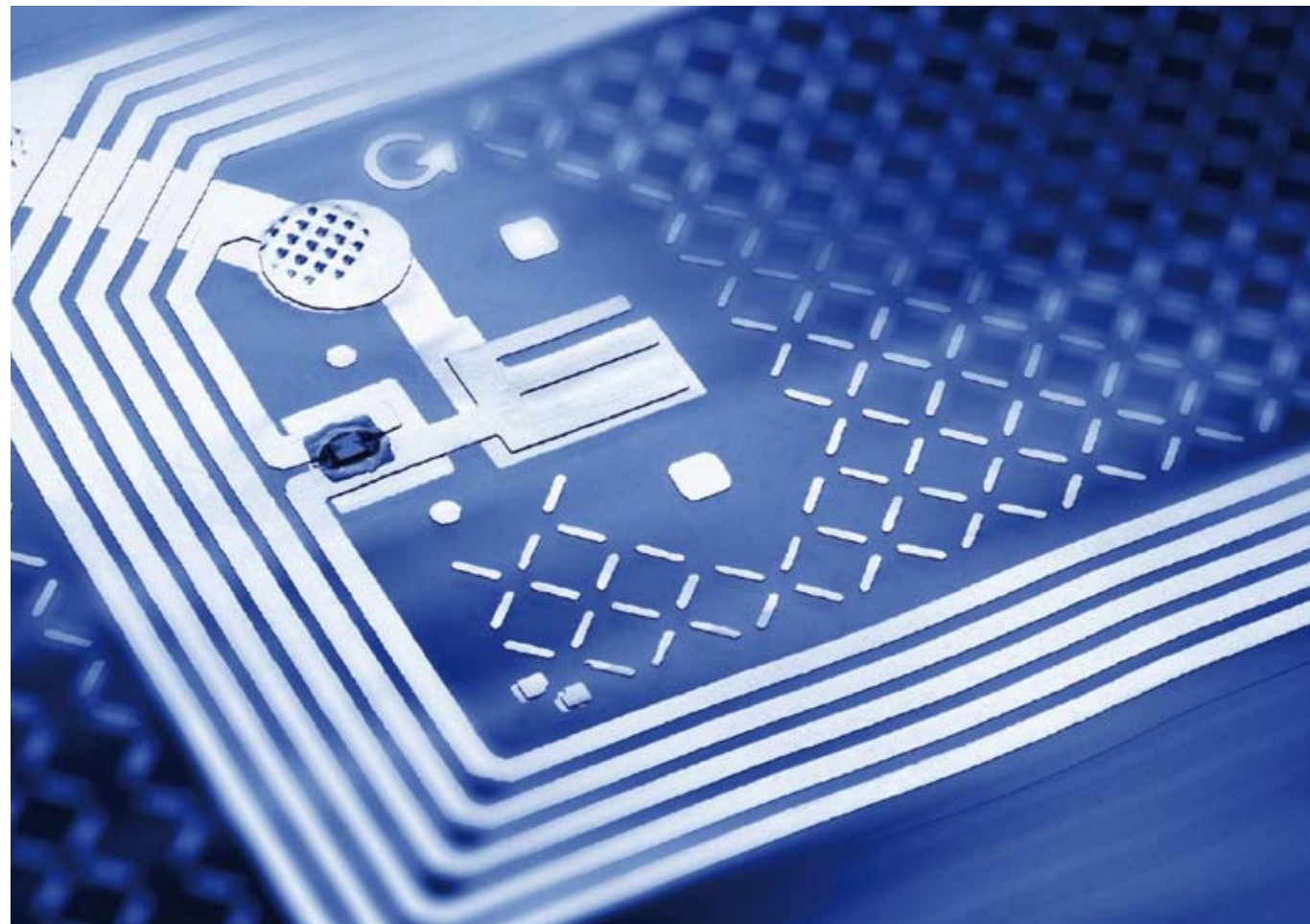


Moving to Mass Markets

RFID technologies are maturing. The gardeur group in Germany has moved from pilots to full-scale RFID control across its international supply chain. Software providers are developing robust middleware in anticipation of an RFID mass market.

FEATURE: AEDAN KERNAN



In December 2006, German clothing group gardeur went live with an RFID-enabled process that tracks roughly one million items per year from gardeur's production sites in Tunisia through to its German DC, ready for delivery to retail outlets.

gardeur's new RFID system scales up a pilot, developed since 2003 by gardeur, that used RFID to trace and sort approximately 1,000 items per day, or 10% of gardeur's total annual production, from the Tunisian production sites to gardeur's DC. The pilot achieved a 99.8% accurate identification rate at item level over a one and a half year period.

gardeur is a major supplier of European fashion. It achieved a sales volume of around €90 million in 2005 and supplies 2.8 million garments per year. Currently, gardeur employs approximately 1,500 people. Around 50% of gardeur's sales are to customers outside Germany.

The benefits to gardeur from the scaled up system will include a sharp reduction in security stocks without the risk of penalties, according to project consultant Dominik Berger, Managing Director of RF-iT Solutions GmbH. Accurate identification also greatly speeds throughput in the distribution centre. And the greater stock visibility enhances production flexibility. gardeur's improved ability to track orders along the supply chain enables it to make better use of its smaller German production unit to fill gaps in response to any demand surge.

The next stage will be the gradual inclusion of Tunisian subcontractors into what has been up to now an internal supply chain.

Stepping back from implementations

The RF-iT consultancy has played a leading role in RFID development for German fashion supply chains. As RFID technologies mature, the consultancy is stepping back from individual RFID implementations and focusing on middleware development. The goal is to help move RFID beyond individual pilots by creating a set of middleware tools that will enable a wide range of systems implementers to create RFID solutions for clients' supply chains.

For instance, RF-iT has built a sub-system to their You R Open middleware called the 'You R Smart Fashion solution'. You R Smart takes RFID data and analyses it independently of the client's ERP solution, but can easily integrate with the ERP. "We can start an RFID system independently of the client's IT and when it is up and running we would then integrate into the ERP with standard interfaces," explains Berger.

The communication channels from the tag to the ERP system are known as 'tubes'. Tubes define the parameters of the reader, the pre-processes and the interface, etc. RF-iT has developed a 'tube-builder' and backed it up with an 'administration suite' to enable easier implementation of pre-built tubes and control and monitoring of the whole process.

High volume RFID projects add complexity. This is where RF-iT's administration suite can play a key role. For example, in gardeur's pilot project connecting the identification number of



Dominik Berger

The focus of companies is now on value generation and less on technology



News from the retail floor

"Fashion accounts for 48% of our total sales, and we don't have an information system that tells us whether our merchandise is on the shelves in our stores or in the stockroom," says Martin Schleinhege, a Spokesperson for the KarstadtQuelle Group. "That is why we have initiated our first RFID project."

Karstadt is participating in the Bridge EU project, looking at the viability of EPCglobal Gen2 RFID solutions, together with other major European players such as H&M and the Metro Group.

"At the moment, we are looking for partners in the different categories and we are searching for partners for areas such as the RFID device management."

While the RFID project is completely independent, it is needs to be set against the context of KarstadtQuelle's major investment in cutting edge merchandising solutions for its department stores.

KarstadtQuelle are implementing a major integration of their purchasing, sales and logistics processes, known as the Forward Project, to be completed by summer 2007. Fashion is one of two business areas where processes are being restructured in the first phase of Forward. The tailored retail system can map the requirements of fast-changing assortments as well as the many different size and colour models of a single article.

Forward is based on SAP for Retail. The purchasing department of the Karstadt department stores now use the new retail system to plan its purchases and the master data solution is currently being introduced.

each item of clothing to an RFID tag number was handled by a single mobile device. For the scaled-up process, the massive increase in volumes means that six mobile devices are needed. They must work in parallel via a WiFi connection. Not only must the six mobile devices synchronise fully, if a mistake is made by one of the mobile device operators, the back-track and restart must not affect the performance of the other mobile devices.

"With the administration suite we know which tube version is running at which decentralised identification point and in the case of an error we can automatically break out the log files with the right version of the tube for debugging and faster error detection," explains Berger.

Both the new gardeur process and the original pilot use HF frequency RFID tags. The tags are removed at the DC and recycled. Despite the added handling costs of removing and recycling tags and the greater complexity that recycling brings to the process, the benefits gained from the full system by gardeur are greater than the investments needed to put the system in place, according to Dominik Berger.

Back in 2003, there were few RFID standards in place. An HF frequency solution was chosen because it was robust and it did not have the 'near-field' problems that UHF tags suffered from at that stage. HF worked well in an apparel environment.

If the prices of RFID tags fall further, gardeur would like to move non-returnable tags. "We have seen dramatic price reductions," says Berger. "In 2003 a tag cost around one Euro. Last year the prices were in the range of 25 cents each. gardeur has declared that the first company to offer it tags at 12.5 cents each will get its order for a one-way project. That price is very close to what is possible now in the market. The tag price is the most crucial item in the business case for an RFID system. It has reached the point where potential users of these systems realise that it is no longer the price of the technology that forms a barrier, it is more a

question of when they are right to change their processes to enable an RFID system."

There are strong arguments to move to a UHF tag solution. Price is one of them. "The big advantage of UHF labels is the forward pricing of the producers of UHF. That currently puts them into a different ball park to HF labels," says Berger.

gardeur are participating with Kaufhof and other retailers in a Europe-wide project using UHF RFID tags to share item level information across the entire value chain. Initial results of the BRIDGE project will be known this summer.

According to Dominik Berger, RFID has reached a new stage. "The focus of the companies is now on value generation and less on the technology. That is a good sign. It is very clear that 2007 is the year where all the major players are moving forward and 2008 will be the year of the roll-outs." ■



gardeur's Chief Production Officer, Thomas Ballweg
The driving force behind RFID at the company

Competence needed

gardeur first took the brave step to pioneer RFID in its supply chain back in 2003 when it invested 250,000 in a pilot study. Labels, antenna systems, readers all parts of the RFID system were analysed and tested.

No RFID project can be implemented without encountering a host of minor technical problems. And a wide range of competencies are needed in a small project team to cover every possible problem.

An early stage analysis in the gardeur project found that 15% of the labels were breaking in handling. The chips had to be re-packaged with greater protection. Handheld RFID readers that had worked well failed after an upgrade designed to give them greater memory and speed their performance.

Software had to be rewritten to get things running smoothly once more. A shortage of antennas for the reusable labels resulted in a two-month delay in the pilot. Special characters could not be read by gardeur's old ERP system (they are in the process of an upgrade at the moment).

There were many minor things that have to be overcome before RFID is plug and play, says Berger. Mastering them eventually delivered a robust system performing well above the 99.5% perfect identification target along the supply chain – fully integrated to the ERP system.



Network ready Germany

"We have a unique environment for RFID in the German fashion industry," says Andreas Schneider



Time to Think Network

"We have a unique environment for RFID in the German fashion industry, says Andreas Schneider, Head of Fashion Group RFID Germany.

"First we have high labour costs, second, we have the most competitive and one of the largest markets in Europe for fashion. We also have the longest supply chains. 80% of the German fashion producers are also retailers and many of those retailers own their factories. That is unique. No other European market has so many shops-in-shops.

"The problem is that the whole RFID world thinks in singular projects," says Schneider. "It is tough to get good read rates along a single supply chain. If you project that onto a heterogeneous group you get a lot more problems. That is why it is problematic that the world thinks in singular projects.

But, the singular project approach has actually operated as a barrier to the uptake of RFID pilots, says Schneider. Finding and convincing a client to undertake an RFID project is extremely expensive. From the supplier's point of view, the risks and benefits from a highly individualised project are not always easily calculable. And once a client has been found, as an 'early mover' they will expect not to pay the full costs. This creates substantial profitability problems for RFID suppliers, which can only be solved by thinking in markets.

Robust middleware solutions, such as RF-iT's You-R® OPEN device-oriented middleware are also essential to the mass market project, he adds.

"RFID is not something you attach to an outlet and run. You find you need different antenna parameters in order to get the best read rates. Even under ideal circumstances it takes constant adjustment. In the fashion industry with supply chains that can run from Laos or Mauritius, you cannot send people around with a box of tools in a suitcase in order to change some drivers. It is very important that you can maintain that through the internet and that you can do it in a scalable and calculable way.

"Many companies who take on RFID projects do some of their own programming. Individual programmers working late into the night on unique solutions is not my idea of a solid base for a mass market. If you look at the development of PCs, the mass market appeared when Microsoft came along with something that was easy to maintain."

Fashion Group RFID is the only mass market RFID initiative that is not driven by a mandate from big customers or by legislation. On debates, such as HF versus UHF tags, they have no preferred solution. But they want a solution.

"I can see a light at the end of the tunnel," says Schneider. "We have a strong interest in getting the frequency discussion off the table. There are many pros and cons, but if the big players want UHF then that is a good argument to take it.

"We were promoting HF until not long ago. Now we see good reasons for UHF. The problem is that this has been going on for far too long. We just want to get that mass market going – after three years working on this."

RFID readers for professionals

FEIG ELECTRONIC is one of the worldwide leading producers of RFID hardware components. The company offers RFID readers and antennas for LF (125 kHz), HF (13.56 MHz) and UHF (860-956 MHz).

Beside a wide range of Proximity- and Mid-Range Readers, Long Range Readers are especially in the focus of interest for potential users within the retail and logistics area. With reading ranges of several metres, RFID readers by FEIG ELECTRONIC allow so-called dock door applications to identify products on both the item level and pallet level.

As an OEM hardware supplier, FEIG ELECTRONIC delivers only to resellers and system integrators like for example RF-iT Solutions GmbH, but does not deal with end users. For these target groups, the company offers regularly scheduled product training and technical customer support.

FEIG ELECTRONIC is active worldwide, currently represented by 26 distribution partners in 19 countries and a subsidiary in the US.

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