



IEEE Aerospace and Electronic Systems Society Strategic Plan, September 2011

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I. Executive Summary

This document represents the Final Version of a Strategic Plan for the IEEE Aerospace and Electronic Systems Society. It is intended to cover the next three years in detail and the next ten years in outline, and it will be reviewed each year. It has been put together by the Vice-Presidents of the Board of Governors following the meeting of the Board in April 2011, by a series of drafts and teleconference meetings, and it has also benefitted from inputs from the Chapter Chairs. It builds on the Strategic Plan presented at the Fall meeting of the Board in Rome, Italy in September 2009, and draws on the results of a Survey of Industry members of AES undertaken in December 2010. This survey elicited 555 responses and provided detailed evidence upon which to base this plan.

It will be presented to the Fall meeting of the Board in September 2011.

A summary of the key elements of the plan is as follows:

Conferences: (i) Increase the number of AES Financial Sponsored Conferences by 3 by converting current Technical Co-sponsorship Conferences or starting new Conferences that support the long term AESS Strategic Objectives; (ii) Selectively examine and rewrite the "Perpetual" MOUs to bring up to IEEE policy standards – examine each and suggest rewrites on those that do not conform with IEEE Best Practices; (iii) Increase the Conference Surplus returned to AES by 10 percent a year.

Education: (i) Continue to develop the Video tutorial program; (ii) In addition to our tutorial program, develop a compendium that provides useful links to existing open source education information; (iii) Work with the AESS GOLD members to develop programs that are aimed at our younger members.

Finance: A conservative look at the future of AESS is a growth of FIVE PERCENT. With aggressive activities from the Membership committee, with Chapter initiatives, and the Conferences growth, this is very possible and conservative.

Industry Relations: (i) establish strategic partnerships with two large companies (Raytheon (US-based) and Finmeccanica (Europe-based)); (ii) introduce a specific Industry feature in the AES Magazine.

Membership: (i) actively encourage retention of membership; (ii) promote AESS membership at AESS sponsored and co-sponsored conferences; (iii) develop AESS membership brochure; (iv) utilize relationship with Chapters for AESS Membership development.

Chapters: (i) promote formation of AES-Joint Society Chapters to serve members where no chapter exists; (ii) hold a Chapter Summit every three years near the Sections Congress meeting to get officer feedback upon the technical direction of the society and improvements in chapter operations; (iii) set up a "forum web page" to increase chapter communications on what's working and what is not; (iv) promote and support AES Board member visits to chapter meetings in their region; (v) promote AES chapters to participate in organizing conferences by providing conference planning resources to chapter officers.

Publications: (i) develop AES Transactions to eliminate publication backlog and improve journal impact factor; (ii) improve content and presentation of the AES Magazine; (iii) determine areas of interests and potential authors for new Tutorials; (iv) address the lack of submitted articles to QEB, and appoint an official editor.

Technical Operations: (i) promote collaboration among Technical Panels and local IEEE chapters; (ii) develop a formal peer review process of each TP; (iii) develop guidance in the specific areas of the TP expertise in the form of best practices, methods and tools; (iv) promote synergy and collaboration among the education activities to develop continuing professional development modules for each of the TP area of expertise.

Governance: review the effect of changes made to AES governance to ensure the documents operate as intended, and make further changes if necessary.

II. Foreword

In my term of AESS presidency (2010-2011), I have learned something that can be very useful for the deployment of this Strategic Plan: the current President has to do his/her best to harmonize the new ideas and the personal vision with the previous President's achievements and vision as well as to pave the way gracefully to the next President, whoever he/she will be. In fact, strong discontinuity is seldom an effective approach in management and it is certainly non-beneficial in an IEEE Society where the President's term is only one or two years long, non-renewable.

Society Officers, Board of Governors members and Society members play a key-role in the conception and development of new ideas, in the maintenance of the Society everyday life and in the Society continuity. I do believe *continuity* is a value, because it obliges people to understand others and to frame their own actions in a large framework.

Moving from the above approach, in my term I have consolidated and finalized some on-going activities and changes, started in the past President's term, launched new initiatives and prepared AESS for its challenging framing in the sustainability and Quality of Life world. Changes have involved both the outer shape of the Society and - most important - the contents.

For instance, we have a new logo, a new website, the Transactions in electronic format, a written Strategic Plan. We have undergone successfully the periodical IEEE review of the Society. The participation of students and Graduate of Last Decade (GOLD) to the Society activities has been increased, giving them the direct responsibility in organizing events and proposing new initiatives. A new AESS Conference on Satellite Communications to be held in Europe, starting from 2012, is under construction.

Recently - after months of hard work - we have approved new Governing Documents (By-Laws and Constitution) to improve the Society flexibility and matching with IEEE goals and perspectives. A new model of Officers/Board of Governors meetings has been successfully implemented: our meetings have mostly taken place in national or international institutions (European Space Agency, CACI, Center for TeleInFrastructure research network) to allow the mutual knowledge between IEEE/AESS and the hosting technical or scientific institution and possible perspectives of cooperation. A strong interaction between IEEE and AESS has been constantly maintained during my term, to allow a stronger and quasi-real-time harmonization between IEEE strategic address and our Society development, although in the full respect of the Society specific goals and ideas. This interaction has been increased by hosting IEEE representatives in all our Officers and Board of Governors meetings, in the active participation to the TAB meetings and to the other Committees where TAB involved the President (TAB Strategic Planning Committee, WIE Committee).

The tight relationship between AESS and IEEE and the Field of Interest (FoI) of AESS is rendering easy and effective also the harmonization between AESS goals and IEEE present and perspective strategy in the sustainability and humanitarian topics.

I consider a tremendous plus the broad AESS FoI: in fact, by covering complex systems, its sub-systems and different type of users (civil, military) AESS is able to cope with the many challenges of everyday life, including emergency situations.

AESS for Quality of Life is therefore a dream of mine that will easily come true if the Society will simply continue its present natural growth. The interdisciplinary attitude is becoming the most rewarding approach to bring the Human Being to new frontiers and to improve effectively his/her Quality of Life (QoL). The QoL is a key-important concept: it deals with a *human being-centric vision* that puts the technology as a tool to create a better everyday life and to protect the health of our Planet. This vision is somehow different from a technology-driven approach.

AESS has all the tools and the knowledge to contribute strongly to the above vision. From my side, whatever my role in the Society will be, I will continue to contribute to this vision and to provide my full support for the successful deployment of this Strategic Plan.

--Marina Ruggieri, President AESS

III. Conferences

Objective: The AES Strategic Plan for Conferences should focus on refining and promoting best practices in planning, management, publications and financing Conferences that directly or indirectly benefit the AES Society Membership.

Critical Areas: Conferences are one of the primary means for AES and IEEE to carry out technical and education initiatives for the membership, as well as an important source of revenue to help carry out the Society mission. There are two types of conferences:

Financial Sponsorship (FS) – where AES is the financial sponsor or co-sponsor of the conference. In co-sponsorship, AES partners with another Society or IEEE Operating Unit to finance, plan and conduct a conference. AES then receives a proportion of the surplus revenue from the Conference based on the agreed financial split.

Technical Co-sponsorship (TCS) – where AES partners with another organization, either within IEEE or with an outside, nonprofit organization, to hold a Conference. IEEE does not share in the revenue, except for the possible sales of proceedings through IEEE Xplore if this option is chosen.

The recent history and short term projection for AES Sponsored Conferences is given in Figure 1. For the two years 2010 and 2011, the numbers reflect actual count on both Financial (FS) and Technical Cosponsored (TCS) Conferences. A Goal of AES Sponsored Conferences is given for the 3 years of this Strategic Plan, along with currently registered sponsorships (as of July 2011).

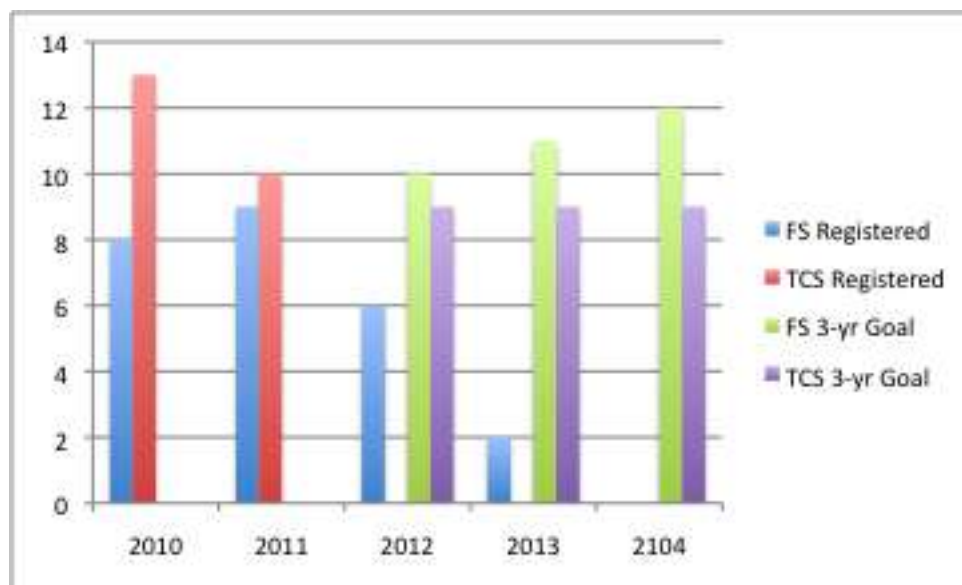


Figure 1 History and Projection of AES Sponsored Conferences

IEEE Conference Contracts and Finance have identified the following factors as essential for meeting the IEEE Policies on Conferences:

1. Strengthen Conference Practices – it is important to educate Conference Organizing Committees into the process for setting up Conferences to insure the IEEE Name Brand, Producing Quality Publications, and providing a financial benefit to the Institute and Society. Key elements of these practices include:
 - a. Memorandum of Understanding between the organizers, the Society, and any other benefactor from the Conference.
 - b. Budget process that maintains the benefit of conferences for technical and educational impact on the Members.
 - c. Conference Publications Program that will establish standards for papers in selection, peer review, written format, and compatibility with IEEE Xplore.
2. Financial Sponsorship MOUs: The IEEE Policy is that any Conference that is managed by multiple operating units (OUs), inside or outside of IEEE) must have a Memorandum of Understanding. The MOU will include the following:
 - a. Financial responsibility and split in advanced funding and surplus between the participants.
 - b. Definition of the roles and responsibilities of the OUs.
 - c. Budget that meets IEEE policy on Fees and Surplus.
3. Technical Co-sponsorship MOUs: When a Conference Organizer or participant outside of AES desires to partner with AES in promotion and operation of a Conference, the following need to be detailed in a TCS MOU:
 - a. Non-profit organization as proposed Conference Organizer
 - b. Clear process and participation of AES Members/Leadership in the Technical Program
 - c. Participation in IEEE Conference Publication Program, with the standards for publication in IEEE Xplore

Issues:

1. Too many MOUs are perpetual, with changes in the Governance and Conference Management processes.
2. Technical Co-sponsorship petitions are weak and very late in the process for defining and managing a Conference.
3. Conferences need revitalization for international and technical (e.g. space, systems, networked) changes.
4. Insufficient AES member participation in Conference management

Short Term Actions:

1. Strengthen TCS process for more International coverage, but with direct AES benefit – have more AESS Board of Governors members on planning committees and in attendance.
2. Strengthening the AES Conference Liaison for Financial Sponsorship – encourage new AESS Board of Governors members to participate in Conferences within their area of interest.

Three-Year Goals (2012-2014):

1. Increase the number of AES Financial Sponsored Conferences by 3 by converting current Technical Co-sponsorship Conferences or starting new Conferences that support the long term AESS Strategic Objectives.
2. Selectively examine and rewrite the “Perpetual” MOUs to bring up to IEEE policy standards – examine each and suggest rewrites on those that do not conform with IEEE Best Practices.
3. Increase the Conference Surplus returned to AES by 10 percent a year.

IV. Education

The AESS bylaws establish the role of the VP, Education as follows:

The Vice President for Education shall direct and coordinate society activities related to training and continuing education for members and other professionals in the AESS technical fields-of-interest approved by the Board of Governors. In accordance with guidance and policies approved by the Board of Governors, he will work with society chapters, Technical Panels, and Conference Committees to develop and execute programs that will enhance the professional capabilities and currency of present and potential society members.

Current activities

Distinguished Lecturers

We receive requests for AESS Distinguished Lectures from IEEE Sections and from our chapters. The procedures are posted on the AESS web site at <http://iee-aess.org/education/distinguished-lecturers/distinguished-lecturer-and-tutorial-program>. Pertinent to this discussion is the following excerpt:

The AES Society will pay reasonable speaker’s expenses for economy-class travel, lodging and meals. As a general guideline, speaker’s expenses involving travel wholly within North America or within the European Union will be covered up to \$1,000. Expenses involving extensive international travel will be covered up to \$2,000. The Society encourages arrangements whereby more than one lecture is presented in a single trip, and costs in such situations will be considered on a case by case basis. The inviting organization is expected to cover 50% of the speaker’s expenses.

In the six month period between October 2010 and April 2011, eleven lectures by seven of our DLs were presented in the USA, Canada, Israel, India, Mexico and Singapore. Although our policy strictly requires the host organization to pay 50% of expenses, in several cases with multiple lectures to be given, we have agreed to pay the to/from travel expenses, with the host paying for all the local expenses. As a result, out of a total of \$17,900 in travel costs, AESS expects to be reimbursed with

\$4,600. This situation needs to be considered in our future budgetary planning, as well as the observation from several of our DLs that the allowance for international travel is inadequate, especially now that the dollar exchange rate is weak.

I have heard informally from several of our DLs that they have given lectures locally with no expenses to be claimed. These lectures should be included in our overall statistics, and I am urging the DLs to keep AESS better informed.

To encourage IEEE student group access to our Distinguished Lecturers, and as *a way of encouraging engineering education*, we are experimenting with presenting these lectures using video conference techniques. To date, we have held one such "Virtual DL". On April 15 of this year, Dr. George Schmidt lectured on INS/GPS Technology Trends to a mostly undergraduate audience at MANIT, an Institute of Technology in Bhopal India. This presentation was highly successful, in spite of several technical difficulties with the conference software and the inconvenience of a 13 hour time difference. We intend to vigorously pursue this concept in the future.

Video Tutorials

In 2007, Bob O'Donnell initiated a series of AESS web-based video tutorials. The program has grown slowly until today. We have six, as follows:

- Bistatic & Multistatic Radar (4)
- GPS/GNSS + Inertial Navigation (4)
- Radar System Performance Modeling (2)
- Sea Clutter (12)
- Fundamental Concepts in Radar Signal Processing (13)
- IEEE Stealth Update (New)

The numbers in parentheses show the position of the tutorial in a Google search for key words. Although the positions are respectable, the number of visitors to the tutorials has not been very high.

Three-Year Goals:

The goals presented here are motivated by concern about the Society's lack of growth as well as a sense that student interest is waning in the engineering fields that traditionally feed AESS: principally electrical engineering and aerospace engineering.

1. Grow the Distinguished Lecturer Program
 - a. Make the budget go further by perfecting the 50% share plan and by making effective use of virtual DLs, using modern video conference techniques.
 - b. Where practical, tie in talks at local universities with DL commitments.
 - c. Select new DLs to improve the global distribution of our lecturers.
 - d. Chapter Chairs submit contact information, bios, and abstracts of select lecturers within respective Chapters so that the DL Program may invite them and thereby expand the DL offering.
2. Continue to develop the Video tutorial program
 - a. Tap the Panels and Conferences to broaden the topics, which are now predominantly radar-related.
 - b. Also approach people providing tutorials at IEEE AESS sponsored conferences and at similar conferences sponsored by IET, AIAA, and SPIE.
 - c. Another source might be people who have recently written an appropriate book who may want to use the tutorial as means to promote the book. Similarly, consider authors of IEEE AES Magazine tutorial articles.
 - d. Discuss with IEEE ways of putting our tutorials on the eLearning system. This should bring a larger pool of viewers to us. We could still maintain free access to AESS members.
 - e. Publicize the program to students –undergraduate as well as graduate.

3. In addition to our tutorial program, develop a compendium that provides useful links to existing open source education information such as links to appropriate courses on Connexions (<http://cnx.org/>), <http://www.radartutorial.eu> and others. The key is to develop an indexing method that is intuitive for IEEE AESS members to find the content of interest.
4. Work with the AESS GOLD members to develop programs that are aimed at our younger members. These could include:
 - a. A program modeled after the DL program but developed "GOLD for GOLD".
 - b. Financial support and mentoring for projects a la the UAV program.
 - c. Making tutorials at our conferences available to GOLD members by recorded webinars. This should not have negative effect on Conference attendance as this category doesn't attend conferences much – actually may stimulate attendance as they progress in their careers.
5. The culture in engineering and, in particular, in the FoI of AESS, has to be created in a very early stage of a student school cycle. AESS should develop a systematic plan of penetration in High Schools, e.g. through seminars, student contest, columns in our Magazine, dedicated room in our website and probably an AESS Internet-based social network.

V. Finance

The AESS's INCOME comes from Interest, Publications, Membership Dues, and Conferences. Interest Income is that part of income earned by the investment of the Reserves Amount of this Society. Publication income is made up of several items as shown below except the Magazine income is essentially the membership dues which the members give to belong to the society and get the magazine free. Conference income is the big item and the society depends largely on the success of the conferences. Below is a chart showing actual accounts for 2008 and 2009 with the budgets for years 2011 and 2012.

Expenses are the cost of publishing the Transactions, publishing the Magazine, Conferences Administration cost to IEEE, Board of Governors meetings, and Committee Activities. Interest Income is always shown here as a cost, so a negative cost is really an income. Holding conferences is one of the largest expenses, so the conferences need to generate revenue. IEEE Administration cost is always with us. Publication cost is a cost for producing the Transactions, the Magazine, and IEEE Libraries. Committee and Others is a cost of the Board of Governors' and Committee activities. Monies that are unused at the end of the year go into AESS Reserves and only a fraction can be used with permission from IEEE in a succeeding year.

IEEE encourages new activities so INITIATIVES are encouraged. A society may use three percent of its Reserve for new activates. AESS has used initiatives to start new AESS student chapters and other Student activities in the past. These monies cannot be used for conferences or general operations.

BUSINESS UNIT - 0100				
	2009	2010	2011	2012
SUMMARY BY COST CENTER	ACTUALS	ACTUALS	BUDGET	BUDGET
00100 INTEREST INCOME	0.0	0.0	0.0	0.0
00380 TRANS ON AEROSP & ELECT SYS	473.5	475.1	511.0	487.8
00381 AEROSPACE & ELECT. SYS. MAG.	290.1	286.2	265.8	233.0
01499 PERIODICAL RELATED - OTHER	1.5	0.4	1.1	0.4
01600 NON PERIODICAL	5.2	2.9	5.8	4.6
01700 MEETINGS/CONFERENCES	1,730.6	2,280.3	1,830.9	2,068.1
01701 CONFERENCE RELATED - OTHER	0.2	0.0	0.2	0.0
01702 GRANT	0.0	5.5	0.0	0.0
01800 ADMINISTRATION	0.0	0.0	0.0	0.0
01900 COMMITTEE & OTHER	0.3	0.5	0.0	0.0
TOTAL INCOME	2,501.4	3,050.9	2,614.7	2,793.9
00100 RMBSVC-INTEREST INCOME	(756.5)	(196.5)	0.0	0.0
00380 TRANS ON AEROSP & ELECT SYS	278.3	479.6	270.5	279.0
00381 AEROSPACE & ELECT. SYS. MAG.	500.9	372.0	433.1	379.4
01499 PERIODICAL RELATED - OTHER	4.6	(0.0)	1.7	3.7
01600 NON PERIODICAL	13.4	13.7	9.3	9.3
01700 MEETINGS/CONFERENCES	1,022.2	1,406.9	1,093.3	1,285.8
01701 CONFERENCE - RELATED	1.9	1.9	1.9	2.0
01702 GRANT	0.0	5.5	0.0	0.0
01800 ADMINISTRATION	319.0	355.3	389.0	426.4
01900 COMMITTEE & OTHER	253.4	255.6	348.5	406.6
TOTAL EXPENSE/RMBSVC	1,637.2	2,694.0	2,547.4	2,792.2
TOTAL NET	864.2	356.9	67.4	1.7

A conservative look at the future of AESS is a growth of FIVE PERCENT. With aggressive activities from the Membership committee, with Chapter initiatives, and the Conferences growth, this is very possible and conservative. The chart below shows a five percent growth over a five year period.

AESS Growth for a Five year Period

	2011	2012	2013	2014	2015
INCOME in million US dollars	2.614	2.711	2.812	2.911	3.11
EXPENSE in million US dollars	2.601	2.701	2.805	2.901	3.01
Initiatives in thousands of US dollars	0	40.01	45.01	48.12	50.12

VI. Industry Relations

1. Review of current status and issues

- AESS has an unusually high proportion of members from Industry, so it makes sense for us to treat their interests as a high priority.
- The Industry Survey has given us a great deal of information from several perspectives – a snapshot of what we are doing currently and what members think of it.
- From the point of view of Industry, it is suggested that the things of greatest interest are recruitment, training and career development of the workforce, and perhaps promotion of their products and/or services. From the point of view of AESS, our interest is in increasing our membership and hence improving and expanding our services.
- AESS should attempt to provide 'a professional home' for engineers from Industry.

All of the issues under the other headings of this document (Conferences, Chapters, Education, Publications, Technical Operations, ...) are relevant to AESS members from Industry, and the developments in those areas detailed elsewhere in this document will help address their interests.

AESS's offerings take the form of:

- involvement with high school and university education, promoting the profession to young people
- chapter activities
- online tutorials, DLs
- conferences
- publications
- recognition of achievement (through higher grades of membership, but also awards)

AESS should explore new things that could be of value, such as Win-win type activities, and ideally ones that don't require substantial investment.

2. Three year goals

- a. We will establish strategic partnerships with two large companies (Raytheon (US-based) and Finmeccanica (Europe-based)). This will entail identifying issues and services of interest to each (likely to be based on the list above). Ideas to be considered might include (i) group membership deals, (ii) specific training/education packages, (iii) agreed sponsorship by industry of conferences, (iv) AES/industry awards. The partnerships should be in place by the end of the first half of 2012. They will be reviewed after 18 months, and lessons learned used as the basis to plan further such partnerships.
- b. We will introduce a specific Industry feature in the AES Magazine. The detail of this needs discussion and refinement, but it might take the form of a piece in each issue about a particular company, describing their business and their relationship with AESS. Since there are a number of senior representatives from Industry on the Board they might usefully produce the first few to establish the precedent and the style (which is important – they shouldn't look overtly like advertising).

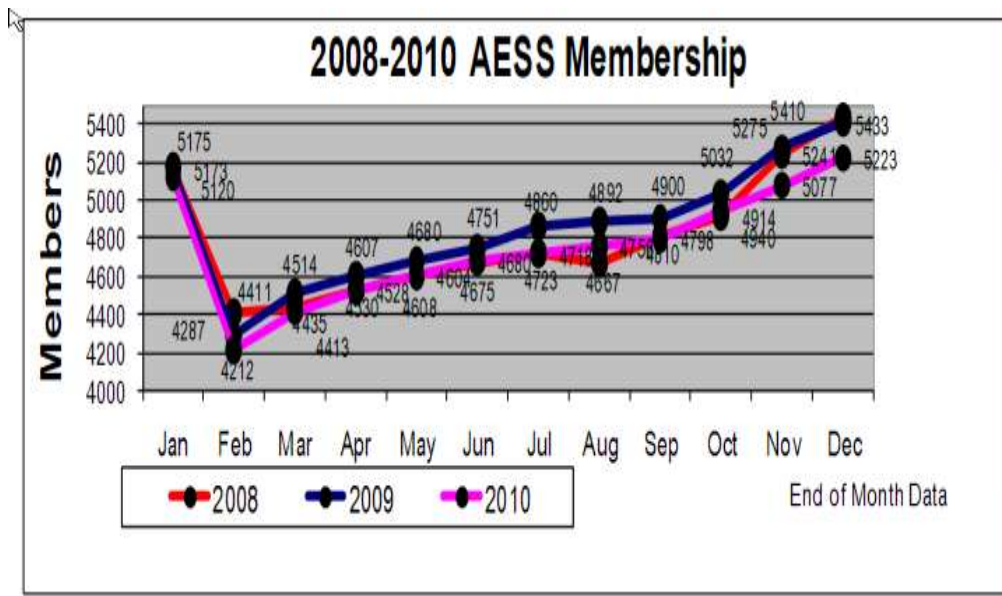
3. Longer-term goals

Much will depend on the success of the three-year goals, but essentially the longer-term goal is to develop the idea of 'a professional home' for engineers from Industry. Envisioned is a situation where companies are coming to us and saying: 'why can't we have a partnership with AESS, like the one you have with XXXX?'. Recognition that the nature of these partnerships will vary from one company to another is important and that (for example) the requirements of a company (or similar organization) in China will be different to those of a US-based company – we have to think globally.

VII. Membership

Current Status and Issues

- AESS has been losing members; however we have, through multiple efforts reduced the losses over the last several years.
- Efforts have been placed at Recruiting, Recovery, and Retention of AESS members by the BOD and by our Staff. This effort included staffing booth and providing material at multiple conferences.
- Overall IEEE has gained members, however they have continued to lose members from Region 1 through 6 (USA), which is having an impact on both IEEE and AESS.



Key Elements of our Future Plans for AESS Membership – Tiered Membership

The driving efforts for our Strategic Plan for Membership will be the IEEE’s Tiered Membership Project. This Project is designed to have each and every IEEE Member belong to a Technical Chapter. Once this Project is approved and in place, AESS will need to accomplish the following in short order:

- Tier 1 AESS Membership - Develop a “Free” or “no-cost” fully “electronic” AESS Membership to be offered to new IEEE members as part of their IEEE Membership. This “tier” of AESS Membership would be a beginning point for new members and would need to have enough information contained within to entice the new members to want to join AESS as a full member. Possible offerings of this “tier” would include, but not be limited to, access to the web site and receiving of the email “blasts”.
- Tier 2 AESS Membership – This would be our “normal” membership for AESS full dues paying members and would include all of the current items we now supply to our members. We would need to enhance this membership option to show the value to our members and to the Tier 1 members so they would want to become full members of AESS.

Continuation of Current Projects to Recruit, Recover, and Retain AESS Members

Our efforts to date have, to some degree, shown promise of “holding our own” for AESS Membership. To continue and enhance these efforts, we will need a strategic look at what is being done and what “could” be done in addition to the current items. Below are items for consideration, both from what we are doing today and what we might do in the future:

- Currently sending a letter (email) to all New AESS Members from the President.
 - Future – offer these members access to a “New AESS Member Webinar” that would be geared to providing the new members with what AESS Membership has to offer. One of the key elements of this Webinar would be to offset the high loss of first year members.

- Currently sending a letter (email) to all Arrears AESS Members after the February “terminator” runs, encouraging them to renew their membership.
 - Future – Send emails to these Arrears AESS Members in January and encourage and remind them to renew. Ask them to provide information on why they did not renew, and if possible, offer them access to a particular “valuable” offering from AESS (i.e., special Webinar, special publication, etc.)
- Currently sending a letter (email) to all new Senior AESS Members.
 - Future – Continue sending these emails, and list all new Senior Members on our website and possibly include in an AESS Publication.
- Currently promoting AESS Membership at AESS Sponsored and co-sponsored conferences. In some cases this is just AESS Membership information at the conference and in other cases involves staffing of a booth.
 - Future – Continue with these conference promotions and consider having the AESS Membership brochures in the languages of the country hosting the conferences. Additionally consider having a staffed booth, possibly by local AESS volunteers at each and every AESS sponsored or co-sponsored conferences.
- Currently have an AESS Membership Brochure (developed within the last few years). This brochure is being sent to conferences and to Chapters who request it and is available via the web page for downloading.
 - Future – Update the current AESS Membership Brochure and consider adding additional information about the various offering available from AESS.
- Currently we have a very good relationship with our Chapters, including our Chapter Summit held at Section’s Congress each year.
 - Future – Utilize the relationship we have with our Chapters to work closer with them for AESS Membership development. Provide them the “new” AESS Membership brochure (see bullet above) to be distributed at Chapter Meetings and other functions. Possibly offer them incentives for obtaining new AESS Membership and for running AESS Senior Member events to assist members in becoming AESS Senior Members.

In the area of Long Term Goals, the Tiered Membership will determine the next steps in our AESS Membership projects. If this project does attract new AESS Members, we will need to be ready to address these new members to show them what AESS has to offer for them and why they should not only stay AESS members, but move to full membership to obtain access to all of the benefits of that level of membership.

VIII. Chapters

Key elements of Chapter development and sustainment are:

1. Promote formation of AES-Joint Society Chapters to serve members where no chapter exists, for example Los Angeles, CA has over 200 AES members but no chapter.
2. Hold a Chapter Summit every three years near the Sections Congress meeting to get officer feedback upon the technical direction of the society and improvements in chapter operations.
3. Set up a "forum web page" to increase chapter communications on what's working and what is not.
4. Promote and support AES Board member visits to chapter meetings in their region.

- Promote AES chapters to participate in organizing conferences by providing conference planning resources to chapter officers.

IX. Publications

Current Status:

The IEEE AES Transactions is a quarterly journal that is available by subscription. Since January 2011, distribution is all-electronic, via IEEE Xplore; there are no plans for print copies now, although preparations are in place should these be needed. For 2012 the page count will be 3744, to clear away some “backlog” of accumulated accepted papers. The 2011 page count will be 3104 pages, and it is anticipated that this will be a stable baseline figure for 2013 and thereafter. All articles are submitted on the EJ Press website (<http://taes.msubmit.net>) and are rigorously peer-reviewed, prior to publication.



IEEE TRANSACTIONS ON
AEROSPACE
&
ELECTRONIC **SYSTEMS**

The IEEE AESS "Systems" Magazine is published monthly, and is distributed free, in print, to all AESS members – it is the primary means by which the Society communicates with its membership. There are approximately 600 pages per year. There are articles of general and topical interest, and presently these can be inserted directly by the administrative editor or editor-in-chief. Another segment of articles comes from submitted contributions; these are peer-reviewed on the EJ Press website (<http://sysaes.msubmit.net>) and those which are accepted are quickly published. Owing to the compositor's requirement equations and deeply technical articles are discouraged. The largest segment of articles comes from reprinting of articles from AESS-supported conferences – while a greater number of contributed articles would be preferable the needs for content, in a monthly publication, outstrip the supply of good quality submissions; this does seem to be changing.



The IEEE AESS Quarterly Email Blast (QEB) is published quarterly and is distributed to the membership via the IEEE E-Notice System. To view a sample of the QEB, go to this link:

http://www.ieee-aess.org/sites/default/files/newsletters/July_2011_QEB.html



The AESS website, <http://www.ieee-aess.org/>, is updated daily and reflects the activities of the Society. There you can find:

1. About the AESS: Complete pictorial rosters of the current governance, along with a historical listing of past governance.
2. Conferences: A complete listing of AESS Conferences, both Financially Sponsored and Technically Co-Sponsored. We also have a Conference Locator so the viewer can see where each conference is in the world.
3. Education: A complete listing of all AESS Distinguished Lecturers with contact information, bios, and abstracts. Also, you will find links to the Educational Video Tutorial System. (EVTS)
4. Membership: All Award Information is housed here. You will find complete descriptions of all AESS Awards, Past Recipients Lists, and Nomination Form. Also in Membership is a listing of all AESS Chapters, with contact information for Chapter Chairs. There is a Chapter Locator, allowing the viewer to see where each Chapter is located in the world. Student Activities and Job Opportunities round out the Membership tab.
5. Publications: Information on Transactions on Aerospace and Electronic Systems, the AESS Magazine, AESS Tutorials, and the Quarterly Email Blast can be found here. Links to past magazines, past transactions, and upcoming transactions are listed.
6. Technical Operations: Information on AESS's 10 Technical Panels can be found here.
7. The site is also equipped with Announcements, and an Events Calendar, listing Upcoming Events.



Strategic Vision:

Transactions: Assure that the Transactions are relevant, timely, and technically advanced.

Magazine: Make Attractive, desirable, cover timely topics that are relevant. *Tutorials:* Make sure they are useful, informative, and up-to-date technically.

QEB: Assure new content and timely information is delivered to the membership.

Strategic Issues & Challenges:

Transactions

1. Delay from acceptance to appearance is too long. Ideally it should be 6-9 months, presently double that.
2. While the AES Transactions has an excellent "half-life" it is less able to respond to the needs of authors seeking publication of time-sensitive results.
3. While the Transactions produce ample revenue via IEEE Xplore, ways must continually be found to control costs and to increase revenue.
4. Quality must be continuously improved. Impact factor counts citations in 2 years after publication.
5. Editorial turnover and quality issues. Lenient and/or slow Associate Editors are easily identified using EJ Press reporting tools, and EIC reports to Board of Governors show these.
6. The Leadership positions in Publications are too temporary and unclear. The EIC deals with content issues while the AESS Vice President for Publications is in charge of financial matters and vision. Financial and editorial chain of command need to be clarified.
7. Require creative response to changing technical areas. Core areas are: Radar, Tracking & Fusion, Guidance & Control, and Navigation. Introduce new areas as they are identified.
8. Author malfeasance: Parallel submissions to multiple journals simultaneously; serial submissions of previously rejected material; plagiarism; inappropriate submissions: co-authors unaware, or scurrilous contents.

Magazine

1. Improve quality of papers and magazine content.
2. Improve presentation and graphics (makeover for magazine).
3. Avoid a single point solution for running the magazine and getting it out in a timely fashion.
4. Lack of motivated and active reviewers.
5. Authors do not like their papers being edited without permission (even though IEEE allows it).
6. Future format of magazine (electronic, paper, bi-monthly?)

Tutorials

1. Lack of submitted articles.
2. Uncertainty in the publication date of tutorials due to the need to acquire a critical mass of articles.

QEB

1. Lack of submitted articles.
2. Need an official editor.

Response to Strategic Issues and Challenges:

Transactions

1. Requested (and been granted) temporary increase in page count from AESS Board of Governors: 3744 pages in 2012, return to stable 3104 thereafter. Post-acceptance/pre-

publication Transactions is now managed by dedicated personnel (Rita Janssen) at Allen Press. Continually consider "in-house" (IEEE) publication model, but Allen Press presently a better choice.

2. Implemented "Letter" format: quick publication in return for revision-free submission and payment of page charges. Charge is mandatory \$250 per page. Need for timely publication must be demonstrated.
3. Implemented \$200 mandatory page charges beyond 6 pages on correspondence items and 10 pages on full. This should have the effect both of raising revenue and of reducing page counts. Voluntary page charges are still requested, but may be rarer. Printed Transactions is no longer available. As a further cost-saving measure, we now have electronic publication only.
4. Timeliness of publication is primary concern, since many citations are also in Transactions (see responses for Challenges 1 & 3). Upcoming Transactions issues' titles and abstracts are available at <http://ieeaeess.org>. Pre-posting on IEEE Xplore preferable, but requires final copy. Associate editors have been encouraged to become more selective.
5. Three-year rolling associate and technical editor terms to be considered. Can be re-appointed. EIC term is currently (informally) six years.
6. It is hoped that the upcoming Bylaws and Constitution will rectify this. Need "corporate memory" of staggered VP Pubs and Associate VP Pubs. Search for Business Editor to replace Jose Bolanos. Also, periodic "Publications Summits" (as in Washington DC on July 26) are useful to clarify such issues.
7. New areas (and editors) presently identified by EIC based on EJ Press tools. This is reactive. Proactive means of encouraging new areas? Simply "putting out a shingle" without the submissions nor editorial support will not (and did not) work.
8. IEEE presents monthly "Banned Author List" that can be checked on EJ Press. EJ Press allows problem authors to be identified by "sticky note" only visible to senior editors. EJ Press Quality Control (QC) stage allows EIC to monitor co-authors, suspicious papers.

Magazine

1. Continue to clarify and update manuscript guidelines. Increase content of papers coming through e-journal (currently 20%...future 80-100%). Associate editors as well as board members should solicit/invite expert colleagues in the field. Create Feature Article / Application corner section. Shorter papers (<4 pages) geared to practitioners in field. Create Interview Papers Interviews with experts in the field. Publish more calls for Papers of conferences related to AES. Require news and information to go through e-journal for tracking purposes.
2. Transition to Allen Press. Consider cost tradeoffs, color, cover style, typesetting, type of paper, varying number of pages. Outside cover should correspond to an article that is published in that month's issue.
3. Transition to Allen Press. Increase number of technical papers going through e-journal (fewer have to be hand selected). Have a dedicated administrator to select additional material from recent conferences, best papers, news, etc. Conferences could submit abstracts to editorial board for selection.
4. Enlist interested and motivated reviewers. Continue to improve search engine in e-journal for appropriate reviewers. Continue to update the reviewer database in e-journal. Automatically include perspective authors into the reviewer database. Ensure that reviewers are aware of guidelines.
5. If papers are selected from conferences, they must fit within magazine guidelines. Authors must be contacted in advance to request modification and submission to e-journal (a faster review process could be put in place for these invited papers)
6. Work with pub leadership to determine financial implications. Note: Industry survey indicates that majority of readers prefer printed magazine. Versus electronic delivery. Do we want to include advertisements to cover costs or increase subscription fee?

Tutorials

1. Work with Board of Governors to determine areas of interests not covered in previous tutorial articles and identify the potential authors that can write these articles. In conjunction with the

Education Committee, determine potential authors from the pool of people who have presented video and/or conference tutorials.

2. Incorporate a tutorial article series in the Magazine in lieu of a supplement to the Magazine. Ensure that updated Magazine typesetting through Allen Press accommodates papers with heavy equation usage.

QEB

1. VP Pubs and/or QEB Editor send out regular call for articles.
2. Appoint an editor.

X. Technical Operations

Technical Operations Overview:

Technical Operations is responsible for overseeing the Technical Panels (TPs) for the AESS Board of Governors. Each panel is composed of representatives from industry, government, academia and professional societies who have in depth theoretical and practical knowledge in a specific technical area of application within the AES Field of Interest (FoI).

The currently active TPs, their primary focus and their specific strategic plan provided below:

Gyro and Accelerometer Panel (GAP) – Primary focus is to develop standards, standard terminology, specification formats, and test procedures for, and to promote understanding of components and systems for detection or measurement of linear or angular motion. Strategic initiatives include development of inertial sensor specification format guide and test procedures for emerging new sensor technologies.

Target Tracking Systems Panel – Primary focus is in standard terminology, specification formats, and test procedures, and to promote understanding of algorithms and components of sensor data processing systems. Strategic initiatives include promoting the use of the Trackipedia wiki engine as a collaboration tool, design and promote the use of standard “test-to” scenarios to improve algorithm performance comparison.

Aerospace Control & Guidance Systems - Primary focus is to provide a forum for discussion, development and rapid dissemination of technical information relevant to aerospace control and guidance systems technologies including adaptive control concepts; advanced vehicle concepts and related guidance, control, and dynamics issues, NextGen air traffic control; integration of UAS in the National Air Space; autonomy; and others. Strategic initiatives include conducting a single day short course on a related guidance and control topic. Introduce a lecture series aimed at attracting young university and/or industry researcher participation in the committee.

Aerospace Workforce Panel (AWP) – Primary focus is to promote a dialogue and collaboration with governments, industry and academia to identify and implement strategies to support the recruitment, development, and retaining of engineering talent in the aerospace and defense industries. Strategic initiatives include working with IEEE-USA career and workforce policy committee conduct related workshops in collaboration with local IEEE chapters, academia and industry to promote engineering workforce issues including employment, career and professional development products and services.

Systems Engineering Panel (SEP) - Primary focus is to promote a dialogue and collaboration with governments, industry, academia and other societies to identify and implement strategies to support advancement of systems engineering techniques and promote solutions to specific SE Topics developed and exercised at the 8/18/11 Chapter Summit. Strategic initiatives include building “real” way forward to assist community to plan, program, and execute these Topics while making the process transparent and collaborative to the IEEE community.

Radar Systems Panel (RSP) - Primary focus is in management and leadership of the annual series of radar conferences, nationally and internationally. Additionally, the panel leads in establishing standards and terminology critical to the radar community worldwide. A focus on education is prevalent throughout panel activity, especially within the short courses offered at each of the annual radar conferences. The panel plays a key role in documenting research and technology presented at the annual conferences through archival submission via IEEEExplore. And, finally, the panel oversees recognition through management of awards for career advancement (Nathanson Award) and career achievement (Warren White Award) as well as best paper and best student paper awards at the annual conference via participation on conference committees.

Space Systems Panel - The Panel focuses on key-topics related to space systems - such as standardization, system analysis & design, applications, constellations, EHF technologies, integration, dual use. Strategic activities include: organizing and supporting several international space conferences held around the world; updating space systems standards, generating new standards as required, and producing and reviewing papers on space systems.

Technical Operations Overall Strategic Focus Areas:

1. Promote collaboration among Technical Panels and local IEEE chapters
2. Develop a formal peer review process of each TP to ensure activities are:
 - Performed, and they are aligned with the TP's established purpose and objectives
 - Aligned with the TP's strategic goals
 - Support the AES strategic functional organizational objectives
3. Develop guidance in the specific areas of the TP expertise in the form of best practices, methods and tools
4. Promote synergy and collaboration among the education activities to develop continuing professional development modules for each of the TP area of expertise.

XI. Governance

There have been significant changes in the AESS Governing Documents in the past two years. The AESS Board of Governors and IEEE have worked together to produce working documents that reflect our Strategic Plan. This will now require review over the next year to ensure the documents operate as intended.

The Society oversight rests with the Board of Governors, a committee of 24 elected members-at-large.



AESS 2010 Board of Governors



AESS 2011 Board of Governors

An effective Strategic Plan has to find a compromise between the following items:

- IEEE rules for time duration of VP's positions
- Know-how and problem solving capability gained by VP's while in their position
- Compliance with BoG composition and turn-over
- Benefits – in terms of new ideas, approach and energy - that derive from new people in an old matter.

Wise use of Committees (Finance, Conference, etc) can create the content and capability continuity between VP's and their unavoidable turn over after the term expiration. The Committee should be composed of 3 categories of BoG members: 1) experienced: this category includes the current VP of the Committee topic; 2) intermediate experience and 3) newly elected BoG members: the latter replace those that, due to term expiration, have to leave the Committee. With a stable composition of the Committee in terms of the above 3 category representatives, continuity is guaranteed. The next VP of the topic, that should belong to category n.2 (intermediate experience) will be the "trained" by the current VP, covering a formal position in the Committee itself. In this way, a proper "strategic" plan of the Committee composition, w.r.t. the BoG composition, will assure continuity and competence in the topic.

Obviously, for particularly critical areas, such as Finance, Conferences and Publication, an external manager/assistant could be envisaged to help.