

Technical Operations

AESS Board of Governors Meeting

April 22-23, 2016

Orlando, FL

Walt Downing

VP Technical Operations, AESS



Objectives

(Cross-Committee Collaborations Highlighted in Red)

- 1 - Develop and implement a technical panel review process
- 2 - Expand technical panel participation in all AES-sponsored conferences
- 3 - Promote collaboration between technical panels and chapters
- 4 - Promote collaboration with AES Educational Activities to expand distinguished lecturer coverage and develop continuing professional development activities for all AES technical fields of interest
- 5 - Prepare technical panel guidance in the form of best practices, techniques, and tools
- 6 - Increase AESS member participation in technical panels

Initiatives

- Gap Analysis (Objective 1)
 - Develop matrices identifying alignment of technical panels with AESS conferences, distinguished lecturers, IEEE standards, etc.
 - Perform gap analysis on these matrices to identify opportunities to increase alignment
 - Review and evaluate technical panels (Blue/Green/Yellow/Red) on alignment metrics and work to continually improve scores

- Conferences (Objective 2)
 - Review attendance at AESS-sponsored conferences to identify AESS members for possible leadership roles
 - Identify cognizant technical panel for each conference and encourage participation in at least one AESS conference per year

Initiatives (Continued)

■ Chapters (Objective 3)

- 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 AES chapters in these regions to promote further collaboration
- Survey local AES chapters to identify which AES fields of interest, if any, are predominant among their members
- Use this information to inform and encourage member participation in relevant technical panels

■ Educational Activities (Objective 4)

- Utilize gap analysis to identify needs for distinguished lecturers in specific fields of interest
- Utilize AES 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

Initiatives (Continued)

- Share Best Practices (Objective 5)
 - Collect charters, strategic plans, and other relevant documents for each technical panel
 - Identify best practices, techniques and tools used by most successful technical panels
 - Prepare a technical panel handbook of these best practices, techniques and tools
 - Share technical panel handbook with all technical panels
 - Revise and update as necessary

- Increase AESS Member Engagement (Objective 6)
 - Inform and invite AESS members to participate in AESS activities through improved communication efforts including letters, email, AESS website, QEB and social media

Highlights

- AESS BoG Members volunteered to serve on technical operations committee and assist with initiatives
 - **Leo Lighthart** (Chapter Coordinator – Objectives 3 & 6)
 - **Alfonso Farina** (Education Coordinator – Objectives 4 & 6)

- Outstanding Technical Panel of the Year Award
 - Recommend Gyro and Accelerometer Panel for 2015 award recognizing their extraordinary efforts in standards development and regular bimonthly meetings

Highlights (Continued)

■ Conferences

- Radar Systems panel has selected RadarConf sites through 2019
- Cyber Security panel meeting at DASC and Carnahan conferences
- AESS-solicited paper for PLANS selected for Walter R. Fried Best Paper Award - "Ranger: A Ground-facing Camera-based Localization System for Ground Vehicles"

■ IEEE Central Texas Section joint SMC-AES Chapter Activities

- 4 technical meetings YTD, including DL and student presentation
- Next meeting April 28, 2016 at 1200 CDT featuring Walter R. Fried award-winning paper encore presentation
- All technical meetings are webcast for remote participation
- Reviewing senior design projects at UTSA Technology Symposium on April 26, 2016 and presenting "special recognition" certificates to the project that best represents SMC-AES fields of interest

Highlights (Continued)

■ Radar Systems

- 39 active members, elections will be held, July 2016
- New Civilian Radars Committee Chair approved, January 2016
- Next meeting at RadarConf 2016 in Philadelphia, PA
- 2016 Warren White Award: Dr. Jim Day, LMCO
- 2016 Nathanson Award: Dr. Ryan Hersey, GTRI
- RadarConf 2017: Seattle, WA
- RadarConf 2018: Oklahoma City, OK
- RadarConf 2019: Boston, MA
- Special double issue on Waveform Diversity in SYSTEMS magazine in October and December 2016
- Special issue on Passive Radars for Civilian Applications in SYSTEMS magazine in February 2017

Highlights (Continued)

- Aerospace Control and Guidance Systems
 - Met March 15-18, 2016, Napa, CA, including 1-day short course on “Modeling the Human Pilot”
 - Next meeting October 19-21, Minneapolis, MN, to include Young Professional Lecture Competition

- Aerospace Systems Integration Engineering
 - Koteswara Tatipamula, Chair; Dante Bolati, Vice-Chair; Giambattista Grusso, Secretary; Roger Oliva, Past Chair
 - Three additional members (LaMont McAliley, Ritesh Keshri, and Friday Lawrence Ogboi)
 - Challenge remains building core group of volunteers and establishing goals and objectives

Highlights (Continued)

■ Gyro and Accelerometer

- Last meeting in March 17-18, 2016, Redmond, WA
- Future meetings:
 - May 16-17, 2016, Charlottesville, VA
 - July 7-8, 2016, Irvine, CA
 - September 22-23, 2016, Boulogne-Billancourt, France
 - November 10-11, 2016, Anaheim, CA
- Continued development and revisions of multiple IEEE standards for inertial sensors and system
- Officers Elected: Randy Curey, Chair; Reese Sturdevant, Vice Chair and Systems Committee Chair; Jason Bingham, Sensors Committee Chair
- Currently averaging 8 attendees/meeting and seeking to expand membership with emphasis on IMU community
- Developing tri-fold brochure

Highlights (Continued)

■ Cyber Security

- Identified 5 technical area in cyber security most relevant to AESS fields-of-interest
 - Cyber security for transportation
 - Cyber security for aircraft and avionics
 - GPS threats
 - Information security for complex systems, and
 - Identification and modeling of cyber-related vulnerabilities.
- Added 2 new members (William Clacomb and Eric Rickard)
- Planning panel meetings at DASC and Carnahan conferences

■ Avionics Systems – No report

■ Target Tracking – No report

■ Space Systems – No report

Highlights (Continued)

■ Unmanned Aerial Vehicles

- Vince Socci, Chair; Philip Hall, Vice Chair
- Completing 2015 UAS University Project (\$5,000 budget)

Milestone	Target Completion	% Complete
Germany: Hexacopter built. Test plan developed. Testing is not complete	30 June 2016	50%
MIST has the least UAS/UAV experience but is working with three students to complete the quadcopter test plan with monthly calls from Dennis Lott, HINDS Community College Aviation Instructor who integrated the DJI F450 quadcopters	30 June 2016	30%
Jackson State University flight programs have been delayed	30 June 2016	25%

Actions – 2016 UAS Project

Task	Completion	Funding
Complete UAS Project (Ogan)	June 2016	\$0
Application project – Drone photography: 2 teams (Germany, U.S.). Engage local community. Create an aerial photography application for the UAV to study technologies, e.g. GPS-based photography, tracking systems, and other surveillance modes (Socci)	Build/Demo: December 2016 Application Report: June 2017	\$3,000 for U.S. unit. Germany will use W. Sass equipment
Engage with CTAP to provide UAV policy support. (Phil Hall is current CTAP chair.) (Hall)	Ongoing	\$1,000 for one meeting in Wash. D.C.
Project team participation at International Aerial Robotics Competition (IARC) (Ogan) http://www.aerialroboticscompetition.org/	August 2016	\$0 (pending funding from MIST or JSU)
IEEE representation at InterDrone Commercial Drone Conference (http://www.interdrone.com/) (Socci)	September 2016	\$1500
Organize a UAV policy event that engages industry (consortium, conference, etc.) (Hall)	TBD 2017	\$0 (pending event strategy)
Total funding requested (+10% reserve)	2016	\$6,050

Motions

- 2016 UAS Project (\$6,050)

Backup Slides

IEEE Systems Council

- 10th Annual IEEE International Systems Conference
- Spring AdCom meeting on April 21, 2016
- 2nd IEEE International Symposium on Systems Engineering (ISSE)
 - Call for Papers Deadline May 15, 2016
 - Conference Dates: October 4-5, 2016
 - George Hotel, Edinburgh, Scotland
- Fall 2016 AdCom meeting during ISSE
- 11th Annual IEEE International Systems Conference
 - Conference Dates: April 24-27, 2017
 - Marriott Chateau Champlain, Montreal, Canada