PROCEEDINGS OF SPIE

Remote Sensing System Engineering III

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Editors

2 August 2010
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 7813

Proceedings of SPIE, 0277-786X, v. 7813

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Please use the following format to cite material from this book:
Author(s), "Title of Paper," in *Remote Sensing System Engineering III*, edited by Philip E. Ardanuy, Jeffery J. Puschell, Proceedings of SPIE Vol. 7813 (SPIE, Bellingham, WA, 2010) Article CID Number.

ISSN 0277-786X
ISBN 9780819483096

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

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Printed in the United States of America.

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Introduction

This volume contains the proceedings for the SPIE conference on Remote Sensing System Engineering III. This conference was held in San Diego, California, 2 August 2010, as part of the Optical Engineering + Applications section of SPIE Optics + Photonics.

As in the previous two conferences in this series, the goals of this conference were to discuss existing and emerging design approaches, engineering methods, tools, and future trends for engineering of remote sensing systems. This topic included:
(1) system architecture and design
(2) requirements, performance metrics and measures of success
(3) modeling and simulation tools and methods
(4) design and integration of distributed architectures
(5) use of commercial assets in future remote sensing systems
(6) end user, effective data/information/system utilization, and optimum return on investment

To achieve these goals, papers were solicited in, but not limited to, the following areas:

- system architecture and design for current and future experimental, research, and operational Earth and space remote sensing programs and experiments
- system engineering metrics and measures of success leading to optimal system design methods and approaches for system requirements identification, definition and allocation for operational programs and experiments
- end-to-end system modeling and simulation methods and tools system engineering approaches for optimizing transition of research systems to operational use
- distributed remote sensing system architectures
- integrated system of systems: engineering approaches and methods
- remote sensors as payloads onboard multifunctional space platforms such as the International Space Station and space satellite communication systems like Intelsat and Iridium NEXT.

A total of 26 papers were presented in five sessions. A highlight of this conference was an interactive workshop on remote sensing systems engineering lessons learned led by program committee member Carl Schueler that provided an opportunity for young engineers and scientists to meet and talk with leading experts in remote sensing system engineering and science.

We enjoyed the participation of a diverse group of international researchers from government, academia, and industry. The range of topics in this conference

continues to grow and included new and future space-based remote sensing systems like HICO, the hyperspectral imager currently onboard the International Space Station, GOES-R, the future US geosynchronous environmental satellite system and VIIRS, the future US polar-orbiting environmental imager along with system approaches for developing climate data records, a new method for absolute vicarious radiometric calibration in the solar reflective spectral region and imager spectrometer trade studies to guide future instrument design.

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

Jeffery J. Puschell
Philip E. Ardanuy