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Front Matter: Volume 8516

, "Front Matter: Volume 8516," Proc. SPIE 8516, Remote Sensing System Engineering IV, 851601 (23 October 2012); doi: 10.1117/12.2008669

SPIE.

Event: SPIE Optical Engineering + Applications, 2012, San Diego, California, United States

PROCEEDINGS OF SPIE

Remote Sensing System Engineering IV

Philip E. Ardanuy
Jeffery J. Puschell
Hal J. Bloom
Editors

12–13 August 2012
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 8516

Proceedings of SPIE 0277-786X, v. 8516

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

Remote Sensing System Engineering IV, edited by Philip E. Ardanuy, Jeffery J. Puschell, Hal J. Bloom,
Proc. of SPIE Vol. 8516, 851601 · © 2012 SPIE · CCC code: 0277-786X/12/\$18 · doi: 10.1117/12.2008669

Proc. of SPIE Vol. 8516 851601-1

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Author(s), "Title of Paper," in *Remote Sensing System Engineering IV*, edited by Philip E. Ardanuy, Jeffery J. Puschell, Hal J. Bloom, Proceedings of SPIE Vol. 8516 (SPIE, Bellingham, WA, 2012) Article CID Number.

ISSN: 0277-786X

ISBN: 9780819492333

Published by

SPIE

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

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

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Contents

v	Conference Committee
vii	Introduction

SESSION 1 FUTURE EARTH OBSERVING SYSTEMS

8516 02	Test plan for a calibration demonstration system for the reflected solar instrument for the climate absolute radiance and refractivity observatory [8516-1] K. Thome, J. McCorkel, J. Hair, B. McAndrew, A. Daw, D. Jennings, D. Rabin, NASA Goddard Space Flight Ctr. (United States)
8516 04	Projected performance of an enhanced VIIRS with spectral bands near 6.7 μm for measuring atmospheric water vapor distribution [8516-3] J. J. Puschell, S. J. Herbst, Raytheon Space & Airborne Systems (United States)
8516 05	Next generation along track scanning radiometer - SLSTR [8516-4] J. Frerick, J. Nieke, C. Mavrocordatos, B. Berruti, C. Donlon, ESA (Netherlands); M. Cosi, SELEX Galileo S.p.A. (Italy); W. Engel, Jena Optronik GmbH (Germany); S. Bianchi, Thales Alenia Space (France); D. Smith, Rutherford Appleton Lab. (United Kingdom)
8516 06	Expected performance of the Visible Infrared Imager Radiometer Suite (VIIRS) without detector sample aggregation [8516-5] J. H. Steele, J. J. Puschell, Raytheon Space & Airborne Systems (United States); C. F. Schueler, Orbital Sciences Corp. (United States); S. W. Miller, K. Grant, Raytheon Intelligence and Information Systems (United States); T. F. Lee, Naval Research Lab. (United States)

SESSION 2 LESSONS LEARNED

8516 07	FD-CHIRP: hosted payload system engineering lessons (Invited Paper) [8516-6] C. F. Schueler, Orbital Sciences Corp. (United States)
8516 08	Lessons learned from the 705-km fleet [8516-7] M. A. Vincent, Raytheon Intelligence & Information Systems (United States)

SESSION 3 NEW TOOLS, NEW APPROACHES

8516 0A	The EIP: a standard experimenter interface panel for NASA airborne science [8516-9] J. B. Forgione, NASA Ames Research Ctr. (United States); J. R. Grose, J. S. Myers, C. E. Sorenson, Univ. of California, Santa Cruz (United States); R. G. Vogler, Arctic Slope Regional Corp. (United States)
---------	---

- 8516 0B **CubeSat modules for multispectral environmental imaging from polar orbit** [8516-11]
J. J. Puschell, Raytheon Space & Airborne Systems (United States) and California Polytechnic State Univ. (United States); E. Stanton, California Polytechnic State Univ. (United States)
- 8516 0C **Day/night band imager for a CubeSat** [8516-10]
E. J. Stanton, California Polytechnic State Univ. (United States); J. J. Puschell, Raytheon Space & Airborne Systems (United States) and California Polytechnic State Univ. (United States)
- 8516 0E **A real-time multispectral imaging system for low- or mid-altitude remote sensing** [8516-12]
D. Yi, Xiamen Torch Hi-tech (China); L. Kong, Minlang Technology and Instrument Ltd. Xiamen (China)

SESSION 4 ACTIVE REMOTE SENSING

- 8516 0F **Polarization effects induced by a two-mirror laser beam scanner** [8516-14]
S. Gimbal, Q. Li, A. Petrova-Mayor, California State Univ., Chico (United States)
- 8516 0G **Laser-induced plasma shutter for infra red range-resolved DIAL** [8516-15]
T. Gasmi, Saint Louis Univ., Madrid Campus (Spain); K. Gasmi, King Fahd Univ. of Petroleum & Minerals (Saudi Arabia)
- 8516 0H **Photonic services, their enablers and applications** [8516-20]
J. Vojtech, V. Smotlacha, P. Skoda, CESNET (Czech Republic); A. Kuna, Institute of Photonics and Electronics of the ASCR, v.v.i. (Czech Republic); M. Hula, S. Sima, CESNET (Czech Republic)
- 8516 0I **Polarization sensitivity of Visible Infrared Imager Radiometer Suite (VIIRS) Flight Unit 1** [8516-22]
E. J. Novitsky, S. Herbst, J. B. Young, J. J. Puschell, Raytheon Space & Airborne Systems (United States); E. C. Fest, Raytheon Missile Systems (United States); B. Guenther, Stellar Solutions at JPSS Program (United States)

POSTER SESSION

- 8516 0L **RSI Sun exposure survivability** [8516-19]
C. Liu, J. Ling, National Space Organization (Taiwan); M.-Y. Hsu, Instrument Technology Research Ctr. (Taiwan); M.-Y. Yeh, C.-H. Chang, National Space Organization (Taiwan)
- 8516 0M **Study of bonding positions of isostatic mounts on a lightweight primary mirror** [8516-13]
C. Y. Chan, National Applied Research Labs. (Taiwan); Y. C. Chen, National Central Univ. (Taiwan); S. T. Chang, T. M. Huang, M. Y. Hsu, National Applied Research Labs. (Taiwan)

Author Index

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- 1 Future Earth Observing Systems
Jeffery J. Puschell, Raytheon Space & Airborne Systems (United States)
- 2 Lessons Learned
Philip E. Ardanuy, Raytheon Intelligence & Information Systems (United States)
- 3 New Tools, New Approaches
Carl F. Schueler, Orbital Sciences Corporation (United States)
- 4 Active Remote Sensing
Jeffery J. Puschell, Raytheon Space & Airborne Systems (United States)

Introduction

This volume contains the proceedings for Remote Sensing System Engineering IV held in San Diego, California on 12 August 2012, as part of the Optical Engineering + Applications section of SPIE Optics +Photonics. This fourth RSSE conference resumed the series started in 2008, following an interruption in 2011.

The overarching goal of the conference was to provide a forum for exchanging critical lessons learned and best practices in the systems engineering of ground-, air-, and space-based remote sensing systems. Additional goals were to enable sharing existing and emerging design approaches, engineering methods, tools, and future trends for engineering of remote sensing systems.

Topics included: (1) systems engineering best practices and lessons learned; (2) system architecture and design; (3) requirements, performance metrics, and measures of success; (4) modeling and simulation tools and methods; (5) design and integration of distributed architectures; (6) use of commercial assets in future remote sensing systems; (7) bridging and balancing across the science-to-engineering and technologist-to-end-user valleys of "death and lost opportunities"; and (8) the end user, effective data/information/system utilization, and optimum return on investment.

A total of 19 papers were presented in five sessions, including a poster session. A diverse group of international researchers from government, academia, and industry participated in the conference. The range of topics presented in this conference continued to grow and included very timely and exciting papers on system engineering of CubeSat-based imagers for environmental imaging and remote sensing that offer promise for significant cost and schedule reduction in developing future remote sensing systems, discussion of lessons learned from the recent CHIRP hosted payload mission for the USAF and a next-generation along-track scanning radiometer called SLSTR along with system simulation approaches for assessing contributions of future operational remote sensing systems to weather forecasting, a new multispectral imager based on computational optics methods and a description of plans for testing a calibration demonstration system for instruments measuring reflected sunlight in future climate monitors.

We thank all of the participants who made this conference successful, especially the cochairs, program committee, and authors.

Jeffery J. Puschell
Philip E. Ardanuy