

Liaisons and Representatives Report

AESS Board of Governors Meeting

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AESS Engagement and Accessibility



- Expansive, versatile fields of interest
- Interest in supporting proactive engagement with other technical organizations
 - Beneficial to active volunteers
 - Expose and provide added information and expertise to AESS membership
- Willingness to invest and become collaboratively engaged with other technical and professional organizations has served AESS well
- Similar/parallel to our robust involvement in conferences and depth of our publications

Role of Liaisons in AEISS

- Critical for the success of AEISS both within IEEE and external to IEEE
- Supports the AEISS mission/role of providing leadership to the technical community
 - Industry and Academia
- Foster and maintain a cohesion and collaboration capability with related groups and organizations
 - Adds to the versatility and valued contribution of AEISS

What Do Liaisons Do for the Society?

- Provide means for interaction between academia, industry, government and the professionals in their region
- Provide forums for discussing means for enhancing the quality of life globally using AESS technological areas, and educating the professionals accordingly
- Afford and outreach capability between like-minded organizations
- Encourage involvement of industries in AESS events for mutual benefit, including the practice of systems engineering and systems of systems approach
- Help the BoG in achieving AESS membership growth, and chapter growth in their region

Purpose, Objectives, and Approach

- Examine various IEEE and external councils, technical communities, societies, and other AESS has been providing financial and/or resource support through its ongoing liaison and engagement activities
- Understand our various commitments where we have been engaged
- Understand the relationships we have and how to maximize the benefit gained
- Develop strategies for future or additional technological engagement opportunities

Initiatives in 2016



- Develop a proactive report for the BoG that meets the objectives of this task.
- Email sent out to each external organization liaison and representative asking for a summary of activities and information relative to the involvement of AESS.
 - Responses are requested by June 1st
 - 22 requests made via email
- Produce pro-active recommendations for the BoG based on relationship of council/activity to each component of the AESS Strategic Plan:
 - Technical Focus Areas
 - AESS Priorities
 - Active collaboration
- Identify additional Councils/Activities that AESS should consider in the future

Approach

- Purpose of AESS engagement
 - Technical
 - Publications
 - Member development/exposure
- Active/Passive involvement and activities
 - Current
 - Future
- How long has AESS been involved?
 - How did we become associated?
- Impact on membership
 - Professionals
 - Students
 - Academia
 - Industry
- Financial/Resource investment/ ROI
 - What is our commitment? (financial & time)
 - Expectations (resources, outcomes)

Summary of AESS Liaisons and Engagements

- *Much of the content for this section of this report has been derived from the active AESS volunteer liaisons and representatives to the subject organizations on behalf of AESS.*
- *Additional information collected from on-line searches, etc.*

IEEE Nanotechnology Council

- Multidisciplinary group with purpose to advance/coordinate Nanotechnology efforts through IEEE scientific and educational activities.
- Formed in 2002 by 22 Societies
 - AESS was one of founding societies
 - 2 Reps on NTC AdCom (1 primary voting member – appointed by AESS President – 2 year alternating terms
 - Meyya Meyyappan (Primary Rep) and Evelyn Hirt have been actively engaged since its inception. Jeong-Soo Lee is Secondary
- Initially, AESS committed to one-time fee of \$5,000 in 2001.
 - Yearly financial commitment is supporting attendance of one AESS member to annual NTC AdCom
 - AESS volunteers have been very proactive in Council governance and technical advances of NTC
- Nanotechnology impact on aerospace:
 - High strength light weight composites for civil aviation, military, and space vehicles; avionics and systems; structural health monitoring; embedded sensor systems; advanced light weight energy storage systems for aviation; space communication systems; and others
- Future looks to increase visibility of Aerospace-related NTC activities to membership
 - NTC and AESS publications
 - NTC and AESS Conferences

IEEE Sensors Council

- Comprises 26 member societies, creating a sensor-related community to promote development and use of sensors in all fields of interest.
- AESS actively engaged with Sensors Council since 1999
 - Purpose is for Sensors Council providing the AESS community with latest sensing technologies to be used for extraction of information (signal/data processing) to fulfill a complex mission (systems design).
 - Lorenzo Lo Monte is Primary AESS Rep/ Long Teng is Secondary
- AESS initially contributed \$2,000 in 1999.
 - Annual financial commitment is to support AESS Rep to attend Sensor Council AdCom meeting (once or twice per year).
 - Liaison assists with coordination of technical content on related topics between Council and AESS publications
 - Firm collaboration to develop specific conference tracks for each organization's flagship conferences.

IEEE Systems Council

- Charter date is June 2005
- The Systems Council integrates IEEE activities regarding aspects of multiple disciplines and specialty areas of systems engineering:
 - Systems Engineering education, standards, processes, methodologies
 - Systems Modeling, simulation, integration, resilience
 - Robust design, safety & human factors, security, usability, environmental
 - Product transition: design, production, test, deployment, disposal
 - Program/project management
 - Quality Assurance
 - Mission Assurance
 - Requirements Development & Management
 - Risk Management
 - Systems Architecture
 - Systems-of-Systems
- AESS was a Founding and Charter member of Systems Council
- AESS pays annual dues of \$5,000
 - MOU signed through 2017
 - Systems Council has been discussing plans to discontinue dues in the future (When?)
- Co-Sponsoring and coordinating conferences
- Pursuing collaborative publishing activities
- AESS supports sending one Rep to AdCom meetings
 - Walt Downing is Primary Rep
 - Bob Lyons is Secondary Rep

IEEE Biometric Council

- The Biometrics Council supports work in biometric technology by focusing on advancements in the theory, design and application of biometric characterization of human beings based on the physiological and/or behavioral features and traits for:
 - Identification
 - Identity verification
 - Authentication
 - Encryption
 - Recognition
- AESS has been a Sponsoring Society for about 10 years (?)
- AESS pays annual dues of \$2,000
 - Committed through the end of 2016
- No current rep from AESS
 - Shirley Chang retired
- AESS was recently sent a new 4-Year MOU
- IEEE or Sponsoring Society members may participate in Biometric Council for free.

IEEE USA

- IEEE USA surveys other IEEE organizations for volunteers in the various IEEE USA committees
 - AESS considers opportunities regarding interests of our members
 - Committee on Transportation and Aerospace Policy
 - Energy Policy Committee
- AESS has been engaged with IEEE USA for over 25 years
 - No Society financial commitment
 - Active members usually live near Washington DC or communicate via internet
 - Supporting IEEE USA in carrying out its mission

IEEE Women in Engineering

- The IEEE Women in Engineering (WIE) Committee is one of the largest international professional organizations dedicated to promoting women engineers and scientists, and inspiring girls around the world to follow their academic interests in a career in engineering.
- WIE's goal is to facilitate the recruitment and retention of women in technical disciplines globally.
- Through WIE, IEEE envisions a vibrant community of IEEE women and men collectively using their diverse talents to innovate for the benefit of humanity.
- All or nearly all IEEE technical societies, as well as IEEE member sections and regions have established liaisons with WIE.
- AESS's interest in engaging and collaborating with WIE is an approach to serve and enhance our member interests.
- Our liaison's commitment is largely a reporting function on WIE events and activities to AESS, and also to report to WIE on AESS-based WIE activities.
 - Dr. Kathleen Kramer is WIE Liaison for AESS
- AESS has no formal financial commitment to WIE at this time.

IEEE Women in Engineering

From a professional affiliation standpoint, AESS does have a strong commitment to supporting the activities and success of WIE. AESS President Teresa Pace has long been an advocate for WIE in IEEE and very encouraging of the integral relationship between WIE and AESS. On this subject, Dr. Pace has said the following:

“IEEE Women in Engineering (WIE) is the largest international professional organization dedicated to promoting women engineers and scientists. I believe it is very important because it allows a forum for women engineers to find others with similar experiences, goals, and challenges while helping to provide opportunities to encourage women to participate and stay in engineering as well as continue to grow women's roles, projects, recognition, and capabilities in engineering across the globe. For me personally, I am excited to see the number of women in engineering rising, especially compared to when I went to school, but we are still a significant minority in the field and have a long way to go to close the gap. The WIE society is helping to change that.”

IEEE Society on Social Implications of Technology (SSIT)

- SSIT is essentially a society of IEEE that crosses with all other technical societies, including AESS, in supporting technology development for humanitarian uses and applications, ethical uses of technology, and sustainability and the development and employment of Green technology.
- Each society's liaison brings specific technical expertise, or enables SSIT to access that expertise and intelligence, as necessary, to address societal issues.
- AESS's liaison is currently in the process of discussing SSIT's wishes to become involved with conferences to support tracks or co-conferences on these societal issues.
- AESS's engagement with SSIT goes back to 2003, and our liaison has largely been led by Michael Cardinale, who has served on both organization's BoG.
- There is no financial commitment from AESS with SSIT.
- Strategic collaboration in conferences and publications can be considered the baseline for future coordination and technical/societal partnerships with AESS.

IEEE Transportation Electrification Community (TEC)

- TEC was started as an IEEE Technical Community in 2014.
- AESS is one of nine IEEE Transportation Electrification Partners
- TEC Vision:
 - *The IEEE Transportation Electrification Community coordinates broad and deep activities throughout the IEEE in the growing electrification revolution across transportation domains, including advances in electric and hybrid cars, more-electric ships and aircraft, rail systems, personal transport, and the motive, storage, power grid, electronic intelligence, and control technologies that make them possible. Creates leadership, professional development, standards development, and other opportunities for practitioners, researchers, students, and all IEEE members interested in electric transportation.*
- AESS pays annual dues of \$3,000. (Committed through 2016?)
- AESS Liaison serves TEC as a member of the TEC Steering Committee
 - Bill Walsh is Primary Liaison; Bob Rassa and Bob Lyons have actively participated in the startup of this activity.
 - Engagement has to date been limited to telcon Steering Committee meetings
- Objectives between AESS and TEC may include
 - Collaborative publishing of articles related to electric transportation of air vehicles, related avionics, etc.
 - Coordinated conference activities where appropriate and progressive

IEEE Standards Association (IEEE-SA)



- The IEEE Standards Association is an organization within IEEE that develops global standards in a broad range of industries, including:
 - Power and Energy, Biomedical and Health Care, Information Technology and Robotics, Telecommunication and Home Automation, Transportation, Nanotechnology, Information Assurance, and many more.
- IEEE-SA is a *"leading consensus building organization that nurtures, develops & advances global technologies."*
- AESS's engagement with IEEE-SA is to support, evolve, and maintain standards development efforts that are related to the aerospace industry and in the AESS fields of interest
- Vince Socci is the current AESS Rep to IEEE-SA
- AESS has no financial commitment at this time.

External Organizations

American Institute of Aeronautics and Astronautics (AIAA)

- AIAA is the world's largest technical society dedicated to the global aerospace profession
- IEEE/AESS and AIAA has a long history of collaboration and cooperation on many common aerospace technological issues.
- Partners and Co-Sponsors for several major technical conferences:
 - IEEE Aerospace Conference
 - IEEE/AIAA Digital Avionics Systems Conference
- There are no financial ties or commitments (beyond conference partnerships) between AIAA and AESS.
- Bob Rassa has been our liaison with AIAA.

Association of Old Crows (AOC)

- The AOC is an organization for individuals who have common interests in Electronic Warfare (EW), Electromagnetic Spectrum Management Operations (EMSO), Cyber Electromagnetic Activities (CEMA), Information Operations (IO), and other information related capabilities.
- AOC provides a means of connecting members and organizations nationally and internationally to promote the exchange of ideas and information, and provides a platform to recognize advances and contributions in its fields.
- AESS's engagement with AOC has mostly been through volunteer members who have been active in both organizations in their professional interests in Electronic Warfare.
- There are no financial ties or commitments between AOC and AESS.
- Erv Gangle has been our liaison with AOC.

External Organizations

Institution of Engineering and Technology (IET)

- IET is a global professional institution, in the same way of IEEE
- IET and IEEE have significant institution-to-institution links.
- AESS's principle engagement is through the international series of radar conferences, where joint conferences between the two organizations dates back to approximately 1967.
- AESS volunteers are also very engaged in IET's publications, specifically the IET Radar, Sonar, and Navigation Journal.
- No formal financial commitment between AESS and IET
 - Hugh Griffiths is current Liaison
 - Additional time commitments are minimal (already actively engaged)
- IET/AESS has become a solid model for building and enhancing inter-society relationships across our profession.

International Council on Systems Engineering (INCOSE)

- INCOSE, founded in 1990, is an organization dedicated to the advancement of systems engineering and to raise the professional stature of systems engineers.
- INCOSE's mission is to advance the state of the art and practice of systems engineering in industry, academia, and government by promoting interdisciplinary, scalable approaches to produce technologically appropriate solutions that meet societal needs.
- AESS has no official engagement or financial commitment with INCOSE, however on the local level, members participate in activities sponsored by either organization.
- Potential collaboration may be found in publications, conferences.

External Organizations

NDIA Systems Engineering Division

- ▣ The NDIA Systems Engineering Division mission is to promote the widespread use of systems engineering (SE) in the Department of Defense (DoD) acquisition process in order to achieve affordable and supportable weapon systems that meet the needs of the military users. To provide a forum for the open exchange of ideas and concepts between government, industry and academia. To develop a new understanding of a streamlined SE process.
- ▣ Bob Rassa has been our liaison with NDIA SE Division. He also serves NDIA SE as Chair Emeritus.
- ▣ There are no financial ties or commitments between NDIA SE Division and AESS.

Armed Forces Communications and Electronic Association (AFCEA)

- ▣ AFCEA was established in 1946, and is a non-profit membership association serving the military, government, industry, and academia as an ethical forum for advancing professional knowledge and relationships in the fields of communications, information technology, intelligence, and security.
- ▣ There are no financial ties or commitments between AFCEA and AESS.
- ▣ Marina Ruggieri has been our liaison with AOC
 - Key note at MILCOM 2014
 - Engagement is through the Rome Chapter

Recommendations

- Consider level of engagement with Biometrics Council
 - Level of benefit vs. dues?
 - No current Rep?
 - Decision on new four-year MOU?
- Consider level of engagement with Transportation Electrification Community (TEC) beyond current commitment
 - Aerospace/avionics topics/issues will not be a priority unless we determine and lead an effort through TEC
 - Publications/conference topics related to electrification?
- Support establishment of local Council chapters through AESS Chapters
 - Proposed Sensors Council Chapter in Orlando
- Review on-going dues commitments and determine ROI
 - Systems Council (\$5K) – how long?
 - Biometrics Council (\$2K) – Continue after this year?
 - TEC (\$3K) – Level of active engagement/leadership?

Future Considerations

- Develop strategic approach, through engagement of Liaisons and Reps to other IEEE and external organizations, to:
 - Enhance the exposure of AESS members to a more robust and in-depth spectrum of information in their fields of interest.
 - Reflect the versatility of our engagement with these organizations as a benefit of AESS and through our publications
 - Systems Magazine
 - TAES
 - E-mail Blast (newsletter)
 - Document and promote collaborative engagement opportunities for our members through our association with Councils and other organizations.
- Develop financial evaluation criteria for proposed new investments
 - Outreach priorities of AESS
 - Membership and Member development impacts
- Establish consistent commitment parameters



Questions?

