

## About the IEEE Aerospace & Electronic Systems Society Newsletter

Dear AESS Members,

First and foremost, Happy New Year 2022! We hope you are all doing well and that 2022 is the year we will finally leave virtual meetings and social distancing behind. Maybe we have already met at one of the many conferences taking place this year? That would definitely be a great opportunity! Check out our new website and also this AESS Quarterly Email Blast (QEB) for a list of all the conferences and symposiums.

It is with great pleasure and honor that we start serving as the new EiCs of the QEB. Our deepest gratitude goes to Mark Davis, AESS President, and Lance Kaplan, VP Publications, for trusting us with this role. We know that picking up the baton from Fabiola Colone is not an easy task and we will do our best to continue the excellent work she did.

In this edition, you will find an inspiring story behind the success from the recipient of the Robert T. Hill Best Dissertation Award 2021. You will learn about the Yagi-Uda antennas and their famous inventors in our History Column. You will read about activities from our Chapters and technical panels. Also, have a look for our logo contest for celebration of the 50th anniversary of AESS in 2023.

We hope that this first edition of the QEB for 2022 will be of interest to you. Please send us your suggestions, comments, complaints, and ideas to make this newsletter increasingly useful and interesting.

Have fun reading!

All the Best,



Francesca Filippini and Philipp Markiton  
Editors-in-Chief, AESS QEB  
[francesca.filippini@uniroma1.it](mailto:francesca.filippini@uniroma1.it), [philipp.markiton@ieee.org](mailto:philipp.markiton@ieee.org)

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A Special Message from the President



To the IEEE Aerospace & Electronic Systems Society  
Present and Future Members,

I am honored to assume the Presidency of AESS and to welcome a New Year for our IEEE Society. We have a continued, strong position to provide technical services and education to our members.

With the improving environment and COVID impact on AESS mobility, there are possibilities for improvements, collaboration, and networking in the global aerospace community. Two AESS major conferences (Aerospace and RadarConf) return to in-person meetings, as will the technical events, Young Professional, WIE, tutorials, short courses and schools, and strong international participation.

The strategy for AESS will continue to focus on broadening our geographic, technical and personnel diversity. We have new membership on the Board of Governors with wider participation in Region 9 (Latin America) and Region 10 (Asia and Pacific). Our technical community is growing with the strengthening of our Cyber Security, Fusion, Glue Technologies for Space Systems and Navigation Systems Panels.

AESS is continuing to expand its educational program for our members. The Virtual Distinguished Lecturers are being transitioned to the IEEE Learning Network. We will resume in-person lectures for Chapters that wish to service their membership and local industry. We are also developing a group of short courses that can provide more in-depth learning on emerging technical areas. We encourage our Chapters and their regional industries to invite these lecturers to their meetings – both in-person and virtually.

We have realized several new initiatives in the last year. In February 2022, we launched the new and modern AESS website, which will allow us to provide updates, news and information faster than in the past. In 2021, we had an initiative for hybrid conferences to expand benefits and reach the global AESS community. We will be testing a hybrid platform at the 2022 IEEE Radar Conference as a supplement to the in-person conference.

Looking ahead, our strategy for the next two years is to expand and strengthen the AESS fields of interest.

Please take a minute to explore our new website at [ieee-aess.org](http://ieee-aess.org). I encourage you to renew your membership and invite colleagues to join.

Mark E. Davis  
IEEE AESS President  
2022-2023

## The Story Behind the Success

Joe Khalife received the 2021 Robert T. Hill Award for Best Dissertation.



It is funny how things unfold in life. Right after I finished my master's at the Lebanese American University (LAU) in my home country of Lebanon, my advisor at the time, Prof. Samer Saab, casually asked me what I thought about pursuing a Ph.D. degree in the U.S. The thought had already crossed my mind, especially that it was almost necessary to have a Ph.D. from a western institution to make a decent living in Lebanon. After collecting myself from the excitement, I casually answered back: "Sure, why not?" That's when he told me that a former student of his, Prof. Zak Kassas, had just started as an Assistant Professor at the University of California, Riverside (UCR) and was looking for solid students to apply for a Ph.D. position.

[Full Story](#)

## AESS Professional Networking and Mentoring Program

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

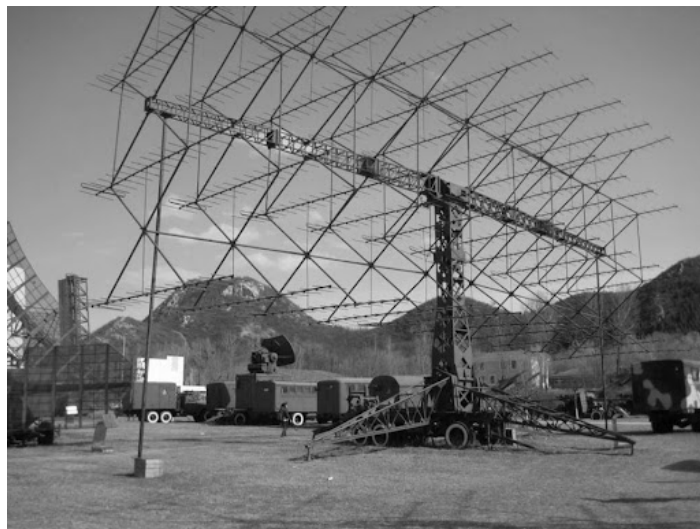
[Sign Up](#)

## The History Column: The Yagi Antenna

*Hugh Griffiths*

University College London

The subject of this History Column is the Yagi (more correctly, the Yagi-Uda) antenna. This type of antenna is used very widely, particularly for television reception at VHF and UHF, but also in plenty of other applications.



10 Å— 4 array of Yagi antennas of a Chinese VHF radar at the Chinese Aviation Museum, Xiaotangshanzhen, Beijing.

The basic Yagi antenna consists of a half-wave dipole driven element (often a folded dipole, to give a good impedance match) with parasitic dipole reflector elements behind, and director elements in front. The key to the design is to arrange the lengths of the parasitic elements and their spacings so that the reradiated signals from each add optimally in phase.

To learn more about the origins, history, and development of this antenna, visit our [website](#).

[Read More](#)

## Member News

### 2022 Officersâ€™™ Meeting in Pisa, Italy

The IEEE AESS Officers held a hybrid Strategic Planning Meeting on 14-15 February 2022 in Pisa, Italy at the University of Pisa. The AESS President-Elect, Sabrina Greco, serves as the Societyâ€™™s Strategic Planning Chair. The Officers conducted two full days of meetings to review the 2021 accomplishments, provide a status update and SWOT analysis of their respective areas, and developed the strategy plan for three years and beyond.



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### AESS Board of Governors Class of 2022-2024

We would like to congratulate and welcome the following AESS members who were nominated and appointed to serve on the AESS Board of Governors for the 2022-2024 term.



**Top Row:** Alfonso Farina (R8), Maria Sabrina Greco (R8), Hugh Griffiths (R8), Puneet Kumar Mishra (R10)

**Bottom Row:** Laila Moreira (R9), Bob Rassa (R2), Michael Noble (R6), Roberto Sabatini (10)

Current BoG

## Awards Recipients



Congratulations to all Aerospace and Electronic Systems Society Award Recipients on these remarkable achievements. Thank you for your hard work, dedication, and contributions to the AESS community!

### 2022 IEEE Dennis J. Picard Medal

Moeness G. Amin - for contributions to radar signal processing across a wide range of applications including through-the-wall imaging and health monitoring

### 2022 Fellows

As it stands today, the IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. Congratulations to the AESS members that were elevated to IEEE Fellow in 2022!

**Maruthi Akella** - for contributions to spacecraft control systems

**Chee-Yee Chong** - for contributions to information fusion methods for multi-sensor tracking

**Jerald Nespor** - for contributions *Digital AESA Radar Systems*

**Daniel Tazartes** - for contributions to inertial sensors and navigation systems

**Frank van Diggelen** - for contributions to assisted global navigation satellite systems for consumer applications

#### **2021 IEEE AESS Pioneer Award**

Pramod K Varshney - for contributions to signal processing and information fusion enabling advanced aerospace and electronic systems

#### **2022 IEEE AESS Judith A. Resnik Space Award**

Erik P. Blasch - for leadership advancements in data analytics supporting space domain awareness and satellite avionics

#### **2022 Warren D. White Award**

Fulvio Gini - for Contributions to Radar Signal Processing and Radar Clutter Modeling and Analysis

#### **2021 IEEE AESS Organizational Leadership Award**

Giuseppe A. Fabrizio - For innovation within IEEE Education, Short Courses, Awards and Mentoring Processes

#### **2022 Fred Nathanson Memorial Radar Award**

Augusto Aubry - for outstanding contributions to the application of modern optimization theory to radar waveform design and adaptive signal processing

#### **2021 IEEE AESS Early Career Award**

Domenico Ciuonzo - for contributions to decentralized inference and sensor fusion in networked sensor systems

#### **2021 IEEE AESS Robert T. Hill Best Dissertation Award**

Joe Khalife " for Ph.D. Dissertation, "Precise Navigation with Cellular Signals: Receiver Design, Differential and Non-Differential Frameworks, and Performance Analysis"

#### **2022 IEEE Michael C. Wick Radar Student Travel Grant**

**Marco Di Seglio** " for the paper entitled "Reducing the Computational Complexity of WiFi-Based Passive Radar Processing

**Karol Abratkiewicz** " for the paper entitled "Radar Pulse Signal Filtering Using Vertical Synchrosqueezing"

**Marcel Hoffman** " for the paper entitled "Filter-Based Segmentation of Automotive SAR Images"

#### **2021 IEEE AESS Technical Panel of the Year Award**

Glue Technologies for Space Systems - The Technical Panel chaired by Claudio Sacchi (University of Trento, Italy) has been awarded for the second consecutive year as "AESS Technical Panel of the Year". The Panel Chair wishes to share this award with all the members that contributed to such an outstanding achievement.

#### **2021 Certificate of Merit for Exceptional Service**

**Fabiola Colone** - for her years of outstanding service as the VP Member Services; as EIC of the Quarterly Email Blast; her work with the Professional Networking and Mentoring Program; and her leadership on many activities and initiatives during her tenure on the AESS Board of Governors

**Peter Willett** - for his years of service as the EIC for the AESS Systems Magazine



## In Memoriam: Eli Brookner



On 29 November 2021, the IEEE Boston Section lost one of its longest serving and most dedicated volunteers, Eli Brookner. Eli was a Lexington resident since 1962 and a Principal Engineering Fellow at Raytheon. For many, many years, Eli was the Chair of the local IEEE Boston Section Chapter of the Aerospace and Electronic Systems Society. He planned and conducted many Chapter meetings each year with technical speakers on radar and related topics.

He was a legendary local, national, and international lecturer on radar and related topics. He developed and presented many, many lecture series and short courses during over 50 years to over 10,000 attendees, particularly in the local IEEE Boston Section, and in 25 other countries on all continents except Antarctica.

Eli was a Life Member of the IEEE and an IEEE Fellow. He received the IEEE Dennis J. Picard Medal and Warren White Award for Excellence in Radar Engineering plus IEEE Centennial and Millennium medals. Eli was the first recipient of the IEEE Boston Section Volunteer Award later known as the IEEE Boston Section Distinguished Service Award.

[More About Eli](#)

## AESS™s 50th Anniversary Logo Contest



In 2023, AESS will celebrate its 50th Anniversary! To commemorate this milestone, AESS invites you to submit a proposal for the 50th Anniversary logo for a chance to win US\$500.

Submit your design by 30 April 2022.

## Submission Details

### AESS Binghamton Chapter Builds â€œIEEE Astrowaysâ€ Disc Golf Course



The AESS Binghamton Chapter had an active and productive year despite an ongoing pandemic. They held 35 meetings in 2021 plus 12 Section Executive Committee meetings. There were various technical events with topics ranging from drone technology to electric vehicles to surveillance radar.

A major contribution this year was the sponsoring, development, and deployment of â€œIEEE Astrowaysâ€ Disc Golf Course in partnership with Kopernik Observatory and Science Center. The AESS Binghamton Chapter created a STEM engineering camp at the observatory, called â€œUnderstanding Flying Objects,â€ to teach the physics of flight. They designed and installed a permanent 12-hole disc golf course at the facility for use during the STEM camp.

[Read More](#)

### Lone Star Section Joint Chapter (AESS/SMC/SYSC) Hosts Drone Lab Tour at St. Maryâ€™s University





To celebrate Engineering Week 2022, the IEEE Lone Star Section's Joint Systems, Man, and Cybernetics, AEES, and Systems Council Chapters held a drone lab tour at St. Mary's University. The tour started with a presentation from Dr. Dante Tezza as seen in Figure 1. Dr. Tezza is an Assistant Professor of Computer and Software Engineering at St. Mary's University in San Antonio, Texas and is the current Lone Star Section Vice-Chair for the AEES Chapter. The presentation covered his initiatives in Unmanned Aerial Systems (UAS) at the university. He discussed his involvement in the development of a new Bachelor's degree in Engineering Science with a concentration in UAS, the construction of the new UAS lab, and UAS summer camps available for local high school students at St. Mary's.

[Read More](#)

## North Atlantic Treaty Organization (NATO) SET-312 Specialists' Meeting

<p>NORTH ATLANTIC TREATY ORGANIZATION (NATO) Distributed Multispectral Sensing and Multistatics Meeting</p>	
<p> Bled, Slovenia  23-24 May 2022</p>	
<p>Organized by: NATO Science and Technology Organization (STO) and Sensors and Electronics Systems Panel (SET)</p>	

The North Atlantic Treaty Organization (NATO) and Sensors and Electronics Systems Panel (SET) are hosting a meeting in Bled, Slovenia from 23-24 May 2022. This Specialists' Meeting aims at promoting the exchange of state-of-the-art knowledge among an audience of specialists on the important topic of Distributed Multispectral and Multistatics Sensing to enhance the capability of the NATO S&T community and to respond adequately to the NATO requirements.

Attendance to STO Specialists™ Meetings is by invitation only from STO National Delegates and from SET Panel Members and will be restricted to citizens from NATO member and partner nations.

[More Info](#)

## AESS Technical Panels

### AESS TECHNICAL OPERATIONS

#### Featured Technical Panel – Glue Technologies for Space Systems Panel



Chaired by Claudio Sacchi, the panel promotes the activities of AESS in the interdisciplinary field of Glue Technologies and 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.

Glue Tech Panel was awarded the AESS Technical Panel of the Year for the second consecutive year (2020 and 2021). Claudio wishes to share this award with all the members that contributed to such an outstanding achievement.

[Learn more about the Glue Tech Panel and other AESS technical panels on our website.](#)

## Education News

#### Invite a Distinguished Lecturer to Your Next Chapter Meeting!

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](#).

You can also watch the 2020 and 2021 Virtual Distinguished lectures on the [AESS website](#).

## Conference News

AESS financially and technically sponsors and co-sponsors conferences addressing important aspects of our Field of Interest. The information below is current as of 1 March 2022. Please refer to each conference website for the most up-to-date information.

### RADAR Conference Events

The 2022 [IEEE Radar Conference](#) will be in Times Square, New York City, USA from 21-25 March. Check out all the events that will be hosted –



Radar Summer School	<a href="https://radarconf2022.org/radar-summer-school">radarconf2022.org/radar-summer-school</a>
Tutorials	<a href="https://radarconf2022.org/tutorials">radarconf2022.org/tutorials</a>
Industry Talks	<a href="https://radarconf2022.org/call-for-industry-talks">radarconf2022.org/call-for-industry-talks</a>
Plenary Session	<a href="https://radarconf2022.org/plenary-speakers">radarconf2022.org/plenary-speakers</a>
Industry Panel	<a href="https://radarconf2022.org/industry-panel">radarconf2022.org/industry-panel</a>
Women in Engineering Lunch	<a href="https://radarconf2022.org/women-in-engineering">radarconf2022.org/women-in-engineering</a>
Networking for Young Professionals	<a href="https://radarconf2022.org/yp-social-event">radarconf2022.org/yp-social-event</a>
Student Paper Competition	<a href="https://radarconf2022.org/student-paper-competition">radarconf2022.org/student-paper-competition</a>
Radar Challenge	<a href="https://radarconf2022.org/radar-challenge">radarconf2022.org/radar-challenge</a>
Inner Circle Exclusive Lunch	<a href="https://radarconf2022.org/the-inner-circle">radarconf2022.org/the-inner-circle</a>
Support for Student Travel	<a href="https://radarconf2022.org/students">radarconf2022.org/students</a>

## 2022 RADAR Challenge and Summer School at RadarConf™ 2022

The [Radar Challenge](#) will be from 21-25 March 2022. This is a series of events that enables participants to experience the magic of radar in a personal, tangible and experiential way. The events aim to invigorate participants to experiment with their self-engineered “home-brew” radar and the application of artificial intelligence/machine learning (AI/ML) to radar datasets.

The [Radar Summer School](#) will be from 19-20 March 2022, providing an overview on a wide range of radar topics through short lectures and demonstrations instructed by noted radar experts. All are invited and welcome to attend!

### 2022 Young Professionals Reception at IEEE Radar Conference

Join us for a social event at RadarConf. The Young Professionals Reception will be Monday, 21 March 2022 6:30 - 8:30 PM ET. This is an open-bar event in the Lenox Room, Sheraton NY Times Square Hotel.

The event gives students and young professionals a chance to interact with AESS Mentors, RSP Instructors, and other key players in the Radar community.

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## Call for Papers: The Institute of Engineering and Technology (IET) International Conference on Radar Systems (Radar 2022)



The Institution of Engineering and Technology (IET) International Conference on Radar Systems (Radar 2022) will be from 24-27 October 2022, in Edinburgh, UK. The call for papers is open for authors from industry and academia, at all career stages, to submit new research, results and innovations to share with an international expert audience. Submit your draft paper for peer review by 18 April 2022.

[Visit Website](#)

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## Flagship Conferences



### 2022 IEEE Radar Conference

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

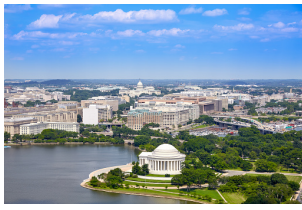
[Registration](#)



### 2022 IEEE Metrology for AeroSpace 2022

Pisa, Italy  
27-29 June 2022

[Call for Papers](#)



# 2022 IEEE AUTOTESCON

National Harbor, MD, USA  
29 August – 1 September 2022

[Call for Papers](#)

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## Technically Co-Sponsored Conference Listing:

### **10th Workshop on Satellite Navigation Technology (NAVITEC 2022)**

Noordwijk, The Netherlands | 5-7 April 2022

[Visit Conference Website](#)

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### **22nd Integrated Communications, Navigation, and Surveillance Conference (ICNS 2022)**

Herndon, Virginia, USA and Virtual | 5-7 April 2022

[Visit Conference Website](#)

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### **International Radar Symposium (IRS 2022)**

Gdańsk, Poland | 11-15 September 2022

[Visit Conference Website](#)

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### **International Conference on Localization and GNSS (ICL-GNSS 2022)**

Tampere, Finland | 7-9 June 2022

[Visit Conference Website](#)

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### **IEEE International Symposium on Phased Array Systems and Technology (PAST 2022)**

Waltham, Massachusetts, USA | 11-14 October 2022

[Visit Conference Website](#)

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### **9th International SpaceWire and SpaceFibre Conference (ISC 2022)**

Pisa, Italy | 17-19 October 2022

[Visit Conference Website](#)

Do you have a conference you'd like advertised in the AESS Quarterly Email Blast? Contact [Amanda Osborn](#) for details on how to have it included.

[View Full List of AESS Conferences](#)



AESS Officers

Board of Governors - Members-at-Large

AESS YP & Student Representatives

## 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. [Call for Papers and Special issues, author information, and more can be found on our website.](#)

#### Recent Issues

[February 2022](#)

[January 2022](#)

[December 2021](#)

[November 2021](#)

[October 2021](#)

### IEEE Transactions on Aerospace and Electronic Systems

*IEEE Transactions on Aerospace and Electronic Systems* (TAES) 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.

#### Recent Issues

[February 2022](#)

[December 2021](#)

[October 2021](#)

[August 2021](#)

[June 2021](#)

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

[Special Section in Deep Learning for Radar Applications](#) -

Submissions open 1 August 2022- 1 September 2022

[Special Section on Automotive Radar Systems and Applications](#) -

Submissions window: 1 October 2022 â€” 1 November 2022

## AESS Suggestions Welcome

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

[Laila Moreira](#), 2022 VP Member Services  
[Amanda Osborn](#), AESS Operations Manager

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