

*RADIO FREQUENCY IDENTIFICATION (RFID)*

*POSITION PAPER*

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EuroCommerce wishes to thank the European Commission for putting the debate on RFID on the table and for giving the opportunity to all the stakeholders to express their views through the different workshops and the internet public consultation.

RFID is a key to the competitiveness of the European technology sector and will greatly contribute to the achievement of the goals set by the Lisbon agenda. It is already used in a wide number of sectors in Europe, and worldwide: in logistics, retail, manufacturing services, health and research for example.

RFID enables the optimisation of processes (RFID enables all participants to track products right from the start through every stage of the value chain) and increases safety (in the food industry for example). It also ensures authenticity, theft prevention and counterfeit detection.

For the retail industry in particular, it is used in the supply chain and has proved very helpful in increasing customer satisfaction by enabling improved processes to replenish shelves and thereby allowing a faster and more efficient response to customer demand with an improved ability to have the right product at the right time at the right place (this also means a reduction in warehousing costs). RFID tagging also gives customers the possibility to easily access additional product information that would not fit on a regular label.

Some examples of products being currently developed with RFID technology include: wine refrigerators that recognize the Electronic Product Codes of the smart chips affixed to wine bottles. This enables the control of the inventory and the gathering of specific information such as vintage and optimal temperature control. The technology is also being used for easier and better tracking of luggage in airports. Radio chips will complement the barcodes currently being used on baggage labels. This will ensure a much quicker localisation of misdirected luggage. By switching to RFID, the IATA expects savings of close to 650 million euros per year. Another example is the automotive industry that already uses RFID technology for car keys. RFID would also enable easier and quicker recall of vehicles in case of quality related incidents. Libraries in Vienna, Stuttgart, Amsterdam and the Vatican have already successfully tested flexible transponders in their check-out system. Visitors can check out their books through lending terminals without having to wait in line at a lending counter. This also insures better protection from theft.

The list of RFID applications is endless and it should be noted that all of these examples are adequately covered by the current European Union data protection and privacy legislation and do not imply any breach of privacy for the European citizens.



Concerning the potential **savings** that RFID could bring to the European economy, a study<sup>1</sup> conducted in 2005 by METRO Group in conjunction with IBM and Procter & Gamble found out that the implementation of RFID in Germany alone resulted in possible annual savings of € 8.5 million for the sales division of Metro Cash & Carry and Real and the distribution warehouses of the METRO Group. As the study only analysed and quantified 2 out of 11 processes stages, possible total savings are even more substantial. Another study<sup>2</sup> conducted by Wal-Mart and the Arkansas University in 24 Wal-Mart stores showed how RFID can be used to reduce out of stocks situations by as much as 16%.

We understand that the uninformed citizen could have concern about this new technology, in particular in terms of privacy. These concerns, detailed below, are not problematic, as the industry is investing a lot of effort and research on the best deployment of RFID.

The European Commission and national authorities should focus on how to best facilitate the deployment of RFID across Europe. Information campaigns aiming at helping the industry to gaining **consumers' acceptance** of this technology should be put in place. Indeed, most of the fears that consumers have about RFID are founded on incomplete or inaccurate information; campaigns based on real facts would help alleviate most of these misconceptions. These campaigns should also outline the individual benefits that RFID can bring to European citizens such as increasing food safety through better and more accurate tracking and tracing of food products, providing easy access to product information or fighting counterfeit pharmaceutical products.

RFID in itself is not the cause of violations of privacy. Industry in general, and retailers in particular, are keen to develop RFID but do not wish to alienate their customers and are working hard to come up with RFID applications that will meet both industry and customers concerns and expectations.

EPCglobal have adopted a list of **self-regulatory principles** providing for a transparent use of RFID technology and a deactivation option wherever RFID is used on consumer products<sup>3</sup>. Similar actions have been taken at the national level in Germany (through a round table group in the German Ministry of Economy) and in the UK (through the RFID Council and the Department of Trade and Industry).

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<sup>1</sup> RFID Product News – Fast Forward: The Past, Present, and Future of Metro's Experimental Future Store, <http://www.rfidproductnews.com/issues/2006.07/ff.php>

<sup>2</sup> RFID Journal - EPC Reduces Out-of-Stocks at Wal-Mart

Oct. 14, 2005—Wal-Mart announced today that an independent study by the University of Arkansas has concluded that Wal-Mart has been able to reduce out-of-stocks by 16 percent by tracking cases of goods with radio frequency identification tags carrying Electronic Product Codes (EPCs). The study, which Wal-Mart commissioned, also showed that out-of-stock items with EPCs were replenished more quickly than comparable items in cases labelled only with bar codes, and Wal-Mart saw a reduction in manual orders and excess inventory within the RFID-enabled stores.

<sup>3</sup> See Appendix 1



Concerning **standard and interoperability** issues, the industry has started working together through EPCglobal Inc. EuroCommerce fully supports the work done by this platform. This industry initiative should be endorsed and supported by the European Commission. Indeed, the GS1 organisations and specifically their standard developing body EPCglobal Inc. are the most important institutions for the development of interoperable RFID systems. For example, in terms of RFID, the EPCglobal Class 1 Generation 2 UHF Air Interface Protocol Standard is an important standard that defines the physical and logical requirements for a passive-backscatter, interrogator-talks-first (ITF), radio-frequency identification (RFID) system operating in the 860 MHz – 960 MHz frequency range. Tests show that EPCglobal Class 1 Generation 2 equipment and tags make better reading rates possible. The fact that it is a global, industry driven standard also gives rise to the expectation that it will be accepted widely. This global acceptance of one standard would also ensure that the price of RFID tags will continue to drop. It is also extremely important to align the usable European frequency bands with other regions of the world, so as to guarantee that RFID tagged products can be read not only in Europe, but anywhere in the world.

Concerning the **UHF spectrum harmonization** issue, we believe that the proposed technical implementation decision should be adopted as soon as possible, in order to ensure that a harmonised UHF bands are available for RFID usage in whole common market. It is essential to bear in mind that the expanding RFID technology might still require additional frequency bands. At the current state of implementation, RFID operations (mostly pilot projects) can reasonably operate without congestion. However, due to the scarcity of available spectrum only 10 readers can operate simultaneously within an area of 1 square kilometre without interfering with each other. This poses a challenge considering the deployment of RFID in warehouses and distribution centres with up to 160 dock doors and large numbers of forklift-trucks. The investment decision in this technology depend on the assured expectation that the new RFID enabled processes will work properly – an assurance which cannot be given pending the development of innovative synchronization techniques and the future availability of sufficient spectrum. Of primary concern is the inherent uncertainty regarding the future availability of enough free channels, at any one point of time at the geographic location of an RFID enabled system.

This matter needs to be addressed as soon as possible because future developments of RFID and research investments depend greatly on future availability of sufficient spectrum in Europe. It is vital that RFID enabled systems have enough free channels to operate, at any point in time and in any geographic location. And despite the fact that synchronisation techniques will make RFID an innovative technology that uses limited amounts of spectrum very efficiently, additional channels would be needed as soon as the uptake of SRD technology gains momentum in Europe. The spectrum allocations in Europe should take into account what is happening in the rest of the world so that RFID can reach its full potential of facilitating international trade.

With regards to ***environmental concerns***, given the current scope of RFID roll-out, RFID tags pose no environmental risks; only a few tags are in use today and most of them are reused several times. Further deployment will not be a problem either: a study conducted by the Federal Office for the Environment (FOEN) in Switzerland found in 2003 that RFID tags do not pose significant problems for municipal waste removal systems: although existing tags contain copper and silicone, they will make up only a marginal fraction of the quantity of domestic waste.<sup>4</sup>

Problems might only arise when large number of items is tagged at retail level. But, this will only happen if tag prices go down through the replacement of expensive raw materials such as copper or silicone by polymer materials which present no risk to the environment.

We would like to conclude by saying that if the full potential of RFID is unleashed, this technology could have an impact comparable to that of the Internet. 2006 will certainly prove to be a decisive year for the deployment, research and policy aspects of RFID. We believe that the European Commission role is very important and should be focused on stimulating research and development programs, promoting best practices, providing a platform for dialogue among stakeholders and insuring that consumers get better knowledge on RFID through accurate information.

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<sup>4</sup> Hilty et al. – Das Vorsorgeprinzip in der Informationsgesellschaft. Auswirkungen des Pervasive Computing auf Gesundheit und Umwelt, [http://www.ta-swiss.ch/www-remain/reports\\_archive/publications/2003/030904\\_PvC\\_Bericht.pdf](http://www.ta-swiss.ch/www-remain/reports_archive/publications/2003/030904_PvC_Bericht.pdf)



## **Appendix 1 EPCglobal Guidelines on EPC for Consumer Products**

The purpose of these Guidelines is to provide a responsible basis for the use of Electronic Product Code™ (EPC) technology for consumer items. Under the auspices of EPCglobal Inc, these Guidelines have been followed since January 1, 2005 and will continue to evolve as advances in EPC and its applications are made and consumer research is conducted. As EPC evolves, so too will new issues. EPC participants are committed to addressing these issues and engaging in a dialogue about them with interested parties.

### **1. Consumer Notice**

Consumers will be given clear notice of the presence of EPC on products or their packaging and will be informed of the use of EPC technology. This notice will be given through the use of an EPC logo or identifier on the products or packaging.

### **2. Consumer Choice**

Consumers will be informed of the choices that are available to discard or remove or in the future disable EPC tags from the products they acquire. It is anticipated that for most products, the EPC tags would be part of disposable packaging or would be otherwise discardable. EPCglobal, among other supporters of the technology, is committed to finding additional efficient, cost effective and reliable alternatives to further enable customer choice.

### **3. Consumer Education**

Consumers will have the opportunity easily to obtain accurate information about EPC and its applications, as well as information about advances in the technology. Companies using EPC tags at the consumer level will cooperate in appropriate ways to familiarise consumers with the EPC logo and to help consumers understand the technology and its benefits. EPCglobal would also act as a forum for both companies and consumers to learn of and address any uses of EPC technology in a manner inconsistent with these Guidelines.

### **4. Record Use, Retention and Security**

The Electronic Product Code does not contain, collect or store any personally identifiable information. As with conventional barcode technology, data which is associated with EPC will be collected, used, maintained, stored and protected by the EPCglobal member companies in compliance with applicable laws. Companies will publish, in compliance with all applicable laws, information on their policies regarding the retention, use and protection of any personally identifiable information associated with EPC use.