PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 6546

, "Front Matter: Volume 6546," Proc. SPIE 6546, Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications IV, 654601 (4 May 2007); doi: 10.1117/12.741317

SPIE.

Event: Defense and Security Symposium, 2007, Orlando, Florida, United States

PROCEEDINGS OF SPIE

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

Daniel J. Henry
Editor

11 April 2007
Orlando, Florida, USA

Sponsored and Published by
SPIE—The International Society for Optical Engineering

Proceedings of SPIE—The International Society for Optical Engineering, 9780819466686, v. 6546

SPIE is an international technical society dedicated to advancing engineering and scientific applications of optical, photonic, imaging, electronic, and optoelectronic technologies.

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 IV*, edited by Daniel J. Henry, Proceedings of SPIE Vol. 6546 (SPIE, Bellingham, WA, 2007) Article CID Number.

ISSN 0277-786X
ISBN 9780819466686

Published by
SPIE—The International Society for Optical Engineering
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone 1 360/676-3290 (Pacific Time) · Fax 1 360/647-1445
<http://www.spie.org>

Copyright © 2007, The 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 <http://www.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/07/\$18.00.

Printed in the United States of America.

Contents

v *Conference Committee*

SESSION 1 ISR SENSORS I

- 654602 **Key performance requirements for military low-light television cameras** [6546-01]
S. Shimer, G. Heim, Ball Aerospace & Technologies Corp. (USA)
- 654603 **Signal processor for acoustic sensors on UAV platforms and ground vehicles** [6546-02]
R. A. Wagstaff, National Ctr. for Physical Acoustics (USA)
- 654604 **High-performance Sagnac interferometer using cooled detectors for infrared LWIR hyperspectral imaging** [6546-03]
P. G. Lucey, K. Horton, T. Williams, Univ. of Hawaii (USA) and Pacific Island Technology (USA)
- 654605 **A rugged 65-gram IR dual FOV MAV payload** [6546-04]
J. M. Wisted, J. D. Leighton, Fluke Electronics Corp. (USA)

SESSION 2 ISR SENSORS II

- 654607 **The Goodrich 3rd generation DB-110 system: successful flight test on the F-16 aircraft** [6546-18]
D. Lange, M. Iyengar, L. Maver, G. Dyer, J. Francis, Goodrich Corp. (USA)

SESSION 3 MOTION IMAGE EVALUATION

- 654609 **Perceived interpretability of motion imagery: implications for scale development** [6546-08]
J. M. Irvine, G. O'Brien, S. A. Israel, Science Applications International Corp. (USA);
C. Fenimore, J. Roberts, National Institute of Standards and Technology (USA); M. Brennan,
Moriarty and Associates (USA); J. Bartolucci, Booz, Allen, and Hamilton (USA); D. Cannon,
Science Applications International Corp. (USA)

Pagination: 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.

- 65460A **Metrics to estimate image quality in compressed video sequences** [6546-09]
G. O'Brien, S. A. Israel, J. M. Irvine, Science Applications International Corp. (USA);
C. Fenimore, J. Roberts, National Institute of Standards and Technology (USA); M. Brennan,
Moriarty and Associates (USA); D. Cannon, J. Miller, Science Applications International
Corp. (USA)
- 65460B **User-oriented evaluation of compression for motion imagery** [6546-10]
J. M. Irvine, G. O'Brien, J. Miller, S. A. Israel, Science Applications International Corp. (USA);
C. Fenimore, J. Roberts, National Institute of Standards and Technology (USA); M. Brennan,
Moriarty and Associates (USA); J. Bartolucci, Booz, Allen, and Hamilton (USA); D. Cannon,
Science Applications International Corp. (USA)

SESSION 4 ISR PLATFORMS

- 65460D **An OEF/OIF study of close combat missions using small unmanned aircraft systems**
[6546-13]
G. Lifschitz, R. J. Tierney, J. A. Vitali, Army Evaluation Ctr. (USA)
- 65460E **Field test of an air-to-ground communication link using a bare optical fiber** [6546-14]
J. C. Juarez, A. Dwivedi, R. M. Sova, J. E. Sluz, D. W. Young, Johns Hopkins Univ. Applied
Physics Lab. (USA)

SESSION 5 ISR ALGORITHMS/IMAGE PROCESSING

- 65460F **Unlimited-size mosaicking of airborne image data** [6546-15]
N. Jiang, C. Li, Arizona State Univ. (USA); G. Abousleman, General Dynamics C4 Systems
(USA); J. Si, Arizona State Univ. (USA)
- 65460G **Reconfigurable device for enhancement of long-range imagery** [6546-16]
F. E. Ortiz, EM Photonics (USA); C. J. Carrano, Lawrence Livermore National Lab. (USA);
E. J. Kelmelis, P. F. Curt, EM Photonics (USA)

Author Index

Conference Committee

Symposium Chair

John C. Carrano, Luminex Corporation (USA)

Symposium Cochair

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

Program Track Chair

Roger Appleby, QinetiQ Ltd. (United Kingdom)

Conference Chair

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