

About the IEEE Aerospace & Electronic Systems Society Newsletter



Dear AESS Members,

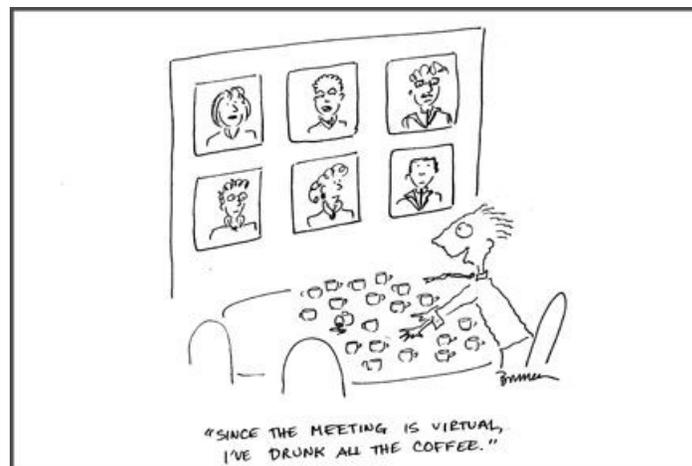
The COVID-19 pandemic has significantly affected our lives in the last months, and regrettably we expect that to continue for some time.

Nevertheless, the big AESS community has reacted swiftly and pragmatically, by deploying alternative processes to keep offering the highest level of services to its members. This is for example the case of virtual conferences and distinguished lectures.

Have a look at recent happenings in this third edition of the QEB for 2020.

I really hope that you all are doing well and we can soon meet together....in a 3D version!

Warmest regards,
Fabiola Colone
Editor-in-Chief, AESS QEB
fabiola.colone@uniroma1.it



Message from the President

Dear IEEE Aerospace & Electronic Systems Society Members:

I hope that you are staying well during the COVID-19 pandemic, which continues to affect our lives in so many ways. We have had to adjust many things to accommodate the precautions necessary to keep us safe and healthy.



Travel restrictions are easing, but at a reduced capacity with significant changes in protocols. Face-to-face meetings, conferences and other events have been transformed to virtual platforms. The economic impact of the pandemic has affected many organizations and individuals creating additional uncertainty and fear. Despite all these disruptions and hardships, I am inspired by the perseverance and resilience of my professional associates. I am also thankful that we did not face these challenges early in my career before we had tools such as cell phones, personal computers and the Internet. Technological advances like these have made it possible to pivot to a new normal in a remarkably short time. We all can take some satisfaction and pride that we work in professions that make these sorts of technical achievements possible.

Walt Downing, IEEE Life Senior Member, AESS President (2020-21)



COVID-19 Related Research and Technologies Free to Access in IEEE *Xplore*®

IEEE realizes that many are directly or indirectly engaged in the fight against COVID-19 and its effects on global health and safety, research, infrastructure, communications, and more. IEEE has identified articles from the IEEE *Xplore* digital library that may help researchers understand and manage different aspects of the COVID-19 pandemic and technologies that can be leveraged to combat it.

All content in this collection is now free to access, with additional rights for all types of reuse, including full text and data mining, and analysis.

We are continually monitoring the developments and will update the [IEEE *Xplore*](#) content periodically.

Thank you for your support of our shared mission to advance technology for humanity.

The Story Behind a Success



“What am I doing here?” and “Is this how you earn your PhD?” were the questions that I asked myself on the roof of my parents’ house, some 10m above the ground. This happened as I was trying to install an antenna array for the passive radar, a technology that became the focus of my professional career for many years. This is a short recount of how I got to be the recipient of 2020 IEEE Fred Nathanson Memorial Radar Award.

[Read Mateusz Malanowski’s Story](#)

The History Column

by Hugh Griffiths



The fifth event in this series of notable historical events of interest to AESS is the first operational use of chaff, on 23 July 1943. Chaff is the name given to the radar countermeasure in which a cloud of metal strips is deployed, each of length approximately half the wavelength of the victim radar, so that each behaves as a dipole. This produces a large, diffuse false target which persists for some time as the strips flutter to ground.

[Read Column](#)

Chapter and Member News

Pioneer Award

Azad Madni was presented with the 2019 IEEE AESS Society Pioneer Award *“For contributions to advanced simulation-based training and intelligent decision aiding for aerospace systems”* at this year’s IEEE Aerospace Conference.

Pictured: (L to R) *Transactions on AES* EIC Michael Rice, Awardee Azad Madni, IEEE Aerospace Conference Chair Kendra Cook

IEEE Aerospace Conference
/Denise Flannery





Are you following the new **AESS Instagram account**? Find us at **@IEEE_AESS** and stay up-to-date with AESS initiatives and member news!

Conference News



27th Saint Petersburg International Conference on Integrated Navigation Systems

25-27 May 2020

Saint Petersburg, Russia



The 27th Saint Petersburg International Conference on Integrated Navigation Systems was held 25-27 May 2020 in a fully virtual format.

[Read Full Conference Report](#)

Elevated AESS Members - 2020 IEEE Senior Members

Senior Membership is the highest grade for which application may be made and shall require experience reflecting professional maturity; a candidate should be an engineer, scientist, educator, technical executive, or originator in IEEE-designated fields in professional practice for at least ten years and shall have shown significant performance over a period of at least five of those years.

For more information, go to the IEEE Senior membership section of the [IEEE website](#).

Visit our [website](#) to view the complete list of our Senior Members.



AESS Professional Networking and Mentoring Program

2020 marks the fourth year of this innovative AESS program that helps connect students and young professionals with distinguished internal experts. They are distributed across industry, academia, and government and are willing to share their time and experience to develop future leaders within the AESS.

Our vision is a flexible international program that is carefully implemented, attentively supported, and singularly focused on providing benefits to AESS members.

More information is available on the [AESS website](#). Mentors and mentees, it is easy to sign up for the program. Join us today!

[Sign Up Today](#)

AESS Mentorship Program in Action

"Team Dronix", an aerial robotic team in collaboration with "Aero 360", Chennai, India has developed an affordable, customized Pesticide Spraying Drone for agriculture application during February-March 2020 and successfully tested, under the guidance of Dr. Ganesh Subramanian. [More information here.](#)



AESS Membership Certificates are now available!

Follow these steps to download and print your certificate:

- Log into [Collabratec®](#)
- Click on your name in the top right of the screen and select "Member Certificates" from the drop-down menu
- From the "Member Certificates" page, click on the "Download PDF" link to the right of "IEEE Aerospace and Electronic Membership"
- Open the PDF and print it

AESS Technical Panels

AESS Technical Operations

AESS members can help us plan our technical activities by filling out or updating their Technical Interest Profile (TIP). Only 60% of our members have done so, and most likely many of those are out-of-date.

Simply sign in with your [IEEE Account](#). Then you can edit or add to what exists. We are particularly interested in the area in which you regularly work. Click "Save" and then sign out.

Our goal is to have updated membership information for 80% of our members. This will help us plan relevant activities. Thank you.

AESS Technical Panels

Currently the AESS has six active Technical Panels. The Panels welcome and encourage new members and each Panel is described on our web site. Many of the panel sessions and local meetings that were planned to be held locally and at conferences are not able to take place due to COVID. However, several have been moved to online which provides an opportunity to

include a wider range of individuals who may not have been able to attend in person. Please contact the Panel Chair or VP Tech Operations George Schmidt. Notes from each of the Panel Chairs follow:

Cyber Security

The panel is organizing local, virtual meetings in a Summer Series of technical meetings to chapters and sections to better serve and motivate their local member interests, beginning on June 24, with an AESS Distinguished Lectures on “ [Information Assurance](#)” and, presented on 22 July “Aerospace Cyber Physical and Autonomous Systems” that will provide virtual meetings for at least four sections and chapters.

The AESS Cyber Security panel promotes and supports cyber security technical activities in those aspects of cyber security relevant to complex systems for space, air, ocean, or ground environments, particularly those that apply to aviation and aerospace. The panel interests align with three AESS conferences for 2020, however each of these has had to go virtual and or postpone its in-person events to 2021. These are the [IEEE Systems Security Symposium \(SSS\)](#), the [53rd International Carnahan Conference on Security Technology \(ICCST\)](#), and the [39th Digital Avionics Systems Conference \(DASC\)](#). The panel will be meeting via teleconference in July.

Are you active in cyber security and interested in participating on this panel? Are you interested in organizing or attending a local meeting in the summer virtual series? Please contact the panel chair, Prof. [Kathleen Kramer](#).

Radar Systems

- Initiated new committee on Publications, the purpose of which is to work towards increasing the number of radar publications in T-AES (and perhaps ultimately in T-Radar)
- in the process of changing the name/scope of the Waveform Diversity committee to the Spectrum Innovations committee, which will serve as the RSP's connection to all things spectrum-related and also interface with other spectrum-facing IEEE entities (i.e. other AES panels as well as other IEEE societies)
- Despite COVID-19 hurdles, the organizing committee of the IEEE International Radar Conference that was supposed to occur in Washington, DC still held a successful virtual conference from 27 April to 1 May, which still had 441 registered attendees.
- Now preparing for the IEEE Radar Conference that will be held in Florence, Italy from 21-25 September. Just shy of 490 papers have been submitted. Given the ongoing state of global health and travel, it remains to be seen exactly what form the conference will take.

Gyro and Accelerometer

P952, “Draft Standard for Specifying and Testing Single-Axis Interferometric Fiber Optic Gyros,” revision re-circulation ballot has completed.

P1559, “Draft Standard for Inertial Systems Terminology,” revision ballot is in progress.

P1780, “Draft Standard for the Specification of Inertial Measurement Units (IMU),” has been distributed for industry comments.

P1431, “Draft Standard for Specifying and Testing Coriolis Vibratory Gyros,” revision is in progress.

The GAPs next meeting is being held virtually July 13/14 using webex. Please contact Randall Curey (randall.curey@ieee.org) if you are interested in attending.

Navigation Systems

IEEE/ION PLANSx 2020 is an outgrowth of the IEEE/ION Position Location and Navigation Symposium 2020 meeting that was originally scheduled to take place in April and was rescheduled due to COVID-19. IEEE/ION PLANSx 2020 will be hosted by ION GNSS+ 2020

and will take place during ION GNSS+ 2020 on 23-25 September, at the St. Louis Union Station Hotel in St. Louis, Missouri.

The IEEE/ION PLANSx 2020 technical program will include a collection of the peer-reviewed papers originally scheduled to be presented in April. Attendees from both meetings will have the freedom to flow between ION GNSS+ and IEEE/ION PLANSx technical presentations and attend the ION GNSS+ commercial exhibit. Dr. Brad Parkinson, originally scheduled as an IEEE/ION PLANS keynote speaker, will be giving his address as part of the ION GNSS+ 2020 plenary session on Tuesday, 22 September.

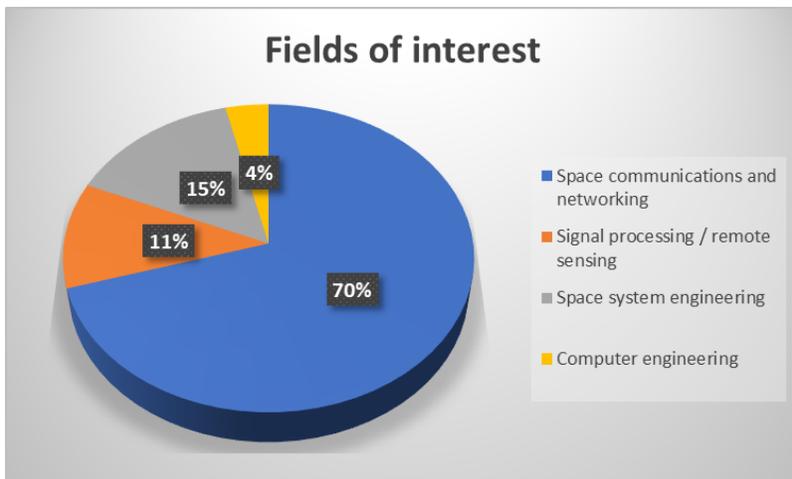
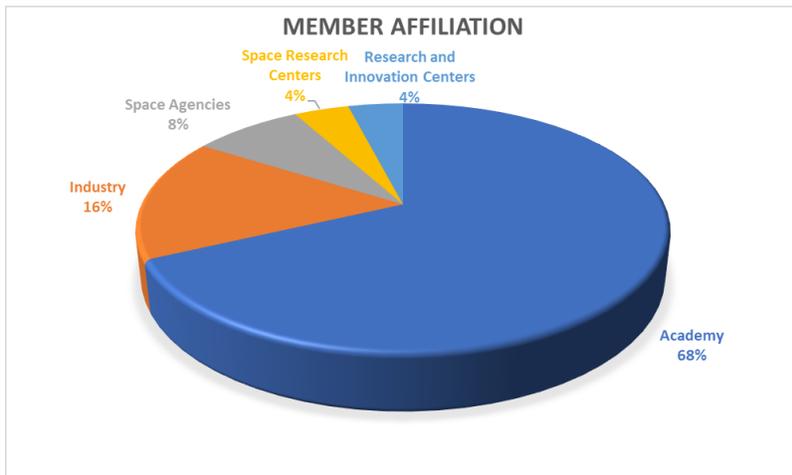
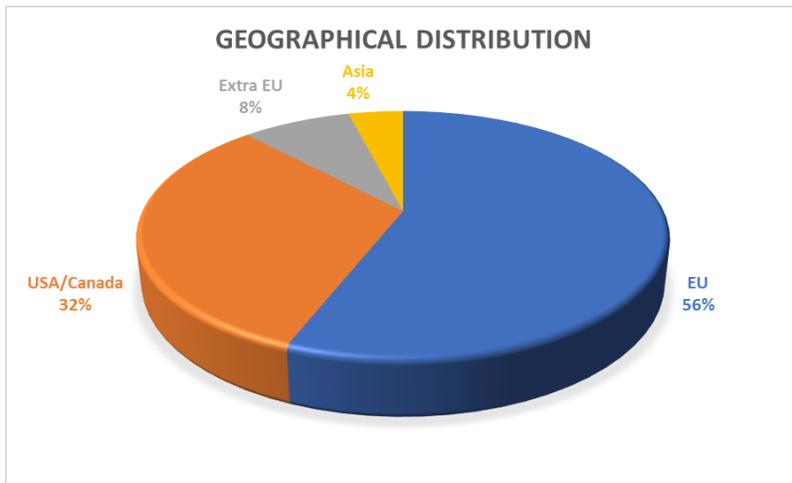
Avionics Systems

Avionics represents a core component of all aerospace systems, which is experiencing a fast evolution fueled by technological developments and concepts such as autonomy and the widespread adoption of artificial intelligence. The Avionics Systems Panel addresses all the fields of avionics research supporting commercial, military, and general aviation. The Avionics Systems Panel intends to compile a Special Issue of the AESS Magazine that will cover the broad field of avionics systems research and innovation. This Special Issue will present the viewpoint of experts in the relevant domains to illustrate the current state-of-research and to discuss the challenges that must be addressed to support further advances in research and innovation. Please see the [Call for Papers](#) in *IEEE Systems Magazine*. (May 2020, p.17)

Glue Technologies for Space Systems

- IEEE Aerospace Conference 2021: a new session made of invited papers and dealing with IEEE Glue Tech panel topics will be offered
- Elections of panel chair, vice-chair and secretary completed! Elected chair: Claudio Sacchi, elected vice-chair Michael Noble, elected secretary: Riccardo Bassoli
- Some papers dealing with Glue-Tech panel topics, where the panel has been mentioned in the acknowledgements, have been submitted and published in international journals and conferences
- The panel description paper has been published in IEEE AES Systems Magazine (Jan. 2020 issue, pp. 46-54).
- First Glue Tech Summer School (Autumn 2020, dates to be defined): the school dealing with Space Networking Softwarization topics (organizers: M. Marchese, F. Granelli, C. Sacchi and T. Rossi) will be held by in remote virtual mode, considering the situation related to the Covid-19 health emergency
- Second Glue Tech Winter School (March 2021, during IEEE Aerospace Conference): the school organized by Michael B. Rice will be held with direct teaching, if allowed. Otherwise, a remote virtual modality will be considered
- New Space Video Series: the series consists of video lectures, and video interviews on YouTube about Glue-Tech panel related topics, organized by the panel member Alessandro Golkar (Skoltech Center for Entrepreneurship and Innovation, Russia)
- Third panel meeting in the Fall 2020, organized in remote virtual modality (dates TBD).

The panel so far accounts 25 members. Geographical distribution affiliation and topics of interest of the various members are depicted in the diagrams given below:



A Contribution to the Activities of the AESS Glue Technologies Technical Panel: New Space Video Series

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. The series consists of video lectures, and video interviews. It is an attempt to explore the phenomenon of New Space using different lenses - both technical and engineering oriented, and with different formats, such as lectures, and interviews. [More information here.](#)

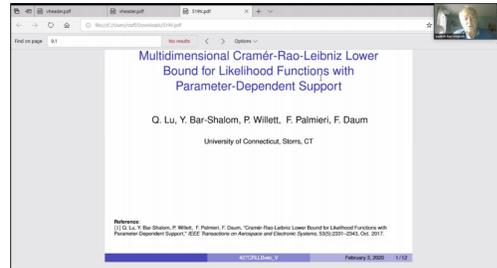
AESS Distinguished Lecturer Program

All AESS Chapters and IEEE Sections are encouraged to take advantage of the AESS Distinguished Lecturer and Tutorial Program for their regular or special meetings, that allows them to select from an outstanding list of truly distinguished speakers who are experts in the technical fields of the Society. For more information, please see the [AESS website](#).

Distinguished Lecturer Reports

Yaakov Bar-Shalom gave a Distinguished Lecture virtually on 4 April

[Read the Full Report](#)



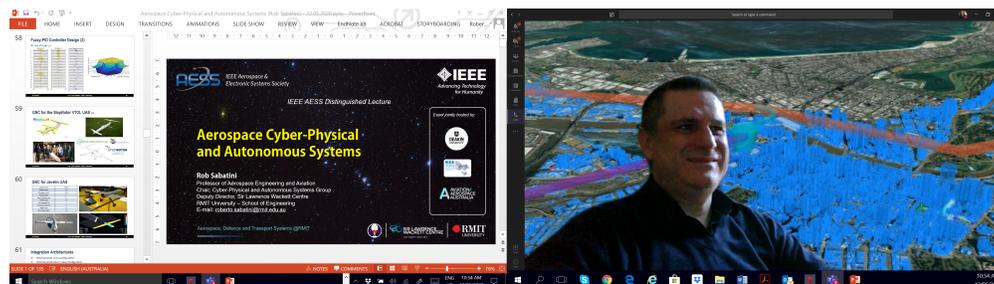
Alfonso Farina gave a Distinguished Lecture virtually as a Keynote speaker at ICASSP 2020 on 6 May.

[Read the Full Report](#)



Alfonso Farina gave a Distinguished Lecture virtually for the Complex Systems and Security Laboratory at the University in Rome on 13 May and 15 May.

[Read the Full Report](#)

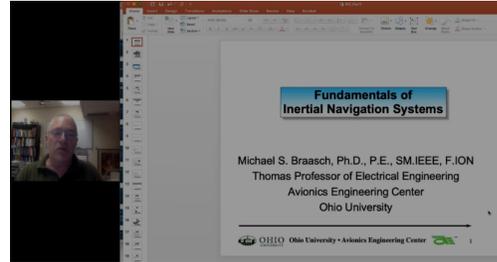


Roberto Sabatini gave a Distinguished Lecture virtually for the RMIT University in Melbourne, Australia on 22 May.

[Read the Full Report](#)

Michael Braasch gave a Distinguished Lecture virtually for the Baltimore Chapter of AESS on 3 June.

[Read the Full Report](#)



Walt Downing gave a Distinguished Lecture virtually for the IEEE Galveston Bay Section on 5 June.

[Read the Full Report](#)



AESS Members have free access to the [AESS Resource Center](#)! The Resource Center is a robust, web-based, technical learning and research center that is tailored to support the educational, career, and research needs of AESS members. It is a one-stop shop for AESS Video Tutorials, Publications, educational material, interviews, and more!

AESS Resource Center Submissions Invitation

The IEEE Aerospace and Electronic Systems Society (AESS) is pleased to invite submissions of tutorials and short courses for inclusion on the [AESS Resource Center](#). This provides an opportunity for authors to support the professional development members of the field and extend the reach of their training material to a global audience. Tutorials may be submitted under a non-exclusive agreement, which does not transfer ownership to IEEE. Further submissions process instructions may be found on the [AESS website](#).

Publication News

Aerospace Magazine

Special Section on AVIONICS SYSTEMS: FUTURE CHALLENGES

The Avionics Systems Panel intends to compile a Special Issue of the AESS Magazine that will cover the broad field of avionics systems research and innovation. This Special Issue will present the view point of experts in the relevant domains to illustrate the current state-of-research and to discuss the challenges that must be addressed to support further advances in industry-focused research and innovation.

Transactions on Aerospace and Electronic Systems

Special Section on META-LEVEL AND ADVERSARIAL TRACKING

In recent years there has been a move towards a new paradigm in tracking applications aimed at a higher-level understanding of complex scenes, potentially involving many objects and partial data from various sensors or data sources. This special section will serve both as a comprehensive primer on the state-of-the-art, and a showcase of current developments to address these modeling and computational challenges as well as the numerous application areas of the topic of meta-tracking and adversarial tracking.

Call for Papers

Conferences

The information below is current as of 1 July 2020. Please refer [to this page](#) or to each conference website for the most up-to-date information.

20th Integrated Communications, Navigation and Surveillance Conference (ICNS)

Due to the ongoing COVID-19 threat and travel restrictions still in place for numerous ICNS attendees and their respective organizations, ICNS 2020 will not be held in person this year - it will be a virtual conference instead.



Integrated Communications Navigation and Surveillance

Visit Website

Radar Summer School 2020



Due to public health concerns related to the coronavirus outbreak, we saw no alternative but to cancel the 12th International Summer School on Radar/SAR 2020. The health and safety of our attendees, partners, presenters, and colleagues is of the utmost importance to us. We were forced to consider the growing risk of exposure, especially in the German state of Nordrhein-Westfalen (North Rhine-Westphalia), where our event is located.

[Visit Website](#)

2020 IEEE AUTOTESTCON Conference

The Board of Directors of IEEE AUTOTESTCON and the IEEE AUTOTESTCON 2020 Organizing Committee regret to inform our loyal authors, attendees and exhibitors that IEEE AUTOTESTCON 2020, scheduled for 24-27 August 2020 at the Gaylord National Resort & Convention Center in National Harbor (Oxon Hill) Maryland is hereby canceled.

[Visit Website](#)

2020 IEEE/AIAA 39th Digital Avionics Systems Conference (DASC)

After careful assessment of the current and potential future impacts COVID-19 situation, the Conference Organizing Committee has decided to conduct the 39th Digital Avionics System Conference (DASC) which was planned to take place from 11-15 October, 2020 in San Antonio, Texas as a completely virtual conference.



[Visit Website](#)

2020 IEEE Radar Conference

21-25 September 2020 in Florence, Italy



Since some of the constraints imposed by COVID-19 will likely remain in place in September, even if the situation has greatly improved and is expected to continue to do so in the next 2-3 months, RadarConf20 has been re-envisioned as a dual physical and virtual conference. We aim at getting the best of the two worlds, physical and virtual, while being very cognizant of the safety of our community.

[Visit Website](#)

2021 IEEE Radar Conference

A large graphic announcing the 2021 IEEE Radar Conference. The background is dark blue with white radar waves. The text 'ANNOUNCING THE 2021 IEEE RADAR CONFERENCE' is in large white letters. To the right, 'Radar on the Move' is written in a gold, italicized font, with a green radar beam pointing towards it. Below this, 'ATLANTA, GEORGIA, USA' is written in gold. The dates '8-9 MAY 2021 (RADAR SUMMER SCHOOL)' and '10-14 MAY 2021 (CONFERENCE & WORKSHOPS)' are in white. Logos for IEEE and AESs are present. A list of activities and special programs is provided, along with contact information for Kristin Bing, Theresa Brunasso, and Dale Blair & Fabiola Colone. The website 'RADARCONFERENCE21.ORG' is at the bottom right.

ANNOUNCING THE 2021 IEEE RADAR CONFERENCE *Radar on the Move* ATLANTA, GEORGIA, USA

8-9 MAY 2021
(RADAR SUMMER SCHOOL)

10-14 MAY 2021
(CONFERENCE & WORKSHOPS)

IEEE Atlanta Section

IEEE

AESs

CONFERENCE & WORKSHOPS

- Plenary & Special Sessions
- Tutorials by the Experts
- Peer-Reviewed Technical Presentations
- Vendor Exhibits

SPECIAL PROGRAMS

- Radar Summer School
- Student Engineering Challenge
- Student Paper Contest – *Judged by Pioneers in Radar*
- IEEE Young Professionals
- IEEE Women in Engineering (WIE)

Historical & Regional Excursions

CONTACTS:

Kristin Bing
CHAIR
(radar21-chair@ieee.org)

Theresa Brunasso
VICE CHAIR
(radar21-VC@ieee.org)

Dale Blair & Fabiola Colone
TECHNICAL CHAIRS
(radar21-tech@ieee.org)

RADARCONFERENCE21.ORG

The 2021 IEEE Radar Conference will be held May 2021 in Atlanta, Georgia, USA. [View the Call for Papers](#). [View the Call for Tutorials](#).

Have a conference you'd like advertised in the AESS Quarterly Email Blast? Contact Judy Scharmann (j.scharmann@conferencecatalysts.com) for details on how to have it included.

[View Full List of AESS Conferences](#)

Publications

IEEE Aerospace and Electronic Systems Magazine

The *IEEE Aerospace and Electronic Systems Magazine* is a monthly magazine that publishes articles concerned with the various aspects of systems for space, air, ocean, or ground environments as well as news and information of interest to IEEE Aerospace and Electronic Systems Society members. Our goal is to inform the readers of technologies, state of the art, design trades, etc. so that they will gain insights into a field heretofore unknown to them. We want to introduce technical specialties to readers in the hope that something in the articles will give them some insight for their own fields of endeavor.

IEEE Transactions on Aerospace and Electronic Systems

IEEE Transactions on Aerospace and Electronic Systems (T-AES) focuses on the organization, design, development, integration, and operation of complex systems for space, air, ocean, or ground environment. These systems include, but are not limited to, navigation, avionics, spacecraft, aerospace power, radar, sonar, telemetry, defense, transportation, automated testing, and command and control.

Latest Issues

[June 2020](#)

[May 2020](#)

[April 2020](#)

[March 2020](#)

[February 2020](#)

[January 2020](#)

[December 2019](#)

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[June 2020](#)

[April 2020](#)

[February 2020](#)

[December 2019](#)

[October 2019](#)

[August 2019](#)

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AESS YP & Student Representatives

AESS Suggestions Welcome

We welcome suggestions from members on how the AESS can improve.

[Fabiola Colone](#), VP Member Services

[Judy Scharmann](#), AESS Executive Assistant



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