PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 6946

, "Front Matter: Volume 6946," Proc. SPIE 6946, Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications V, 694601 (12 May 2008); doi: 10.1117/12.801202

SPIE.

Event: SPIE Defense and Security Symposium, 2008, Orlando, Florida, United States

PROCEEDINGS OF SPIE

Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications V

Daniel J. Henry
Editor

17 March 2008
Orlando, Florida, USA

Sponsored and Published by
SPIE

Volume 6946

Proceedings of SPIE, 0277-786X, v. 6946

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications V*, edited by Daniel J. Henry, Proceedings of SPIE Vol. 6946 (SPIE, Bellingham, WA, 2008) Article CID Number.

ISSN 0277-786X

ISBN 9780819471376

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2008, Society of Photo-Optical Instrumentation Engineers

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/08/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIEDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID number.

Contents

v Conference Committee

SESSION 1 MULTISPECTRAL ISR SENSORS

- 6946 04 **Real-time multispectral data collection, processing, downlink, and display: test and demonstration** [6946-03]
D. Runnels, S. Peterman, J. Powell, C. Leflore, A. Martin, Radiance Technologies, Inc. (USA); J. Schoonmaker, Advanced Coherent Technologies (USA); P. Henderson, J. Dirbas, M. Crowley, A. Davies, PAR Government Systems Corp. (USA)
- 6946 05 **Overcoming adverse weather conditions with a common optical path, multiple sensors, and intelligent image fusion system** [6946-04]
J. Ng, Panavision Federal Systems LLC (USA); M. Piacentino, Sarnoff Corp. (USA); B. Caldwell, Panavision Federal Systems LLC (USA)
- 6946 06 **Spectral detection and monitoring of marine mammals** [6946-05]
J. Schoonmaker, T. Wells, G. Gilbert, Y. Podobna, I. Petrosyuk, J. Dirbas, Advanced Coherent Technologies LLC (USA)
- 6946 07 **DUSTER: demonstration of an integrated LWIR-VNIR-SAR imaging system** [6946-06]
M. L. Wilson, D. Linne von Berg, M. Kruer, Naval Research Lab. (USA); N. Holt, S. A. Anderson, Space Dynamics Lab. (USA); D. G. Long, Brigham Young Univ. (USA); Y. Margulis, Artemis, Inc. (USA)
- 6946 08 **Near infrared missile warning testbed sensor** [6946-07]
D. J. McDermott, Air Force Research Lab. (USA); R. S. Johnson, MacAulay-Brown, Inc. (USA); J. B. Montgomery, M&M Aviation (USA); R. B. Sanderson, J. F. McCalmont, Air Force Research Lab. (USA); M. J. Taylor, General Dynamics (USA)
- 6946 09 **Performance analysis of a multispectral framing camera for detecting mines in the littoral zone and beach zone** [6946-08]
E. Louchard, B. Farm, A. Acker, BAE Systems (USA)
- 6946 0A **Color in perceptual tracking using low frame rate motion imagery** [6946-09]
D. Young, Raytheon (USA); T. Bakir, Harris Corp. (USA); F. Petitti, Raytheon (USA); M. Brennan, Moriarty and Associates, Inc. (USA); C. Kavanagh, ITT (USA); R. Butto, Jr., Photon Research Associates (USA)
- 6946 0B **Mass properties factors in achieving stable imagery from a gimbal mounted camera** [6946-10]
D. R. Otlowski, K. Wiener, B. A. Rathbun, Space Electronics LLC (USA)

SESSION 2 3D ISR SENSORS

- 6946 OD **3D rapid mapping** [6946-12]
F. Isaksson, J. Borg, L. Haglund, Saab Bofors Dynamics AB (Sweden)

SESSION 3 ISR PROCESSING

- 6946 OE **A complete passive or imaging-based sensor system for unmanned air vehicle taking off and landing operations** [6946-13]
S. Yi, Technest Holdings, Inc. (USA)
- 6946 OF **SmartCapture: a compact video capture, encoding and streaming technology for UAVs** [6946-14]
W. Dai, P. Topiwala, FastVDO, Inc. (USA)
- 6946 OG **Automatic image exploitation system for small UAVs** [6946-15]
N. Heinze, M. Esswein, W. Krüger, G. Saur, Fraunhofer IITB (Germany)
- 6946 OH **VideoQuest: managing large-scale aerial video database through automated content extraction** [6946-16]
H. Cheng, D. Butler, T. Kover, C. Meng, Sarnoff Corp. (USA)
- 6946 OI **A content-based retrieval system for UAV-like video and associated metadata** [6946-17]
N. E. O'Connor, T. Duffy, P. Ferguson, C. Gurrin, H. Lee, D. A. Sadlier, A. F. Smeaton, K. Zhang, Dublin City Univ. (Ireland)
- 6946 OJ **Real-time aerial video exploitation station for small unmanned aerial vehicles** [6946-18]
J. B. Gregga, A. Pope, K. Kieltmeyer, Y. Ran, SET Corp. (USA)

Author Index

Conference Committee

Symposium Chair

Larry B. Stotts, Defense Advanced Research Projects Agency (USA)

Symposium Cochair

Ray O. Johnson, Lockheed Martin Corporation (USA)

Program Track Chair

Roger Appleby, QinetiQ Ltd. (USA)

Conference Chair

Daniel J. Henry, Recon/Optical, Inc. (USA)

Session Chairs

- 1 Multispectral ISR Sensors
 Daniel J. Henry, Recon/Optical, Inc. (USA)
- 2 3D ISR Sensors
 Daniel J. Henry, Recon/Optical, Inc. (USA)
- 3 ISR Processing
 Daniel J. Henry, Recon/Optical, Inc. (USA)