



IEEE  
AEROSPACE  
and  
ELECTRONIC

# SYSTEMS MAGAZINE

March 2008  
ISSN 0885-8985  
Volume Twenty Three  
Number Three

**Editor-in-Chief** – Evelyn H. Hirt  
**Assistant Editor** – Marina Ruggieri  
**Tutorials Editor** – Lance M. Kaplan  
**Administrative Editor** – David B. Dobson  
**Assistant Administrative Editor** – A. Lim

**Sector Editors**  
General & Comcl. Aviation – George Dean  
Avionics –  
Modeling & Simulation –  
Position, Location & Navigation –  
Radar Systems – Hugh Griffiths  
Sensors & Instrumentation –  
Space Systems –  
Systems Engineering –  
Book Reviewers –  
News & Information – A. Lim

**Contributing Editors**  
Awards – Erwin C. Gangl  
Conferences – Barry C. Breen  
Education – Steve E. Watkins  
Ethics –  
History – Henry Oman, Ron Schroer  
Patents, Stds. & Reg. Issues –  
Arnold M. Greenspan  
Technical Panels – James R. Huddle

**How to Reach Us**  
We welcome letters; we reserve the right to edit for space, style, and clarity. Include address and daytime phone number.  
**E-mail:** Systems.AESS@ieee.org  
**Fax:** 301/657-0209  
**Mail:** IEEE A&E Systems Magazine,  
4500 N. Park Avenue, Chevy Chase,  
MD 20815-7239, USA

**Address Changes & General Information**  
There is one method for updating your IEEE records: address, phone/fax numbers, e-mail address, etc.). Make on-line changes at:  
<http://service@ieee.org/memberserv/cao/intro.htm>.  
**IEEE Website:** [www.ieee.org](http://www.ieee.org)  
**AESS Website:** <http://www.ieee-aess.org/>

**Magazine Deadlines:** Material (except articles) must be received by no later than 60 days prior to the month of the issue in which it is to appear.

**Contributions within the scope of the Society are solicited.** Use the web-based submission system at: <http://sysaes.msubmit.net>. Guidelines may be found on the banner at the top of the submission homepage under "Information to Author." We do not encourage special sections but will consider special series. Contact the Editor-in-Chief.

**In This Issue – Technically** . . . . . 2

## Articles

- ◆ **Managing Complexity in a Complex Vehicle** . . . . . 3  
*J.C. Bebel, B.L. Raskob, A.C. Parker & D.J. Bebel*
- ◆ **Crop Dusting using GPS** . . . . . 14  
*S.J. Thompson & L.A. Smith*
- ◆ **AFRL Cryogenic Technology Development Programs** . . . . . 18  
*T.M. David & B.J. Tomlinson*
- ◆ **Descriptive Development System for True Instrument Synthesis** . . . . . 28  
*C. Nadovich, D. Kaplan, J. David & M. Montgomery*

## Panel Report

- ◆ **Resource Management Coordination with Level 2/3 Fusion Issues & Challenges** . . . . . 32  
*E. Blasch, J. Salerno, I. Kadar, K. Hintz, J.K. Biermann, C. Chong & S. Das*

## Column

- ◆ **What Did You Think of This Issue's Panel Report?** – E.H. Hirt . . . . . 47

## News & Information

- Membership Application** . . . . . 48
- Conferences & Meetings Calendar** . . . . . Inside Back Cover
- Distinguished Lecturers** . . . . . Back Cover