



## **Special Issue of Information Systems Frontiers on *Advances in RFID Technology***

Guest Editors

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### **1. Scope**

Radio Frequency Identification (RFID) is a wireless communication technology that uses radio-frequency waves to transfer information between tagged objects and readers without line of sight. This creates tremendous opportunities for linking various objects from real world. These objects are numbered, identified, catalogued, and tracked.

Although RFID has been around for more than half a century, it is only in recent years that this technology has begun to attract a lot of attention, due to the convergence of lower cost and increased capabilities of RFID tags. Currently, RFID is emerging as an important technology for revolutionizing a wide range of applications including supply chain management, retail, anti-counterfeiting, baggage handling, and healthcare. Many organizations are planning or have already exploited RFID in their main operations to take advantage of the potential of more automation, efficient business processes, and inventory visibility.

While RFID provides promising benefits such as inventory visibility and business process automation, some significant challenges on information systems and technologies (IS/IT) need to be overcome before these benefits can be realized. One important issue is how to process and manage RFID data, which is typically in large volume, noisy and unreliable, time-dependent, dynamically changing, and of varying ownership. Another issue is how to seamlessly integrate low-level RFID data into (existing) enterprise information infrastructures (e.g., upper-level business processes). Finally, given the ability of inexpensively tagging and thus monitoring a large number of items and/or people, RFID raises some serious security and privacy concerns. Indeed, RFID privacy and security are stimulating research areas that involve rich interplay among many disciplines, like signal processing, hardware design, supply-chain logistics, privacy rights, and cryptography.

In recent years, the field of RFID has become a vibrant and rapidly expanding area of research and development. Many researchers and vendors are currently engaged in proposing solutions needed for the development and deployment of RFID applications. This special issue will present the latest developments, trends, industrial applications and research challenges for RFID technology. This issue will explore how organizations can gain competitive advantages by applying RFID technology in real-world settings. Submissions on studies which demonstrate RFID techniques for specific application problems are encouraged. Survey

articles that emphasize research and application in a particular RFID domain are also welcome. Topics of interests include, but are not limited to:

- Data management issues in RFID applications
- Innovative RFID-enabled applications
- RFID and physical user interfaces
- Security/privacy and RFID
- RFID and sensor networks
- Web services and RFID
- RFID and semantic Web
- RFID standards
- RFID case studies and field trials
- RFID middleware
- Next generation RFID technologies
- Commercial experience with RFID
- RFID network management
- COTS and Open Source RFID infrastructure
- Integration of RFID with other applications
- Performance evaluation
- Business process redesign and RFID
- RFID industrial applications

## **2. Target Audience**

This special issue intends to gather, address and share the grand challenges, latest breakthroughs, experiences, case studies including the difficulties encountered and lessons learned with researchers and practitioners in RFID. The special issue's list of topics will be of significant interest to the wider IS/IT community. The target audiences of this special issue are researchers, engineers, professionals working on relevant topics of RFID.

## **3. Important Dates**

Paper submission due:	30 Oct 2008
1 <sup>st</sup> round review due:	30 Dec 2008
Revision and responses due:	28 Feb 2009
2 <sup>nd</sup> round review due:	30 Mar 2009
Final decision:	10 April 2009

## **4. Submission**

We welcome original, unpublished manuscripts. Papers submitted for consideration for this Special issue must be written in excellent English and describe original research not published or currently under review by other journals.

Authors should submit a PDF version of their paper directly to the corresponding editor Dr. Michael Sheng (Email: qsheng@cs.adelaide.edu.au) or to any of the Guest Editors below. All submitted contributions will go through a double-blind peer review evaluation. We will also invite authors of selected best papers to submit an extended version from the following two International RFID workshops and an international conference industry track that the guest editors are organizing:

- IWRT'08 (<http://www.iceis.org/workshops/iwrt/iwrt2008-cfp.html>)
- AIR'08 (<http://conferences.computer.org/icebe/AIRworkshop.htm>)
- SUTC'08 Industry track (<http://sutc2008.csie.ncu.edu.tw/>)

For accepted papers, authors should follow the format requirement of Information Systems Frontiers, in preparing their final version.

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