RFID.nordic.se

RFID TAGGING IN SALMON INCREASES SELLING

RFID-tagging of salmon brood has been used since long. The identification of take-away, delicious salmon dishes using RFID is a world novelty!

Christer Lagnell and his family started the famous Laxbutiken back in 1987 and since 1996 the combined restaurant and shop is situated along the main E6 road at Heberg just south of Falkenberg. Christer Lagnell has always been a visionary and his latest idéa is to start a "Laxomat", an unmanned automatic store based on the RFID-technology.
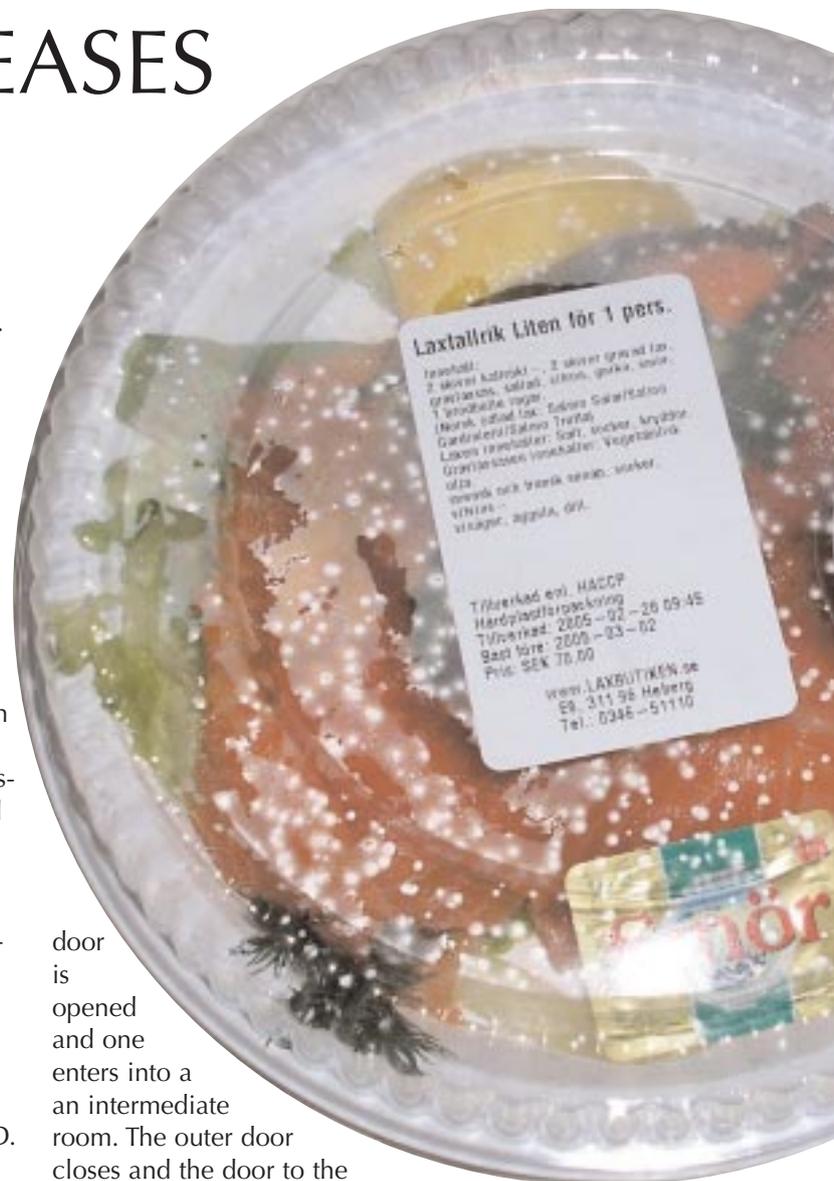
Laxbutiken (the Salmom Store) is divided into a restaurant part, where all kinds of delicious dishes, all based on its speciality Salmon (lax), are served. In the other part, there is a sales counter, where one can buy take-away dishes, whole or half salmonds, smoked, cooked, marinated – yes anything that is appealing to a gourmet. Although the opening hours are very generous, customers have asked for increased accessability, in particular travellors having heard about Laxbutiken, but for some reason happen not to pass Heberg at "the right" moment.

-I got a tip from a consultant about the RFID-technology and I immediately was fascinated by the possibilities this technology opens. I started browsing the Internet and I soon made up my mind to start something involving RFID. Since we already are working with take-away dishes, packed on disposable plates with a clear plastic lid, we decided to tag each lid with an RFID-label. We were encouraged by the on-going experiments e.g. at Metro's Futurestore in Germany.

In march 2005 the world's first Laxomat was inaugurated. In principle it is a kiosk, consisting of a locked compartment, into which one gains access after having pulled a functioning credit card through a card reader at the entrance door. Upon verification of the readability, the door is opened and one enters into a an intermediate room. The outer door closes and the door to the camera protected sales area opens. There one finds a sizable cold counter with a very broad selection of take-away salmon dishes and cold drinks. All items are marked with an RFID-label.

- In the kitchen, where we prepare the dishes, there is a label printer, loaded with special labels with an RFID-tag laminated to the back. On the front, all information of interest to the customer e.g. date and time of preparation, best-before date, as well as ingredients and price are

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Sept2005

printed. All information is stored in a database, so it is very easy to upgrade all data, or to append new dishes.

- Today the labels are somewhat expensive. They cost about 75 cent, but we do get added sales, so we don't consider this to be a big problem. As time goes by and more users of RFID will come, the prices will inevitably fall. The most important thing to us is the reading reliability and this we do achieve with the RFID-system.

EASY TO SHOP.
As soon as the customer has passed the eye of the needle, the card reader at the entrance, the customer selects the items he or she wants, puts them in a bag, which in turn is placed on a clearly marked area, close to the exit. The RFID-antenna is mounted under the desk and one can place six plates on top of each other and two bags next to each other, so in total twelve plates can be read simultameously.

A list of all items selected, including the total price, is shown on a touch screen. The customer accepts the purchase by pulling the credit card through a card reader next to the touch screen and signing on a special area on the screen. Thereafter the exit lock opens and one can head for home to enjoy the delicacies. Regulations from e.g. the fire department authorities

requires that there is a fire escape possibility, hence it will be possible to leave without having purchased anything. Up till now there has been no problems in that direction. Lovers of salmon are probably very honest people?

- I principle we could apply virtually any security level, but up until today our experi-ence is very positive. After all, you register in a way with your credit card when you enter the Laxomat and the whole sales area is surveilled by an on-line camera. Christer Lagnell can even get a signal on his mobile phone when someone enters the premises, so he can be sitting in his easy chair watching the person presently in the kiosk to shop.

- The advantage with the Laxomat, apart from the added sales volume, is that we have gotten more traffick around the clock and this in itself gives a better protection against burglary and damages.

The project (hard- and software) was carried out by the Gothenburg-based company Artimas AB and Strålfors handles the payment function.

Pictures: Bo Wallteg

DOES THE NEW ELECTRONICALLY ENHANCED PASSPORTS JEOPARDIZE OUR INTEGRITY?

This has been the topic of an animated discussion both in the USA and in Europe. The main reason being recently signed international treaties mandating electronically stored biometric data in passports. The debate mainly concerns the requirement that the biometric data shall be possible to read remotely using radio frequency identification techniques, a.k.a. RFID, and whether unauthorized persons can access that information.

I will try to shed some light on what is fact and what is fiction in this case.

Almost every day I hear or read questions such as "Will the criminals now have an even easier time to unobtrusively hijack my personal data from my passport in order to perform identity theft and/or empty my bank account etc.?" or – "I have just read that RFID tags can be read at over 60 feet. Does this mean that the RFID-based data in my passport also can be read from afar?"

The answer to the questions is a categorical and unambiguous – NO!

Can one be sure of that?

Yes – because the standards developed by the International Civil Aviation Organization (ICAO - a UN agency) for the electronically readable travel documents, have explicitly taken integrity concerns into account. One example of this is that the technology for passport reading is designed to operate only between 0 and 10 cm distance. The recommended normal distance during passport verification/control being only 2 cm! Thus it will be it very difficult to secretly scan a passport's data content.

Now - even if unauthorized readings should occur, the unlawful obtainer of the data would have to go to extremes in terms of acquiring computing power and time in order to crack the ciphering of the data. The idea behind this is that it should not be worth the effort to even try to break the data-encoding scheme.

If you are still concerned over the infinitesimal risk for data hijacking, you could apply a very simple and 100% proven countermeasure – wrap your passport in e.g. aluminum foil! This renders the passport chip totally invisible to any reading device. This tip is found in the governing standard documents.

On the other hand there may be occasions where it would be a clear advantage of not having to display ones wallet publicly, whilst still being able to carry out monetary transactions.

Envision the following scene. It is a winter afternoon. You are on your way home from work. You have purchased the ingredients for today's dinner. You are in a hurry to get home and have just gotten onboard the bus that will take you there. Now you have to:
• Put down the bags on the wet bus floor;
• Take off your gloves;
• Produce your wallet or purse;
• Take out money or your ticket;
• Pay or slide the ticket through a reader;
• Put the ticket back into your wallet;
• Put the wallet back into its pocket;
• Try to get hold of the glove that got stuck under the wallet, while a line is building up behind you;
• Grab the paper food bags, now with soggy bottoms, without the food falling out; etc., etc.

Wouldn't you prefer just to skim past a reader at the entrance - and presto! - your ticket is paid for?

I believe the latter is a way to increase the quality of life, sic!

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References:
ICAO TAG15, Biometrics deployment of Machine Readable Travel Documents 2004

CAMPING SITES BENEFIT FROM PROXIMITY PAYMENT AND ACCESS CONTROL

Most campings like to minimize cash handling, unauthorized access, excessive showering and alike that disturbs other guests. An own proximity system solves such problems. At the same time, running costs are lowered and easier handling is achieved.

CampTrac handles not only access control to the camping site and to common localities both safe and convenient. The cards can easily be configured to allow access to the guest's "own" cabin whereby all key handling is omitted. Validity time can be set for each card catering that unreturned cards are not useable. Returned cards are reconfigured for new guests.

The safety of the system is high. Each camping site has its own system code meaning that issued cards only can be used within the premises. An encryption key makes illegal copying impossible.

The same card is used for both access control and cash-less payments. Each card is charged with a desired amount giving pre-payment cash flow. When held towards a reader configured for payment, a defined amount is withdrawn from the card and e g the hot water in the shower is turned on. Each transaction is stored in the card. Guests can conveniently check the card balance themselves at a balance display. The card can be recharged with any amount.

-"Our guests are very positive and appreciate the convenience with the RFID solution" says Yrsa Fröding of Kapelludden camping. The queues to the showers has virtually disappeared and the hot water last much longer. We escape all coin handling and maintenance of the machines, should we had chosen such a solution. We also expect a significant reduction in hot water costs.

TracTechnology supplies complete solutions for camping sites. We install controlled entrance and exit gates, RFID readers with weather and vandal-proof housing, and contact-less cards with printed text and logos.

The system functionality is also suitable for in-premises payment systems at e.g. hotels, golf clubs, cabins and marinas.

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RFID IN THE BOWLINGBALLS

Bowl with someone on the other side of the world in real time and strike down chickens and ketchup-bottles instead of bowling pins. Exciting, don´t you think? The worlds first virtual bowling alleys has got real balls, wooden floors etc. The difference is that where the alley ends there is a large-screen TV-set instead of the usual bowling pins.

Eight bowling alleys, 4 in breadth, back to back. They look just like ordinary bowling alleys but they are about half the length. In the end of the alleys there is a projector-screen that shows the rest of the alley and the pins in the end.

When the player rolls away a ball there are a lot of photocells that register the speed, position and spin. Every ball is also equipped with a rfid-chip that tells the exact weight and also the colour of the ball. When the ball disappears in under the projector-screen the virtual reality takes over and you can follow the ball on the screen instead.

Jan Hansen at Virtual Bowling, VRB, is the founder of this project. The idea was born 4 years ago and has been developed for 2 years.

Jan Hansen can tell us that the virtual bowling alley has got many advantages:

-You can have these bowling alleys in city-centers where the square-metre rental cost is high. You don´t need so many mechanics and spare parts as you need in ordinary bowling alleys.

One idea is to be able to adjust the game to different environments, according to Thomas Schultz at VRB.

-If for example a restaurant keeper is sponsored by a beer-producer to install a bowling alley, maybe the pins can be changed to beer-bottles.

Other ideas than he mention is that the ball can be changed into a fox and the pins into chickens…

Thomas Schultz at VRB thinks that the concept with virtual bowling have a wide field of application.

-This can be a complement to ordinary bowling alleys that are overcrowded and it is possible to have this in hotels and bars. A virtual bowling alley does not cost much more than an arcade-game, according to Thomas.

At newly opened Hard Rock Café in Gothenburg you can find the worlds first virtual bowling alley.

The RFID-equipment is from Texas Instruments, the chip is of the type LF134,2 kHz.

For more information you are welcome to contact Electrona-Sievert AB or Virtual Bowling.

Electrona-Sievert AB, tel 08-447 31 00 Virtual Bowling, tel 031-742 13 35
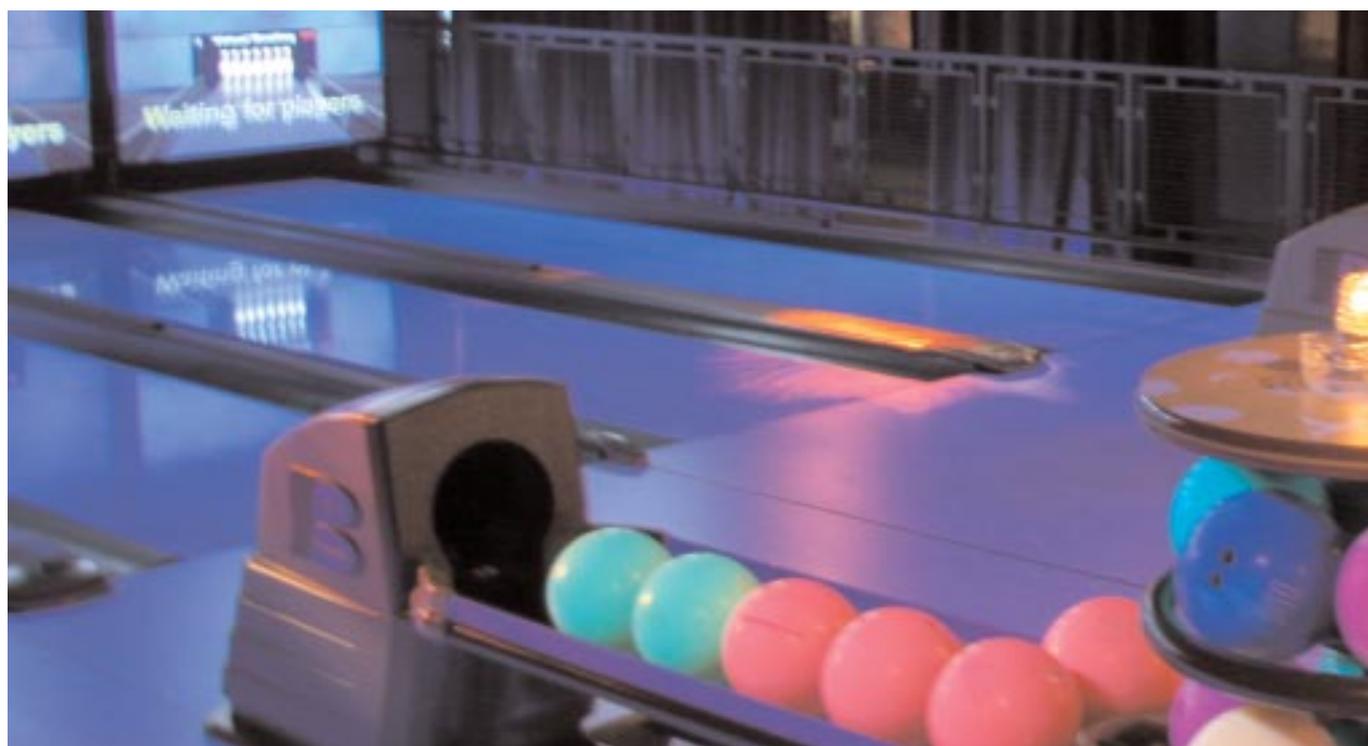
INTEROPERABILITY AND DATA TRANSMISSION SPEED....

... are probably the most used terms when talking about RFID readers for use in electronic passport applications. They are also the most important features of ACG ID's HF Dual ISO Reader.

The HF Dual ISO Reader family has especially been designed to perform data capture from state-of-the-art RFID enabled electronic passports. Thus, it needs to meet the two major challenges all e-Passport readers are confronted with: first of all, global interoperability is a pre-condition that needs to be fulfilled if electronic passports shall be implemented successfully. Consequently, electronic passport readers need to be compliant with a large number of ICs, operating systems and applet combinations. Second, e-Passport readers must guarantee high data transfer rates as those are crucial for the quick processing of high volumes of travellers transiting through international airports and other points of entry.

ACG ID's HF Dual ISO Reader proved its technical superiority in official interoperability tests: it was rated the number one performer of the eleven tested readers as it was able to read the greatest number of integrated circuits. Interoperable with 96% of the components in the contest (24 out of 25), the HF Dual ISO reader read more integrated circuits than any other reader. In terms of data transfer speed, it was one of the fastest units in the test field. The high-speed, fully ISO 14443 A and B compatible RFID reader is available in four form factors: as OEM module, Plug&Play board, fully packaged desktop reader and plug-in module for mobile devices such as PDAs and laptops.

As the industry's benchmark in terms of interoperability and efficiency, the HF Dual ISO Reader already proves its superiority in practice in Belgium.

Belgium was the first European government that had started issuing to its citizens electronic, biometrically-enabled passports that fully comply with the recommendations set forth by the International Civil Aviation Organization (ICAO). ACG was part of the global team, headed by Paris-based security printer and ID document specialist Francois-Charles Oberthur Fiduciaire (FCO), which provided the solution, contributing the hardware and the software for the electronic passports and the PKI infrastructure. The HF Dual ISO reader offers full SOD and active authentication functionalities, in compliance with ICAO recommendations for such devices. Being the reading component of the Belgian e-Passport application, it allows fast and reliable lecture of the electronic identity documents issued.

Further information: www.acg.de, SecureID@acg.de

(Footnote:)
ACG ID is the response to the growing demand for secure identification applications. As an independent component and technology supplier in the area of smart card and RFID-based systems, ACG ID provides solutions consisting of components such as smart cards, transponders, contactless and contact readers, allowing system integrators to develop fast, reliable and secure systems. Applications of the products and services provided by ACG ID lie in the areas of physical and logical access control, financial transactions, public transport, ticketing and secure identity authentication (e-Passport, national ID, e-drivers' licence).

GERMAN RFID PRODUCER TO SWEDEN

Feig Electronics in Weilburg, Germany is one of the world-leading suppliers of RFID-equipment in LF, HF and UHF.

Feig might be a bit anonymous but they are present in all the bigger ongoing projects around the world, not least in Europe. If you open the shell on most RFID-equipment installed today, a lot of this is based on Feig-products but "branded" in other names.

Maybe it is the fantastic environment around Weilburg that has made it possible to gather so much RFID-experts under the same roof? They started already in the beginning of 1970.

Feigs focus are on antennas and readers and they have got protocols for reading/writing to most types of transponders/tags on the market. One strategic partner (among many others) has for many years been Texas Instruments and they have together participated in many exciting projects for ex airport-installations, libraries, production- and logistic-solutions for the industry.

Maybe it is the fantastic environment around Weilburg that has made it possible to gather so much RFID-experts under the same roof? They started already in the beginning of 1970.

One extraordinary installation together with Texas Instruments is the library in the Vatican with over 2 millions of books/documents that has been marked with RFID for administration to borrow books and for anti-theft marking and also to be able to find wrong-placed/hidden books. Among 2 millions of books, this was impossible earlier.

SOME OF THE PRODUCT-NEWS ARE:
- UHF-readers and antennas for EPC Gen 2

- Automatic tuning of antennas
- ID CPR. 04 e-passport-reader is the first reader on the market that fulfil the standards and recommendations of ICAO´s (International Civil Aviation Organization)

The reader can be built-in into scanners, terminals, printers etc and is also available as "stand-alone"- product.

Feig has now chosen Electrona-Sievert AB as partner and distributor on the Swedish market. Electrona-Sievert has by this strengthen their position further in the area of RFID and can offer a complete selection in LF, HF och UHF.

For more information about Feig or Texas Instruments you are welcome to contact:

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# THE USE OF RFID-TECHNOLOGY IN SUPPLY CHAINS IN SWEDISH COMPANIES

Schenker has carried through a survey of the use of RFID in supply chains at Swedish Companies. This is a summary of the report.

The survey is based on two populations. First the top 100 of Swedish Companies. Of these we have interviewed 75 (75%). The rest are companies without material flows (banks, insurance companies etc), holding corporations, and a couple of companies we couldn't reach. We also completed the interviews with another group of 50 small and medium sized companies.

The study indicated that 4 Swedish companies use RFID-technology today in their logistics flows. Another 5 companies is conducting tests (3) or
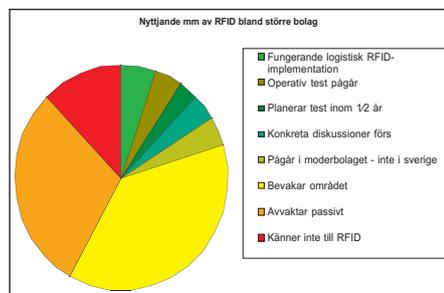

are planning such (2). 3 companies says that the mother company (not Swedish) is conducting tests.
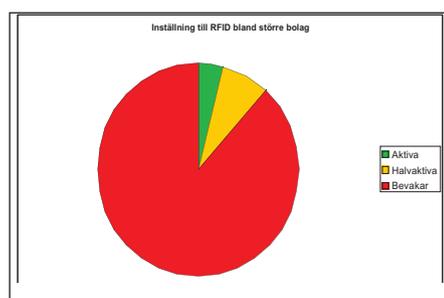
What about their veiw on RFID? Well, among the bigger companies the usual answer was that they are (active or passive) keeping an eye on the

RFID-field. Only a few were unaware of the technique.

Among the population of small and medium sized companies the part that was unaware was bigger (75% haven´t even heard of the technique). Only one single company said that they were interested in the technique. As a summary one can say that only
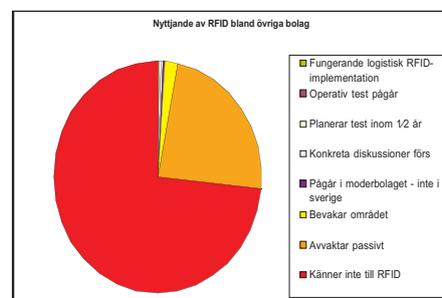
around 10 companies in Sweden actively work with RFID in supply chains.

Compared with the international market we can state that Sweden is not in the front line. The front is in USA (especially WalMart and Department of Defense) and in Germany and UK in Europe and these companies drive the development and concequently set the standards. One reason Sweden isn´t in the front line may be an extensive use of bar coding and for that reason the use of RFID wouldn´t rise the effiency.
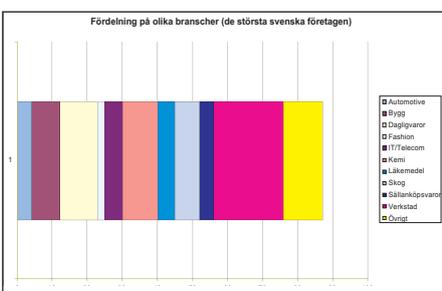
The use in different bransches can be seen in the following figure. Red indicates no interest and green interest (tests etc).

The interest depends on bransch and size of company. Generelly speaking small companies wants to "wait and see" and Swedish companies are small.

What incitaments do the companies have to invest in RFID?
Those using or testing RFID say their primary reason is to lower costs. That is achieved by decreasing the number of containers (less capital in equipment) and to get better control of the containers. Another reason is increased quality on delivery accuracy. None of the companies said the reason was to get a better transparency, increase customer service, collaboration etc.
The most common reason to begin using RFID was a demand from a customer, from the mother company or as an attempt to be more efficiant.

We at Schenker Consulting belive that the RFID-technology will develope in the same way as the e-business thus that the business slowly but constantly grows while media in the beginning drives it up and then drives the technique down. During that time companies is making good and bad experiences, developes the technique, set standards and clarify real effects. RFID has come to stay – in spite of the hype.

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RFID IN THE PAPER INDUSTRY

Since February 2005, the globally operating paper manufacturer SCA has been using RFID technology in the production of hygiene products and the delivery of goods to the Metro retail chain

SCA is looking to use the RFID solution from Siemens Business Services to endow its value added chain with complete transparency and thereby pave the way for cost savings.

During two months, SCA analyzed and tested the feasibility, economic viability and technologies of RFID, and piloted its use in logistics. Since February 2005, the paper specialist has integrated the RFID solution from Siemens Business Services in its logistics workflow, and is currently enjoying the benefits of the 99.7% read accuracy provided by the contactless chips.

The ultra-high frequency RFID transponders are affixed to the pallets. All SCA hygiene articles delivered to two selected Metro outlets are equipped with the radio frequency tags, which enables automatic recording of the arrival of the incoming goods. RFID thus offers the paper manufacturer end-to-end transparency of the individual delivery units - from production right through to the sales area.

Monika Oßwald, Business Logistic Manager at SCA, comments: "RFID allows us to drive process innovation and explore new possibilities." In its capacity as prime contractor, Siemens

Business Services provided consulting services, carried out technical and financial feasibility studies, and designed, implemented and managed the RFID solution. Winfried Holz, head of Solution Business at Siemens Business Services, comments: "Our RFID solutions already enjoy considerable demand in the retail trade, in logistics, in hospitals, with automobile and airplane manufacturers and have now gained a foothold in the paper industry as well."

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PUBLIC TRANSPORT COMPANIES SHOW A RAPID INCREASE IN CONTACTLESS RFID TECHNOLOGY

Contactless travel may sound really depressing, but we are not talking about personal contact here, rather the possibility of travelling on trains, buses, the underground, etc., using smart cards with RFID technology, which can be scanned without contact by a reader. This technology is spreading rapidly among public transport companies all over the country. A major supplier of the cards is XPonCard, which is the only card manufacturer that produces cards in Sweden.

The annual accounts for 2004 show that XPonCard is the leading market supplier in the Nordic plastic cards market, and that much effort is being made to incorporate the Baltic countries into a new home market. The Group, with a turnover exceeding SEK 900 million and more than 400 Nordic employees, also has a global business in the SIM card market. Clients include banks, telecom operators, retail chains, public transport companies and authorities. The home market is Northern Europe, where the company is in a very strong marketing position.

The roots of the company go all the way back to 1968 when it manufactured Sweden's first secure identity cards, followed by Swedish driving licences in the 1970s. During the 1980s Visa and MasterCard cards were manufactured, and production of smart cards began in the 1990s. Two years ago the development and production of the first Swedish smart bank cards commenced in accordance with the EMV standard. This standard came about as a result of the assignment of responsibility for compensation (from January 1) in cases of card fraud to individual card providers, primarily banks and financial institutions.

"This change has driven the deve-lopment of the new smart cards which set completely new standards for secure payment technology and increased card functionality," says Eva Maria Matell, who is the Sales and Marketing Director of XPonCard AB.

"We are major suppliers of these cards to banks, cards which provide considerably increased security for both banks and users. We act as a safe bridge in the transition from magnetic stripe cards to smart cards, and have helped many clients so far."

"RFID has come to play an important role in plastic cards too, although the primary market for this technology has up to now been within public transport," according to Michael Nyberg, who is responsible for the trade and transport areas within XponCard.

"We have supplied cards with RFID technology for almost five years now; we were the first to have them in Sweden, and the first to put them into use with Dalatrafiken. The technology works very well and we have since then extended this system into other Swedish counties."

"Since common standards have emerged it has been possible for the purchaser of a system to order cards from sources other than the system manufacturer, which has opened up the market even further. The client can conduct a thorough analysis of what is really needed, and we can guarantee that is precisely what is supplied."

"We mean that we have our strength in this area. We have our own manufacturing base in factories in Motala and Strängnäs, which makes us flexible, so that we can rapidly and efficiently ensure that clients get their tailor-made cards. We recently delivered 4,000 cards for a pilot project in a matter of just over four weeks."

"Other suppliers often get bogged down in their own heavyweight solutions. We have extensive involvement with subcontractors, which provides great flexibility."

XPonCard develops with clients total solutions, including chip production, module production, development of operating systems, development of applications, card manufacturing, chip embedding, personalisation and administration.
"RFID technology and its possibilities is no 'hype', as many maintain; it is a technology which has existed for a long time but has now begun to attract serious attention, due to its tremendous possibilities. When it comes to travelling using contactless cards, a great deal is about to happen in the next few years," says Michael Nyberg.

"Other areas are, for example, cards which can be used for ski lifts or cards for events. The Football World Cup next year will employ RFID technology for ticketing, and future development will be strong."

"We are happy to emphasise that we make cards for many different sectors," says Eva Maria Matell. "We supply bank cards, loyalty cards for retailers, electronic gift cards, cards for public transport and ID card solutions. We can also manage customer clubs."

"Because we have been in the business such a long time, we have acquired a great deal of experience and expertise; together with our collaborating partners we can move fast and set high demands on our level of service, flexibility and quality. We can provide almost everything for our clients."

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RFID HELPS UNDERSTAND ATTENDEES AT JAVAONE ^{SM} CONFERENCE

What happens when tradeshow attendees use radio frequency identification (RFID) technology from Sun and business intelligence (BI) software? A new world of attendee profiling becomes easily and inexpensively available enabling companies to track who attends events, how attendees allocate time, and what attendees' greatest interests are.

At most conferences and tradeshows, attendee profiles are limited to high-level views–how many users buy session badges versus exhibition hall

passes, or how many passes were sold each day. Further detail is expensive. Could more useful information be found using RFID to track user participation?

At the 2005 JavaOneSM Conference, where the developer community goes to learn more about Java™ technology and solutions, conference organizers wanted to see what they could

learn from attendees. Using RFID technology to gather data on movement throughout the show, and business intelligence software to query, analyze, and report on the findings, the team gained new insight that will improve future conferences.

The initial goals for using RFID at JavaOne were simple. Beyond learning what sessions were the most popular, conference organizers wanted to know what other sessions were attended by those attending the most popular ones. That is, if the Jini™

technology session was well attended, where else did those particular attendees go? The RFID team expected to answer other questions, too, such as which time slots–morning, afternoon, or evening–were most popular.

By giving every attendant to the conference a RFID enabled badge, information on who attended what session was collected. To ensure data privacy,

actual names were not associated with the RFID tag within the badge. By analysing the information using BI software reports provided information such as:

Which sessions were attended by a given attendee-type? For example, which sessions did Java 2 Platform, Micro Edition (J2ME™) developers tend to go to?

Which attendees that attended session "A" also attended sessions "X" and "Y"?

What were the top ten attended sessions, correlating this information with other reports to determine if there were any themes of interest.

What were the ten most popular sessions by day (with total number of attendees), with metrics such as:

Total session attendance.

Average number of attendees per session.

Average number of attendees by session type (such as Core Enterprise Technologies, Java Technology in Mobility, and so on).

Average number of attendees by subject matter.

Session attendance by time slot.

Over the course of the show, Sun executives wanted to create custom queries: What was the farthest distance walked? What was the most number of sessions attended by a user? How many people went to a session in every time slot?

With all this information available, a better conference will be easier to arrange next time.

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