

About the IEEE Aerospace & Electronic Systems Society Newsletter



Dear AESS Members,

I am happy to share with you this second edition of the QEB for 2021. I hope that it will find all of you in good health and high spirits.

The list of contents of this Newsletter has been progressively increasing over the year, so I am sure that each one of you will find an article that is of interest for you. I would like to recommend the Awards sections: you might read about colleagues whose achievements have been recently recognized and possibly get inspired to apply for the many AESS Awards with upcoming deadlines. Be the reason for your success!

"Successful people have fear, successful people have doubts, and successful people have worries. They just don't let these feelings stop them."
(Nelson Mandela)

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

Message from the President



Dear IEEE Aerospace & Electronic Systems Society Members:

In *Plato's Republic*, the author wrote "our need will be the real creator" which led to the English saying, "necessity is the mother of invention." We use this expression when we are forced to find new ways to do things due to special needs or circumstances that prevent us from continuing in the normal fashion. Sometimes, after the crisis, we return to the old ways; but at other times the changes become the new normal. This saying seems to perfectly fit our experience since March 2020. Due to the COVID-19 pandemic we had to cancel all in-person meetings, conferences, and events as well as the associated travel, networking, and social interactions.

As a result, we "pivoted" to virtual platforms for many of these activities. The results are mixed. In some cases, we cannot wait until we can return to the in-person format. In other situations, virtual participation is here to stay as an efficient way to meet, to augment in-person activities, or to facilitate participation in events when in-person attendance is not possible. Now that the crisis is decreasing, we are beginning to sort out these issues and develop plans.

A good example of where we plan to continue using virtual platforms is for distinguished

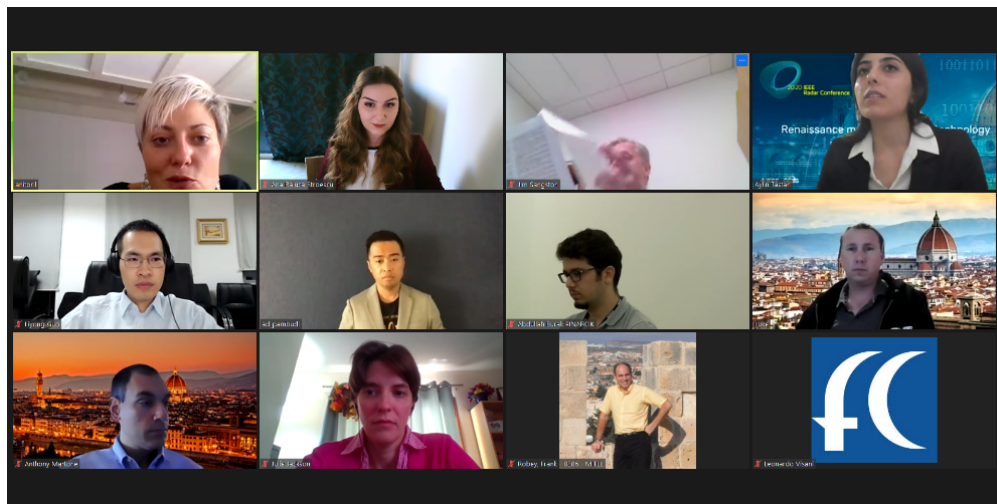
lectures. These have been a resounding success. Thanks to the leadership of AESS VP of Education, Dr. Lorenzo LoMonte, we just completed the second series of virtual lectures. These talks were attended by large international audiences and will continue to reach others through the IEEE Learning Network. We plan to expand the use of virtual platforms for tutorials and short courses. These will be valuable additions to our educational products and services.

The use of virtual platforms for conferences is more challenging. Some virtual conferences in 2020 were successful but, others struggled or were canceled. A large majority want to return to in-person events as soon as possible. However, it appears that having the ability to participate remotely could be valuable in some cases. IEEE is exploring the possibility of conducting hybrid conferences with both in-person and virtual participation options. How to do this successfully both technically and financially is the challenge.

In conclusion, I hope that we can use the remainder of 2021 to “return to normal” whether by traditional or innovative means. You have a role in this effort. The polls are open for the election of new members of the AESS Board of Governors. Please cast your vote before the 9 June deadline.

Walt Downing
IEEE AESS President
2020-2021

The Story Behind a Success



As the top three winners of the 2020 IEEE Radar Conference Student Paper Competition, we feel fortunate to have our work recognized by such an inspiring organization and it is our pleasure to share our stories with the AESS community.

[Read Here](#)

The History Column

by Hugh Griffiths



Brigadier General Billy Mitchell was a pioneering American aviator who is regarded by many as the father of the US Air Force. He was born on 29 December 1879 in Nice, France, and grew up in an affluent area of Milwaukee; his father was eventually a Senator for Wisconsin. He served as an airman in World War I and became one of the top aces, highly decorated, and finishing World War I as Chief of Air Service, Third Army.

[Read Column](#)

IEEE AESS Michael Wicks Fund of the IEEE Foundation



Michael Wicks was a gifted electronic engineer who had a profound impact on all who met and interacted with him. His dedication to the radar community was well known. He freely gave his time to serve the IEEE Aerospace & Electronic System Society (AESS) community.

By far his greatest legacy was the profound influence he had on a worldwide generation of radar engineers. His passion for "giving back" to the AESS and fervor for nurturing the next generation were his motivations when he created the **IEEE Michael C. Wicks Radar Student Travel Grant Award**.

Thanks to Mike's™ donation to seed the IEEE AESS Michael Wicks Fund of the IEEE Foundation, each year graduate students who are lead authors on a paper in the area of radar signal processing accepted for presentation during the annual IEEE Radar Conference can receive, if selected, travel support to attend the conference and present their research. Celebrate Mike by joining him in [supporting this worthy endeavor and help perpetuate his legacy](#).

[Read More](#)

AESS Awards

Awards Presented at the 2021 IEEE Radar Conference:

IEEE Dennis J. Picard Medal for Radar Technologies and Applications

Simon Haykin, McMaster University, Ontario, Canada

For contributions to the development of the theory and practice of radar, especially cognitive radar and adaptive filtering.



AESS Pioneer Award

Alfonso Farina, Consultant to Leonardo Land & Naval Defence Electronics, Rome, Italy

For pioneering contributions to the analysis, design, development, and experimentation of digital-based adaptive radar systems



AESS Industrial Innovation Award

Miroslav N. Velev, Aries Design Automation, LLC, Chicago, USA

For contributions to formal verification of microprocessors for aerospace applications and Boolean Satisfiability for SAT solvers.



Robert T. Hill Best Dissertation Award

Francesca Filippini, University of Rome Sapienza, Rome, Italy

*In recognition of her PhD dissertation:
"Multichannel Passive Radar Systems: Signal Processing Techniques and Design Strategies"*



AESS Engineering Scholarship, Undergraduate

Alex Towfigh, University of California San Diego, USA



AESS Engineering Scholarship, Graduate

Minghui Sun, University of Virginia, USA



Warren White Award for Excellence in Radar Engineering

Daniel W. Bliss, Arizona State University, Tempe, USA

For contributions to Multiple-Input Multiple-Output Radar, Multiple-Function Sensing and Communications Systems, and Novel Small-Scale Radar Applications.



Fred Nathanson Memorial Radar Award

Alexander Charlish, Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE, Wachtberg, Germany

For contributions to radar resource management and cognitive radar.



M. Barry Carlton Best Paper Award



Farzad Hessar & Sumit Roy, University of Washington, Seattle, WA, USA

For the paper entitled "Spectrum Sharing Between a Surveillance Radar and Secondary Wi-Fi Networks."

Published in: *IEEE Transactions on Aerospace and Electronic Systems*, Volume: 52, Issue: 3, June 2016.

M. Barry Carlton Best Paper Award



Bo Li & Athina P. Petropulu, Rutgers, The State University of New Jersey, USA

For the paper entitled "Joint Transmit Designs for Coexistence of MIMO Wireless Communications and Sparse Sensing Radars in Clutter."

Published in: *IEEE Transactions on Aerospace and Electronic Systems*, Volume: 56, Issue: 6, Dec. 2017.

Harry Mimno Best Paper Award



Sevgi Zubeyde Gurbuz, Hugh D. Griffiths, Alexander Charlish, Muralidhar Rangaswamy, Maria Sabrina Greco, and Kristine Bell

For the paper entitled "An Overview of Cognitive Radar: Past, Present, and Future."

Published in: *IEEE Aerospace and Electronic Systems Magazine*, Vol. 34, No. 12, December 2019.

Newly Elevated IEEE Fellow Class 2021

Stefano Coraluppi

Systems & Technology Research, Woburn, Massachusetts, USA

For contributions to multi-sensor multi-target tracking.



Michael D. Griffin

11th Administrator of NASA, Under Secretary of Defense for Research and Engineering 2018-2020, USA

For leadership in space infrastructure and Space Shuttle, International Space Station, Hubble and other missions.



Robert T.-I. Shin

MIT Lincoln Laboratory, Lexington, MA, USA

For leadership in electromagnetic modeling of radar systems and in microwave remote sensing.



Birsen Yazici

Rensselaer Polytechnic Institute, Troy, New York, USA

For contributions to multi-static inverse synthetic aperture radars.



Call for Nominations

Nominations are open for the 2021 awards cycle! Deadlines and [more information can be found here](#).

Member News

The AESS Board of Governors met for the spring meeting, held virtually this year, on 6-8 May 2021.



AESS VP of Conferences Michael Braasch was recognized by IEEE Meetings, Conferences and Events for his excellent service as AESS VP Conferences. Congratulations, Michael, and thank you for all that you do!

Michael Braasch
Vice President Conferences, IEEE Aerospace and Electronic Systems Society (AESS)

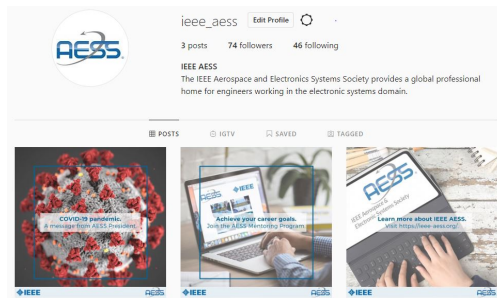
Michael is responsible for leading “efforts to provide high-quality conferences in our technical fields of interest.” In his role, Michael finds that “assisting conference organizers who are completely new to the process is particularly gratifying.” In his tenure as Vice President, “helping conference organizers in their pivoting from in-person to virtual conferences throughout 2020 was a significant highlight.” In terms of words of wisdom for organizers, Michael encourages them to “take advantage of the services that MCE has available. Their Event Emergency Response Team (EERT) provided vital services to a great many conferences during 2020 when the pandemic hit.”



AESS supported the IEEE Sections Congress by participating in a virtual exhibit organized by Technical Activities (TA) that was conducted on Saturday, 10 April. [Learn more here.](#)



Join us on AESS Social Media!



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

2021 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



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 international **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](#).

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 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

Publication News

Upcoming Special Sections in the IEEE Transactions on Aerospace and Electronic Systems

[Special Section on Information and Communication Technologies \(ICT\) for a New Space Vision](#) - Submissions open 1 October 2021 - 29 October 2021

[Special Section on Industrial Information Integration in Space Applications](#) - Submissions open 23 November 2021 - 31 December 2021

IEEE Systems Journal

The *IEEE Systems Journal* provides a systems-level, focused forum for application-oriented manuscripts that address complex systems and system-of-systems of national and global significance. It intends to encourage and facilitate cooperation and interaction among IEEE Societies with systems-level and systems engineering interest, and to attract non-IEEE contributors and readers from around the globe. For example, it publishes original contributions on disaster responses triggered by hurricanes, tsunamis, or current volcanic eruptions that are not solvable by pure engineering solutions.

[Read details on the journal scope.](#)

We invite you to consider this journal as one of the journals where your systems-oriented research results can be published.

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 [IEEE Xplore](#) content periodically.

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

AESS Technical Panels

AESS Technical Operations

In this challenging pandemic environment, all six of the technical panels have continued with their conferences, publications, standards developments, and educational activities, such as giving web-based Distinguished Lectures. More than 100 AESS volunteers are participating in these activities. Read the full Panel Posts following this introduction. Please support your panels and consider joining one. Just contact the Panel Chair!

VP Technical Operations Marina Ruggieri has formed a Visions and Perspectives Committee to identify visionary technical topics and possible cross-panel activities or "super topic." Each panel has a representative on the committee. An interim report will be given in the Fall.

George Schmidt, VP Technical Operations

Panel Chair Statements

Radar Systems Panel

Nathan Goodman, Chair 2021

The IEEE Radar Systems Panel (RSP) serves this Technical Community by overseeing the world's flagship conferences in the field, serving as editorial staff for radar's home in the *IEEE Transactions on Aerospace & Electronic Systems Journal*, educating the radar workforce, and managing radar standards. With continued advances driven by the digital revolution, radar is truly experiencing a renaissance that is opening new vistas in myriad civil applications, increasingly sophisticated defense applications, and addressing the growing congestion of spectrum. Indeed, the explosion of low-cost, software-driven technologies is ushering in a "home-grown" era of radar research that will ultimately lead to a previously unseen degree of innovation crowdsourcing. Consequently, it is more important than ever that the RSP engages with a diverse population of the radar community, and individuals interested in serving should reach out to current members to learn how they can participate.

Glue Technologies for Space Systems Panel

Claudio Sacchi, Chair

Our panel intends to promote the activities of AESS in the interdisciplinary field of "Glue Technologies." The panel aims at bringing in the community a renewed systemic vision of telecommunications encompassing various and heterogeneous space technologies in a unified framework targeting the evolution to future "Space 2.0" vision.

An updated list of the panel topics is as follows:

- Broadband space transmissions
- Softwarization of space networking
- Internet of Remote Things (IoRT) and Internet of Space Things (IoST)
- Seamless integration of intelligent aerial networks with cognitive and softwarized sky networks
- Augmented 3D reality for manned exploration missions (e.g., on Mars)
- End-to-end system considerations of space systems
- Integrated communication, navigation, and sensing
- Advanced signal processing and data fusion techniques for Space applications

You are encouraged to join the panel, writing an email to myself (claudio.sacchi@unitn.it), to the panel vice-chair Michael Noble (noble@ieee.org) and, in c.c., to the panel secretary Riccardo Bassoli (riccardo.bassoli@tu-dresden.de). The affiliation to IEEE (and to AESS) is welcome, but not required to join.

Avionics Systems Panel

Roberto Sabatini, Chair 2021

The Avionics Systems Panel (ASP) addresses technology research, innovation, education, and standards for avionics systems for all manned and unmanned commercial, military, and general aviation operations. The avionics system functions include communications; command and control; navigation; surveillance; traffic management; and space systems (launch vehicles, spacecraft and satellites). This is a transformational realm for avionics systems design and development due to the introduction of artificial intelligence and machine learning into avionics for autonomous aircraft. The ASP can provide opportunities for members to collaborate across industry, government and academia as well as participate in the management and organization of the two leading avionics conferences that are jointly sponsored by IEEE and the American Institute of Aeronautics and Astronautics (AIAA). We welcome individuals who want to be the future shapers of the aviation and space sectors. Individuals interested in participating should contact the chair at roberto.sabatini@mit.edu.au.

Gyro and Accelerometer Panel

Randall Curey, Chair

The Gyro and Accelerometer Panel (GAP) is a long standing group of dedicated individuals whose contributions to the inertial sensors and systems body of standards benefit the inertial community at large. The GAP has existed for almost 60 years and has two standing committees; one for systems and one for sensors. The GAP develops and maintains a growing body of inertial sensor and system standards; 14 published standards and one in development. The GAP provides the opportunity for the inertial community to develop long term relationships and networking capabilities across academia, developers, users and customers. Participation in the GAP discussions provides a learning opportunity to hear diverse perspectives on how specifications are developed, which allows early-career professionals insight into the physics, the mathematics and the application. The GAP enables fellow professionals to engage with others in the inertial field for education, awareness and camaraderie. To that end, a number of unsponsored retirees continue to participate in the GAP activities. Individuals interested in participating should contact the chair at randall.curey@ieee.org.

Navigation Systems Panel

Michael Braasch, Chair

The purpose of the Panel is to sustain and oversee the programs of the IEEE/ION Position, Location and Navigation Symposium (PLANS); promote and support publications in the domain of Navigation; and to encourage the submission of nominations for IEEE Fellows and Senior Members in the domain of Navigation. The Panel is composed of a variety of representatives of industry, government laboratories, educational institutions and professional societies who are active in the domain of Navigation.

The panel works with the U.S. Institute of Navigation (ION) and the PLANS Executive Committee to select and support volunteers for PLANS including track chairs, session chairs and the like. The panel promotes the submission of navigation manuscripts to the *IEEE Transactions on Aerospace and Electronic Systems* and the *AESS Systems Magazine*.

Those working in the navigation area and interested in supporting the panel's activities are encouraged to contact the panel chair: Dr. Michael Braasch: braaschm@ohio.edu.

Cyber Security Panel

Kathleen Kramer, Chair

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.

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.

[View Panel Posts Here](#)

Education News

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, which

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



The 2021 IEEE AESS Virtual Distinguished Lecturer Webinar Series takes place over the months of April and May. Webinars are 60-minutes long, including 15 minutes for Q&A. We are thrilled to offer you the opportunity to attend these webinars, and we encourage your participation!

AESS Activities are being recognized by other Societies! President Walt Downing was asked to present on this new virtual DL initiative to the IEEE ITSS Society in April.

[More Information and Recordings of the Virtual DLs](#)

AESS at the Explorando el Futuro 202X Event

Walt Downing gave a Distinguished Lecture virtually for the AESS Unicauca and Uninorte Student Branch Chapters on 16 April.

[Read the Full Report](#)



Conference News

AESS Conferencés' Paper Deadlines

Home

Updated: May 21, 2021

CONFERENCE	ABSTRACT SUBMISSION	FINAL PAPER SUBMISSION	CONFERENCE DATE	CONFERENCE LOCATION	WEB LINK
ICINS 2021	(passed)	(passed)	May 31 - June 2, 2021	Saint Petersburg, Russia AND VIRTUAL	http://www.elektropribor.spb.ru/en/conferences/141
ICL-GNSS 2021	(passed)	(passed)	June 1-3, 2021	VIRTUAL	https://events.tuni.fi/icl-gnss2021

Follow the link below to find up-to-date information on the deadlines for all upcoming AESS conferences.

[Conference Paper Deadline Tracker](#)

Call for Proposals for the 2024 IEEE Radar Conference

The Radar Systems Panel (RSP) of the IEEE Aerospace & Electronic Systems Society welcomes proposals from prospective organizers to host the 2024 IEEE Radar Conference. This conference series, originally initiated in 1984 as the US National Radar Conference, has grown to have an internationally diverse attendance and a reputation for the highest quality.

[More Information Here](#)

Conferences and Workshops

The information below is current as of 21 June 2021. Please refer to the link below or to each conference website for the most up-to-date information.

[Visit Website](#)

2021 IEEE International Workshop on Metrology for AeroSpace

IEEE MetroAeroSpace 2021 will pioneer a blended approach, normally with in-person presentations of podium talks and posters. Depending on the evolution of the COVID-19 pandemic, speakers that might have travel limitations (e.g., due to national restrictions or personal health conditions) will be given the possibility to present their paper or poster remotely. Participants that will not present a paper will be given the possibility to register and attend remotely.



[Visit Website](#)

2021 IEEE Digital Avionics Systems Conference



HYBRID & San Antonio, Texas, USA | 3-7 October 2021

[Visit Website](#)

2021 International Conference on Information Fusion



Sun City, South Africa | Postponed to 1-4 November 2021

The organizing committee is taking note of resurgences of the COVID-19 virus across the globe, and the emergence of new strains of the virus in the UK and South Africa. The initial roll-out of vaccines in some countries offer a glimmer of hope, but given the current intensity of the pandemic, it is becoming more and more apparent that an in person conference in July in South Africa is becoming impossible. As such, we as organizers with the support of the ISIF Board of Directors are postponing the conference to 1 - 4 November 2021.

[Visit Website](#)

2021 International Conference on Information Fusion



New York City, New York | 21-25 March 2022

[Visit Website](#)

Technically Co-Sponsored Conference Listing:

19th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM 2021)

VIRTUAL | 8-11 August 2021

[Visit Conference Website](#)

IEEE International Carnahan Conference on Security Technology (ICCST 2020)

VIRTUAL | 1-3 September 2021

[Visit Conference Website](#)

International Conference in Sensor Signal Processing for Defence (SSPD 2021)

Edinburgh, Scotland and VIRTUAL | 14-15 September 2021

[Visit Conference Website](#)

Signal Processing Symposium (SPSympo-2021)

VIRTUAL | 21-23 September 2021

[Visit Conference Website](#)

DGON Inertial Sensors and Systems (ISS 2021)

VIRTUAL | 29-30 September 2021

[Visit Conference Website](#)

IEEE Conference on Microwaves, Communications, Antennas, and Electronic Systems (IEEE COMCAS 2021)

Tel Aviv Israel | 1-3 November 2021

[Visit Conference Website](#)

IEEE Radio and Wireless Symposium (RWS 2022)

Las Vegas, Nevada, USA | 16-19 January 2022

[Visit Conference Website](#)

9th International SpaceWire and SpaceFibre Conference (ISC 2022)

Pisa, Italy | TBD

[Visit Conference Website](#)

Have a conference you'd like advertised in the AESS Quarterly Email Blast? Contact [Judy Scharmann](#) 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

Latest Issues

[December 2020](#)

[November 2020](#)

[October 2020](#)

[September 2020](#)

[August 2020](#)

[July 2020](#)

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

[December 2020](#)

[October 2020](#)

[August 2020](#)

[June 2020](#)

[April 2020](#)

[February 2020](#)

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[AESS Board of Governors](#)

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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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