PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 8404

, "Front Matter: Volume 8404," Proc. SPIE 8404, Wireless Sensing, Localization, and Processing VII, 840401 (11 June 2012); doi: 10.1117/12.977658

Event: SPIE Defense, Security, and Sensing, 2012, Baltimore, Maryland, United States

PROCEEDINGS OF SPIE

Wireless Sensing, Localization, and Processing VII

Sohail A. Dianat
Michael David Zoltowski
Editors

25 April 2012
Baltimore, Maryland, United States

Sponsored and Published by
SPIE

Volume 8404

Proceedings of SPIE, 0277-786X, v. 8404

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

Wireless Sensing, Localization, and Processing VII, edited by Sohail A. Dianat, Michael David Zoltowski,
Proc. of SPIE Vol. 8404, 840401 · © 2012 SPIE · CCC code: 0277-786X/12/\$18 · doi: 10.1117/12.977658

Proc. of SPIE Vol. 8404 840401-1

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 *Wireless Sensing, Localization, and Processing VII*, edited by Sohail A. Dianat, Michael David Zoltowski, Proceedings of SPIE Vol. 8404 (SPIE, Bellingham, WA, 2012) Article CID Number.

ISSN 0277-786X

ISBN 9780819490827

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 © 2012, 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/12/\$18.00.

Printed in the United States of America.

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

SPIE
Digital Library

SPIDigitalLibrary.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 as 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 SENSOR NETWORKS

- 8404 02 **STER: a look at sensor-triggered communication for wireless network** [8404-01]
K. Langston, A. Robinson, The Univ. of Memphis (United States)
- 8404 04 **Distributed parameter estimation in wireless sensor networks using fused local observations** [8404-03]
M. Fanaei, M. C. Valenti, N. A. Schmid, M. M. Alkhweldi, West Virginia Univ. (United States)
- 8404 05 **Routing in wireless ad hoc and sensor network underground with sensor data in real-time** [8404-04]
E. Odei-Lartey, K. Hartmann, H. Ahmadian, Univ. Siegen (Germany)
- 8404 06 **Distributed geolocation algorithm in mobile ad hoc networks using received signal strength differences** [8404-05]
S. Guo, H. Tang, Defence Research and Development Canada (Canada)
- 8404 07 **Effects of energy harvesting on quality-of-service in real-time, wireless sensor networks** [8404-06]
W. S. Hortos, Associates in Communication Engineering Research & Technology (United States)

SESSION 2 DIVERSITY AND MULTICARRIER TECHNIQUES

- 8404 08 **New space-time codes for coherent transmission scheme using multiple antennas** [8404-07]
X. Chen, E. Walker, Southern Univ., Baton Rouge (United States)
- 8404 09 **Detection of code spread OFDM based on 0-1 integer quadratic programming** [8404-08]
A. Elghariani, M. D. Zoltowski, Purdue Univ. (United States)
- 8404 0A **Bayesian sparse channel estimation** [8404-09]
C. Chen, M. D. Zoltowski, Purdue Univ. (United States)
- 8404 0B **Partial spread OFDM** [8404-10]
A. Elghariani, M. D. Zoltowski, Purdue Univ. (United States)
- 8404 0C **Comparing the performance of continuous phase modulation and constant envelope orthogonal frequency division multiplexing** [8404-11]
J. Nieto, Harris Corp. (United States)

SESSION 3 IMPLEMENTATION AND APPLICATIONS

- 8404 0D **New method for numerical approximations of vector derivatives based on digital signal processing techniques** [8404-12]
H. Brice, M. Z. Ahmed, Univ. of Plymouth (United Kingdom)
- 8404 0E **A novel approach for using polyphase filter bank in directly digital RF conversion from RF to baseband** [8404-14]
D. Zhang, Q. Jiang, M. Ahmed, HRL Labs., LLC (United States)
- 8404 0F **Serial concatenation schemes for PSK waveforms vs. turbo codes** [8404-15]
F. C. Kellerman, J. W. Nieto, Harris Corp. (United States)

SESSION 4 DETECTION AND LOCALIZATION

- 8404 0G **Quadrphase DS-CDMA wireless communication systems employing the generalized detector** [8404-16]
V. Tuzlukov, Kyungpook National Univ. (Korea, Republic of)
- 8404 0H **Joint optimization of source beamformer and relay coefficients using MSE criterion** [8404-17]
B. K. Chalise, Y. D. Zhang, M. G. Amin, Villanova Univ. (United States)
- 8404 0I **Performance optimization of partially coherent CPM on multipath fading channel** [8404-18]
J. A. Norris, Harris Corp. (United States)

Author Index

Conference Committee

Symposium Chair

Kevin P. Meiners, Office of the Secretary of Defense (United States)

Symposium Cochair

Kenneth R. Israel, Lockheed Martin Corporation (United States)

Conference Chairs

Sohail A. Dianat, Rochester Institute of Technology (United States)

Michael David Zoltowski, Purdue University (United States)

Program Committee

Moeness G. Amin, Villanova University (United States)

John W. Nieto, Harris Corporation (United States)

Raghuveer M. Rao, U.S. Army Research Laboratory (United States)

Yimin D. Zhang, Villanova University (United States)

Session Chairs

- 1 Sensor Networks
 John W. Nieto, Harris Corporation (United States)
- 2 Diversity and Multicarrier Techniques
 Michael David Zoltowski, Purdue University (United States)
- 3 Implementation and Applications
 Raghuveer M. Rao, U.S. Army Research Laboratory (United States)
- 4 Detection and Localization
 Fred C. Kellerman, Harris Corporation (United States)