

EU RFID FORUM 2007 - REPORT

March 13th and 14th 2007
Conference Centre Albert Borschette
Brussels

INTRODUCTION

The European RFID Forum 2007 that took place on March 13 and 14, 2007 welcomed more than 300 participants. Speakers included policy makers, academics from top universities and industry leaders.

The event was attended by a very wide variety of people, ranging from a Commission's Director General, an American Under-Secretary of State and senior Chinese Government Advisors to young research students, professors, business managers and Consumer Group representatives from many countries. This broad spectrum just confirms the breadth and variety of interests captured by the exciting developments taking place in the use of RFID. This breadth was seen in the keynote speeches, presentations and research submissions about work in progress that were heard over the two very full days of the Forum.

The Forum has offered an inspiring space for a new kind of dialogue, bringing together science, technology and policy in the search for a common language and shared terms of engagement. It has shown that the use of RFID has moved from the artificial heights of initial over-enthusiasm into a positive, sane and sensible stage of real developments and opportunities. A few quotes from some of the presentations catch the positive feeling of the event:

'RFID sensors will be key for cool supply chains'; - 'RFID brings location, status, context awareness and information integration'; - 'auto-identification and authentication for supply chains'; - 'standards, dissemination and training are very important across all RFID projects'; - 'not only people communicate'; - 'establish a friendly environment for standardisation'; - 'allows organisations to focus on how to use the information not just on how to get the information'.

In conclusion, it was a great event that allowed elaborating an embryo of global consensus on the importance of RFID developments.

THE EVENT, DAY ONE

The first day of the event was dedicated to *an industry and technology forum*. A session was devoted to reporting the provisional results of key European research projects, including BRIDGE, PROMISE and SMART. Afternoon sessions looked at the importance of future standards, the long term perspective of the Internet of Things and the Ubiquitous Information society. The industry and technology forum concentrated on issues of implementation and policy and provided participants with the latest strategies of RFID technical developments.

SESSION 1: RFID – AN ENABLER OF INNOVATION

Speakers: Mr. Gerd Wolfram (METRO), Mr. Gregor Hackenbroich (SAP), Mr. Ryo Imura (Hitachi).

Key points:

- ❑ RFID has the potential to create value, not just reducing costs. New business models need to be developed.
- ❑ IT systems integration is difficult but necessary to get the benefits.
- ❑ To enable roll-out at the consumer item level, the tag price needs to be as low as 1 Euro cent. Moving from silicon to polymer might be one relevant yet not exclusive solution.
- ❑ Spectrum alignment throughout Europe is required. Long term spectrum requirements need to be considered.
- ❑ Software infrastructure must evolve to enable real-time supply chain management.
- ❑ Integrate the Internet of Things and the Internet of Services.
- ❑ Full traceability in the food chain from livestock to the stores.
- ❑ Patient safety, drugs traceability and anti-counterfeiting are huge opportunities.

SESSION 2: EUROPEAN RESEARCH PROJECTS FORUM

Speakers: Mr. Henri Barthel (GS1), Dr. Dimitris Kiritsis (EPFL Lausanne), Dr. Katerina Pramataris, (Athens University), Mr. Guido Stromberg (Infineon Technologies), Prof. Rafael Pous (Universitat Politècnica Catalunya)

Key points:

- ❑ EU funded projects enable to get started rapidly. The project management structure enables discipline in project and quality deliverables.
- ❑ Projects enable to develop real demonstrators.
- ❑ Long term aspect and timing can be an issue that can however be addressed by a phased approach.
- ❑ Opportunity to take a comprehensive approach and cover the whole supply chain.
- ❑ Research projects plans can change depending on market evolution.
- ❑ Transform data into useful and meaningful information ('knowledge').

- ❑ Standardisation, training and dissemination could possibly be addressed across several projects having similar scopes.

SESSION 3: THE REQUIREMENTS FOR STANDARDS IN THE FUTURE

Speakers: Mr. Gerd Ochel (ETSI), Mr. Chris Adcock (EPCglobal), Mr. Linpeng Gao (CESI)

Key points:

- ❑ Compatibility and interoperability are a “must”; therefore standardisation is key to the future of RFID.
- ❑ The potential applications are countless and will develop in all and every sector.
- ❑ RFID is one of the technologies which will shape the Ubiquitous Information Society in the 21st century.
- ❑ Standards help reduce costs and complexity.
- ❑ A comprehensive User requirements analysis and documentation is key to developing standards that get actually implemented.
- ❑ Regional issues and opportunities are extremely important, but standards must be globally applicable.

SESSION 4: MEETING THE NEEDS FOR THE UBIQUITOUS INFORMATION SOCIETY

Speakers: Mr. Roland Airiau (France Telecom), Mr. Mika Lauhde (Nokia)

Key points:

- ❑ Installation, Management and Customization of things and devices will be simple, user-friendly and secure.
- ❑ Design capillary gateways to link things and Telecommunication networks.
- ❑ Important to define good architecture models.
- ❑ New touch-based services on mobile phones will be interoperable with RFID technology.
- ❑ A large range of personal services will become available through near field communications combined with RFID.

THE EVENT, DAY TWO

The second day of the event was dedicated to academic sessions enabling world class university researchers to exchange information and coordinate their programmes. Thirty selected papers were presented in two parallel sessions: Business & policy and Technical developments. This academic stream was part of a series of meetings of the “*RFID Academic Convocation*”, driven by the Auto ID Labs at MIT and being organised around the world to build collaboration across academic disciplines, institutional and geographic boundaries.

OPENING SESSION DAY 2

Speakers: Prof. Duncan McFarlane (Cambridge University), Mr. Steve Miles (MIT, Mr. Tom Aelbrecht (Johnson & Johnson)

Key points:

- ❑ RFID can create value for all stakeholders including the end consumer.
- ❑ Convergence of RFID with other wireless protocols to leverage existing wireless infrastructure.
- ❑ Standards are important for broad adoption.
- ❑ Continuing research investment is critical to advancing RFID.

The papers presented in the two parallel sessions are listed below:

A) TECHNICAL DEVELOPMENTS

Authors	Speaker	Paper title
Thomas J. Sommer	Thomas J. Sommer	Research and Development Needs for RFID
Claire Vishik, David Hoffman and Karim Lesina	Karim Lesina	In Search of a Perfect Identifier: Identifiers and Privacy
Dieter Uckelmann	Dieter Uckelmann	Utilizing application- and data fact identifiers for structured RFID-based data communication
Karl A. Hribernik, Martin Schnatmeyer, Andreas Plettner, Klaus-Dieter Thoben	Karl A. Hribernik	Application of the Electronic Product Code EPC to the Product Lifecycle of Electronic Products
Javier Dacuña, Rafael Pous	Javier Dacuña	Near-field UHF tags based on metamaterials concepts
Andrea Soppera; Trevor Burbridge; Valentijn Broekhuizen	Trevor Burbridge	Trusted RFID Readers for Secure Multi-Party Services

Ugo Biader Ceipidor; Carlo Maria Medaglia; Marta Mei; Maurizio Sabene; Alexandru Serbanat	Ugo Biader Ceipidor	GLIDEO: An RFID system for identification and description of objects by blind and visually impaired people
Yu YU, Yuqing YANG, Na YAN, Hao MIN	Yuqing YANG	A novel design of secure RFID tag baseband
M. de la Fuente Ruz, A. García Higuera, J. Abril Duro, A. Abarca Álvarez, J. G. Escribano Sánchez	Andrés García Higuera	S2I: Dual Frequency Smart Sensor Identifier
Manfred Aigner	Manfred Aigner	Seven reasons for application of standardized crypto functionality on low cost tags
Hong-Bae Jun; Dimitris Kiritsis; Paul Xirouchakis	Dimitris Kiritsis	Product usage information modelling in a ubiquitous environment
Mark Harrison	Mark Harrison	Network-assisted Product Lifecycle Information Management
O. Vermesan, D. Grosso, F. Dell'Ova, C. Prior	Ovidiu Vermesan	Quo Vadis RFID technology? Emerging RFID technology roadmap
Christian Floerkemeier, Matthias Lampe and Christof Roduner	Chris Floerkemeier	Facilitating RFID Development with the Accada Prototyping Platform
John R. Williams, Abel Sanchez	John R. Williams	Supply Chain Realms with Data Streams and Location Services

B) BUSINESS AND POLICY

Authors	Speaker	Paper title
Dirk Morgenroth	Jan-Willem Reynaerts	The road to a smooth, accelerated RFID rollout requires optimal solutions
Reinhart, G.; Ostgathe, M.; Wiesbeck, M.	Martin Ostgathe	Process Framework for the Implementation of RFID Systems in Small and Medium-sized Enterprises
A.G. de Kok, K.H. van Donselaar, T. van Woensel	Dr. Tom van Woensel	A Break-even Analysis of RFID Technology for Inventory sensitive to shrinkage
Ajith Parlikad, Stavroula Theodorou, Duncan McFarlane	Ajith Parlikad	Lifecycle information management: Key Challenges
Eddy Bajic; Andre Thomas	Eddy Bajic	Ambient RFID Services Infrastructure & RFID Deployment in Wood industry
Rosemary Amondi	Rosemary Amondi	Bridging the Traceability Gap in Food Exports From Africa to Europe

Lieven Trappeniers; Michael Brackx; Laurence Claeys; Johan Criel; Marc Godon; Zhe Lou; Thais Lauwers; Sigurd Van Broeck; Rudi Broos	Lieven Trappeniers	Going beyond the Obvious - Creating Engaging Experiences with RFID and Touch-based Interactions
Aristeidis Theotokis, Katerina Pramatarı, Georgios Doukidis	Aristeidis Theotokis	RFID and Innovative Retail Services: The Consumer perspective
Katerina Pramatarı, Arnd Huchzermeier	Katerina Pramatarı	RFID enabled store level collaboration Intelligent Integration of Supply Chain Processes based on Unique Product Identification
Freddy Brofman, Luis Kluwe Aguiar	Freddy Brofman	Customers' own information in-store
Indra Macrı	Indra Macrı	CNIPA (National Centre for ICT in the Public Administrations): RFID actions
Alexander Ilic; Florian Michahelles	Alexander Ilic	Towards a Business Collaboration Framework for the EPC network
Andras VILMOS	Andras VILMOS	The need for business and operating standards in the mobile NFC ecosystem
Frédéric Thiesse	Frédéric Thiesse	Coping with public perceptions of privacy risks: What can we learn from theory?
Olli Pitkänen; Marketta Niemelä	Olli Pitkänen	Privacy and Data Protection in Emerging RFID-Applications

The conference concluded with a panel session, which provided concise summaries of the two days presentations and panel discussions. It clearly demonstrated the importance of collaboration for building a dynamic, competitive, sustainable, secure and user-friendly Ubiquitous Information Society in the work being carried out throughout Europe and globally. It also showed the benefit of bringing together researchers and practitioners in such a forum. All papers and presentations from the EU RFID forum are available at the event's web site www.rfidconvocation.eu.

GENERAL CONCLUSIONS:

- ❑ The presentations on both days showed that relevant activities in Europe are not behind what happens in other regions of the world.
- ❑ Awareness and education need attention and efforts from all involved stakeholders: industry, universities and public authorities.
- ❑ The whole “thing” will work at a global scale or it will not work, therefore international standards are of great importance.
- ❑ ID and wireless technologies are not limited to what the world perceives as “RFID”.
- ❑ RFID deployment is not an objective in itself. Data management, data transformations, data integration and system architectures need to be properly defined to fully benefit from the technology.

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FORTHCOMING EVENTS

- 3-4 April 2007, Washington, D.C., USA, “DoD RFID Summit”, an event organised by the US Department of Defence,
<http://www.dodrfidsummit.com/>
- 30 April – 2 May 2007, Orlando, FL, USA, “5th RFID Academic Convocation”, Conference hosted by the Auto-ID Lab at MIT,
http://www.rfidjournalevents.com/live/preconfer_academic_convocation.php
- 25-26 June 2007, Berlin. “RFID: Towards the Internet of Things”, Conference organised by the EU Presidency (Germany)
<http://www.nextgenerationmedia.de/Nextgenerationmedia/Navigation/en/rfid-conference.html>

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This report was prepared by the organisers of the EU RFID Forum 2007:

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