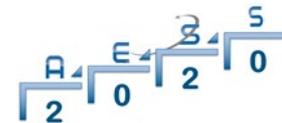


# AESS Board of Governors Meeting

**Technical Operations**  
**V.P. George Schmidt**

**September 24-25, 2020**

# Committee Members



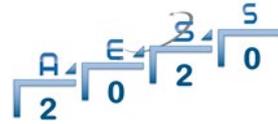
M. Braasch  
S. Coraluppi  
H. Griffiths  
K. Kramer  
M. Ruggieri

Thank you!

# List of Goals

## Technical Operations Committee

- 1) Review all technical panels for relevance, activity and leadership. Seek revitalization of those technical panels that may be dormant or lagging and drop those whose relevance or currency has expired. Seek to expand the portfolios of each panel, as well as, its membership.
- 2) Identify topics and potential leaders for new areas within our fields-of-interest where technical activities should be pursued and look for collaboration opportunities with other societies and organizations.
- 3) Implement guidance in the form of best panel practices from initial proposal of the panel through on-going operations and recognize outstanding technical panels achieving their goals.
- 4) In collaboration with Conferences, identify and recruit AESS members from technical panels and elsewhere to participate in organizing AESS conferences.
- 5) In collaboration with Education, promote interaction between technical panels and local AESS chapters by increasing the number of DLs on panels.
- 6) In collaboration with Publications, have each panel produce an annual Technology Assessment and Forecast or other new publications to enhance membership knowledge and advertise panel activities.



# Panel Activities

**Recent membership in the 6 panels is:**

**Radar Systems (44)**

**Gyro and Accelerometer (35)**

**Glue Technologies for Space Systems (25)**

**Navigation Systems (14)**

**Avionics Systems (13)**

**Cyber Security (13)**

**TOTAL 141 (approximately 3% of the AESS membership)**

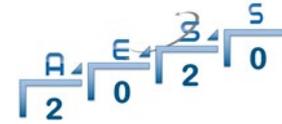
**5 panels are active in conferences, "schools", and tutorials.**

**5 panels are making regular contributions to the technical literature (Systems).**

**4 panels have AESS Distinguished Lecturers.**

**Detailed panel activities are given in the pages following the next motion.**

# Motion



## From the Tech Operations Committee (by Unanimous Approval)

**The Best Panel Award shall include an amount of up to \$1000 for the panel to use in enhancing its operations and furthering AESS objectives, with prior authorization of expenditures by the AESS Treasurer, beginning in 2021.**

**Reason: The Award is the only one the AESS gives out with no honorarium. Panels can use the money for snacks at meet and greets for new panel recruits, WIE and YP meetings, various student activities, an award reception, and is only limited by their imagination and IEEE rules.**

# Radar Systems Panel

- Sustain and oversee the program of IEEE Radar Conference series
- Promote and support publications in the field of Radar
- Promote educational activities in the field of Radar
- Provide periodic revision of IEEE Standards pertaining to the domain of Radar
- Encourage the submission of nominations for IEEE Fellows and Senior Members in the field of Radar
- Manage the nomination and selection of candidates for IEEE Awards in the field of Radar

# Accomplishments and Activities

- The 2019 RadarConf in Boston was the 1<sup>st</sup> time the new RSP-managed Student Paper Award process was employed (and quite successfully). It was likewise successfully repeated for the 2020 Intl. RadarConf in DC (virtual) and will again for the 2020 RadarConf in Florence. With the feedback from lessons learned, this process is now in good shape and will be used for all future IEEE-led Radar Conferences.
- Recently established an RSP Publications Committee, the purpose of which is to advocate and grow radar publications within the AES society (TAES for now). If/when a new IEEE Transactions on Radar Systems is established, this committee will serve as the direct link between that journal and the RSP.
- The RSP Waveform Diversity committee has been rescoped as the Spectrum Innovation committee, with the purpose of taking an outward looking perspective on spectrum implications for radar and interactions with other modalities (and associated technical bodies) to address the expectation of increased sharing.

# Accomplishments & Activities

- The two IEEE-led Radar Conferences in 2020 (DC in April and Florence in Sept.) have now officially gone to all-virtual formats. While doing so was certainly not desired from the standpoint of enabling the in-person technical interactions that are so useful, there are some possible lessons learned regarding expansion of engagement to those not able to attend once life gets back to normal.
- Work continues to expand the footprint of civilian radar within AES and our conferences, including health-related, automotive, and weather/climate.
- The Radar Summer School (coincident with IEEE-led radar conferences), likewise went virtual for both occasions in 2020. It continues to be well-received and is expected to continue growing once in-person interactions resume. This may likewise be an opportunity for virtual outreach into the future.

# Glue Technologies for Space Systems (GlueTech)

2020 Fall

Accomplishments & Activities

**Claudio Sacchi**  
**GlueTech Chair**

# Goals of the GlueTech Panel

- Promote the coordination of the technical activities related to the technologies that constitute the necessary common platform for innovative Space Systems;
- Promote and support publications concerning the panel topics;
- Organize panels and special sessions in featured-topic conferences;
- Promote educational activities;
- Encourage the submission of nominations for IEEE Fellows and Senior Members in the fields of interest of the panel;
- Manage the nomination and selection of candidates for IEEE Awards in the fields of interest of the panel;
- Creation of communities and forums cooperating in the development of panel technical activities.

# Accomplishments & Activities

- Some papers have been published on IEEE journals and international conferences with the acknowledgment to the GlueTech panel;
- Organization of the panel “Towards Global Connectivity: A Key 6G Challenge and Opportunity” by the member M.S. Alouini during the Sixteenth International Conference on Wireless and Mobile Communications (ICWMC 2020), October 18-22, Porto, Portugal;
- A special session related to GlueTech panel topics will be organized during 2021 edition of IEEE Aerospace Conference, with open contributions only (it has been decided by session organizers to avoid invited talks, leaving open this option for 2022 edition that, hopefully, will be organized in presence);
- The IEEE AESS Glue Technologies for Space Systems Technical Panel in conjunction with Professor Alessandro Golkar of the Skoltech Center for Entrepreneurship and Innovation has launched a New Space Video Series initiative on YouTube. This is the first step of a roadmap toward the creation of a new social “Space Community”, whose endorsement of IEEE AESS is on the due course, complying with the procedures foreseen by the Society;
- A book proposal: “Glue Technologies for the Future of Space Systems: a Softwarized, Systemic and Sustainable development” has been submitted to Wiley and is under review.

# Accomplishments & Activities

A Winter School for PhD students will be organized (in virtual manner) by the panel members C. Sacchi, T. Rossi, M. Marchese and F. Granelli. The school will have a 1-week duration. The scheduled period is between 15 November 2020 and 15 December 2020. The tentative title for the School should be: "*Softwarization and virtualization as Glue Technologies for Next Generation Space Networks*". Lecture topics and speakers are currently under discussion.

# Avionics Systems Panel (ASP)

Accomplishments & Upcoming Plans

AESS BoG Meeting

**Aloke Roy**  
**ASP Chair**

# Accomplishments & Activities

- Chaired the 2020 Judith Resnik Award Selection Committee and managed the process for a successful, unanimous selection decision.
- The Research and Innovations Committee developed a paper titled “AESS Avionics Systems Panel Research and Innovation Perspectives” for publication in the Aerospace Systems magazine. This paper is currently undergoing editorial review.
- The Research and Innovations Committee issued a Call for Papers (CfP) for a special issue of the AESS Systems magazine to focus on “Avionics Systems: Future Challenges”. The CfP was circulated during late Spring with a manuscript submission deadline of August 31, 2020. Wider circulation of the CfP through various conferences was impacted by COVID-19 but we are expecting several quality papers for consideration.
- The Education Committee is working on a paper to stimulate formal education on avionics systems through established, degree-granting education programs at colleges and universities. This is to mitigate projected shortfall of qualified avionics engineers to sustain research and development in the field.
- The Education Committee also collaborated with EUROCAE and Single European Sky Aviation Research (SESAR) to promote avionics education.

# Accomplishments & Activities

- The Nominations Committee effectively nominated several members of the ASP to become Distinguished Lecturers (DL). These new DLs expanded the offerings of the IEEE lectures and potential tutorials at future conferences or Chapter meetings
- The Avionics Conference Committee actively supported the organization and management of the Integrated Communications, Navigation & Surveillance (ICNS) and the Digital Avionics Systems Conferences (DASC). Unfortunately, both of these conferences were converted to virtual mode due to COVID-19. ASP members are assisting with the conference tutorials, local arrangements, and overall planning.
- The ASP absorbed the functions of the UAV Panel in 2020 and welcomes a few new members. The UAV Committee planned for couple of drone competitions as STEM activities for local high school and colleges during DASC. Unfortunately, the competition is postponed to 2021 as DASC went virtual due to COVID-19.
- The UAV Committee members are collaborating with NASA AAM workshops.
- The ASP is very happy to win the 2020 AESS Outstanding Panel of the Year award.
- The ASP plans to continue its active engagements in the avionics research, innovation, education, standards, cyber and UAV initiatives in 2021.

# Gyro and Accelerometer Panel (GAP)

2020 Fall

Accomplishments & Activities

**Randall Curey**  
**GAP Chair**

# GAP Purpose

- Promulgate the understanding of components and systems for detection or measurement of linear or angular motion.
- Develop inertial standards with industry consensus.
  - Specification format guides
  - Test procedures
  - Terminology
  - Recommended practices
- Provide periodic revision of the standards developed by the GAP.
  - 14 published standards
  - one under development.

# Accomplishments & Activities

- The GAP has held 4 meetings so far this year

Dates	Location	Host	Attendance
20/21 January	San Antonio, TX	Southwest Research Institute	6
16/17 March	Phoenix, AZ	Ideal Aerosmith	12*
4/5 May	Virtual	Webex	16
13/14 July	Virtual	Webex	11

- Future GAP meetings

Dates	Location	Host
16/17 September	Virtual	Webex
9/10 November	Virtual	Webex
TBD January	Virtual	Webex

\* Includes three people by phone

## Accomplishments & Activities

- Completed balloting the revision of 952, “IEEE Standard for Specifying and Testing Single-Axis Interferometric Fiber Optic Gyros.”
- The ballot for 1559, “Standard for Inertial Systems Terminology” is in progress.
  - Currently resolving comments received during the ballot.
- Revision of 1431, “Standard for Specifying and Testing Coriolis Vibratory Gyros” is in progress.
- Development of 1780, “Standard for the Specification of Inertial Measurement Units (IMU)” is almost complete.
  - The draft is out for industry review.
  - Received comments will begin being addressed at the September meeting.

# Cyber Security Report (Technical Operations Panel) – Fall 2020

- Significant Accomplishments
  - Summer IEEE AESS Cyber Series – June, July, and August “local” webinars, eventually went worldwide
  - Participating in AESS Webinar Series of Distinguished Lectures
  - Panel met virtually July 16, 2020 (Usual conference meetings not possible this year. ICCST and SSS postponed to 2021)
    - 8 of 10 in attendance
  - Collaborated with Avionics Systems Panel on two IEEE AESS Systems panel related papers.

# Navigation Systems Panel

- 'State-of-the-art' article submitted/revised/accepted for SYSTEMS (awaiting publication)
- Primary panel responsibility is support of the PLANS conference
- PLANS 2020 was canceled due to the pandemic
  - Peer-reviewed and accepted papers were published in Xplore
- Panel plans to meet in Fall to start planning for PLANS 2022