

Editors

Editor-in-Chief—Peter K. Willett
Associate Editor-in-Chief—David F. Crouse
VP Publications—Maria S. Greco
AESS President—Joe Fabrizio
Executive Assistant, AESS—Jane Buckingham

Contributing Editors

Awards—Erwin C. Gangl
Book Reviews Editor—Darin Dunham
Conferences—Mark Davis
Distinguished Lecturers & Tutorials—Kathleen Kramer
Education—Kathleen Kramer
History—Hugh D. Griffiths
Student Research—Wenbo Dou, Federico Lombardi
Technical Panels—Walter Downing
Tutorials Editor—W. Dale Blair
Website Updates—Judy Scharmann

Associate Editors and Areas of Specialty

Scott Bawden—Energy Conversion Systems
Erik Blasch, Roberto Sabatini—Avionics Systems
Dietrich Franken—Communications, Signal Processing, and Data Fusion
David Crouse—Target Tracking
Mauro De Sanctis—Signal Processing and Communication in Aerospace Systems
Michael Braasch—Navigation, Positioning
Giancarmine Fasano—UAS
Daniel O'Hagan—Radar Systems
Open—Astronautic and Aeronautic Systems
Haiying Liu—Control System Engineering and Robotic Systems
Michael Cardinale—Electro-Optic and Infrared Systems, Image Processing
Ruhai Wang—Systems Engineering
Peter Willett—Multi-Sensor Systems

How to Reach Us

We welcome letters to the editor; but, we reserve the right to edit for space, style, and clarity. Include address and daytime phone number with your correspondence.

Email: Peter Willett, peter.k.willett@gmail.com
David Crouse, david.crouse@nrl.navy.mil
Michael J. Hellrigel, m.hellrigel@ieee.org

Publishers: Send books for review to Darin Dunham, Lockheed Martin, 208 Buddy Tate Ln, Meridianville, AL 35759. If you have questions, contact Darin by e-mail at darin.t.dunham@lmco.com.

Advertisers

If you are interested in advertising in the AESS SYSTEMS Magazine, please contact Peter Willett at peter.k.willett@gmail.com



May 2019

ISSN 0885-8985

Volume 34 Number 5

COLUMN

IEEE Aerospace and Electronic Systems Magazine May 2019 2

FEATURE ARTICLES

Estimation of Solar Panels Available Power for a LEO Satellite in Detumbling Mode Based on Monte Carlo Analysis
R. Amjadifard, F. Bagheroskouei, E.M. Miandoab, A. Fasooniehchi 4

Can Holistic Optimization Improve Airport Air Traffic Management Performance?
A. Karahasanović, A.W. Eide, P. Schittekat, H.E. Swendgaard, K. Bakhrankova, D. Kjenstad, C. Mannino, T. Zeh, V. Grantz, C.-H. Rokitansky, T. Gräupl 12

Reconfigurable Wavelet Based Real Time Imaging System for Low Bit Rate Telemetry Space Missions
D. Muraleedharan, P. Haridasan, A.K. Abdul Samad, Subha Varier G., Vinod P. . 22

A Framework to Predict Failures for Ground Tests on Aircrafts
I. Monedero, F. Biscarri, D.F. Larios, J. Barbancho 30

An Emergency Mitigation System for Safer Lunar Surface Exploration
M. Vanegas, K. Kotowick, S. Schreiner, L. Geiger, D. Barmore, D. Roberson, B. Putbrese, A. Stankovic 42

Power Line Detection for Aircraft Safety Based on Image Processing Techniques: Advances and Recommendations
X. Zhang, G. Xiao, K. Gong, P. Ye, J. Zhao 54

Review of High Throughput Satellites: Market Disruptions, Affordability-Throughput Map, and the Cost Per Bit/Second Decision Tree
Y. Guan, F. Geng, J.H. Saleh 64

Navigation Systems Panel Report Navigation Systems for Autonomous and Semi-Autonomous Vehicles: Current Trends and Future Challenges
Z.M. Kassas, P. Closas, J. Gross 82

BOOK REVIEWS

Meter-Wave Synthetic Aperture Radar for Concealed Object Detection
E. Brookner 85

Free Space Optical Systems Engineering: Design and Analysis
M. Cardinale 86

NEWS AND INFORMATION

2019 Aerospace & Electronics Systems Society Distinguished Lecturers ... 63

AESS Senior Members Elevated in 2019 81

AESS Meetings and Conferences inside back cover