

# RFID



Dear readers,

To advance the modernization of retailing – this was the objective of the METRO Group and its partners when they established the METRO Group Future Store Initiative in the summer of 2002. Our cover story will shed light on the diverse activities of the initiative.

The increasing interest of political decision makers in RFID both on a domestic and European scale represents another focus of this newsletter. During her visit to our stand at the CeBIT, German Chancellor Angela Merkel declared that German politicians are prepared to support the continued development of RFID. But it is not just Germany's politicians who have recognized the significance of this future technology for the economy. RFID is also a prime issue on a European scale.



The European Commission has initiated a consultation process in order to enforce an exchange across national borders. Dr. Jorgo Chatzimarkakis, Member of the European Parliament, will address this topic in our interview.

The METRO Group will migrate to the new EPCglobal Class 1/Gen. 2 standard from July 2006. This specification will create the essential prerequisites for using RFID on boxes too. For more details on the new standard, please read our background story.

We hope you enjoy your reading.

Yours truly,

A handwritten signature in black ink, appearing to read "Zygmunt Mierdorf".

Zygmunt Mierdorf  
Member of the Management Board  
of METRO Group

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**METRO Group**  
Future Store Initiative



# HAPPY BIRTHDAY!

**FOUR-YEAR ANNIVERSARY OF THE METRO GROUP FUTURE STORE INITIATIVE. Since its inception in the summer of 2002, the members of the initiative have been successfully developing and implementing innovative technology for the retail sector - first and foremost RFID.**

Just a few years ago, the image of the retail sector was still characterized by attributes such as "down to earth" and "pragmatic." This has fundamentally changed. Today, retailing is marked by the capacity of innovative and technological expertise: retail companies like the METRO Group are pioneers in the development and implementation of new, future-oriented technologies. The METRO Group Future Store Initiative has made a key contribution to facilitate this transformation.

## **Four years of broad-based commitment**

Together with SAP and Intel, the METRO Group established the Future Store Initiative in the summer of 2002, thereby sounding the starting signal for the comprehensive modernization process within the retail sector. Today, about 60 partners from the consumer goods, IT and service industries are jointly developing new technologies and testing them in practice.

The Future Store Initiative has been active in many different ways in advancing RFID and other innovations. One of the first projects was the METRO Group Future Store in Rheinberg (Germany). This year, the future workshop of the retail sector celebrates its three-year anniversary. The RFID Innovation Center will also celebrate its birthday: for two years, the RFID partners of the METRO Group have been testing there how RFID can be used in practice.

With its participations at international trade fairs and conventions such as the recent 2006 CeBIT and the upcoming China Chain Store Expo, the initiative communicates with the public and promotes the acceptance of new retail technologies. This is an important prerequisite for their large-scale implementation.

## **Three-year anniversary of the Future Store**

On April 28, 2006, the innovative supermarket celebrated its third birthday. Much has happened since the day it opened. More than 23,000 visitors from Germany and abroad have come over the past three years to obtain information on the technologies used at the Future Store, including both interested consumers and decision-makers from the business and political arenas, among others.

The contribution of the Future Store in promoting innovation was honored at the highest government level on February 26, 2006. The initiative "Germany – Land of Ideas" funded by the federal president and the German government conferred the title "Place in the Land of Ideas" to the supermarket.

## **Two-year anniversary of the RFID Innovation Center**

With the RFID Innovation Center, the METRO Group established a unique communications and training platform for its industry partners in July 2004. In the fields of order picking, warehouse management, department store, supermarket and private household, about 40 systems show how RFID can optimize processes in practice. At the beginning of this year, these offerings were expanded once again. At the EECC testing laboratory developed in collaboration with GS1 Germany, manufacturers can test RFID and find out how the technology can be adapted to their individual conditions. A comprehensive training program professionally prepares the suppliers of the METRO Group for the roll-out at their own company.

## **A birthday premiere**

March 2006 marked the first time the METRO Group Future Store Initiative participated in the worldwide leading trade fair for information and communications technology, CeBIT. It was the objective to present the diverse applications of RFID to a broad target group and to familiarize consumers, media representatives and decision makers from the business and political arenas with the enormous potential of the technology.



For three years, the partners of the METRO Group Future Store Initiative have been testing innovative retail technologies in the Future Store. The RFID Innovation Center focuses on RFID technology.

About 3,000 square meters in size, the trade fair stand was one of the main visitor attractions at CeBIT. During the seven trade fair days, approximately 120,000 guests obtained information on the possible applications of RFID in logistics, supermarkets, department stores, private households and recreational uses. The interactive exhibits made it easier for visitors to approach the issue.

As part of its trade fair participation, the METRO Group Future Store Initiative organized high-caliber panel discussions. Both users and RFID experts discussed with political decision-makers how the further development of this future-oriented technology could be advanced more forcefully.

### Focus on RFID

It is a key concern of the initiative to advance the large-scale introduction of RFID technology in the consumer goods industry. The consumers must be informed comprehensively on RFID and the associated benefits, and the dialog with the public must be promoted.

As the largest German retail company, the METRO Group has been using RFID since November 2004 at the pallet level in selected warehouses and stores of the Metro Cash & Carry, Real and Galeria Kaufhof sales divisions. Tests have shown that the technology significantly optimizes incoming and outgoing goods processes. The second phase of the roll-out includes the expansion of RFID to retail units – the partners of the METRO Group will then also tag cases with transponders.

Beginning in July 2006, the METRO Group will migrate to the new EPCglobal Class 1/Gen. 2 transponder standard. This specification standardizes the content and structure of the Electronic Product Code (EPC) and increases its storage capacity. With the use of the new standard, the company sets the course for phase two,



since EPCglobal Class 1/Gen. 2 is an important prerequisite for the successful implementation of RFID on retail units.

### Outlook

In November of this year, the METRO Group Future Store Initiative will set another milestone by presenting itself in Asia for the first time. At the China Chain Store Expo 2006 in Beijing, which is a major trade fair for the retail industry, about 20 partners of the initiative will showcase their innovations for Asian industry experts. Metro Cash & Carry will also participate in the event. The successful sales brand is already represented in China with 30 stores, and further expansion is planned.

The Future Store Initiative will focus on RFID. The agenda will include RFID-based applications in the supply chain as well as in supermarkets and department stores of the future.

Metro Cash & Carry will cover the topics of quality and freshness. At its 1,200-square-meter stand, the flagship of the METRO Group will present measures that serve to ensure the quality of fresh food along the entire supply chain.

### To a successful future

The METRO Group Future Store Initiative will continue to develop and launch innovations for the retail sector. Activities will focus on intensive public relations at relevant trade fairs and conventions and the close collaboration between scientists and politicians. As a result, the initiative systematically pursues its declared goal of jointly designing the future of retailing.



About 120,000 visitors informed themselves about RFID in retail, leisure, logistics and private household applications at the Future Store Initiative stand at CeBIT 2006.

### CeBIT 2006: politics meets RFID

The participation of the METRO Group Future Store Initiative at the 2006 CeBIT placed the topic of RFID on the political agenda. On the first day of the fair, German Chancellor Angela Merkel visited the exhibition area of the initiative and emphasized the significance of innovative technologies such as RFID for Germany as a business location. Other politicians at the state, federal and European level, who obtained information from the METRO Group Future Store Initiative on the applications of the technology included Federal Minister of Foreign Affairs Frank-Walter Steinmeier, Federal Minister of Justice Brigitte Zypries and EU Commissioner Viviane Reding.



# RFID COMPACT



## >> Smart genie in a bottle

Lab ID, the Italian manufacturer of RFID labels, has developed a wine cork with integrated transponder. The so-called Smart-Corq stores such information as bottling date, grape variety and alcohol content. The cork simplifies warehouse management and the exchange of information with suppliers, retailers and customers. The Italian wine manufacturer Arnaldo Caprai is already using this innovative cork for one of its most expensive wines.

## >> An atlas for the world of RFID

In March 2006, the Stuttgart Chamber of Industry and Commerce presented a new online portal on Radio Frequency Identification: the "RFID Atlas." The core of this Internet portal is a database with case studies from the German-speaking region. The directory was developed by scientists from the Steinbeis transfer center "My eBusiness." The information is primarily customized for the interests of medium-sized companies.

## >> Transponder inside a book page

In collaboration with the Japanese company Semiconductors Energy Laboratory, the German electronic group TDK has developed an RFID transponder that is thin enough to be incorporated in a sheet of paper. Including the antenna, the thickness of the chip is a mere 0.25 millimeters. A library in Vienna has already successfully tested the flexible transponders in its check-out system. In the future, they could also simplify data processing in bookstores.

## >> RFID without a chip

In March 2006, the US company InkSure Technologies presented its so-called "chipless tags" at the Smart Label Conference in Boston (USA). These labels no longer contain a silicon chip and can therefore be manufactured much more cost-effectively than the conventional RFID transponders. As a result, they may be particularly suitable for use at the item level. Based on estimates by the consulting firm IDTechEx, the market share of such applications will be about 45 percent in 2016.

## >> ECR Europe Conference in Stockholm

Innovative methods for efficient consumer response (ECR) took center stage at the ECR Europe Conference in Stockholm (Sweden) from May 29 to 31, 2006. In more than 30 high-caliber workshops and lectures, the attendees obtained information on current developments, including those in the field of category management. A special highlight was the People Development Forum on the subject of partnership collaboration. Dr. Hans-Joachim Körber, Chairman and CEO of METRO Group, and Thony Ruys, former CEO of the Heineken brewery, both of them co-chairs of ECR Europe, headed the plenary discussions.

## >> Golf ball hits dartboard

The British company World Golf Systems has invented a new recreational sport – TopGolf. As in conventional golf, the goal is to hit the ball into the hole and to score as many points as possible. However, there are no holes in the ground of the golf course, but the target looks like a dartboard. RFID readers are integrated into the discs, and the golf balls are equipped with transponders. This way, the players' accuracy can be measured exactly.

## >> Current study on the use of RFID in medium-sized companies

On the occasion of the 2006 CeBIT, the Informationsforum RFID has launched a new practical study – the "Leitfaden für den Mittelstand" (Guide for Medium-Sized Companies). The study was authored by the Research Institute for Telecommunications (FTK) in Dortmund (Germany). A total of ten case studies demonstrate the experience with the use of RFID in medium-sized companies. As a result, the potential of the technology is also illustrated for small and medium-sized companies, accompanied by important addresses and contacts. The publication is available for download on the website of the Informationsforum RFID at [www.info-rfid.de](http://www.info-rfid.de).

# "TECHNOLOGY IS NOT AN END IN ITSELF."

> An interview with Dr. Jorgo Chatzimarkakis, Member of the European Parliament

Europe has recognized the potential of RFID technology: in March of this year, the European Commission initiated a consultation process on RFID with the goal of promoting an exchange on this technology within Europe. The editors talked to Dr. Jorgo Chatzimarkakis, Member of the European Parliament from Germany's Liberal Democratic Party (FDP) and a Member of the European Committee on Industry, Research and Energy (ITRE).

**According to estimates, the market volume for RFID technology will increase tenfold over the next ten years. How well is Europe prepared to share in this potential?**

With leading European companies such as the METRO Group, Europe is in a far better position than we frequently believe. It is these companies that carry a large part of the growth in the RFID sector, thereby vitally influencing the development of the market. But the EU is also well-positioned with regard to hardware production and the development of software solutions. However, we need to try and use the leadership position European companies have fought for in the fields of research and development in Europe itself. Otherwise, we will punish outstanding achievements in Germany with disregard or engage in lengthy and frequently futile discussions. The Transrapid is a recent example: developed by leading European companies, it was realized only in China.

**How can you avoid such a development for RFID? Which obstacles must be overcome to advance the large-scale roll-out of the technology in Europe?**

We must develop realistic scenarios in which RFID can significantly improve people's quality of life and the competitiveness of European industry. Technology must not become an end in itself, if it is to have a chance in the long term! Citizens must be convinced of the benefits of the technology. The networking of everyday things into an "Internet of things" can only become reality, if we can attain societal consensus for the use of this new technology.



**The European Commission has initiated a consultation process on RFID technology. What does this mean specifically?**

The Commission's consultation process on RFID is directed at all lobbyists. It includes representatives from the manufacturing industry and the wholesale and retail sectors as well as consumer protection organizations, national and European data privacy officers and a large number of international experts. By the way, the parliament's Scientific and Technological Options Assessment program (STOA) is also involved in the process. During workshops, for example, companies realizing RFID solutions have the opportunity to directly communicate with potential customers and consumers. Each person involved has his or her very own perspective, specific questions or doubts regarding the pros and cons of RFID. As a result, the issues to be addressed in the working groups cover technical, legal and sociopolitical areas.

**What does the collaboration of research, business and politics look like with regard to the promotion of RFID on a European scale?**

Of course, RFID also plays an important role in Brussels (Belgium). With her appearance at CeBIT in Hannover (Germany) EU commissioner Viviane Reding underscored that the Commission as a legislator is willing to take both research and industry as well as consumer protectionists on board. Several activities are already under way in the European Parliament. STOA is currently developing a survey on the consequences of a broad market application of RFID. I myself held a workshop at the European Parliament in June.



## YOU ASK, WE ANSWER

### Are there any plans for equipping additional stores and outlets with RFID technology?

Currently, the METRO Group is using Radio Frequency Identification in 22 warehouses and stores of its sales brands and cross-divisional service companies. The selection of sites depends on various factors, such as the size or geographic location, and is done in close coordination with the partners from the consumer goods industry. At the moment the METRO Group is focusing on converting the portals for incoming and outgoing goods that are already installed at Metro Cash & Carry and Real to prepare them for the introduction of RFID at the case level. In the medium term, plans are to equip additional stores and warehouses of the METRO Group with RFID technology.

### Which specifications must be met for the RFID roll-out at the case level?

Prior to the physical receipt, the industry partners must announce delivery of the merchandise to the retailer via electronic dispatch advice (DESADV). The DESADV must declare that the goods are tagged with EPC transponders. In addition, the Serialized Global

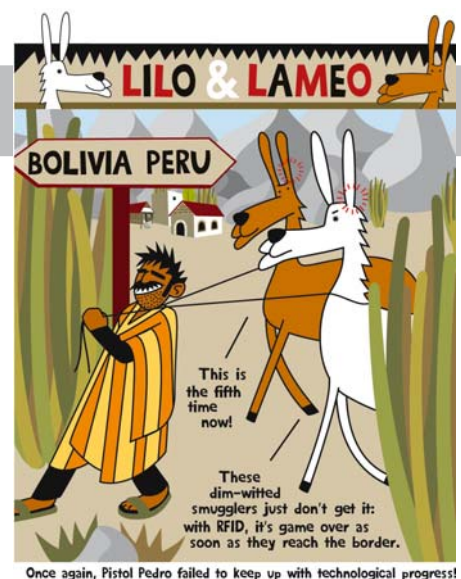
Trade Item Number (SGTIN) must be transmitted for retail units, which is a national interim solution developed by GS1 Germany. It standardizes the exchange of data in pilot projects. In principle, the METRO Group and its suppliers develop customized solutions for the introduction of RFID and arrange for individual schedules and objectives for each company.

### When will there be a binding schedule for the roll-out of second-generation RFID technology?

The specifications for the EPC Class 1/Gen. 2 standard have only been available in their final version since March 2006. The "EPC Tag Data Standard 1.3" last ratified by EPCglobal stipulates how the information must be encoded on the transponder. This information is indispensable for the smooth exchange of data between hardware and software. As a result, the METRO Group has been accepting pallets tagged with second-generation transponders only since April. Alternatively, manufacturers can tag their merchandise deliveries to the METRO Group with first-generation transponders until the end of June. After that date, EPC Class 1/Gen. 2 will be mandatory.

### What exactly is the connection between alpacas and RFID?

Alpacas are a fascinating example of the use of RFID beyond retailing and logistics: the farmers in the elevated regions of Peru specialize in the breeding of alpacas. These close relatives of llamas produce alpaca wool, which is in great demand all over the world. The animals are also popular with thieves and smugglers – their wool commands record prices on the world market. The farmers refused to tolerate the continuing losses to their flocks any longer. Now they are using RFID transponders to protect their animals. RFID chips that identify the owner are implanted behind the alpacas' ears or into their neck muscles. With the help of manual RFID readers, it is quick and easy to ascertain whether an animal was stolen.



# MILESTONE FOR RFID

> The second generation of transponders promises to deliver significantly enhanced performance

**In March 2006, the international standardization EPCglobal passed the "EPC Tag Data Standard 1.3" specification. Together with the Air Interface Protocol ratified at the end of 2004, which describes how reader and transponder communicate with each other, the key foundation for the continued development of RFID technology is now available.**

The new standard includes a mandatory stipulation for how many code digits, including the number of the logistic unit, are represented in the Electronic Product Code (EPC). Additional advantages of the "EPC Tag Data Standard 1.3": the storage capacity is no longer limited to 64 bits. Moreover, an additional level for user-specific data is planned. The individual serial number of the EPC can be represented alphanumerically in the future. Transmission can be optimized with three different reader settings, depending on whether just one reader is active or several are used simultaneously in a confined environment. Two different types of encoding allow the reading of transponders despite potential interfering noise due to outside applications. Writability was also optimized: users can write to the transponders directly in their application. This is even possible when the chips are already located on subcartons. Last but not least, the

reading speed was doubled – at least under European radio conditions. "For the first time ever, we have a globally uniform standard for passive RFID transponders. This is the basis for the breakthrough of the technology," said Dr. Michael Clasen, RFID Project Manager at GS1 Germany. "The demand for chips will increase significantly, so that unit prices will continue to go down in the medium term."

## Optimized performance

Companies that already work with RFID have high expectations for the second generation of the technology. This includes improved reading results and a constantly good performance across the entire available ultrahigh frequency band – important factors for the RFID roll-out at the case level. The METRO Group has already conducted



## Commentary: Global standardization will be possible

The question of introducing second-generation transponders is controversial for some but topical for others. Controversial, because many companies are only now beginning to approach

RFID technology. Topical, because starting in July 2006 the METRO Group will be using Gen. 2 transponders exclusively.

The advantages are obvious: EPCglobal Class 1/Gen. 2 builds on the experience of the first generation and takes it further. Apart from the 96-bit standard EPC, alphanumerical data content can also be represented in various versions. As a result, the new standard is fully compatible with regard to EAN numbering schemes. The integration of components will be simplified, since transponders, readers and printers from various manufacturers will be compatible with each other. Especially for open-loop scenarios, this represents an enormous advantage.

Reading speed was increased compared to the previous generation. In addition, two different kinds of encoding allow other applications to register transponders despite potential

interfering noise. The communications protocol is also less susceptible. Moreover, users can choose between three different reader settings to improve transmission, depending on whether one or several readers are used. This will enable selective reading and writing with a variety of readers in confined spaces. The writing process was also improved. The transponders can even be encoded when they have already been applied to a case. As an optional feature, the communication between reader and transponder can be encrypted. In security-sensitive applications, this guarantees optimized bugging protection.

All in all, it is fairly surprising when critical voices indirectly tolerate a delay of the roll-out. It is a good thing that these voices are few in number. In any case, RFID technology and the associated technological developments deserve determination and decisiveness.

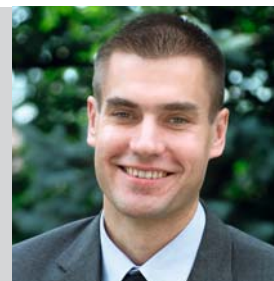
**Anja van Bocxlaer is the editor in chief of "RFID im Blick" (Focus on RFID). The trade journal is published ten times a year and provides information on relevant industry trends.**

## VOICES FROM THE INDUSTRY

comprehensive practical tests in this respect. "We were able to achieve very good results. For pallets in which each individual case was tagged with a transponder, the reading rates were almost up to 100 percent," said Dr. Gerd Wolfram, Managing Director of MGI METRO Group Information Technology. The new technology also prevailed in so-called multi-reader environments: "We actively ran three neighboring portals. Each of the readers transmitted on a different channel. In contrast to comparable tests in November 2005, the respective reading rate was more than 90 percent." This performance increase is due to a new function of the EPC, the dense reader mode. "The frequency band for RFID available in Europe only provides a limited number of channels," Clasen explains the problem. "The two-watt signals of the readers overlap the waves of the transponders." Based on the dense reader mode, readers can only transmit on selected channels, while the transponders respond via the remaining spectrum. "This way, the capacity of the frequency band can be used optimally," Clasen said.

### The next steps

Since the end of February, the METRO Group has been working to further improve the reading rates on the case level. "By the end of July, we will have optimized the processes. Parallel to that development, we are installing new portals for incoming and outgoing goods at Metro Cash & Carry and Real," said Dr. Gerd Wolfram. The company's schedule for the continued RFID roll-out features plans for the exclusive use of second-generation transponders from July 2006 onward. Wolfram: "Our suppliers can use the expertise of the project partners in the Future Store Initiative anytime to ensure a smooth conversion."

Igor Arbanas

[Managing Director of TRICON Consulting GmbH & Co. KG]

### What does Tricon GmbH do?

Tricon designs customized RFID solutions and supports its customers in their implementation or integration into existing IT infrastructures. In addition, Tricon develops RFID components that are geared toward the specific requirements of companies.

### For about one year, Tricon has been a partner of the METRO Group Future Store Initiative. Why are you active in the initiative?

The METRO Group Future Store Initiative is concerned with topics that are very important for the retail sector, industry and technology providers. It is particularly positive that the initiative is industry-driven and not technology-driven. This ensures optimal practice relevance. The partnership is equally worthwhile for the METRO Group and Tricon. We contribute a great deal of expertise and comprehensive practical experience. For example, one of our logistics projects in retailing was honored with the 2005 Austrian State Prize for Transport Logistics. The METRO Group Future Store Initiative offers Tricon many opportunities to expand the business and make new contacts. Together with other innovative companies, we can use this framework to develop future-oriented solutions.

### How do you think a company should proceed if it wishes to use RFID?

Companies that introduce RFID should act step by step according to the motto "Think big, start smart." It is of key importance to define a goal from the outset. In doing so, the result and not the technology should take center stage. Many projects are interdisciplinary and coincide with smaller or larger changes within the company. As a result, all decision-makers and participants should be involved in the process. The staff must also recognize the benefits of the innovation in order to be motivated to join in the work. Of course, it is also important to design the entire solution correctly with all its different facets. This also includes the selection of those components that are best suited for the project.

## TRADE FAIRS AND CONVENTIONS

### RFID Conference

June 29, 2006 \_ Berlin, Germany

At this event, the Informationsforum RFID brings together decision makers from the business, science and political arenas with the goal of promoting the dialog between the various interest groups. Guest speakers include Dr. Bernd Pfaffenbach, State Secretary at the Federal Ministry of Economics and Technology, and Professor Bernd Holznagel, Director of the Institute of Information, Telecommunication and Media Law at the University of Muenster (Germany).

Informationsforum RFID  
[www.info-rfid.de](http://www.info-rfid.de)

### EPCglobal/RFID in Europe 2006

September 6 to 8, 2006 \_ Duesseldorf, Germany

This conference informs companies from all of Europe on new possibilities and market opportunities offered by RFID. A closer look will be taken at the technology's stage of development as well as best-practice examples from the areas of consumer goods, textiles, health, automotive and aviation. The program includes presentations, tours and workshops.

GS1 Europe/EPCglobal  
[www.gs1-europe.de/europe/content/index\\_ger.html](http://www.gs1-europe.de/europe/content/index_ger.html)

### 7th ECR Day

September 28 to 29, 2006 \_ Munich, Germany

Is there anything predictable today in our democratic consumer society with brand-new sales channels, products and markets all the time? How do practitioners design efficient processes for systematic customer orientation? The ECR Day provides answers. In workshops and lectures, results from consumer surveys and success stories from other industries will be presented.

GS1 Germany  
[www.gs1-germany.de](http://www.gs1-germany.de)

### China Chain Store Expo 2006

November 2 to 4, 2006 \_ Beijing, China

Metro Cash & Carry and the METRO Group Future Store Initiative will jointly present themselves to the expert audience of Asia's leading commerce fair. The world's largest self-service wholesaler uses a pathway through the exhibit to demonstrate what stations foodstuffs will pass during quality control. The Future Store Initiative will present the use of RFID in the supply chain as well as the Future Mall with selected exhibits involving applications of the technology at supermarkets and future department stores.

China Chain Store & Franchise Association (CCFA)  
[www.ccfa.org.cn](http://www.ccfa.org.cn)

## PUBLIC DEBATE

### Consultation process continued

In mid-May, some initial workshops have taken place in Brussels (Belgium) with representatives from the political arena, the business sector and consumer associations as part of the European Commission's consultation process on RFID.

The participants of the working group on "RFID Application Domains and Emerging Trends" discussed potential and existing applications of the technology. Summary: depending on the application in question, different requirements toward legal regulations and the compatibility with currently valid standards must be taken into account. Questions regarding data privacy and potential health impacts were the topic of the second workshop on "RFID Security, Data Protection & Privacy, Health and Safety Issues." Voluntary commitments of the business sector regarding the



responsible use of RFID were deemed an important instrument in meeting data privacy requirements. In March, the Information Society and Media Directorate-General of the European Commission had started the consultation process on RFID. It is the objective of this process to formulate a uniform position of the EU on Radio Frequency Identification by the end of 2006. Apart from additional expert workshops, an online survey is also planned. A complete documentary report of the entire process is available for download at [www.rfidconsultation.eu](http://www.rfidconsultation.eu).

# WHAT ARE THE BENEFITS OF RFID?

> A survey of the possible applications of transponder technology in medium-sized consumer-goods-oriented companies with a special focus on the retail sector

Economic benefits for medium-sized retailers can only be gained from the use of RFID when a large number of industry partners participate in the roll-out of the technology. This is the result of a pilot project that was jointly implemented by the Institute for Retail Research (IfH) at the University of Cologne (Germany) and the Testing and Teaching Institution for Beer Brewing (VLB). From July 2003 to June 2005, the researchers investigated the optimization potential of RFID in medium-sized companies. For this purpose, they tagged 15,000 cases of beer with transponders and traced the path of the merchandise from the manufacturer – the Gaffel brewery – to three selected Cologne-based stores of the Rewe retail group. Subsequently, the cases were returned to the brewery via an interim warehouse. The collected data on incoming and outgoing goods enabled the scientists to make conclusions regarding the efficiency and practical usability of RFID.

## Seven tips for retail companies

Based on the experience gathered from the pilot project, the project report contains seven recommended courses of action that will make the RFID roll-out easier for companies. The first prerequisite for the successful implementation of RFID is a sufficient technological infrastructure including a merchandise management system and Internet access. In addition, retailers should coordinate the introduction of the technology with their industry partners. Furthermore, the authors recommend involving the staff in the project: "Such a system must be lived and must not depend on suboptimal application. The delivered data must be reliable, the reading rates must be perfect." Moreover, companies must define exactly what objectives they pursue with the use of RFID and precisely analyze costs and benefits.

## Comprehensive industry overview

As part of their research project, the IfH scientists examined the supply chains of various consumer goods, including foodstuffs, electronic devices and books: where can RFID be profitably used? The objective was to identify the merchandise-specific



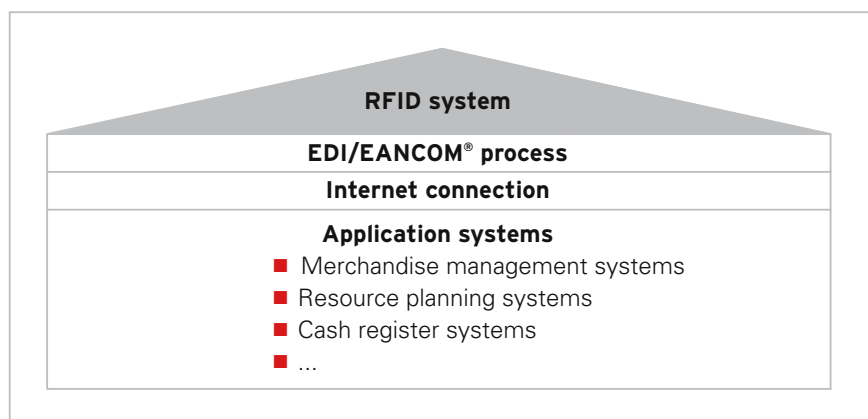
The study can be downloaded  
in German at <http://www.ecc-handel.de/erkenntnisse/1141292539/#Downloads>

requirements for the technology. It became apparent that closed, internal supply chains in particular can benefit from the use of RFID.

## Government involvement

The Federal Ministry for Economics and Technology funded this study. According to the authors of the study, it is a key task of the government to inform small and medium-sized companies in an unbiased manner about RFID and current developments. In addition, politicians could participate in task forces, thereby exerting an influence on the continued development of this innovative technology. Regulations regarding data privacy should be designed to be as user-friendly as possible, however, there is no specific need for action at this point.

## Basic technologies for the use of RFID



Source: Institut für Handelsforschung (Institute for Retail Research), 2005

## READ MORE

> Welcome to the Future Store - A Journey into the Future of Retail

This brochure invites readers to take a journey into the future of retailing – the METRO Group Future Store. The publication is designed in the form of a travel guide. The idea: shopping becomes an experience in a place where the retail sector and industry are testing innovative technological solutions and each customer can witness the future of retailing up close and personal. The sections of the brochure may look familiar to experienced globetrotters, e.g. "Portrait of the attractions," "History" or "Travel impressions." On about 80 pages, both interested consumers and expert visitors will find interesting information on the highlights of this extraordinary supermarket. Exclusive background information, tips on travel times and directions as well as selected tours round out the offering.

The publication is available in both German and English and can be ordered via the METRO Group RFID Hotline:



Phone: +49 (0)2 11.68 86-20 04  
 Fax: +49 (0)2 11.68 86-4 90-60 04  
 E-mail: [rfid@metro.de](mailto:rfid@metro.de)

Welcome to the Future Store

METRO Group, Duesseldorf

> RFID/EPC Compendium



RFID/EPC Compendium

GS1 Germany, Cologne

How can companies optimize their processes with RFID? What experiences have users gathered during the past few years, and which requirements will the technology have to meet in the future? The "RFID/EPC Compendium," published by the standardization organization GS1 Germany, provides detailed answers to these questions. It offers an overview of the current stage of development and makes basic knowledge about all aspects of RFID and the Electronic Product Code (EPC) available. The offerings range from start-up help and technical information to profitability calculations and RFID process descriptions. The compendium consists of modules that build on each other and present the information in greater depth in stepwise fashion. This makes the publication a handy encyclopedia for both novices and experts from retail, industry, logistics and the IT sector.

The RFID/EPC Compendium can be purchased at the GS1 Germany Online Shop at [http://www.gs1-germany.de/internet/content/produkte/epcglobal/rfid\\_epc\\_in\\_der\\_praxis/rfid\\_epc\\_kompendium/index\\_ger.html](http://www.gs1-germany.de/internet/content/produkte/epcglobal/rfid_epc_in_der_praxis/rfid_epc_kompendium/index_ger.html).

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