

IEEE RFID 2008 PROGRAM BRIEF


Wednesday, April 16 (Morning)

8:00 - 8:30
8:30 - 10:00

SPEAKER BRIEFING
PLENARY

Veronese 2502
Veronese 2502

Welcome & Introduction	Emily Sopensky , General Chair, IEEE RFID 2008
Technical Program Overview	Daniel Engels , Program Chair, IEEE RFID 2008
Featured Speaker	Richard Kallop , RFID Business Development Manager, Lexmark Kallop describes an affordable alternative combining RFID capability with laser printing technology and encoding EPC Gen 2 inlays embedded in label stock. RFID Applications: A Case Study -- Beyond Discrete Tags
Introduction of Keynote Speaker	Paul Hartmann , General Vice Chair, IEEE RFID 2008 RFID: A Diversity of Disciplines & Applications

Keynote Speaker		James T. Farricker , Senior Technical Fellow, The Boeing Company For parts control (just-in-time inventory, history, high value and limited-life asset management) and for work process efficiency, Farricker lays out the future direction of Boeing's comprehensive RFID immersion, especially as it impacts the 787 Dreamliner. His talk is entitled: Boeing's RFID Unfolding Story —From Manufacturing to Maintenance.
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10:00 - 10:30
10:30 - 12:00


BREAK
TECHNICAL SESSIONS

<p>Session 1A1: Testing & Evaluation Systems and Results (Veronese 2503)</p> <p><i>Multi-Antenna RF Tag Measurement System Using Back-Scattered Spread Spectrum</i> Gregory Durgin, Anil Rohatgi, Georgia Tech (USA)</p> <p><i>Automated Test System for ISO 18000-7 – Active RFID</i> Peter J. Hawrylak, Ajay Ogirala, J.T. Cain, Marlin Mickle University of Pittsburgh (USA)</p> <p><i>Feasibility Study of Surface Acoustic Wave RFID for Information Processing Asset Management</i> Byung You Song, Arunabh Chattopadhyay, Jae Yeol Lee, Rait Gadh, Junghoon Lee Seoul National University (South Korea)</p> <p><i>Evaluation of RFID Performance for a Pharmaceutical Distribution Chain: HF vs. UHF</i> Dilek Dagdelen Uysal, Jean-Pierre Emond, Daniel Engels University of Florida (USA)</p>	<p>Session 1A2: Security I (Veronese 2504)</p> <p><i>An Efficient and Flexible Way to Protect Privacy in RFID Environment with Licenses</i> Shi-Cho Cha, Kuan-Ju Huang, Hsiang-Meng Chang, National Taiwan University of Science & Technology (Taiwan)</p> <p><i>High-Assurance Avionics Multi-Domain RFID Processing System</i> Rainer Falk, Florian Kohlmayer, Andreas Koepf, Siemens AG; Mingyan Li, Boeing Phantom Works (USA)</p> <p><i>A Tamper Detection Method for RFID Tag Data</i> Akira Yamamoto, Shigeya Suzuki, Hisakazu Hada, Jin Mitsugi, Fumio Teraoka, Osamu Nakamura, Keio University (Japan)</p> <p><i>Design and Implementation of PUF- Based 'Unclonable' RFID ICs for Anti-Counterfeiting and Security Applications</i> Srinivas Devadas, M.I.T.; G. Edward Suh, Cornell Univ.; Sid Paral, Richard Sowell, Thomas Ziola, Vivek Khandelwal, Pufco Inc. (USA)</p>	<p>Session 1A3: RuBee (IEEE P1902.1) in Action (Invited) (Veronese 2505)</p> <p>A panel of RuBee experts discusses applications for the DoD's weapons visibility, RitzCarlton's applications, healthcare tools, and other mobility solutions.</p> <p>Moderator: Peter Abell, VP Business Development, Visible Assets.</p> <p>Panelists: Dane Davis (Sig Sauer) <i>Weapons Visibility Networks and Shot Counting.</i> Gary Dennis, (Trimble) <i>Van-Based RuBee Asset Visibility in Mobile Networks: Process Free Mobile Asset Visibility with Driver Identity.</i> Herb Hauser (MidTown Technologies) <i>What is RuBee Doing at the Ritz!</i> Joe Chwan Jr. (Snap-On Tools) <i>RuBee- Enabled Mission Critical Tool Applications: A "Process Free" Foreign Object Damage (FOD) Prevention Network for Hand Tools.</i> John Stevens (Visible Assets) <i>High Security RuBee: How the Physics of RuBee Can Block Tempest, Target and Eavesdropping Threats in Ultra High Security Applications.</i></p>
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12:00 - 13:30

LUNCH

Veronese 2502

Keynote Speaker		Anthony "Buzz" Cerino . An independent security and systems consultant. Formerly communications lead, U.S. Dept. of Homeland Security, Cerino relates the highs and lows of work on standardizing worldwide aviation RFID baggage tagging. He will share inside stories of more than a decade of sorting through candidate frequencies, air interface protocols and components to achieve consensus that meets the airline industry's needs. Hear his prognosis for the 'brotherhood' established with EPCglobal, ISO, and the model for future IATA/ATA RFID standards. His talk is entitled: The Flight & Fight for International Standard RFID Baggage Tagging.
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IEEE RFID 2008 PROGRAM BRIEF

Wednesday, April 16 (Afternoon)

13:30 – 15:00

TECHNICAL SESSIONS

<p>Session 1B1: Antenna Theory & Design (Veronese 2503)</p> <p><i>A Compact Low Cost Planar Smart Antenna for RFID Reader at 900 MHz</i> Nemai Chandra Karmakar, Sushim Mukul Roy, Muhammad Saqib Ikram, Monash University (Australia)</p> <p><i>A Printed Rampart-Line Antenna with a Dielectric Superstrate for UHF RFID Applications</i> Benjamin Braaten, Gregory Owen, Robert Nelson, Cherish Bauser-Reich, Jacob Glower, North Dakota State U.; Dustin Vaselaar, Michael Reich, Aaron Reinholz, CNSE; Brian Morlock, Packet Digital LLC (USA)</p> <p><i>Compact Mobile RFID Antenna Design and Analysis Using Photonic-Assisted Vector Near-Field Characterization</i> Jeong-Jin Kang, Dong Seoul College; Dong-Joon Lee, Chia-Chu Chen, John F. Whitaker, U. Michigan; Edward J. Rothwell, Michigan State Univ. (USA)</p> <p><i>Novel N - way Power Divider and Array Configuration for RFID Readers Operating at 5.8 GHz</i> Sushim Mukul Roy, Isaac Balbin, Nemai Chandra Karmakar, Monash University (Australia)</p>	<p>Session 1B2: Security II (Veronese 2504)</p> <p><i>EC-RAC (ECDLP Based Randomized Access Control): Provably Secure RFID Authentication Protocol</i> Yong Ki Lee, Ingrid Verbauwhede University of California Los Angeles; Lejla Batina, Katholieke Univ, Leuven (USA)</p> <p><i>Aggregating Symmetric/Asymmetric Attestations</i> Huafei Zhu, Heng Mui Keng Terrace (Singapore)</p> <p><i>Tamper Detection in RFID-Enabled Supply Chains Using Fragile Watermarking</i> ShuiHua Han, Xiamen University; Chao-Hsien Chu Pennsylvania State University (China)</p> <p><i>HB-MP+ Protocol: An Improvement on the HB-MP Protocol</i> Xuefei Leng, Keith Mayes, Konstantinos Markantonakis Royal Holloway, University of London (UK)</p>	<p>Session 1B3: Distributed Management of RFID Intelligence (Invited) (Veronese 2504)</p> <p>Discussion of works in progress on intelligent clients, local processing with a central database.</p> <p>Daniel Engels, Christian Floerkemeier, William A. Gruver, Dilip B. Kotak</p>
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15:00 – 15:30

15:30 – 17:00

BREAK TECHNICAL SESSIONS

<p>Session 1C1: Circuits and Architectures (Veronese 2503)</p> <p><i>Power and Energy Optimization of the Digital Core of a Gen2 Long Range Full Passive RFID Sensor Tag</i> Ibon Zalbide, Julia Vicario, Igone Velez, CEIT and Tecnum (Spain)</p> <p><i>Very High Efficiency 13.56 MHz RFID Input Stage Voltage Multipliers Based on Ultra Low Power MOS Diodes.</i> Geoffroy Gosset, Bertrand Rue, Denis Flandre Catholic University of Louvain-La-Neuve (Belgium)</p> <p><i>High Data Rate RFID Tag/Reader Architecture Using Wireless Voltage Regulation</i> Nicholas Pillin, Norbert Joehl, Catherine Dehollain, Michel Declercq, Swiss Federal Institute of Technology (Switzerland)</p> <p><i>Hybrid Transformer-Based Adaptive RF Front End for UHF RFID Mobile Phone Readers</i> Pekka Pursula, Heikki Seppa VTT Technical Research Centre (Finland)</p>	<p>Session 1C2: Localization and Tracking (Veronese 2504)</p> <p><i>Introducing a Micro-Wireless Architecture for Business Activity Sensing</i> Raj Bridgelall, Axxess International (USA)</p> <p><i>SLAM Algorithm for 2D Object Trajectory Tracking based on RFID Passive Tags</i> Po Yang, Wenyan Wu, Staffordshire University (UK)</p> <p><i>SIP-RLTS: An RFID Location Tracking System Based on SIP</i> Zang Li, Chao-Hsien Chu, Wen Yao Pennsylvania State University (USA)</p> <p><i>Value of Sparse RFID Traceability Information in Asset Tracking During Migration Period</i> Tatsuya Inaba, Keio University (Japan)</p>	<p>Session 1C3: RFID and Sensors in Industry (Invited) (Veronese 2505)</p> <p><i>A Ubiquitous Computing and Monitoring System (UCoMS) for Oil Platforms Management</i> Magdy Bayoumi Center of Advanced Computer Studies (CACS), University of Louisiana at Lafayette</p> <p><i>U.S. Air Force RFID SCOUT Program</i> Kristin Hedger, Killdeer Mountain Manufacturing (KMM) Mark G. McDonald, Alien Technology</p> <p><i>HF, UHF & Sensors</i> Jean-Pierre Emond, University of Florida</p>
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IEEE RFID 2008 PROGRAM BRIEF

Thursday, April 17 (Morning)

8:30 – 10:00 **SYMPOSIUM PANEL RFID Technology for Transportation Security Logistics (ILS)** Veronese 2502

Logistics is increasingly important in ensuring a security system's success as a product. Increased competition in inventory control, speed-to-market (airport deployments), and maintenance put more emphasis on the efficiency of the enterprise. As a result, logistics information systems (ILS) is critical to profitability.

Moderator: **Buzz Cerino**
Overview and Evolution of RFID technology, and the IATA business model for RFID implementation.

Dave Bourgon, Airline Systems Manager, **McCarran International Airport** (Las Vegas)
Airport/Terminal Issues.

Ken Ehrman, President & COO of **I.D. Systems**, a Wireless Fleet Management System (WFMS) vendor.
Applications in Vehicle/Asset Geo Tracking.

John C. Shoemaker is President, **Shipcom Wireless**, a solutions provider serving many global markets.
Bold New Options for Management: Integrated Hybrid RFID Solutions Development and Integration.

10:00 – 10:30

BREAK

10:30 - 12 noon **SYMPOSIUM ROUNDTABLE Where Are The Jobs?** Veronese 2502

Moderator: **Steven Cherry**, Senior Associate Editor, IEEE **SPECTRUM** magazine

Industry Panel:

Loek d'Hont, VP Business Development, **Mark IV Industries**
Peter Kuzma, Vice President of Business Development, **Thin Battery Technologies**
Pedro Reyes, Associate Professor, Hankamer School of Business, **Baylor University**
Craig Weakley, Technical Director, **RCD Technology Inc.**
Donna Wright, Vice President and General Manager, AIDC Solutions Group, **NCR**

IEEE Leaders:

Paul Hartmann, General Vice Chair, IEEE RFID 2008, is Vice President of Engineering for **RF SAW, Inc.** He is a Senior Member of the IEEE, served on the Board of Governors of the Communications Society from 1998 to 2000, was Technical Program Chair for IEEE Globecom '89 and is a member of the Globecom/ICC Management and Strategy Committee (GIMS).

Elizabeth Johnston, engineering student at the **University of Alaska** Fairbanks, is IEEE Region 6 Student Representative.

Karen Panetta, Associate Professor of Electrical and Computer Engineering at **Tufts University**, Medford, MA, is Chair of the IEEE WIEC (Women in Engineering Committee).

Ed Perkins, a 30-year veteran of the electronics industry, is 2008 Chair of the IEEE-USA Career and Workforce Policy Committee. Perkins, who has been an IEEE volunteer for 25+ years, is a Senior Member of IEEE and a Past Chair of the Oregon Section, as well as Region 6 Membership Chair

12:00 - 13:00

LUNCH

Veronese 2502

Luncheon Speaker **Russ Lefevre**, President, IEEE-USA **The Evolution of RFID within IEEE**

LUNCHEON PANEL **RFID in Casinos**

Moderator: **Harry Pappas**, President & CEO, International RFID Business Association

Participants: **Jim Grubbs**, Security Supervisor and Training Coordinator, **Caesar's Palace**

John M. Kendall, President & CEO, **CHIPCO International**

Jeff Markman, President, **Positek RFID**

IEEE RFID 2008 PROGRAM BRIEF

Thursday, April 17 (Afternoon)

13:30 – 15:00

TECHNICAL SESSIONS

<p>Session 2B1: Collision Avoidance (Veronese 2503)</p> <p><i>Robust and Dynamic Bin Slotted Anti-Collision Algorithms in RFID System</i> Jae Sung Choi, Hyun Lee, Daniel Engels, Ramez Elmasri, University of Texas at Arlington (USA)</p> <p><i>Speed Adjustment Algorithm for an RFID Reader and Conveyor Belt System Performing Dynamic Framed Slotted Aloha</i> Laurent Simon, Poompat Saengudomlert, Asian Institute of Technology; Urachada Ketprom, Nat. Elec & Comp. Tech. Ctr. (Thailand)</p> <p><i>The Slotted-LBT: A RFID Reader Medium Access Scheme in Dense Reader Environments</i> Cheng-Hao Quan, Gil-Young Choi, Electronics & Telecom Res. Inst.; Jin-Chul Choi, Chae-Woo Lee, Ajou University (South Korea)</p> <p><i>CDMA-based RFID Systems in Dense Scenarios: Concepts and Challenges</i> Christian Floerkemeier, Massachusetts Institute of Technology; Carlo Mutti, ASSA ABLOY (Switzerland)</p>	<p>Session 2B2: System Deployment & Design (Veronese 2504)</p> <p><i>Shortest Travel Distance for Full Reads on Least RFID Friendly Carton Stacking Configuration Using Advance Design of Experiments Techniques and Gage Reproducibility and Repeatability</i> Edmund Chan Republic Polytechnic (Singapore)</p> <p><i>An Overview of RFID System Interfaces and Reader Protocols</i> Christian Floerkemeier, Sanjay Sarma Massachusetts Institute of Technology (USA)</p> <p><i>A Comparative Analysis of RFID Adoption in Retail and Manufacturing Sectors</i> Mithu Bhattacharya, Chao-Hsien Chu, Tracy Mullen Pennsylvania State University (USA)</p> <p><i>Improvements in Operational Distance in Passive HF RFID Transponder Systems</i> Christian Klapf, Albert Missoni, Wolfgang Pribyl, Graz University of Technology; Günter Hofer, Gerald Holweg, Walter Kargl Infineon Tech. Graz (Austria)</p>	<p>Session 2B3: RFID and Sensors for Space and Harsh Environments (Invited) (Veronese 2505)</p> <p>Discussion of the use of RFID for asset tracking and RFID with sensors in the environments found in manned space craft, in testing facilities that simulate space environments, and for monitoring the condition or health of critical hardware systems under stressful environmental conditions.</p> <p>Moderator: Paul Hartmann, VP Engineering, RF SAW</p> <p>Panelists: Clinton Hartmann, President, RF SAW <i>RFID Asset Tracking on the International Space Station</i> Patrick Fink, NASA Johnson Space Center <i>RFID for NASA Ground Facilities and Planetary Habitats</i> Kurt Silvers, Pacific Northwest National Laboratory <i>RFID Asset Health Monitoring – A Technology Coming of Age</i> Scott Hafermalz, NASA Johnson Space Center <i>RFID Sensors in the Inflatable Habitat Field Demonstration Project in Antarctica</i></p>
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15:00 – 15:30

15:30 – 17:00

BREAK TECHNICAL SESSIONS

<p>Session 2C1: Radio Frequency Investigation and Utilization (Veronese 2503)</p> <p><i>A Channel Allocation Scheme Considering with Collisions and Interferences in Practical UHF RFID Applied Communication Fields</i> Seon Mi Yeo, Bu Won Jeon, Jae Hyun Bae, Young Joo Moon, Hyoung Hwan Roh, Jun Seok Park, Yeong Rak Seong, Ha Ryoung Oh, Yeon Joo Kim, University of Kookmin; Jeong Seok Kim, Chan Won Park, Gil Young Choi, ETRI (South Korea)</p> <p><i>Characterization of RF Propagation in Helical and Toroidal Metal Pipes for Passive RFID Systems</i> Darindra Arumugam, Daniel Engels University of Texas at Arlington (USA)</p> <p><i>Antennas and Propagation in UHF RFID Systems</i> Pavel Nikitin, KVS Rao Intermec Technologies (USA)</p> <p><i>A Novel Chipless RFID System Based on Planar Multiresonators for Barcode Replacement</i> Stevan Preradovic, Isaac Balbin, Nemaï Chandra Karmakar, Monash University Gerry Swiegers, CSIRO (Australia)</p>	<p>Session 2C2: Smart Environments (Veronese 2504)</p> <p><i>ASSIST - Automated System for Surgical Instrument and Sponge Tracking</i> Nilo Rivera, Rosemary Mountain, Allen A. Williams, A.B. Cooper, Douglas L. Lewis, Richard C. Benson, Joseph A. Miragliotta, Russell H. Taylor, Johns Hopkins University; Michael Marohn, Johns Hopkins Hospital; Lia Assumpcao, Johns Hopkins Medical Institute (USA)</p> <p><i>iWalker: Toward a Rollator-Mounted Wayfinding System for the Elderly</i> Vladimir Kulyukin, Aliasgar Kutiyawala, Utah State University; Edmund LoPresti, AT Sciences; Judith Matthews, University of Pittsburgh School of Nursing (USA)</p> <p><i>GIDS - A System for Combining RFID-Based Site Information and Web-Based Data for Virtually Displaying the Location on Handheld Devices.</i> Andreas Löffler, Uwe Wissendheit, Heinz Gerhäuser, Dina Kuznetsova, Friedrich-Alexander University of Erlangen-Nuremberg (Germany)</p> <p><i>Wirelessly-Charged UHF Tags for Sensor Data Collection.</i> Daniel Yeager, Richa Prasad, David Wetherall, University of Washington; Pauline Powledge, Joshua Smith, Intel Research (USA)</p>	<p>Session 2C3: Tools for Design and Evaluation (Veronese 2505)</p> <p><i>Combined System Analysis and Automated Design of RFID Transponder Systems</i> Frank Deicke, Hagen Grätz, Fraunhofer Institute for Photonic Microsystems; Wolf-Joachim Fischer, Technische Universität Dresden (Germany)</p> <p><i>Functional Verification of Future Higher Class UHF RFID Tag Architectures based on Cosimulation</i> Alex Janek, Christian Steger, Reinhold Weiss Graz University of Technology; Josef Preishuber-Pfluegl, Markus Pistauer, CISC Semiconductor Design + Consulting GmbH (Austria)</p> <p><i>Engineering RFID Systems Through Electromagnetic Modeling</i> Sudhanshu Gakhar, Joseph Feldkamp, Mark Perkins, Kimberly-Clark Corp.; Rensheng Sun, C.J. Reddy, EM Software & Systems Inc. (USA)</p> <p><i>Evaluation of Physical and Logical Layer RFID Simulation Engine</i> Christian Floerkemeier, Massachusetts Institute of Technology; Ravikanth Pappu, ThingMagic Inc. (USA)</p>
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