Technical Operations Strategic Planning

AESS Officers Strategic Planning Meeting

January 28, 2017

Renaissance Atlanta Midtown Hotel

Walt Downing

VP Technical Operations, AESS

IEEE Advancing Technology for Humanity

Technical Operations Mission & Vision (Unchanged)

- **Mission Statement -** AESS Technical Operations will form technical panels in the Society's fields of interest to stimulate technological advances and member engagement in technical networking, standards development, publications, conferences, chapter meetings, and other professional development activities.

- **Vision Statement** – Organize and conduct the world's best technical activities in the Society's fields of interest.

Strategic Analysis (Unchanged)

- What is our **current status**?
  - Strengths and Opportunities
    - Some strong legacy panels
    - Some emerging panels with promising futures
    - Conferences seeking more member involvement/engagement
    - Members seeking training and professional development
    - Chapters seeking speakers and workshops
    - Students seeking experiential training (i.e. projects)
  - Challenges
    - Some panels are in limbo or are relatively inactive
    - Some lack of alignment with other AESS activities
    - Some technical panels and conferences only loosely affiliated with AESS
    - Time demands on volunteers
    - Weak connections with students and young professionals

Strategic Objective 1

Develop and implement a technical panel review process

Activities:

- Develop matrices identifying alignment of technical panels with AES conferences, distinguished lecturers, IEEE standards, etc.
- Perform gap analysis on these matrices to identify opportunities to increase alignment
- Filling the gaps

Strategic Objective 1 Metrics/Scorecard

Technical Panels	Aerospace Control & Guidance Systems	Aerospace Systems Integration Engineering	Avionics Systems	Cyber Security	Gyro and Accelerometer	*Proposed* Navigation Systems	Radar Systems	Space Systems	Target Tracking Systems	Unmanned Aerospace Vehicles
Chair	Brian Lee	Koti Tatipamula	Paul Kostek	Kathleen Kramer	Randall Curey	Michael Braasch	Braham Himed	Cosimo Stallo	David Crouse	Vince Socci
Vice Chair or Co-Chair	? Jeb Orr (Sec.)	Dante Bolatti			Reese Sturdevant		Raviraj Adve	Marina Ruggieri		Phillip Hall
Number of Members							30-45			
Number of Committees	5	"4-7"	5	None Currently	2		7	3 "Areas"	4	Ad Hoc
IEEE Standards					Sensors - 292, 293, 517, 528, 529, 647, 671, 813, 836, 952, 1293, 1431, 1554, Systems - 1559, & 1780		Terminology - 521 & 686 Ultrawideband Radar - 1672			
Meetings per Year	Semi-annual	2+	2+	2+	6 meetings/yr.		4+	2+	2+	2+
Conference Participation			DASC & ICNS	DASC & ICCST		PLANS	Multiple	Aerospace & RAST		
Respoinsibility for AES Awards							Nathanson & White	Resnik		
Distinguished Lecturer Coverage	4	9	3	1	1	3	12	6	11	5

Strategic Objective 2

Expand technical panel participation in all AESS sponsored conferences (Coordinating with VP, Conferences)

Activities:

- Utilize gap analysis to identify conferences that lack AESS member participation
- Identify cognizant technical panel for each conference and encourage increased participation
- Encourage all technical panels to participate in at least one AESS conference per year

Strategic Objective 2 Metrics/Scorecard (Preliminary)

Sponsored/Cosponsored Conferences	Financial Cosponsors	Next Conference	Last Held	AESS Attendees		AESS Technical Panel
				2016	2015	
IEEE Aerospace Conference		March 4-11, 2017 Big Sky, MT	March 5-12, 2016 Big Sky, MT			Space Systems
Navigation, and Surveillance Conference (ICNS)	AIAA DATC	April 18-20, 2017 Herndon, VA	April 21-23, 2015 Herndon, VA			Avionics Systems
IEEE International Radar Conference (RadarCon)		May 8-12, 2017 Seattle, WA	May 1-6, 2016 Philadelphia, PA		133	Radar Systems
European Navigation Conference (ENC)	Multiple	May 9-12, 2017 Lausanne, Switzerland				
Metrology for AeroSpace (MetroAeroSpace)	IEEE IM Society	June 21-23, 2017 Padua, Italy	June 22-23, 2016 Florence, Italy			
IEEE AUTOTESTCON	IEEE IM Society	September 9-15, 2017 Schaumburg, IL	September 12-15, 2016 Anaheim, CA			Board of Directors
IEEE/AIAA Digital Avionics Systems Conference (DASC)	AIAA DATC	September 16-21, 2017 St. Petersburg, FL	September 25-30, 2016 Sacramento, CA		14	Avionics Systems
Position Location and Navigation Symposium (PLANS)	ION	April 23-26, 2018 Monterey, CA	April 11-14, 2016 Savanah, GA		19	*Proposed Navigation Systems

- Aerospace Control and Guidance Systems Panel is separate 501.c.3 that conducts semiannual meetings with technical sessions and short courses that are not affiliated with IEEE.
- Gyro and Accelerometer Panel meets for two days every two months to develop sensors and systems standards.
- Radar Panel and Space Panel are actively engaged with several meetings and conference in their fields of interest
- Aerospace Systems Integration Engineering Panel is engaged with IEEE Systems Council and conferences
- Cybersecurity Panel and UAV Panel are engaged with other IEEE and Professional Society conferences.

Strategic Objective 3

Promote collaboration between technical panels and chapters

(Need committee member to work with Chapter Coordinator)

Activities:

- Identify technical panel members and their local IEEE sections
- Develop matrix of technical panel membership vs. IEEE sections for regional coverage
- Analyze matrix to identify regions that have critical mass and ensure that there are local AESS chapters in these regions to promote further collaboration
- Survey local AESS chapters to identify which AESS fields of interest, if any, are predominant among their members
- Use this information to inform and encourage member participation in relevant technical panels

Strategic Objective 4

Promote synergy and collaboration with AESS Educational Activities to expand distinguished lecturer coverage and develop continuing professional development activities for all AESS fields of interest

(Coordinating with VP, Education)

Activities:

- Utilize gap analysis to identify needs for distinguished lecturers in specific fields of interest
- Utilize AESS chapter fields of interest and local experts to identify new distinguished lecturer candidates
- Explore concept of short courses proposed by educational activities to increase collaboration

Strategic Objective 4 Metrics/Scorecard (Preliminary)

	Aerospace Control & Guidance Systems	Aerospace Systems Integration Engineering	Avionics Systems	Cyber Security	Gyro and Accelerometer	*Proposed* Navigation Systems	Radar Systems	Space Systems	Target Tracking Systems	Unmanned Aerospace Vehicles
Maruthi Akella								X		X
Yaakov Bar-Shalom		X							X	
Erik Blasch	X	X							X	
Eli Brookner							X		X	
Larry Chasteen		X	X				X			
Fred Daum		X					X		X	
Mark Davis							X		X	
Walt Downing			X			X		X		X
Giuseppe Fabrizio		X					X		X	
Alfonso Farina							X		X	
Maria Sabrina Greco							X		X	
Hugh Griffiths							X		X	
Phillip Hall										X
Lorenzo LoMonte							X			
Wolfgang Koch	X	X					X		X	
Kathleen Kramer				X		X				
Surendra Pal	X	X						X		
Zhihua Qu										X
Bob Rassa		X								
Avid Roman-Gonzalez								X		
George Schmidt	X	X	X		X	X				X
Michael Wicks							X	X		
Peter Willett							X		X	
Ji Wu								X		

Strategic Objective 5

Prepare guidance in the form of best practices and recognize outstanding technical panels

Activities:

- Collect information for each technical panel
- Identify best practices
- Share ideas among technical panels

Outstanding Technical Panel of the Year Awards:

2016 – Unmanned Aerial Vehicles (Proposed)

2015 – Gyro and Accelerometer

2104 – Aerospace Control and Guidance Systems

2013 – Radar Systems

Strategic Objective 6

Increase AESS member participation in all technical panels

Activities:

- Utilize AESS chapter fields of interest and local experts to identify and engage emerging leaders
- Inform and invite AESS members to participate in AESS activities through improved communication efforts including letters, email, AESS website, QEB and social media

Strategic Objective 6 Metrics/Scorecard

Status

- Updating AESS website with current information
- Preparing articles for QEB
- Increasing participation in social media activities
- Collaborating more effectively with student branches
  - Having chapter meetings at local universities
  - Sponsoring student projects
- Engaging with UTSA IEEE-HKN chapter to create opportunities to increase student involvement in AESS
  - AESS undergraduate student representative is active in this chapter
  - AESS VP, Technical Operations invited to become industrial advisor
    - Meeting with the chapter officers periodically
    - Serving as a mentor for students in the chapter

Financial Assessment

- How do the initiatives impact the AESS **"financially"** ?
  - Account for the AESS resources required to implement initiatives
  - Recommend what future investments should be made and why?
  - Formulate motions required to bring up to the board
- Student projects and especially competitions or challenges seem to be an effective means of engaging students in professional society activities (Formula SAE, ASCE Concrete Canoe, ASME Design Competitions, Collegiate Cyber Defense Competition, etc.)
  - Thanks for the Trinity University student project funding
- 2015 UAV/UAS student project was an interesting initiative
  - Possibly worth consideration for future funding
- Other Resources
  - Volunteer time is the most critical scarce resource, not money
  - Coordinating the activities of multiple volunteers is challenging and existing communication methods and collaboration tools are relatively inefficient or ineffective

Technical Operations – Summary

- **Member Placement**
  - Get members into TP's
- **Chapters**
  - TP speakers for Chapter meetings
- **Conferences**
  - Encourage TP's to plan and organize conferences
- **Education**
  - Identify DL's in all AESS Fields of Interest
- **Standards**
  - Get TP's engaged with IEEE-SA activities
- **Awards**
  - Develop TP Awards
- **Communications**
  - Publicize TP activities
- **TP Development**
  - Identify new and emerging fields of interest
- **Student Branches**
  - Increase student engagement

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