

THE RFID ADVENTURE AT AROSFORTET



Arosfortet has developed a world unique entertainment plant, "the prisoners at the fort", where the Itmaskinen Sweden AB built a solution with both soft- and hardware in order to handle 50 cells and 100 visitors each day entirely automatic.

Itmaskinen.se has in near cooperation with JP ELteknik, developed a complete system, Cellserver, in order to administrate visitors, cells, points and to handle all communication with electronics in the cells. Communication with components from different producers happens via EBI, a standardized system independent of producers.

At all entry doors RFID reader are installed and they will open the cells with a card bought by the visitor. The administration happens in an entire web based system that not only works against a database but also against electronic components up in the plant, all developed in the latest Microsoft. Net technology

RFID readers and transponders (13,56 MHz) are delivered by Electrona-Sievert Ltd, Gunnar Ivansson



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CONSTRUCTION COMPANIES REDUCE THEFTS WITH PROXIMITY ACCESS CONTROL.

Every year more than 6 000 thefts on building construction sites in Sweden are reported. The estimated value of stolen goods is more than 160 million Euros per annum. This leads to increased insurance costs and enormous additional costs for truce and extra work. Especially at cities in city center locations further problems like security hazards and littering are caused by unauthorized access.

A way for a construction company to take control of and reduce accelerating costs is to provide every employee with a proximity key fob for entrance and exit access. Returning visitors and suppliers are provided with a contact-less card. First time visitors call their contact person who can open the gate remotely from a computer on the intranet of the site.

Opening hours and anti-pass back can be set for each gate. Time, tag, group, person, company, entrance or exit passage and denied accesses are registered to a log file.

The reading distance of one meter makes access control convenient. A visitor only needs to hold up the card to the side window of his car when passing the reader for opening of gate.

GateTrac handles all administration and access control. Each RFID card in the data-

base is connected to a group - e.g. electricity, plumbing, recycling etc. Each cardholder is also connected to his/hers corresponding company. Information is handled centrally through web UI on the corporate network. The construction company gets useful statistics of visits by time interval, gate, individual person, class and company.

TracTechnology is currently installing GateTrac-Construction at one of Skanska's - Sweden's largest construction company - ongoing rebuilding projects in Stockholm city.

TracTechnology supplies complete access solutions for construction sites. We install control of entrance and exit gates on site, long-range RFID readers, key tags and contact-less cards with printed text and logos. The web interface of the GateTrac-Construction access control system is installed in a multi-user environment.

TracTechnology also offers GateTrac system versions dedicated to car parking payments and entrance control at recycling plants, campsites and marinas.

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An exciting new year 2006...

2005 has hardly come to an end, when 2006 starts up with a burnout. At first a new issue of our pdf-newspaper is hitting The Net. Nowadays our newspaper reaches a global market thanks to our new collaboration partners AIM global, RFID Society and RFID Business Organisation.

Secondly, on the 7:th of February, it is time for RFID I NORDEN seminars at Kista Science Tower in Stockholm and the The Golden Tag Award and the Mini Tag Award ceremonies. The Golden Tag Award goes to the company/organisation that has ordered

the Winning entry and the Minitag goes the the company that did the implementation. Ten companies/organisations are nominated. You can read more about that later in this issue.

Lots of seminars and workshops and other meetings will take place in 2006. According to my talks with our members, 2006 seems likely to be the year of breakthrough for RFID applications.

I will also take this opportunity to wish You all a successful 2006.

Ove Canemyr
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TOTAL DELIVERY SECURITY AT SSAB

SSAB Oxelösund has invested in a modern integration solution based on RFID-technique. Through the IT-solution SSAB has increased their efficiency in stock handling, created more secure deliveries to their customers and also facilitating and automatizing the daily work for the truck-drivers at the company.

Loading-cassettes



Map-application



Work-order on the screen in drivers cab

SSAB in Swedish Oxelösund (SSAB) has introduced an RFID solution for total control of their delivery security that has been integrated with existing systems for transport handling. This now implemented solution is built from scratch by IT-consultancy Sogeti, a supplier of IT-solutions with a large experience of RFID solutions.

Together with Sogeti's close partner Electrona-Siewert AB, leading supplier of RFID hardware and general agent for Texas Instruments in Sweden, they have in a very short time come up with this new solution for SSAB. The purchasing took place as late as in May last year and the RFID solution was already in use in October, a quite rapid roll-out since a large number of items such as loading-cassettes now carry RFID tags linked to the new system.

HOW IT WORKS

So, what has been done at SSAB Oxelösund? To start with, all the RFID transponders were mounted on the loading-cassettes used for internal transportation of metal sheets. RFID-antennas with readers and a GPS positioning equipment has also been placed in the company trucks. In addition, Sogeti has develop-

ped a system that minimizes the truck-drivers reporting related work. Now, only deviations have to be reported manually. Finally, the RFID solution was integrated with SSAB's existing transport system.

At every registration of the RFID transponder, the GPS position is stored on the loading-cassettes ID. This means that even if the loading-cassette is in the wrong position, you can still see where it is. Through an integrated map application position and status of all loading-cassettes is made visible. In the map application there is also a built-in search function. Thanks to this solution SSAB can now, with very high precision, see the position of the load.

FULL TRACEABILITY

SSAB Oxelösund's Mr Sören Thelander is very pleased with the new solution:

"The biggest profit is that we always know where all the loading-cassettes are. With 600 movements every 24 hours, even a very few manual misregistrations or misplaced cassettes can cause delayed deliveries resulting in very high costs for additional part deliveries. With our RFID solution we strongly increase delivery safety and we also improve the working environ-

ment for our truck-drivers.

RFID-TECHNIQUE:

LF 134,2 kHz with readers and transponders from Texas Instruments.

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ABOUT SOGETI:

Sogeti is a consultancy specializing in local professional IT services, offering a full range of technological IT knowledge and expertise. One of the company's fields of expertise is RFID solutions. Sogeti has 15 000 employees in 10 countries of which 650 people work at the company's 18 Swedish offices. Sogeti can not only design the infrastructure architecture behind your RFID-solution. The consultancy also offers development, implementation, integration and testing services and can manage and run your RFID systems. More information is available in Swedish at www.sogeti.se/rfid.

NOMINEES FOR THE GOLDEN TAG AWARD 2005

SKANE DAIRY AB / SKÅNEMEJERIER AB

Skane dairy AB decided at an early stage, based upon a substantial insight into technology trends in their industry, to try out the Bioett System for cool chain validation. Having run extensive pilot projects during 2004, the system was installed into a commercial production-line early 2005. This also meant that a number of partners and customers became involved in the validation process. The business values were found to be both an improved cool chain (after correcting identified problems) as well as an increased interaction and participation, with and by the customers, on this important issue.

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SSAB

SSAB Oxelösund has introduced an RFID-based add-on module to their existing transport management system, using IT-expertise from Sogeti. This new add-on has resulted in: more efficient store-room management; better precision in customer deliveries as well as partially automating tasks, thereby improving the working conditions for the company forklift operators.

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SVENSKA RETURSYSTEM

Svenska Retursystem (SRS) has inserted EPC gen 2 tags in their new plastic pallets. These pallets travel in a closed system. The nodes are SRS (as origin), via whole salers to the retailers, and back the same way. The pallet is read and registered at the SRS cleaning facility. The other parties involved can of course also read and use the pallet ID. The initial test using 30 pallets was tested during December 2005.

Intermec: Thorbjörn Sporre;
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THOMSON FLY

The product will reduce the time spent on security checking and maintenance of life jackets in air-planes by 3-4 hours per occasion.

The product has been subject to fire resistance tests and has a high safety level.

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HÅBO KOMMUN

The basis for the Avista system is that each "doer" is equipped with a mobile phone with integrated RFID-reader (such as the Nokia 5140i) as well as with a personal ID-device utilizing an RFID-tag. Each "user" is equipped with a unique RFID-tag. When the "doer" arrives at a "user's" site, the time-of-arrival is logged using the mobile phone and the "user's" RFID-tag. The time-of-departure is logged as well when the requested task is done. If deviations according to plan occur, they can be reported in real-time. The "doer", the supervisor and/or the administrative personnel can access information needed for their daily work via a web-based interface.

Avista Time: Ulf Gullstedt;
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INSTANT DVD

Current DVD-"renting machines" are bulky and fixed into building walls. Therefore the aim in this project was to develop a smaller, mobile unit that can be placed in food-stores, convenience stores, universities and at larger working facilities. Instant DVD's main business idea is to export the "renting machines" to partners abroad. A partner network is already in place in Germany and the USA. Instant DVD will service the domestic market themselves.

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VIRTUAL BOWLING AB

A virtual bowling alley has a number of advantages over traditional ones. One can reduce the area required and hence establish oneself in more interesting, centrally located spots, in spite of high rental costs. There is also a much lesser need for mechanics and spare parts compared to traditional bowling alleys. There are numerous opportunities to adopt the game to new conditions. Consider that a restaurateur has received sponsoring from a beer-manufacturer for the building of a bowling alley. In this case the bowling pins may be substituted for beer-bottles. In an other scenario the bowling ball is a fox and the bowling pins are chickens.

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THE DIGITAL PASSPORT PROJECT

The digital passport project aims at a new generation of passports combining the traditional booklet form with electronically stored personal biometric data, utilizing high-performance integrated micro-controllers.

Smarticware: Omid Aval;
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BANVERKET

The GOTCHA-measurement system can detect multiple railway car wheel defects in real-time and by automatically reporting these, reducing the cost of maintenance both on cars and rail system. The system also offers knowledge based support in order to optimize the required repair effort for each defect. A maintenance strategy based on regular measurements, improves the railway operator's safety margins. A car with severe wheel defects will be quickly identified and can be taken out of operation before accidents occur.

Tagmaster: Magnus Rehn;
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LAXBUTIKEN AB

In March of 2005 the worlds first Loxomat opened.

It operates as a unmanned vending kiosk, where access is allowed only after registering a valid credit/debit card at a reader by the entrance. All merchandise are equipped with RFID-tags, containing all information deemed of relevance for the customer. Payment is automatically managed after the purchase is approved, using the same credit card as was used to gain access. At this point the exit door is opened and the customer can leave with his purchased salmon products.

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The winner of the GOLDEN TAG AWARD is presented during the RFID I NORDEN-conference on Februari 7, 2006 at the Kista Science Tower.

Reservations are made through mats.b@mentoronline.se

DRAMATIC DEVELOPMENT FOR TRANSPONDERS

Finally, very exciting things are happening in the development of transponders and it is happening very quick! At the same time the prices on transponders are dropping thanks to increased volumes and improved technique in the production and also thanks to a better competition with more actors on the market.

If we take a look at Texas Instruments for example, one of the bigger suppliers of RFID-transponders, we can see a dramatic development only in the last year. In some cases the prices has fallen with 40-50% thanks to the UHF's entrance on the market. Less silicon in the microchip is one of the answers to the lower prices at the same time as the competition force you to improve the processes in all possible ways and also to be updated in the production-development. Customers as Wal-Mart, Metro and Tesco have of course also a big effect on the costs with their enormous needs of transponders in the future. Thanks to these customers we have rapidly got international standards in RFID, first in UHF with EPC Gen 2 standard etc.

One of the difficult moment in the production of the type of transponders we normally call "inlays" is to mount the microchip with the antenna and then trim these by laser to the best possible reading-distance etc. At the same time as a new technique with printed antennas is starting to develop quicker, TI has now introduced a RFID microchip with "big ears" that makes it possible to applicate this chip on a printed antenna. This definitely opens up for new possibilities to integrate RFID in new applications and environments.



UHF Gen 2 inlay (microchip)



UHF Gen 2 strap

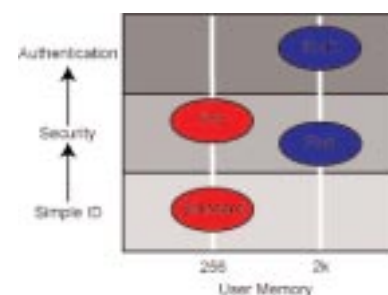
The reading distance is today about 5 meters (in free way) for these UHF-transponders but also this is constantly developing and we will see the reading distance increase in the future. Please note that the reduction when reading through different materials has got a direct effect on the reading distance.

Also for the transponder HF (13,56MHz) the development is really thrilling. We can see an increased number of actors working with "packages" of inlays such as labels, key-cards, id-cards, tickets and encapsulated transponders. One innovation from Texas Instruments is that you can choose capacity of memory and also level of safety when you choose a transponder and hereby get a differentiation in the price. A transponder with smaller memory and without and extra facilities will of course have a lower price.

At the same time they introduce a pass-word protected transponder. This transponder can not be opened without a programmed pass-word. If the wrong pass-word is given, you can choose from different measures such as "disable or killer" functions to make the transponder unvalid in one way or These transponders are called HF-I, a new series from TI. These transponders are a lot quicker when reading many



HF-I inlays



HF-I transponder struktur

transponders at the same time, so called FastSID (Fast Simultaneous IDentification).

The HF-I family support standards such as ISO/IEC 15693-2, -3 and ISO/IEC 18000-3 and are available in a number of different dimensions and shapes such as rectangular, round, square, short, long etc.

Even if UHF is advancing very strong, the LF and HF-technique will stay for a very long time. Both the techniques have got their advantages and disadvantages and at the same time the development in all areas is rolling in a very high speed.

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RECYCLING APPLICATION FOR RFID

Botek Systems AB have implemented RFID technology on dustbins, containers, glass tanks, mud drains etc. When emptying the container, the specific unit is identified without any physical contact using a handheld unit.



Botek market industrial electronic scales, is now focusing on systems that helps customer to get a more efficient way to handle the recycling work. The system contains of transponders/tags, antennas and hand held units. Different kind of bins/containers are equipped with a RFID-tag, and sometimes (if the environment allows) also a bar-code.

SECURE MARKING

RFID is a 100% secure method for identifying information. No obstacles like snow, ice, water, mud, shock or vibrations will affect the encapsulated tag or the information saved in the tag. The fixed programmed code for each tag is unique, protected against counterfeiting and can't be modified or deleted.

AUTOMATIC READING WHEN EMPTYING

The vehicles are equipped with antennas and vehicle mounted hand held units with an integrated RFID reader. When a vehicle arrives for emptying, the antenna sends a signal to the tag on the bin/container. The tag sends back a signal with a unique serial number. The number is received in the hand held unit and can thereafter be processed in the computer.

Some vehicles are fully operated by

the driver from his cabin. The emptying process is controlled by a joy-stick and the identifying process is handled automatically without any action by the driver.

The hand held units are also handling a route program and when emptying the bin/container, the customer name and address is automatically registered together with the information about what bin/container that have been handled. The information is thereafter sent directly to the administration system for processing.

The hand held units and the system is delivered by CUB Systems i Täby.

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RFID INCREASES SECURITY AND THE QUALITY OF NURSING CARE

SOME REFLECTIONS:

When I go to the Swedish Ministry of Industry, Employment and Communications, I have to report to the guard, and then the person I am visiting comes to fetch me. Without this, I would never get inside the department's premises. Security for their own staff is self-evident.

When I go to the Hewlett Packard offices, I have to report to reception, I am given an identity badge which lets me into the large lounge where I can sit down on a sofa with a cup of coffee. There I can wander around an exhibition of HP products, or perhaps call on some acquaintance in one of the conference rooms. But I cannot get any further inside. Self-evident.

It is the same when I visit my former company Nynäs. Reception records my name, asks me to sit down and wait for the person I am to visit. It has been like that ever since 1928, when the refinery was founded. This is nothing unusual or newsworthy.

DOES IT WORK LIKE THIS FOR OUR CARE GIVERS?

It is hardly news that anyone can walk unannounced around our major hospitals without attracting any attention. However, it is surprising that more hospitals have not increased their checks on people on the premises. Hospitals contain many things that people want – all kinds of drugs, syringes and suchlike. Hospitals can also be a "refuge" for people who don't have a roof over their heads.

INTERNATIONALLY, THIS IS WHAT IS HAPPENING:

In the Bronx outside New York, EAN-

coded patient armbands have been replaced by armbands with RFID. The aim is to increase security, and to have an automated process for checking on who is in the hospital. Only authorised persons should be on the premises. The right patient in the right place is obviously a precondition – one among many – for giving the right treatment. In the US, improper treatment is also a more pronounced problem, with a more appreciable cost.

within care cannot help but notice – sometimes with astonishment – how little use is made of technology that is standard practice in many other places, for example the automation of the simpler aspects of care procedures, or the co-ordination and monitoring of the status of individuals. A great deal of this can be improved simply by ensuring better "traceability". This is where RFID is potentially a cost-effective solution.



"In the Bronx outside New York, EAN-coded patient armbands have been replaced by armbands with RFID."

SWEDISH DECISIONS:

In Sweden we have barely touched on this topic. In an article in Dagens Nyheter dated 10 January 2005 it was said that 2,000 – 3,000 people a year die as a consequence of incorrect treatment (out of approx. 91,000 cases followed up statistically). In a leader on 8 November 2005, Dagens Nyheter wrote about criticism from the County Council's auditors, in which it was claimed that 400 - 600 people die unnecessarily because of incorrect treatment. "Has sub-standard service become acceptable in nursing care?"

One thing is certain – there is nothing wrong with the commitment among hospital staff. But anyone who from time to time meets people working

THINGS ARE STARTING TO HAPPEN –

Ahead of a lecture at Hewlett Packard's user conference ITUG in San Jose in October 2005 we came across the following excerpts from the Web:

..."RFID for pharmacy with 14 retailers, distributors and manufacturers, estimates that RFID-based solutions may save the industry

more than \$8 billion dollars by as early as 2006."

.."Emergent, an outsourced provider of physician-based hospital emergency room management services, based in Jackson, Mississippi, was looking for an innovative solution to a traditional emergency room."

.."Precision Dynamics Corporation (PDC)Blood Bank began a pilot study on March 1 to explore how RFID wristband solutions increase the efficiency and reliability of blood transfusion safety."

.."French Army Tracks Emergency Equipment With TI-RFID Tags"

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One thing stands out – the care sector is a hot segment for the introduction of RFID as a technology that gives better facilities for keeping track of all the steps and parts of a care process.

HOW DRUGS ARE HANDLED IN SWEDEN

Dagens Nyheter had an article on 8 January 2006 pointing out that drugs worth about SEK 2 billion – total weight about 900 tonnes – were incinerated every year. One recurring comment from doctors about the deaths of elderly people is that the answer can often be found in that person's medicine cupboard.

This view is supported by statistics on the reasons why people find themselves in hospital – 16 percent were there because they had been given the wrong drug.

Some Scandinavian companies, for example Cypak AB (www.cypak.com/) have therefore started using packaging for drugs with automatic reporting.

Both EAN codes and RFID can be used more effectively to indicate and to look for errors in the patients' combinations of drugs. Care staff in home nursing can be provided with simple aids enabling them to report straight from the drugs packaging to expert units and receive feedback about unsuitable combinations.

At Karolinska Institutet, the Centrum för Integrativ Medicin (Centre for Integrated Medicine) has recently been inaugurated. The research is looking for links between the effects of drugs and a person's constitution. RFID in combination with other more usual communications can make information-handling in this research more efficient to find out what drugs, and what quantities of drugs, people are consuming.

However, new technology is slow in coming.

In milliseconds, I can find out how stock market prices are moving. Industry is automating its manufacturing processes for all sorts of sophisticated things. But in the daily routine of care, it's much slower.

There are some steps in the right direction. They have already started work on making the processes involved in blood transfusions safer. But it

takes time – way too much time. The reasons for this are the traditional ones – decision-making processes are hampered by political special interests; there are convoluted procurement rules; technical uncertainty about what must be purchased as an investment and what can be bought as a service; squabbles among suppliers about what is an IT investment and what is a communications service.

A simple review of the effects of systematically using RFID in care processes – tracking patients and making it easy to get them back; equipment and beds; keeping track of laundry and all the other odds and ends in the daily routine; giving the right drugs, and ensuring that they end up in the right patient; automatically checking that everything is in the right place in the operating theatre – all these things show a beneficial effect many times greater than any other sought-after RFID deals within retail, logistics and other service businesses. We base these estimates on some simple general rules and on experience of working for change:

My experience is that it is the simple work routines and procedures that



consume the most resources. Low costs x large volumes quickly produces very large numbers. For that reason, the improvement activity should focus on the simpler procedures.

The automation of a process must reach a certain level – often over 80% – in order to achieve the desired effect. As long as the critical level has not been reached, the work

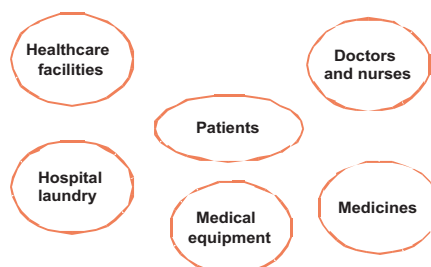
WE ARE GOING TO SELL A BICYCLE

One obstacle is the public utilities who are to provide better solutions for

such care. For the individual company – one with a short-term perspective – it is always more interesting to sell a limited solution that may contain "habit-forming" components, than to work together to sell a complete service. Consequently these days we have a palette of solutions which are like islands. To me, this is like selling a bicycle in the form of its components without an assembly manual.

Other people will happily sell a textbook on the theory of cycling – and then ask the customer to come back with a list of wishes about the bicycle's functionality.

When is real time a demand?



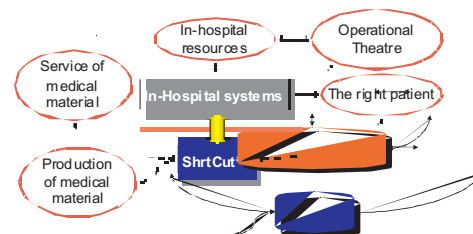
Good bicycle dealers sell a bicycle that the customer can immediately mount and cycle away on.

From this the good reader will draw the conclusion that we suppliers must jointly put together RFID services that:

- meet the immediate needs of care
- can be put into use immediately on delivery
- can work with other solutions.

We suppliers ought to be able to do this without the County Council needing to set up an RFID commission.

Time for real time decisions



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RFID HELPS IN THE CARE FOR THE ELDERLY

At Pomona, the company responsible for the elder care in Håbo near Stockholm, the personnel use RFID-technology to measure the time needed for each house call. sig Håbo från mängden.



The technology is delivered by Avista in Kista. And in Håbo they have been using it for one and a half year, since August 2004. During that time, a constant exchange has been going on, where the personnel at Pomona has suggested changes and reported problems that have occurred, and where Avista has brought new solutions.

Håbo was among the first in the world to report time and activities with RFID and cell phones. The solution is based upon Nokia RFID phones and Avista ASP.

- This was brand new when we started using it.



So we played the role of guinea pigs, says Ann-Sofie Zetterberg, responsible for the group of caregivers at Pomona. All personnel who is working with the elderly - or users as they are called - and who is making house calls is given a cell phone with a special back side (Nokia Xpress-on RFID Reader shell). And in each user's apartment there is a small tag on the wall, containing RFID technology. When someone is entering an apartment, he or she just holds the back side of the phone against the tag to log in. And then does the same thing to log out, when he or she leaves.

The person also enters what the house call was about, by choosing from a list in the cell phone display.

The data is then stored in a system, and is used to determine how much each user should be charged.

There are many advantages with the system. The time reports are more accurate, it is possible to see if the users really get the service they pay for, and family members can easily find out if their elder relatives are getting the help they should.

One of the people who are most positive to the RFID solution is Gun-Britt Gauffin. She is working as an administrator at Pomona. And for her, the technology means a largely reduced work load.

Before, she used to get time sheets that were filled in by hand, one sheet for every user and month. A single time sheet could contain the minutes and hours of over a hundred house calls.

Today, all data is stored in the system automatically. Gun-Britt Gauffin only needs to print out one list, containing all the users and the time used for their care.

- To me, this is a dream, she says.

Ann-Sofie Zetterberg and her boss Marianne Bergdahl are not quite as enthusiastic. There have been problems with the system stalling. But the upgrade they got a couple of days ago seems to be working fine.

- When it works as it is supposed to, this is a perfect system, says Marianne Bergdahl. Now our staff doesn't have to carry notepads and pencils all the time.

When the technology was introduced, some people had high expectations

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regarding increased efficiency, others worried about being observed all the time. But the work at Pomona hasn't changed.

– We do our job as we did before, only now we measure time, Ann-Sofie Zetterberg says.

Even though the time saved in the work with the users haven't been as big as the time savings in the administration, the RFID technology has proven useful in daily work.

– Now we can see how much we actually worked, when there has been a stressful period, Ann-Sofie Zetterberg says.

– This is also a way of certifying what we do. If a relative says that "Mother hasn't had a shower today" we can check it up, says Marianne Bergdahl.

Besides the occasional stalling of the system, there are some other problems. The RFID technology used by Pomona takes a lot of power, which means that the cell phone batteries need constant recharging.

In spite of the problems, the work with the RFID technology is progressing. When the system was introduced at Pomona, it was to measure time. But Ann-Sofie Zetterberg believes that the system also will be used to plan work



Marianne Bergdahl

in the future.

In time, it will also be possible for family members to go in by themselves and check what kind of help their relatives have been given.

Gun-Britt Gauffin wishes that the system could separate the time spent on actions that are all ready paid for, like lunch box distribution or medical care, from the time that the users should be charged. She would also like to integrate Avista's system better with the other soft wares she uses. Today she has to type in the data from the Avista system in to her other programs.

So how do the persons living at Pomona feel about the technology?

– 95 % of the users are positive. But there are always those who are against, says Marianne Bergdahl.



Gun-Britt Gauffin

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REUSABLE ASSET TRACKING FOR FINLAND POST

Finland Post had limited insight into movement of its roll cages – the valuable metal trolleys used to transport post around Finland. Whenever there was a shortfall of cages, it resulted in increased staff overtime work, a potential delay in delivering items to customers, and the purchase of additional roll cages to meet service level agreements.

This Finland Post pilot case proved that RFID could be used effectively to track reusable assets in the supply chain. It also indicated that it would increase Finland Post's financial performance by improving customer service, increasing profitability (by eliminating the need to replace so many mislaid cages), reducing costs, and optimising asset inventory.

Finland Post chose the BEA RFID Solution Framework on Intel-based servers.

"Quite simply, we proved that a UHF RFID portal can be used to track roll cages automatically", said Heljä Salomaa, Business Director in Logistics, Finland Post. "We achieved 100 percent reception with every long range reader tested, with tags designed especially for Finnish Post's cages. During the tests, up to 39 empty trays

– otherwise known as plastic letterboxes – inside each cage with standard tags were seen by an average of 93 percent of the readers. Some changes in tag design may easily enable 100 percent reads."

According to Salomaa, the BEA application infrastructure was instrumental in the success of the RFID program. "The BEA WebLogic RFID Edge Server resulted in the rapid and cost effective development and implementation of "proof of concept" solutions using an RFID laboratory," she explained. "In combination with the Intel Xeon processors, it offered us a solid and secure foundation upon which to scale large deployments for the highest possible ROI. Using BEA WebLogic Integration TM, we experience very smooth data integration for leveraging internal systems and external data repositories. We were able to trans-



form real-time data into meaningful information and then expose this via BEA WebLogic Portal, allowing us to share the information in a tailored way with those that need it."

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INTERMEC NAMES RFID RAPID START LICENSING PROGRAM PARTICIPANTS

Reading, UK – 15 August 2005 – Intermec Technologies Corp. today released the names of companies participating in its RFID (radio frequency identification) Rapid Start Licensing Program. The programme, which concluded Aug. 31, provides participants with access to up to four portfolios of intellectual property from Intermec's 145+ critical RFID patents.

The Rapid Start programme satisfies three major requirements. It identifies Intermec licensees before broad-scale Gen2 RFID implementations begin later this year. It eliminates uncertainty about who is licensed to use Intermec technology during ongoing vendor selection processes. And it ensures end-users access to multiple suppliers of critical RFID capabilities required to reap RFID's most powerful business benefits.

The Rapid Start community of leading technology innovators named today will provide the market with an ample supply of quality, properly licensed RFID equipment. Companies named as authorised licensees for relevant portions of the RFID patents available in the Rapid Start programme include:



- Accu-Sort
- Avery Dennison
- AWID
- Datamax
- EM Micro
- Feig Electronics
- Hand Held Products
- LXE
- Metrologic
- Paxar
- PSC
- Psion Teklogix
- SAMSys
- Sato

- Symbol Technologies
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- Toppan Printing
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BARCODES WILL BECOME OBSOLETE WHEN LUGGAGE IS TAGGED WITH RFID



The airline travel association IATA recently came forward with a proposal to tag future air travel luggage with RFID. Traditional barcode stickers will thus become obsolete - as airports around the world install RFID readers to handle luggage logistics. The existence of such readers may also create a new market for luggage identification tags - helping to reduce today's rising cost of lost luggage.

Marking luggage with anonymous tags equipped with a reference code readable only by a third party (e.g. a security company) has been a market for decades. One common method has been to punch the number into a small metal plate, accompanied by the postal address of the security company. Today, it is possible to make these luggage tags even more discreet with the help of RFID (Radio Frequency Identification). One of the forerunners in this still relatively small global market is the UK-based company Globalbagtag, which plans to include RFID-based identification in the company's line of anonymous bag tags. Identity will no longer be visible, since the identification code will only be readable when the tag is presented to an RFID reader.

In the travel and airline industry, RFID readers are becoming more and more common, and the international airline travel industry association IATA recently announced a campaign to make RFID the next tagging standard for luggage handling, thus replacing traditional barcodes. Besides faster handling, reading reliability will be increased, from around 80 percent as is the case with barcodes to more than 95 percent with RFID.

The transition will not happen overnight, though. The first pilot installations only took place during 2005. But the plans are ambitious, despite the fact that only a small fraction of air-

ports and air travel authorities around the world have so far expressed explicit interest in the technology. It is both a cost issue and a question of co-ordination, with IATA being the party the airline industry usually refers to.

An interesting observation is that RFID technology may not only be used with dedicated identity tags, but may also



come embedded in traditional plastic address labels - at a relatively small premium cost. Many travel agencies today issue their customers with flexible plastic luggage tags, carrying the agency logotype and enough space for customers to write their name and address on the back. The luggage will carry a visible sign of origin, but the obvious drawback - besides the fact that all details will be clearly visible - is that the home address is usually of

no use at the destination, and that hotel reservations sometimes change. By embedding an RFID readable chip inside such an address label, the luggage will become easily identifiable - and the travel agency can keep address references up to date, both at home and the travel destination, since details are stored back-office at the agency. Combining the identity number with a digital image of the actual bag or suitcase would further ease tracking and help resolve any claims.

The cost of lost luggage is a growing pain in the airline industry today. According to the European Airlines Association, an average of 11.9 bags for every 1,000 passengers were lost during the second quarter of 2005. Worst hit were the KLM part of Airfrance KLM, British Airways and Austrian Airlines which each lost between 15 and 17 bags per 1,000 passengers in that period. The total cost to the industry is around USD 1 billion or USD 100 per bag.

In February 2005, new regulations took effect in the European Union, raising the compensation level to EUR 1,200. In the USA, airlines are liable for up to USD 2,800 for losing a passenger's luggage.

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SUN LOOKS TO RFID FOR IT ASSET TRACKING

Sun's rollout of an RFID-enabled physical asset tracking system will be followed in a few months by a more comprehensive announcement.

Sun Microsystems Inc. is eyeing a future product that will combine its existing software for IT asset management with a new solution, unveiled on Wednesday, that uses RFID for tracking "non-networked" physical assets ranging from rack mountable computer servers to hospital equipment and furniture.

Sun and its partners developed the new Sun RFID Industry Solution for Physical Asset Tracking to fill an immediate market need, said Vijay Sarathy, director of RFID product marketing and strategy, in an interview.

Ultimately, RFID carries strong potential for pervasive use across large supply chains, according to Sarathy.

"But until then, people need plenty of help just keeping track of things and finding them in smaller parts of the supply chain," he said.

Tested internally within two departments of Sun before its release this week, the new physical asset tracking system bundles Applied Logistics Solutions' RFID-enabled mobile asset tracking system with Sun's Solaris OS, Java Enterprise System and RFID middleware.

Sun has been testing the solution with RFID tags and readers from third-party partners, too, Sarathy said.

As Sarathy sees it, the system can also serve as "a bridge between physical assets and the network."

Asset tracking systems for the "physical world" are not entirely new, according to some analysts.

"But they really haven't gotten that far because, until now, most of these systems have been highly customized," said Sarah Shah, an analyst with ABI Research.



"Sun and its partners developed the new Sun RFID Industry Solution for Physical Asset Tracking to fill an immediate market need"

In contrast, Sun's new solution has widespread applicability, according to Shah. "It can be used in office buildings, hospitals, or almost anywhere else for asset tracking," she said.

Initially, Sun is targeting its new system at IT departments, hospitals and the retail and manufacturing industries, according to Sarathy.

The company has tested the system internally in the Sun Tradeshow Equipment Distribution Center in Milpitas, Calif., as well as at the Sun Shared Lab Facility in Newark, Calif.

The Tradeshow Equipment Distribution Center is using the system to keep track of equipment and other assets shipped from its 5,000-square-foot warehouse to local and international trade shows and partner events.

Meanwhile, in the Shared Lab Facility, Sun has placed RFID tags on more than 10,000 computers and other pieces of equipment in a data center. Some of these products, such as network routers, are quite valuable, according to the Sun executive.

Beyond building productivity by helping to locate misplaced equipment, the solution also assists with supply

chain planning by gauging the comparative demand for—or "popularity" of—various assets, he said.

"Some [rackmountable] servers, for example, spend a lot of time on the rack, whereas others just sit on the shelf," Sarathy said.

Also at the Shared Lab, Sun's RFID division is collaborating with IT Operations to combine the new physical asset tracking system with Sun's existing IT management product, which is used for auditing network-attached hardware and software assets.

Sarathy expects the integration project to wrap up in about three or four months, with another product announcement from Sun to follow.

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