into the Conference Budget. The VAT varies from 17% to 27% in the EU (e.g., 22% in Italy) but could possibly be higher in other regions. The VAT will be calculated and invoiced by IEEE, typically within 2-3 months after the conference ends, and this of course becomes a conference expense, which reduces the surplus. One effective way to handle the VAT is in the registration process where the VAT is charged to each registrant as he/she registers. This is done by stating the registration fee, say \$650.00 USD, and then state "plus VAT x%" and when the credit card is charged, it includes the VAT. Wherever there is a sales tax or VAT, individuals are quite comfortable with paying that as it is the norm for all their purchases, so charging the VAT on top of the stated cost is normal.

# 11. Conference Banking

AESS conferences will use the IEEE NextGen Banking system unless the location of the conference makes this impractical (some non-US areas are difficult to implement). Information on NextGen Banking is contained in the IEEE conference guide shown earlier. A benefit of NextGen banking is that the money in the account earns interest. Contrary to some beliefs, IEEE does not interfere in the NextGen banking program. A checkbook and deposit slips can be issued to the conference treasurer and a conference credit card can also be issued if needed. The conference pays its own bills, and the account, as noted earlier, earns interest.

#### Payments to Attendees

It is expected that Tutorials and Student Stipends will be paid only at the Conference. The Treasurer should pay these honoraria in the form of a check on the Conference Banking, and only after a W-9 (US) and W-8 (non-US) has been filled out and given to the Conference Treasurer. The Treasurer will forward all of the W-8 and W-9 to the IEEE to provide for payment of associated income taxes. For conferences held outside of the U.S., the conference organizers should engage with MCE regarding proper procedures.

IEEE Policy is that NO CASH payment will be made to any attendee. If the overseas participants wish to have direct bank transfer, this can be arranged through IEEE Conference Ops. The payee is responsible for providing the Bank Transfer number and their account number for IEEE to make the direct payment. This should be arranged prior to the Conference with IEEE Conference Operations. If overseas payments need to be in Cash, this can only be made if BOTH the W-8 and a Signed Receipt is provided to the Treasurer prior to payment.

#### 12. Conference Committee

An AESS conference should be composed of committee members who are AESS members, although this is not always possible for all positions within the committee. It is important that the Treasurer be an AESS member, as well as the overall or General Chair and the Technical Program Chair. Adequate meetings should be conducted in advance of the conference to assure success. It is important to have at least one onsite meeting at the venue, so all committee members can get an understanding of the layout etc. For this reason, the more committee members you have who are local to the venue, the better, as it is inappropriate for the conference to spend potential surplus for committee travel. The recommended committee positions are: General Chair, Treasurer, Technical Program Chair, Publications Chair, Registration Chair, Promotions Chair, Arrangements Chair, and if exhibits are included, an Exhibits Chair. Typically, a smaller committee is preferred to a larger one. The typical functions of the chairs are described in the IEEE conference organizers manual provided previously.

# 13. Onsite Planning and Execution

Onsite execution is critical to conference success.

#### Registration area:

This should be in a central location to the conference activities (plenary session, breakout sessions).

Networking: One of the benefits of AESS Conferences is the ability to network with other researchers. The organizers should make every effort to have space set aside in the Exhibit areas or in unused rooms for small groups to get together. This feature should be emphasized in the Conference website.

#### Audio-visual:

Use of the in-house AV company is preferred since backup equipment and technicians are already onsite. In some cases a discount can be negotiated from list prices; discounts from 25% to even 40% or 50% have been achieved with the right approach. Sometimes technical set-up and tear-down fees are included, and then a "service charge" of 20% to 24% (the type of service charge applied to food & beverage) on top of that. Simply refuse to pay the service charge - it invariably works.

#### Food & Beverage:

Careful planning here can lead to good savings! The following are key elements:

 We should note that it is not essential to provide a full, hot breakfast for attendees, as a light continental will usually suffice.

- When ordering items for a continental breakfast, do NOT order per person; rather, order in quantity (dozens of baked goods, for example).
- Similarly, don't order coffee per-person; order by the gallon instead (you get 15 to 20 cups of
  coffee per gallon, depending on the cups used). Not everyone eats breakfast items; not
  everyone drinks coffee. We'll give some number guidelines at the end.
- For lunches, avoid typical ethnic-restricted foods (such as pork).
- If you must serve chicken, do it only once, and have other main dishes (seafood such as salmon, and beef) for other lunches.
- Never serve a 4-course lunch, especially in the USA; it is too much food, adds excess costs, and tends to put people to sleep.
- Also, never serve wine with lunch, as it is not necessary, especially in the US. Some European
  conference organizers argue that it is an insult to not serve wine at lunch; we won't argue that
  view but still suggest avoiding wine at lunch.
- It is also not necessary to have a full dinner with a 3-day conference; having a heavy "welcome reception" the 1<sup>st</sup> night will usually suffice. Ongoing conferences with a long tradition, such as the Aerospace Conference, do have a dinner one night as the traditional venue is a bit distant from a choice of restaurants, but other conferences can easily switch out a dinner for a light reception, or call a "free" night.
- When there is a reception, it is appropriate to limit the free drinks to two per paid attendee using drink tickets supplied with the registration. No need to limit the free drinks to beer and wine as mixed drinks house brands) are actually less expensive than a beer or glass of wine.
- In terms of guarantees, never, ever (ever!!) guarantee the number of expected guests- even if you have a pretty firm "head count" for something like a board or committee dinner. Someone invariably doesn't show up, and for a banquet or committee dinner the hotel always plans on being able to serve about 3% to 5% above guarantee depending on the total (smaller percentage for larger groups). For a small private dinner, there is always one additional entre' available in case the kitchen makes a mistake such as dropping the plate. The commitment might be "guarantee 100, set for 108" or similar.
- At a 3-day typical conference, you never have all attendees for the full 3 days. Typical is 70 to 75% the 1<sup>st</sup> day, 75 to 80% the 2<sup>nd</sup> day, and 60 to 70% the 3<sup>rd</sup> day, but this does vary. This is important for your meal guarantees- if you have a 200-person conference, the typical number that show for lunch the 1'st day is 140 (70%) and sometimes even a bit less (such as 65%). For the 2<sup>nd</sup> day lunch, expect about 70 to 75%, and for the 3<sup>rd</sup> day lunch, assuming there is one, only 50 to 55%.
- If you run a 3-day conference that will end about noon, it is definitely not necessary to serve lunch the 3<sup>rd</sup> day.

## 14. Conference Proceedings

Conference proceedings distributed at the conference should contain all submitted papers as well as next year's Call for Papers. As most new computers no longer have a CD drive, it is starting to become common to put the proceedings on a memory stick/thumb drive vs a CD-ROM. It is important that the thumb or USB drives are checked for malware, before the Conference.

#### Proceedings Registration

It is important that the Conference Committee register with the Conference Publications Program several MONTHS before the event, which generates a Letter of Acquisition (LoA) from IEEE in which they agree to put your proceedings in the IEL. The process for registration is covered on the IEEE Conference Organization website. If the Conference is not registered (especially new Conferences or Technical Cosponsored Conferences), there will be a delay in publication in IEEE IEL, or no publication depending on the delay situation.

#### CrossCheck

IEEE is particularly concerned by recent attempts at <u>plagiarism in Conference papers</u>. The Conference Technical Committee will insure that plagiarism is avoided by making a strong statement in the Call for Papers, as well as using CrossCheck to determine the amount of reuse of previous material. Information on IEEE CrossCheck is found at: https://www.ieee.org/publications/rights/cross-check-main.html

### Xplore Submission

IEEE will require the Xplore submittal within 30 days after the conference and formatting requirements are contained in the conference manual. An important element is that authors who do not show up to present their accepted paper and do not have a co-author or colleague resent the material are defined as "no-shows". As a result, their paper should not be included in the Xplore submittal. This should be made known in advance of the conference to help eliminate the "pay to publish" trend.

### 15. Hybrid and Virtual Conferences

Hybrid and Virtual conferences have started as of 2020 due to the COVID-19 pandemic, wherein physical in-person gatherings were either prohibited outright or were simply not practical.

# Virtual Conferences

A virtual conference is one held either "live" (real-time) via Zoom, WebEx, GoToMeeting, Convene or similar platform OR held "on-demand" using pre-recorded presentations. The live, real-time is easiest since all preparation, except for food & beverage, room setups and audio-visual is the same as for an inperson conference. A Call for Papers is issued, manuscripts are received and adjudicated, selected, a program is set up and virtual room moderators handle the conference. Since there is no f&b, hotel venue, audio-visual etc, costs are substantially less, but IEEE still recommends a registration fee of between 60 and 75% of the normal fee for such a conference. The conference is hosted "live" to a

normal 2 or 3 or 4 day schedule with individual virtual rooms for each typical breakout room, and each room requires a moderator and a host. The virtual on-demand conference is similar except that the conference typically runs for 3 to 4 weeks with all pre-recorded content (vice-over slides) and paid attendees can access any presentation during the 3 to 4 week time slot. The content is not downloadable of course since we will still do an Xplore submittal with full papers. No room moderators or hosts are needed and the conference management company does all the setup and execution, just as with a live virtual conference. The advantages of the virtual conference are lower cost (both to attendees as well as AES) and no travel on the part of organizers and conference management personnel. The main disadvantage has been shown to be the lack of personal interaction, networking and socializing which has long been considered an essential part of the conference experience.

### **Hybrid Conferences**

The hybrid conference is the most difficult one to execute since it is a normal, live, in-person conference with capability to allow remote attendees. The main difficulties are in two areas: 1- the inability to predict in advance how many usual attendees will opt for virtual attendance, which affects venue sleeping room block, size of meeting rooms, and food & beverage service, and 2- the need to have broadcast cameras in each meeting room to broadcast the content to remote attendees, which requires - besides the camera operator - a Zoom room (or other platform) host with necessary license. The inability to know this in advance – i.e. when the venue contract is being negotiated – leaves AES open to significant attrition liabilities and penalties should too many attendees opt for virtual attendance. And of course, the additional costs for the camera rentals with operator and Zoom room hosts are there as well. So, we have greatly increased risk as well as a substantial increase in costs. And virtual attendees will, of course, ask for a reduced registration fee since there are not being served any coffee, refreshments, o meals. So, in effect we have a "triple whammy" impact on conference costs.