RFID

Dear readers,
Laundry detergent, hair shampoo or liquid cleaners: in the past, RFID transponders and readers failed on objects with liquid contents. The error-free reading of multiple chips simultaneously also frequently posed problems for the hardware. The new transponder generation EPCglobal Class 1/Gen. 2 effortlessly masters such problems. Read our cover story to learn more about the benefits of EPCglobal Class 1/Gen. 2 and the introduction of the new standard at the METRO Group.

RFID offers benefits not just for large companies. Medium-sized companies are now also getting into the subject. Management consultants predict that medium-sized companies will invest more strongly in RFID in the future. They need to make up for lost time and keep up with technical standards. Jörg Glaser, Director for Organization and IT at the German Central Association of Commercial Cooperatives (Zentralverband Gewerblicher Verbundgruppen e. V.), will comment on this theory in our interview.

Internationally, RFID technology is a key subject as well. Our background report is concerned with a current pilot project of the METRO Group: Advanced Logistics Asia. On a worldwide scale, the METRO Group uses the technology in close collaboration with local suppliers in China. By the way, more information will also be available at the China Chain Store Expo from November 2 to 4, 2006 in Beijing, where the METRO Group Future Store Initiative will jointly exhibit with Metro Cash & Carry China.

We hope you enjoy your reading.
Yours truly,

Zygmunt Mierdorf
Member of the Management Board
of METRO Group

METRO Group
Future Store Initiative

METRO GROUP BANKS ON SECOND GENERATION

ON JULY 1, 2006, THE COMPANY CONVERTED TO THE NEW TRANSPONDER STANDARD EPCGLOBAL CLASS 1/GEN. 2. **The new generation offers numerous advantages and allows the use of RFID at case level, which the METRO Group has been testing in practice since August of this year. In addition, the company is testing future applications of the new standard at the METRO Group RFID Innovation Center.**

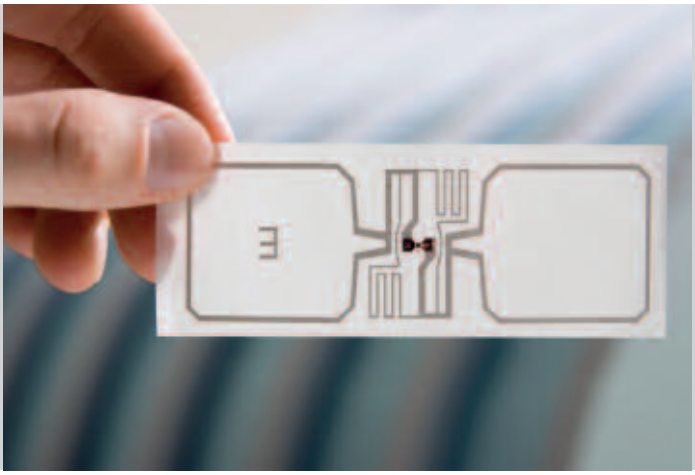
"Gen. 2 has already exceeded our expectations," said Philipp Blome, who is in charge of RFID Pilots & Trials at MGI METRO Group Information Technology. "We achieve excellent reading rates – even for difficult materials." These include especially objects with liquid contents such as detergent or hair shampoo. CDs can also be read reliably with Gen. 2 transponders. "The second-generation chips use the disc surface to support the antenna. This enhances the antenna signal and generates optimal reading results," the expert explained. Objects with a metallic surface are still causing difficulties. The metal foil in chocolate packaging reflects the radio waves. A practicable solution for this challenge is currently being developed.

Efficient and cost-effective

The new generation is predominantly marked by two factors: the greater hardware sensitivity and the quicker data exchange between transponders and readers. Due to the greater sensitivity of chips and readers, even very weak signals can be exchanged. Thanks to this improvement, RFID now also works for products with liquid contents. "Pallets with shower gel or fabric softener can now be registered just as unambiguously as products from solid materials," Blome said. "In the past, the liquid would absorb the radio signal. This can no longer happen with the new standard." Another plus: the faster information flow between chip and reader facilitates bulk reading. Up to 300 transponders can be registered simultaneously. The previous standard managed a maximum of 60 transponders in

RFID at the METRO Group

July 2003: Start of the RFID testing phase at the METRO Group Future Store in Rheinberg near Duesseldorf, Germany
July 2004: Opening of the METRO Group RFID Innovation Center in Neuss near Duesseldorf, Germany
November 2004: Start of the RFID roll-out in selected warehouses and stores of the Metro Cash & Carry, Real and Galeria Kaufhof retail brands. The participating suppliers equip their pallets for the METRO Group with RFID transponders.
July 2006: Introduction of the new transponder standard EPCglobal Class1/Gen. 2
August 2006: Application of RFID on sales cartons at Real and the METRO Group Future Store



Page 2: As a test, selected manufacturers tag their sales cartons with RFID chips. Page 3: The new UHF transponders can be easily read.

parallel. "For example, we can now book deliveries of several hundred T-shirts without error in just the shortest period of time." Costs also speak in favor of the new generation. With Gen. 2, EPCglobal has developed the first globally applicable RFID standard. The worldwide demand curbs the price development. For a quantity of one million transponders, the current unit price is 7.9 cents. Experts predict additional significant price reductions for the next few years.

Good reading rates for pallets, cases and items

Before the practical start, the METRO Group thoroughly put Gen. 2 to the test at the RFID Innovation Center. The new generation impressively proved its efficiency in the METRO Group's RFID testing platform. Whether it's mixed pallets with soap, detergent and shower gel or homogeneous pallets with hair shampoo – reading rates of up to 99 percent are now the rule when registering liquid merchandise. But the use of Gen. 2 is not just limited to pallets. Cases and individual items can also be registered easily with the efficient UHF transponders. This represents immense progress, because different distances between chip and reader required different frequency ranges in the past. Larger distances, e. g. during the receipt of pallets at incoming goods, could only be overcome with UHF transponders. Shorter distances, for example during the registration of individual items on Smart Shelves, required HF transponders. In order to be able to use RFID on pallets, cases and products, users would have had to work with two different chip versions in parallel. This would have not been very practicable and quite expensive. At the METRO Group RFID Innovation Center, the new-generation UHF chips demonstrate that they are also excellently suited for short-range applications: at the check-out or Smart Shelf, items with transponders can be read in a matter of seconds. The registration of sales cartons in the simulated warehouse area also works without problems.

Training seminar dates at the EECC

The European EPC Competence Center (EECC) regularly offers training seminars for the handling of RFID. The training offering consists of three modules addressed to different target groups.

Module I –
RFID and EPC basics
Date: November 28, 2006
Target group: RFID novices
Costs: 595.00 euros per person plus VAT
No more than 25 participants

Module II –
Influence factors for a successful RFID roll-out
Date: November 29, 2006
Target group: RFID intermediates
Costs: 595.00 euros per person plus VAT
No more than 25 participants

Module III –
UHF expert training
Date: November 30, 2006
Target group: RFID experts
Costs: 695.00 euros per person plus VAT
No more than 25 participants

Interested individuals can register at:
Phone: +49 (0)21 37.92 78 05
E-mail: epc@eecc.info
Internet: www.eecc.info

Worldwide innovation with Gen. 2

The METRO Group RFID Innovation Center also allows a peek into the future. Here, the retail company is testing which applications can be realized with Gen. 2 in the future. One worldwide innovation takes center stage: the Smart Clothes Rack, which works with Gen. 2 and innovative antenna technology. The antenna is located in the rack's hollow space and receives the radio signals from blouses or T-shirts tagged with new-generation RFID transponders. Integrated readers register whenever a customer removes a clothing item from the clothes rack and send this information to the merchandise management system where the inventory is automatically updated. This way, the staff maintains an overview of the current inventory situation at all times. If only a few items remain available, they can react immediately and restock.

Gen. 2 in use at the METRO Group

After comprehensive tests, the day had come on July 1, 2006: the METRO Group converted its RFID processes to the new standard. All suppliers participating in the RFID roll-out have since been delivering their pallets with Gen. 2 transponders. Since August 2006, the company has also been testing transponder use on sales cartons at Real and at the METRO Group Future Store in Rheinberg, Germany. The goods tagged with RFID transponders are clearly labeled. Upon request, the chips can be deactivated quickly and conveniently at the customer information desk. Soon, special De-Activators will also be available, where customers can render the chips on sales cartons unusable. Posters and brochures in the stores inform customers in detail on the use of the technology. At Metro Cash & Carry, the use of RFID on cases will also begin shortly. On the suppliers' side, both Kraft Foods and Procter & Gamble will participate. "The experience from this pilot project will help us detect and reduce errors, thereby stabilizing processes before the start of the roll-out," said Dr. Gerd Wolfram, Managing Director of MGI METRO Group Information Technology and in charge of introducing the technology at the retail company. "Overall, by using RFID at case level, we hope to get an even more exact overview of our inventories and significantly fewer empty shelves. Everybody will benefit from this situation – our customers, our partners from the consumer goods industry and we as retailers," Dr. Wolfram said.

RFID on sales cartons helps minimize out-of-stock situations.

However, the application of Gen. 2 and the use of the innovative radio technology at case level also means a conversion for our suppliers. "We see it as our task to support the required knowledge transfer. Together with GS1 Germany, we operate the European EPC Competence Center at the METRO Group RFID Innovation Center, where we provide a comprehensive training program and special equipment for various transponder tests," Dr. Wolfram said. Industry partners can use it to test Gen. 2 applications and significantly speed up the learning curve.

RFID COMPACT

>> Perfect oral hygiene thanks to Smart Chips

Oral-B has developed an electronic toothbrush that adjusts itself to individual tooth-brushing habits and optimizes the cleansing performance. Using a Smart Chip in the brush head, the Oral-B Professional Care 9500 DLX Triumph identifies the user in question and registers the tooth-brushing frequency and duration. The Smart Toothbrush reminds the user when to switch brush heads and automatically chooses the correct setting out of the total of four different cleansing levels.

>> The Nolte kitchen company banks on RFID

Nolte Küchen GmbH & Co. KG has introduced RFID technology for warehouse management at its factory in Loehne, Germany. As part of a reorganization of the company's material flow management, the manufacturer of built-in kitchens installed two RFID readers and tagged all pallets with RFID transponders. In particular, this helped reduce the time required for materials registration: trucks, for example, are now loaded three times faster than in the past.

>> Trust based on information

In August 2006, a new German-language information portal on RFID technology went online. At www.rfid-ready.de, interested individuals can find facts, figures and practical examples on the subject. The objective of this independent portal is to inform the public about RFID. In addition, it will help companies find the right partner and provides an overview of the solutions available in the market. rfid-ready would like to make the benefits and functions of RFID understood to increase trust in the technology.

>> Safely locked with "MyKey 2300"

The U.S. company GlobalComm has developed an RFID key for residential entrances. Instead of a lock, a complete RFID reader is installed. At the push of a button, the "MyKey 2300" system locks the door and will only open it from the outside with an RFID card or a PIN code. From the inside, however, the door can be opened anytime. The lock is kept in place mechanically and cannot open by itself even during a power outage. Another benefit is the automatic locking system, which will lock the door after three seconds.

>> Office organization with RFID

The company Thax Software has developed an office management system that not only makes it easier to search for documents but also facilitates the link of paper files to digital documents. The principle of "Findentity" is simple: each file is tagged with an RFID transponder. Readers in the offices register the data stored on the chip and show the location of the file on a map. Thanks to automatic identification, users can also access all electronic documents of the file immediately.

>> Medium-sized companies catch up on investments

During the next few years, medium-sized companies will increasingly invest in RFID technology, as is expected by the experts of Pierre Audoin Consultants (PAC). Since there is a substantial backlog in the fields of IT and software, companies will spend more funds in these areas in the future. Investments will focus on the optimization of logistics: especially companies in the retail sector and the manufacturing industry expect RFID to improve their merchandise flows.

>> Sales increases are feasible

One out of twelve items written down on a customer's shopping list is sold out at the supermarket. For the North American consumer goods industry, this generates losses worth 52 billion euros per year, which corresponds to 2.6 percent of overall sales. An analysis of U.S. investment bank Lehmann Brothers has shown that the comprehensive application of RFID can help reduce out-of-shelf situations. According to Lehmann Brothers, sales could be increased by 0.5 percent through the use of the technology.

"EVERYBODY MUST BENEFIT."

› Interview with Jörg Glaser, Director at the German Central Association of Commercial Cooperatives (Zentralverband Gewerblicher Verbundgruppen e. V.)

Large retail companies such as Wal-Mart and the METRO Group are pioneers in the introduction of RFID technology. Medium-sized companies, on the other hand, previously adopted a wait-and-see policy. The editors spoke to Jörg Glaser, Director at the German Central Association of Commercial Cooperatives (Zentralverband Gewerblicher Verbundgruppen e. V. – ZGV). The ZGV represents cooperating medium-sized companies from the retail, trades and service industry. The association supports cooperation across company lines and unites about 180,000 smaller and medium-sized companies in about 300 groups.

Management consultants are expecting a change among medium-sized businesses: for the future, they forecast greater IT investments by the companies, including RFID. What do you say about this forecast?
Due to past economic difficulties, there is now a backlog in many industries. This applies at least to the medium-sized cooperatives and their associates which we represent. I do think that the companies are now forced to spend money to make the flow of information between all parties involved uniform and complete. Especially EDI standards must be introduced. RFID in particular has not yet reached the medium-sized companies – with the exception of large grocery store cooperatives such as the Rewe Group or Edeka. Nevertheless, everybody is looking with suspense at the RFID projects of the large corporations, especially with regard to what economic success the technology will bring. However, to be able to use RFID, uniform data standards are required, and medium-sized companies are currently still busy enough with their introduction.

This could be one reason why medium-sized businesses have been rather guarded toward RFID. Are there other reasons?
In general, corporations have an advantage over cooperatives: the latter must convince more people to implement pilot projects. This is easier to push through in a corporation. Another reason for the previously guarded behavior is that medium-sized companies are not yet convinced that RFID will pay off for them. The challenge consists of finding a way for all involved parties to benefit. We experienced a similar situation during the introduction of EDIFACT, an international standard for electronic data exchange across different industries. Since about 1990, the cooperatives and the industry have met in ZGV working groups time and again. A give-and-take principle developed over the years. When a supplier said he would transmit an invoice in the electronic INVOIC message format, the cooperative in turn was willing to use the electronic payment notification. Today, both sides benefit from this development. In this respect, the ECR idea prevailed.

And we haven't yet reached this point with RFID?
Exactly. Now it must be our goal to jointly develop solutions. Suppliers are currently investing in a technology that they don't use sufficiently themselves. I believe that, due to insufficient IT infrastructure, they are not yet able to evaluate the data, even though the retail sector makes them available.

What do you recommend to companies that wish to integrate RFID into their processes?
It is important that they keep in touch with the current players, i.e. the METRO Group on the part of corporations and the Rewe Group on the part of grocery store cooperatives. This way, medium-sized companies can benefit from their experience and set up small test scenarios in the next step. In doing so, it is important to clarify whether the existing databases would be able to process the arising volume of information. Nothing could be worse than building "data cemeteries" that cannot be analyzed.

One final question: where do you see RFID in ten years?
The great visions of everybody working with RFID technology is certainly the "Internet of things." However, I am skeptical if this will be the case in as little as ten years. Nevertheless, if we pursue this vision, we will one day be able to check from any point in the world where in the supply chain an item is located. Products could control the systems, not the other way round. This is one vision that will also concern medium-sized businesses. The question is from what industry and with what force this development will ultimately come. It is our responsibility as an association to continuously keep our members posted on these issues.

YOU ASK, WE ANSWER

What is the difference between the EPC Tag Data Standard 1.3 and its predecessor version?

The EPC Tag Data Standard stipulates how the information of the Electronic Product Code (EPC) is stored on the transponder. This is the prerequisite for a smooth data exchange between the individual hardware components and the EPC network. In contrast to its predecessor, the EPC Tag Data Standard 1.3 expressly applies to second-generation RFID transponders. Among others, it provides for the following changes:

- 64-bit numbering is no longer possible.
- The rules for scaled EPC headers no longer apply.
- The encoding of the Electronic Product Code has been adjusted to the structure of second-generation transponders.
- The numerical standards SGTIN, SGLN, GRAI and GIAI can now also be represented alphanumerically.

What do the new standards for RFID transponders mean specifically for the users?

EPCglobal Class 1/Gen. 2 provides a significant performance increase: more than 300 transponders can be read per second. This is possible, since the signals of the reader and the transponder are separated from each other via the so-called Dense Reader Mode. As a result, the efficiency of transponders in Europe will be 20 percent higher than in the United States in the foreseeable future.

Second-generation transponders and readers are also more sensitive than their first-generation predecessors, which is why even faint signals can now be heard. Furthermore, certain mechanisms have been integrated that minimize potential disruptions (interference) from other readers or transponders.

In addition, the reading speed was doubled compared to the previous generation – at least under European radio conditions.

Why do suppliers who wish to use RFID have to be members of EPCglobal?

For the RFID roll-out, the METRO Group decided against an isolated solution and uses the globally uniform standards of EPCglobal instead. They represent the basis for the quick, smooth and secure exchange of product information between consumer goods manufacturers and retail companies. Among others, full members of EPCglobal receive access to hardware and software specifications they need to use RFID based on the Electronic Product Code. In addition, they can apply for a so-called EPC Manager Number, a key component of the EPC that allows unmistakable assignments of products and logistic units to a company. More information on membership and costs is available at www.epcglobalinc.org.

What is the function of the middleware?

Middleware is a type of software that works similarly to an adapter. It communicates with the readers and individual applications and prepares the collected information in such a manner that it can be processed by applications such as the merchandise management system or the EPCglobal network. Furthermore, the middleware is responsible for activating and deactivating the readers at the incoming and outgoing goods portals whenever the motion sensors report that a pallet is being received or sent out.

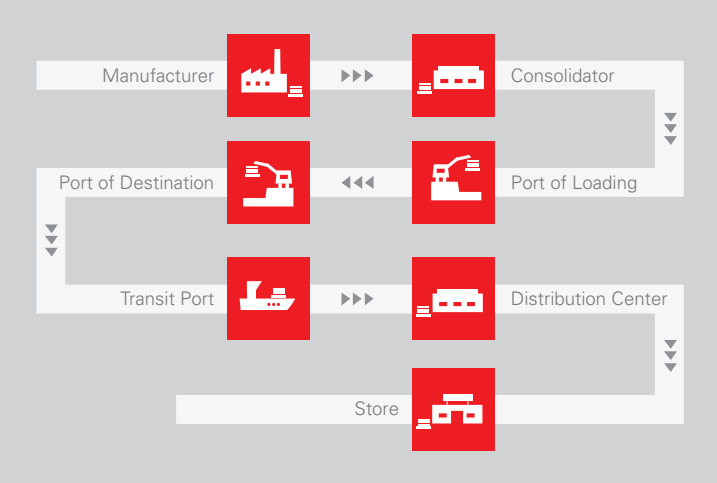
FROM HONG KONG TO UNNA

› The METRO Group is the first retail company to test RFID technology in global goods traffic

Logistic processes and warehouse management can be made more efficient and transparent with RFID. What already works at the national level will now also start in global commerce. With the "Advanced Logistics Asia" (ALA) program, the METRO Group is now also introducing the innovative technology for the first time along the supply chain between China and Germany.

"The Chinese market plays a key role for the future use of RFID technology," said Dr. Gerd Wolfram, Managing Director of MGI METRO Group Information Technology and in charge of the RFID rollout at the retail company. The most densely populated country on Earth doesn't just provide a gigantic sales market. Numerous manufacturing and supply processes also begin there. With an export volume of 1,432 billion U.S. dollars in 2005, the People's Republic is the world's third largest trading nation after the United States and Germany. The most important export goods are textiles, home entertainment products and toys. However, the degree of automation is still low for most Chinese manufacturers. Usually, retail orders are registered on paper and all further processes are not coordinated with computer assistance either. Many people don't know RFID technology.

To change this situation, the METRO Group has started the "Advanced Logistics Asia" (ALA) program. The project is meant to demonstrate the economic potential of RFID – for manufacturers, transportation providers and retail companies. The long-term objective is to make international merchandise flows more efficient and transparent with the help of the technology and to completely track the path of transportation. For this purpose, several pilot projects and test scenarios are planned that focus on deliveries from Hong Kong and the Pearl River Delta to Germany.



Interview: Klaus Kriener, Project Manager for Advanced Logistics Asia (ALA)

What objectives does the METRO Group pursue with ALA?
We are interested in the specific advantages RFID technology has for international goods traffic. We investigate the business benefits of quicker information flow as well as greater data accuracy and transparency at all levels of the supply chain, e.g. how does a logistics manager benefit, if he knows exactly which container arrives at what time at the port of Rotterdam?

Why was China selected for the program?
There are two reasons. On the one hand, China is the METRO Group's largest procurement market in Asia: about two-thirds of the goods imported from Asia originate there. On the other hand, with MGBI METRO Group Buying International Hong Kong, we have a strong and successful purchasing company locally, which is responsible for all purchasing logistics. In addition, we focus on the south of China, where the largest part of the gross national product is generated and where most of our suppliers are based.

Did the program start well? How will it continue?
The pre-tests were successful: we have dispatched and processed some initial merchandise shipments with RFID transponders. The internal flow of information went smoothly as well. In October, the so-called implementation started, which means that over the next three months we will test the technology under real conditions. Then there will be an exact analysis based on which we will make a decision regarding the next course of action.

Limitless transparency
With the "Cross Border Visibility" pilot project, the METRO Group has been testing since the fall of 2006 how much RFID technology can improve the merchandise flow from the Chinese manufacturers via the European distribution centers to the stores of the METRO Group. For this purpose, Chinese logistics service provider Fat Kee Stevedores Limited, a company that bundles products from various manufacturers for the METRO Group and prepares them for shipping, equips select merchandise shipments with passive RFID transponders. An RFID reader at the exporter's outgoing goods portal registers the shipments and automatically checks them for completeness. The new technology accelerates the work process many times over. "Normally, warehouse workers check each shipment individually – a lengthy procedure that can lead to errors time and again," said Terence Yan, Senior Project Manager at Fat Kee Stevedores Limited.

From there, the packages are shipped by MGBI METRO Group Buying International Hong Kong via different ports to Germany. At the METRO Group Distribution Center in Unna, the merchandise is checked again with RFID. A reader at the incoming goods portal controls within seconds whether all ordered products were delivered. Now the items can be distributed to the outlets and stores of the METRO Group.

Jointly achieving greater efficiency
The project is an important step for improving the merchandise flow between Asia and Europe. To accomplish this, the cross-divisional service companies MGI METRO Group Information Technology, MGBI METRO Group Buying International and MGL METRO Group Logistics collaborate with industry partner Intel, logistics service provider Fat Kee Stevedores Limited and the standardization organization GS1 Hong Kong. In mid-October, the managers in charge met at a CEO conference in Hong Kong for an exchange on the current status and the next steps.

VOICES FROM THE INDUSTRY

deister electronic
The RFID Company

Joachim Gonschior

[Key Account Manager Ident & Automation, deister electronic GmbH]

Among others, deister electronic GmbH manufactures RFID products. What are they?
We develop RFID writers and readers for all industries that use this technology. Currently, these predominantly include the fields of security, industry in general, logistics, and retailing. For the latter, we produce incoming and outgoing goods portals as well as specialized small reading units for handheld devices and printers.

When was the first time you heard about the METRO Group Future Store Initiative? Why did you become a member?
We have known about the Future Store Initiative ever since it was established in 2002. By doing so, the METRO Group tremendously advanced the development of Radio Frequency Identification for the retail sector. For deister electronic GmbH, the initiative is an important interface with the users. Based on the joint work, we can develop solutions that are specially tailored to the needs of retailers and suppliers. One such example is the RFID-based pick-by-voice system. It was created based on the experience we gathered at a distribution warehouse of the METRO Group.

What exactly is pick-by-voice?
It is a voice-controlled system that supports the employees during order picking at the warehouse. They communicate with the merchandise management system over a headset. During the conventional pick-by-voice, the employee confirms over a microphone that he has executed the instruction he received. Errors easily occur in this process. Therefore, deister electronic GmbH has developed a special glove with integrated RFID reader. The system automatically registers whether the employee compiles the correct goods in the desired quantity on the pallet. This way, errors can be reduced and the order picking process can be accelerated.

TRADE FAIRS AND CONVENTIONS

Upcoming events

German Retail Convention (Deutscher Handelskongress)
October 30 to 31, 2006 _ Berlin, Germany
Under the motto "New Generation – Retail and consumer goods industry in a time of transformation!" the industry will meet for the largest retail convention. This year's highlights will be the award ceremony for the German Retail Prize as well as the 2006 Lifetime Award of the German Retail Sector. Speakers include Kurt Beck, Prime Minister of Rhineland-Palatinate and Federal Chairman of the Social Democrats (SPD).

Deutscher Handelskongress
www.handelskongress.de

ECR live! Category Management: CRM – Building Profitable Customer Relations
November 7 to 8, 2006 _ Cologne, Germany
Category management remains an important subject for the retail sector. During the two-day event, high-ranking experts will report on their experience in setting up and expanding profitable customer relationships. In workshops and lectures, the participants will also learn how they can develop customer loyalty and how they can match their processes to their top clients.

GS1 Germany
www.gs1-germany.de

3rd Annual Handelsblatt Conference on RFID: Successful and value-generating applications
November 15 to 16, 2006 _ Frankfurt (Main), Germany
The Frankfurt conference will gather pioneers and international experts in RFID technology. Subjects of the two-day event include the RFID market and its development, value enhancement in logistics, RFID ticketing in public transportation and the successful use of RFID in the health care sector. The conference is chaired by Professor Dr. Elgar Fleisch of the Institute for Technology Management at the University of St. Gallen, Switzerland.

Handelsblatt
http://vhb.handelsblatt.com/rfid

Past events

RFID – Technology of the Future, August 28, 2006 _ Duesseldorf, Germany
RFID will move the world: this was the message of this event of the Duesseldorf regional administration. About 200 guests used the occasion to obtain information on the opportunities of the technology. After the expert lectures, the audience held a discussion with the speakers, including Professor Andreas Pinkwart, North Rhine-Westphalian Minister for Innovation, Science, Research and Technology; Professor Michael ten Hompel, Fraunhofer Institute for Material Flow and Logistics; Member of the Bundestag Manfred Zöllmer (SPD); and Dr. Gerd Wolfram, MGI METRO Group Information Technology.

RFID Policy for Europe: Positions from North Rhine-Westphalia, September 20, 2006 _ Brussels, Belgium
Experts view RFID as a new cross-sectional technology with great significance for growth and employment. To indicate directions in the European dialog between industry, politicians and society, the State Chancellery of North Rhine-Westphalia extended invitations to a workshop at the state representation in Brussels. The event was attended by Andreas Krautscheid, Government Spokesperson and State Secretary for media in North Rhine-Westphalia, and Rudolf Strohmeier, Cabinet Chief of EU Commissioner Viviane Reding. Furthermore, representatives from major companies such as the METRO Group, T-Systems and DHL discussed the economic potential of RFID.

PUBLIC DEBATE

Parliamentary technology assessment and RFID
The so-called ubiquitous computing plays an increasingly significant role in more and more areas of life. To be able to help shape future technological developments and to create the corresponding framework, the Research Committee of the German Parliament has commissioned a study with the Office of Technology Assessment (Büro für Technikfolgen-Abschätzung beim Deutschen Bundestag, TAB) in June of 2006. This scientific institution supports the parliament with research- and technology-related consultation and decision-making processes.

The study on ubiquitous computing will be conducted by the Fraunhofer Institute for Systems and Innovation Research in Karlsruhe, Germany, which has been collaborating with TAB since 2003. One of the subjects to be addressed will be RFID technology.

Also in other European countries, institutions for technology assessment are currently dealing with RFID, e.g. in Denmark, Sweden, Norway and the Netherlands. One of the issues concerns data privacy aspects. An overview of parliamentary technology assessment activities in Europe is available at the platform "European Parliamentary Technology Assessment" at www.eptanetwork.org.

NO NEED FOR ACTION

› Legal dimensions of Radio Frequency Identification

The German data privacy and security legislation is marked by a particularly high protective level; an additional legal regulation for RFID is not necessary. This assessment was made in a legal expert opinion by Professor Dr. Bernd Holznagel of the Westphalian Wilhelms University, Muenster, on behalf of the Informationsforum RFID. Nevertheless, Holznagel, who is the director of the Institute for Information, Telecommunications and Media Law, recommends users to respond to any potentially existing reservations against RFID. For example, as part of a voluntary commitment, legal data privacy provisions could be made that would exceed the effective legal regulations. Companies could label products that are tagged with transponders. Consumers should also have the possibility to view the information stored on the chip at any time and to render it unusable, if requested – even if the data are not person-related. The EPCglobal guidelines for the use of RFID are already implementing these recommendations.

Differentiated analysis

The authors – Professor Holznagel and his scientific collaborator, Mareike Bonnekoh – first analyzed to what extent data privacy regulations are affected by the use of RFID. The Federal Data Privacy Act (BDSG) applies as soon as person-related data are stored directly on the chip or a link to personal information is made via a database. The affected individuals must give their consent, if companies wish to store their personal information. Exceptions are only permissible as part of effective legal regulations, i.e. if a company could not fulfill a valid contract without the customer's personal information. On the other hand, the use of RFID in logistics and warehouse management gives no cause for concern. The Electronic Product Code (EPC) is not person-related.

During the second part of the expert opinion, Holznagel and Bonnekoh examined data privacy during the use of RFID. Based on their assessment, users can take sufficient technical security precautions to ensure the integrity, confidentiality and authenticity of the information. Possibilities include e. g. password protection or encrypted communication. There are already comprehensive legal obligations for the safeguarding of person-related data.

The expert opinion is available in German for downloading at
www.info-rfid.de/downloads/rfid_rechtsgutachten.pdf

Confidential data exchange

From a legal standpoint, a third aspect during the use of RFID is the protection of confidential communications. Pursuant to the expert opinion, the data exchange between reader and transponder comes under the confidentiality of telecommunications. Non-authorized third-party persons who intentionally intercept such communications violate the law. In this context, according to the authors of the study, the current legal situation is sufficient to cope with the risks currently associated with RFID. In their final conclusion, Holznagel and Bonnekoh advised against already reacting to future risks with new legislation today. Instead, the flexible instruments of data privacy law should be adjusted to the new challenges.

On September 27, 2006, the German Parliament also dealt with the issue as part of a discussion round. Participants included Johann-Henrich Krummacher (CDU), Manfred Zoellmer (SPD), Gisela Piltz (FDP) and Silke Stokar (Buendnis 90/Die Gruenen).

Legal assessment of RFID – data privacy

Case group 1 Storage of an EPC	**No person-related data**	**Federal Data Privacy Act (BDSG) does not apply**	
Case group 2 Linking of an EPC with person-related data	**Person-related data**	**Federal Data Privacy Act (BDSG) is applicable**	■ Section 4a BDSG, consent proviso ■ Section 28 BDSG, legal exceptional situation ■ Notification and information duty pursuant to sections 33, 34 BDSG
Case group 3 Storage of person-related data directly on the chip	**Person-related data**	**Federal Data Privacy Act (BDSG) is applicable**	■ Section 4a BDSG, consent proviso ■ Section 28 BDSG, legal exceptional situation ■ Information duties pursuant to section 6c BDSG ■ Notification and information duties pursuant to sections 33, 34 BDSG

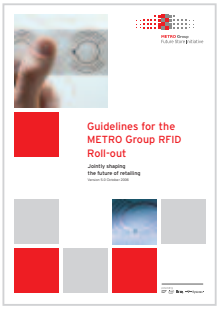
Source: Holznagel/Bonnekoh: Rechtliche Dimensionen der Radiofrequenz-Indentifikation, Berlin 2006

READ MORE

› Guidelines for the METRO Group RFID Roll-out – Jointly shaping the future of retailing

Since July 2006, the METRO Group has been using the new EPCglobal standard Class 1/Gen. 2. A new and revised edition of the "Guidelines for the RFID Roll-out at the METRO Group" will support the industry partners in the conversion of their RFID processes. The brochure summarizes the requirements for the system architecture in a clear-cut manner and provides important and up-to-date information regarding suitable RFID hardware and software. Since the METRO Group has also been testing Radio Frequency Identification at case level since July of 2006, the company's partners will find placement information for RFID transponders on pallets and cases. In addition, the guide answers key questions about the technology.

The 44-page brochure "Guidelines for the METRO Group RFID Roll-out" is available in PDF format only. It can be ordered in German or English from the hotline of the METRO Group RFID Competence Team:



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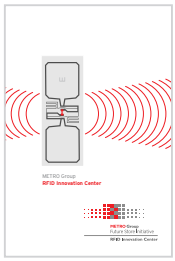
› METRO Group RFID Innovation Center



METRO Group RFID Innovation Center

METRO Group, Duesseldorf, Germany

In July 2006, the METRO Group RFID Innovation Center in Neuss, Germany celebrated its second anniversary. In an area of 1,900 square meters, the globally leading information and development platform offers an opportunity to become familiar with RFID applications for the employees of the sales divisions as well as industry and IT partners. Ever since the opening, the technology has evolved at rapid speed – and so has the RFID Innovation Center. A new and revised edition of the information brochure presents the more than 40 systems and describes the areas in which RFID is used: order picking, warehouse management, department store, supermarket and household. The brochure provides information on the testing and training opportunities of the European EPC Competence Center (EECC), which was integrated into the RFID Innovation Center at the end of 2005. At the EECC, interested individuals can test RFID under real-life conditions. A fold-out map provides on-site orientation for visitors.

The brochure is published in German and English and can be ordered from the hotline of the METRO Group RFID Competence Team:

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