

Technical Operations Report Board of Governors Meeting May 7-9, 2015

Technical Operations Strategic Plan

- **Mission Statement**

AES 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.

Technical Operations Strategic Analysis

What is our current status?

– Strengths

- Some strong legacy panels
- Some emerging panels with promising futures
- Conferences seeking more panel involvement/engagement
- Chapters seeking alignment with panel topics
- Educational activities seeking volunteers
- Members seeking training and professional development courses

– Challenges

- Some panels are in limbo
- Some lack of alignment with other AES activities
- Some technical panels and conferences only loosely affiliated with AES
- Time demands on volunteers

Technical Operations Metrics/Scorecard

AESS currently has 9 technical panels

- Creating matrices illustrating technical panel alignment with the following metrics:
 - Conferences
 - Educational Activities (Distinguished Lecturers)
 - Other Metrics
- Developing blue/green/yellow/red scoring for each metric

Leadership Development

- Each VP shall create in the first year of his/her term a two person committee from members from the BoG to support him/her and to be trained for possible succession (Bylaws Article VI.C)
 - Need to fill these positions
 - Recruit volunteers from interested BoG members not currently engaged in other activities
- All technical panel chairs must be AES members in good standing (Bylaws Article II.B)
 - Develop accurate leadership roster consistent with above criteria
 - Several technical panels have relatively few AES members

Technical Operations Strategic Objectives

Strategic Objective 1

Develop and implement a technical panel review process

- 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
- Review and evaluate technical panels (Blue/Green/Yellow/Red) on alignment metrics
- Share these metrics with technical panels and work to continually improve scores

Status

- Developed initial matrices for distinguished lecturers and conferences
- Performed gap analyses (illustrated in later strategic objectives)

Technical Panel Metrics

Technical Panels	Aerospace Control & Guidance Systems	Aerospace Systems Integration Engineering	Avionics Systems	Cyber Security	Gyro and Accelerometer	Radar Systems	Space Systems	Target Tracking Systems	Unmanned Aerospace Vehicles
Chair	Phil Hattis	Roger Oliva	Paul Kostek	Kathleen Kramer	Randall Curey	Maria Greco	Cosimo Stallo	Dale Blair	Ron Ogan
Vice Chair	James Forbes	Koti Tatipamula			Reese Sturdevant		Marina Ruggieri		Phillip Hall
Number of Members						30-45			
Number of Committees	Ad Hoc	"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+	6 meetings/yr.	4+	2+	2+	
Conference Participation	PLANS?		DASC, ICNS & PLANS?	DASC & ICCST		Multiple	Aerospace & RAST		
AES Awards						Nathanson & White	Resnik		

Technical Operations Strategic Objectives

Strategic Objective 2

Expand technical panel participation in all AES sponsored conferences

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

Status

- Identified AES members that attended PLANS 2014 and shared this information with PLANS 2016 organizers to stimulate more participation in planning
- Aerospace Control and Guidance Systems and Avionics Systems have expressed interest in increasing support for PLANS 2016

Example: AES Members That Attended PLANS 2014

Last Name	First Name	Email Address	Member Number	Affiliation	City/State or Country
Braasch	Michael	braaschm@ohio.edu	08474843	OHIO UNIVERSITY	ATHENS, OH
Curey	Randall	rcurey@pacbell.net	04383279	NORTHROP GRUMMAN	WEST HILLS, CA
Dusha	Damien	d.dusha@gmail.com	41614549	LEICA GEOSYSTEMS	AUSTRALIA
Jan	Shau-Shiun	ssjan@mail.ncku.edu.tw	41304073	NATIONAL CHENG KUNG UNIVERSITY	Taiwan (ROC)
Kee	Changdon	kee@snu.ac.kr	04424933	SEOUL NATIONAL UNIVERSITY	KOREA, REPUBLIC OF
Liu	Yushuang	liuyushuang@aspe.buaa.edu.cn	92703655	BEIHANG UNIVERSITY	China
Morton	Yu	morton.jade@gmail.com	41304626	MIAMI UNIVERSITY	OXFORD, OH
Nunes	Fernando	nunes@lx.it.pt	10641868	INSTITUTO DE TELECOMUNICACOES	PORTUGAL
Oshman	Yaakov	yaakov.oshman@technion.ac.il	40163473	TECHNION - ISRAEL INST. OF TECHNOLOGY	ISRAEL
Park	Chan	chanpark@snu.ac.kr	08972846	SEOUL NATIONAL UNIVERSITY	Korea, Republic of (South Korea)
Somerville	John	john.m.somerville@boeing.com	40262403	Boeing	Seattle, WA
Suratkal	Dayananda	prof.shetty@gmail.com	90754060	VISVESVARAYA TECHNOLOGICAL UNIVERSITY	India
Tazartes	Daniel	dan.tazartes@ngc.com	40211832	NORTHROP GRUMMAN ELECTRONIC SYSTEMS	WOODLAND HILLS, CA
Thombre	Sarang	sarang.thombre@nls.fi	92034358	Finnish Geodetic Institute	Finland
Trusov	Alexander	alex.trusov@gmail.com	85023469	Northrop Grumman	Woodland Hills, CA
Vasilyuk	Nikolay	nicknich@progtech.ru	85027893	Topcon Positioning Systems	Russia
Weiss	Ira	ira.m.weiss@aero.org	01503010	THE AEROSPACE CORPORATION	EL SEGUNDO, CA
Wipf	Heinz	heinz.wipf@skyguide.ch	02067049	SKYGUIDE	SWITZERLAND
Yang	Chun	chunyang@sigtem.com	01182310	SIGTEM TECHNOLOGY, INC.	SAN MATEO, CA

AES Financially Sponsored Conferences Alignment with Technical Panels

	Financial Cosponsors	Next Conference	Last Held	AESS Attendees	AESS Technical Panel
IEEE International Radar Conference (RadarCon)		May 11-15, 2015 Crystal City, VA	May 19-23, 2014 Cincinnati, OH		Radar Systems
IEEE International Workshop on Metrology for Aerospace (MetroAeroSpace)	IEEE IM Society	June 4-5, 2015 Benevento, Italy	May 29-30, 2014 Benevento, Italy		
IEEE/AIAA Digital Avionics Systems Conference (DASC)	AIAA DATC	September 13-18, 2015 Prague, Czech Republic	October 5-9, 2014 Colorado Springs, CO		Avionics Systems
IEEE Radar Conference	IEEE GRS Society	October 27-30, 2015 Johannesburg, South	?		Radar Systems
IEEE AUTOTESTCON	IEEE IM Society	November 2-5, 2015 National Harbor, MD	September 15-18, 2014 St. Louis, MO		
IEEE Aerospace Conference		March 5-12, 2016 Big Sky, MT	March 7-14, 2015 Big Sky, MT		Space Systems
Position Location and Navigation Symposium (PLANS)	ION	April 11-14, 2016 Savannah, GA	May 5-8, 2014 Monterey, CA	19	
Integrated Communication, Navigation, and Surveillance Conference (ICNS)	AIAA DATC	?	April 21-23, 2015 Dulles Airport, VA		Avionics Systems

AES Technically Sponsored Conferences Alignment with Technical Panels

	Next Conference	Last Held	AESS Attendees	AESS Technical Panel
Saint Petersburg International Conference on Integrated Navigation Systems	May 25-27, 2015 St. Petersburg, Russia	May 26-28, 2014 St. Petersburg, Russia		
Signal Processing Symposium (SPSympo)	June 10-12, 2015 Debe, Poland	?		
International Conference on Recent Advances in Space Technologies (RAST)	June 16-19, 2015 Istanbul, Turkey	June 12-14, 2013 Istanbul, Turkey		Space Systems
International Workshop on Compressed Sensing Theory and Its Applications to Radar, Sonar and Remote Sensing (CoSeRa)	June 22-24, 2015 Pisa, Italy	September 17-19, 2013 Bonn, Germany		
International Radar Symposium (IRS)	June 24-26, 2015 Dresden, Germany	June 16-18, 2014 Gdansk, Poland		Radar Systems
International Conference on Information Fusion (Fusion)	July 6-7, 2015 Washington, DC	July 7-10, 2014 Salamanca, Spain		
IEEE Asia-Pacific Conference on Synthetic Aperture Radar (AP SAR)	September 1-4, 2015 Marina Bay Sands, Singapore	September 23-27, 2013 Tsukuba, Japan		Radar Systems
Sensor Signal Processing for Defense (SSPD)	September 9-12, 2015 Edinburgh, UK	September 8-9, 2014 Edinburgh, UK		
International Carnahan Conference on Security Technology (ICCST)	September 21-24, 2015 Taipei, Taiwan	October 13-16, 2014 Rome, Italy		
DGON Inertial Sensors and Systems Symposium	September 22-23, 2015 Karlsruhe, Germany	September 16-17, 2014 Karlsruhe, Germany		
Sensor Data Fusion: Trends, Solutions, Applications (SDF)	October 6-8, 2015 Bonn, Germany	October 8-10, 2014 Bonn, Germany		
IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS)	November 2-4, 2015 Tel Aviv, Israel	October 21-23, 2013 Tel Aviv, Israel		

Technical Operations Strategic Objectives

Strategic Objective 3

Promote collaboration between technical panels and chapters

- 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

Status

- Initiated organizational meeting for Central Texas Section Joint Chapter of SMC (existing) and AES (new)
- Visiting AES Japan Council Chapter on May 29, 2015

Technical Operations Strategic Objectives

Strategic Objective 4

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

- 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

Status

- Prepared conceptual alignment matrix for DL vs. technical panel interests
- Identified potential gaps in DL coverage of AES fields of interest

Distinguished Lecturers Topics Alignment with Technical Panels

	Aerospace Control & Guidance Systems	Aerospace Systems Integration Engineering	Avionics Systems	Cyber Security	Gyro and Accelerometer	Radar Systems	Space Systems	Target Tracking Systems	Unmanned Aerospace Vehicles
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	
Saj Durrani		X					X		
Giuseppe Fabrizio		X				X		X	
Alfonso Farina						X		X	
Avid Roman Gonzalez							X		
Maria Sabrina Greco						X		X	
Hugh Griffiths						X		X	
Simon Haykin		X				X		X	
Wolfgang Koch	X	X				X		X	
Surendra Pal	X	X					X		
Tony Ponsford		X							
Bob Rassa		X							
George Schmidt	X	X	X		X				X

Technical Operations Strategic Objectives

Strategic Objective 5

Prepare technical panel guidance in the form of best practices, techniques, and tools

- 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

Status

- Aerospace Control and Guidance Systems selected for 2014 Outstanding Technical Panel Award
- Award Presentation Planned for Summer 2015

Technical Operations Strategic Objectives

Strategic Objective 6

Increase AESS member participation in all technical panels

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

Status

- Updating AES website with current information
- Preparing articles for 2015 QEB
- Increasing participation in social media activities

2015 QEB Q1 – Technical Panels Article

What are Technical Panels and why should you care? Technical Panels are groups of professionals from government, industry, and academia who enjoy joining together to share their knowledge and experience and to work on a variety of collaborative activities in an AESS field of interest. These activities include development and periodic revision of IEEE standards pertaining to the relevant technical domain; organizing and leading the premier IEEE technical conferences in the field of interest; nominating candidates from among their peers to be recognized for their professional achievements with IEEE awards or elevation to IEEE Fellows; encouraging the publication of technical papers in IEEE journals or magazines; and supporting technical presentations to promote continuing education and professional development. If you want to get the best value from your AESS membership then you should get involved in these types of activities in your field of interest. Currently AESS has nine Technical Panels: Aerospace Control and Guidance Systems, Aerospace Systems Integration Engineering, Avionics Systems, Cyber Security, Gyro and Accelerometer, Radar Systems, Space Systems, Target Tracking Systems, and Unmanned Aerospace Systems. Check out the Technical Operations section of the AESS website for more information about the focus of each of the Technical Panels. Join the group that best fits your field of interest or voice your interest in new and emerging technologies that should be addressed. Get engaged in the professional activities of the Technical Panel and experience the mutual benefit of advancing the state of the art and enhancing your career as you increase your knowledge and become recognized as a “player” in the technical community. Remember, when it comes to membership in any organization, you only get as much out of it as you put into it.

Schedule for 2015 QEB Articles Featuring Technical Panels

QEB Q1

- Cyber Security
- Space Systems

QEB Q2

- Radar Systems
- Target Tracking Systems

QEB Q3

- Gyro and Accelerometer
- Aerospace Control and Guidance Systems

QEB Q4

- Avionics Systems
- Unmanned Aerospace Systems

Technical Operations Financial Assessment

- (1) CY 2015 Budget for Technical Operations - \$10K
- (2) No Current Initiatives
- (3) Strategic Analysis Will Reveal Opportunities for New Initiatives