

## RFID NEWS

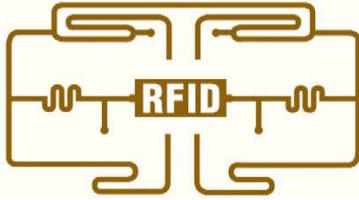
July 2007

Ken Gilleo - [Ken@-ET-Trends.com](mailto:Ken@-ET-Trends.com)



### MARKET & BUSINESS NEWS

**RFID in Next 10-Years** - The RFID market size is currently \$4.96-billion according to



RFID, Ltd. They predict that the market growing to \$26.88-billion by 2017. The company indicated that the U.S. maintains the largest number of RFID projects, followed by the U.K., where the RFID market size is one-third that of the U.S. In 2017, the most important sectors by value of tags will roughly represent \$2-billion each and

will be smart cards, consumer goods (item level), and pallets/cases. The second most important sectors will represent approximately \$1-billion each and will be military use and animal tracking. Source: RFID, Ltd.

**Asia Pacific RFID Market** - The Asia Pacific RFID supply chain market earned



\$170.3-million in 2006 and will reach \$646.3-million in 2013 per Frost & Sullivan. Today's key driver for RFID adoption in the supply chain for the Asia Pacific market is compliance with mandates set by retail giants located in the U.S. or

Europe. [The boost will hopefully come when end users begin to realize that RFID's value extends beyond mandates. Some, but not all have seen a positive ROI, but most observers see a positive outcome as users figure out how to gain advantages from RFID that can be somewhat unique to their situation. There are more spectators than players, so a positive posting for RFID technology will generate large-scale adoption.] An increasing number of mandates in Asia Pacific will indirectly spur RFID adoption in the supply chain within this region. Other companies and organizations in this area are expected to announce new mandates once they deploy RFID within their own supply chain. The ratification of standards and frequency allocation for RFID technology will make it more feasible for end-user adoption. RFID success will require that all participants better educate end users about its actual benefits, without hyping. Although end users more or less understand what RFID technology is on a general level, they are unable to comprehend how RFID can transform their supply chain to be more efficient. ***[RFID is less about cost per tag and more about ROI for each company. The 5-cent tag will not guarantee success, but maximizing value and utilizing every attribute, will make RFID a good deal today. There are many analogies, but the one the comes to mind, is flexible circuitry. Success was not the result of getting the cost below PCBs, but derived from utilizing enough of the dozen or more unique attributes of the technology]*** Source: IW.



**Active RFID is Growing** - Research firm IDTechEx shows that active RFID will grow over the next ten years from 12.7% of the market in 2007 to 26.3% in 2017. IDTechEx pegs the active RFID market value in 2017 at \$7.07-billion. There are a number of factors driving the growth

of the active RFID market, many similar to what is seen on the passive RFID side. Among them are an increase in track-and-trace generally (both assets and people), decreasing cost of the technology, standardization, integration with other wireless



technologies, contactless payment adoption, and the ambitious Ubiquitous Sensor Networks (USN) projects seen in Asia. IDTechEx estimates that 614 million active RFID tags were sold

as of the beginning of this year. At 593-million, car clickers accounted for the vast majority. In a distant second place were military applications, which have used 6.3-million. Active RFID is a systems business. That is, providers make money less on the tags and more on deploying holistic solutions. Contrast that to some of the passive RFID supply chain and retail deployments, in which the anticipated high-volume consumption of tags will contribute significant, recurring cost. While there has been much coverage of the adoption of RTLS solutions by the healthcare industry and hospitals in particular, there have not been many estimates of the actual number of deployments occurring. About 50 hospitals per year are installing RTLS systems for asset, patient, and staff tracking. Active RFID and RTLS has attracted more than its fair share of interest from investors: 37% of the 27 recent IDTechEx-tracked fundings went to companies that are in some way involved with active RFID. Notable, too, is that one of the biggest acquisitions to date in the RFID industry was Lockheed's \$400-million purchase of Savi, a company that focuses heavily on active RFID technology. Source: RFID Update.



**RFID Middleware has Strong Growth Potential** - The North American RFID Middleware and Software market brought in revenues of \$21.7-million in 2006 and will reach \$113-million in 2013 according to research firm Frost and Sullivan. The growth comes as the technology is finally being valued for its ROI as opposed to being mandated by large retail chains. The RFID market is poised for stronger growth during 2007 and 2008 due to end users' increased acceptance of RFID as a valuable tool to increase efficiency in a number of applications. Asset management, inventory management and work in process visibility applications will require the type of data management capabilities that RFID middleware provides. Many are not waiting for a 5-cent tag and are able to increase the probability of attaining higher returns right now. Companies can



maximize the value of every data capture point through RFID middleware. Middleware companies can help recognize often-elusive ROI in RFID by offering full infrastructure solutions backed up by seamless enterprise software integration. Incorporating that data into enterprise-wide systems gives companies the ability to draw meaningful conclusions about their business processes and where they can improve, according to Frost & Sullivan.

### **RFID Benefits Beyond Supply Chain**



More companies are realizing that RFID can be used to streamline operations beyond supply chain management, according to **ABI research**. The value of integrating the tracking and tracing technology into operations is being realized across many industries. The RFID survey indicates that the technology's use is not limited to open-loop supply chain management. Other application areas include asset management, security access control, and inventory management in closed-loop environments. The survey of 175 organizations that either have implemented RFID or have considered it also identifies key markets trends, system requirements, expenditures, and more, according to ABI. An increasing number of companies said that they were using, evaluating, or piloting the technology to support a wide number of applications; the main driver behind its uptake is downward pressure from retailers.

In the US, Wal-Mart has set mandates requiring its suppliers to invest in the technology or risk losing shelf space in stores. Metro supermarket chain has led the way similarly in Europe. Outside of supply chain management of pallet, case, and item level tracking, US food and drink manufacturers are looking at asset management applications such as reusable pallets, tray, roll cage, and container tracking and visibility as well as optimization and utilization. The survey found that some respondents evaluated RFID, but decided not to deploy the technology. The reasons non-users gave for not deploying or evaluating the technology included limited application relevance, the success of existing automatic identification solutions already, concerns about ROI, and a lack of clarity regarding RFID's potential benefits. The issue is having the right infrastructure in factories to support RFID. The difficulties remain in justifying the first step in terms of return on investment. Manufacturers are also looking at the total cost of ownership because of the larger cost of deployment, but manufacturers that have already traveled down have experienced benefits. The results of this end-user research reinforce ABI Research's position that the opportunity for RFID is not limited to supply chain management or industrial environments. These survey results mirror the patterns and pace of adoption that we have previously forecast and provide solid validation for our assessment of the direction of the RFID market. A recent IDTechEx study estimated the RFID use in the food supply chain have a global value of \$5.8-billion in 2017. Source: Food Production Daily.



**NCR to Use RFID** - NCR Corp. recently announced it is applying RFID tags to cartons and pallets of retail technology products shipped from its Atlanta Customer Fulfillment Center. The service is made possible by the implementation of NCR TransitionWorks Retail RFID Compliance, a turnkey application package offered by the company's Automatic Identification and Data Collection (AIDC) Solutions Group. They are currently sending RFID-tagged shipments to a major retailer and expect to extending this value-add service to other NCR retail and hospitality industry customers. Businesses that implement RFID solutions in their supply-chain operations can gain added efficiencies by being able to automatically identify and validate the NCR shipment, including the individual items, and direct it to the proper destination. Source: Bus. Intelligence Network.



**New RFID Player** - RFID@TOSHIBA will offer a complete end-to-end RFID infrastructure solution providing customers with the main components of an RFID implementation from consultancy right through to after sales service:

(1) Consultancy—this covers from defining the solution through to identifying the correct technology and components to use, to understanding the business case to present to the board (involves the calculation of the ROI) and finally the delivery of a proof of concept.

(2) Project Management—this is a key component in a solution that is likely to involve change management, management of disparate resources and change control over multiple initiatives that form part of the whole.

(3) RFID Hardware—this covers the provision of printers and readers.

(4) RFID Software—this covers the selection and use of RFID middleware and edgware. It also involves integration to ERP and BI solutions at the Enterprise level. The last component of this service looks at the selection and implementation of Edge Service Applications such as Asset management

(5) RFID Consumables—this involves the selection of the appropriate tags for the solution. The other unique is a bureau service.

One of the tag solutions offered is Toshiba's own SPRINT™ (Short Pitch Rfid eNcoding Technology) tags. Toshiba is unique in the ability to print directly onto RFID Inlays. The normal process Inlays come from the manufacturer on a roll with an adhesive backing and an acetate coating. They are then sent to a converter who inserts the inlays into a paper label. With SPRiNT™ the costs are dramatically reduced as this process step is removed. They gave their latest cost at about 8-cents each. SPRiNT™ defines straight to tag printing/encoding for wet-web media with a form factor where there is a short pitch height between chips (approx 20mm minimum).

Implementation Services—this covers Site surveys, Hardware installation & testing, Initial bulk tagging, Infrastructure (cabling/wireless networks), Software configuration, installation and testing, and Sign off. After Sales Service—Toshiba provide call logging, Warranty issues, SLA's, Call sign off, Engineer dispatch, 3rd party liaison and Full call reporting. This is a comprehensive set of the services required to implement an RFID solution. Toshiba allow organizations to pick and mix from the services and components in the RFID@Toshiba portfolio. Source: IT Analysis.

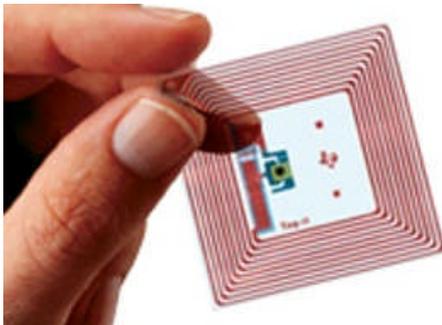
**TOSHIBA**

**RFID Update** - Unisys recently landed an extension order from the US Department of Defense worth \$28-million yearly and up to \$112-million if three further planned extensions are granted; this is item and conveyance tagging. This deal should not be confused with the DoD's passive RFID mandate initiative involving billions of tags worth

\$425-million for Lockheed Martin; this is active RFID. The Unisys project uses active RFID technology to track 125,000 shipments every week - ammunition, rations, medical supplies, vehicles and vehicle parts. RFID cards are seeing even bigger commitments than these massive logistics orders for RFID labels and plastic moldings and their systems. China is spending \$2-billion on RFID this year, mainly the 900 million person national ID card and the city payment card schemes for up to 14 million people at a time. By contrast, a \$66-million order for a non-military US Government access card system has recently gone to EDS. And just one extension of the Washington WMATA transport card scheme has recently put \$11.58-million in the hands of Cubic Transportation Systems. Source: IDTEchEx



**RFID Payoff** - 93% of All Organizations Surveyed Expect RFID to Help Cut the Cost of



Doing Business as Opposed to Help Increase Revenue). Best-in-Class Organizations Are Able to Decrease the Total Value of Spare Parts on Hand by 21% Leveraging Their RFID Data, A Rate That Is 50% Higher Than All Other Organizations. Process-intensive organizations continuously face competitive pressures to increase: labor waste, throughput while decreasing the cost of doing business. According to a new research report by Aberdeen Group, a Harte-Hanks Company

(NYSE:HHS - News) the majority of the costs that can be optimized without adverse impact on throughput fall into four categories: excess inventory, loss due to mishandling or misplacement of key components, and exception handling. Aberdeen surveyed 220 end-users to identify the value proposition of RFID for managing assets in process-intensive environments, such as high-touch manufacturing, aerospace, automotive, textiles and hospitals. The key benefits to the technology are:

1. Improving real-time visibility into critical processes,
2. Managing exceptions and preventing loss or damage to critical assets,
3. Locating and providing proactive maintenance to tools and equipment,
4. Reducing the need for excess spare parts inventories.

Reducing loss, reducing time-wasting manual intervention, reducing the time it takes to get from information request to information delivery and resolution, the ability to find and fill process flow gaps with idle equipment, parts and people, and, ultimately, the ability of an organization to structure its pricing to reflect the actual cost of doing business, together represent the value proposition of RFID to the process-intensive industries. In order to realize the potential, an organization must be able to measure its performance at key points in the process, identify waste, and be willing to adapt existing processes to take advantage of the business intelligence that these actions deliver. Source: Yahoo Finance.

## RFID APPLICATIONS



**RFID Luggage Tags at Heathrow** - While there have been RFID bag-tag trials at smaller airports for many years, this one is a major deal. Heathrow Airport will trial RFID technology to track luggage as it moves around the airport as it aims to reduce the amount of bags that get lost in the system. Heathrow will become the largest airport in Europe to trial the tech for this purpose when the pilot begins in September. Bags will be fitted with RFID tags when they are checked in before being scanned as they enter the baggage system. BAA will use the trial to see how the system compares to the current system of barcode scanning in terms of keeping track of bags. This trial will allow us to compare the success rate of RFID technology against their existing system. They will also do some big picture analysis and brainstorming

toward understand the benefits RFID offers to the airline, airport, suppliers, and customers. Source: Silicon.com

**Sushi Tagging in Seattle** - Intermec showcased their system designed for the Blue C Sushi restaurant in Seattle. This restaurant brings the kaiten style of service, popular in Japan, to American diners. A conveyor belt carries plates of sushi past diners throughout the restaurant. Instead of ordering your food, you simply pick up a plate of sushi as it moves past your table. Your bill is calculated by the number of plates that you pick up, as well as by the type of item on the plate. Think of it as an automated Japanese version of the more-familiar (to Americans) Chinese dim-sum service [*for a linear, rather than circular, "Automat" launched in the early 1900's*]. The restaurant had been using barcodes to provide basic plate-tracking information. The Intermec RFID system allows Blue C Sushi to track far more information in real-time, such as how long the sushi has been on the conveyor, what type of sushi is on each plate, and which types of inventory are running low. The restaurant has successfully used the real-time reporting from the RFID data to optimize its order profile and preparation practices. In addition, it has dramatically cut down on wasted sushi and reduced the number of out-of-stocks of popular items on the conveyor belt. Another plus is that the RFID system has improved the speed and accuracy of the customer checkout process. This system capitalizes on several strengths of RFID. It is a closed-loop application, where tagged plates are re-used and readers are tied to a limited geographic area, thus making an ROI case simpler to demonstrate. It uses the increased speed and accuracy of RFID-tagged data to provide inputs to intelligent demand planning. And it also leverages the traditional RFID application of automatic inventory tracking.



Source: IW.

**Grocery Distribution** - This is one of the more up-and-coming application areas for RFID. A Reva Systems brought on-line a major RFID deployment at

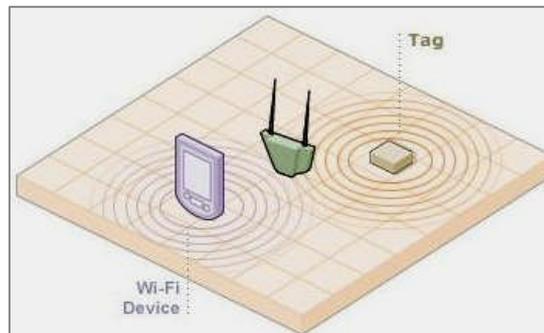


METRO Group grocery stores and distribution centers in Germany. The systems will ultimately be added to their stores throughout Europe. The system records RFID data as pallets of product arrive at 200 stores and distribution centers using the Reva TAP (Tag Acquisition Processor) reader network-manager product. METRO Group has been a leader in piloting RFID technology in Europe. The company is also a frequent target of anti-RFID privacy advocates, but maybe the protesters help business. This production rollout is a transition from RFID piloting efforts to large-scale RFID technology infrastructure build-out.

The METRO Group RFID system will use pallet-level tags to provide proof-of-delivery of items at the store. The Reva TAP technology will allow real-time decisions to be made at this point, based upon instructions from the corporate IT backbone. A person receiving a pallet can be given a real-time alert to move that pallet directly to the sales floor for promotions. The real-time decision-making and notification element distinguishes the METRO Group deployment from traditional RFID supply-chain applications. It combines traditional pallet-level supply-chain RFID data collection with real-time decision-making algorithms. Real-time instructions can be valuable. The Grocery Manufacturers Association in North American shows that the out-of-stock rate for advertised in-store products ranges from 8% to 17%. Empty shelves mean lost sales. Kimberly Clark's experience with pallet-tagged promotional products at Wal-Mart allowed them to improve in-stock execution from a baseline of 56% (without tagging) to 75%. The METRO Group could conceivably improve their sales of advertised items by 25%, a number that should result in a good ROI value. Source: IW



**Boeing Merges RFID and Wi-Fi** - Boeing has been an early adopter of RFID and they continue to advance the technology as Airbus tries to catch up. RFID/Wi-Fi technology is being used to track and locate aircraft parts across its mammoth manufacturing factories. Each individual aircraft is made of up to 3-million parts and Boeing's Everett factory north of Seattle in Washington State is the largest building in the world; 100-acres. Boeing said the company is working on a technology called Real-Time Location Service" (RTLS) to help keep track of millions of parts. The RTLS technology uses Wi-Fi access points to pick up signals from active RFID tags on the aircraft parts and then uses triangulation or time-stamping to check the exact location of each part. Misplaced parts are never lost. The RTLS technology, though still in pilot phase, also helps track parts from one workstation to another in the factory and monitors if they are moving at the right speed through the assembly process. Future vision, 5 to 7-years from now, is that every employee will have a mobile device. The ROI will be about 1 day. The value of information is going to be that high, and the cost of that communications device is going to be that low. Source: ZDNet-Australia.





**More Aircraft Tagging - RFID can help the aircraft industry right through the entire chain. Boeing has long been a proponent of RFID technology in the aerospace industry. Airbus is deploying RFID technology throughout**

**its value-chain and appears to be playing catch-up to their American rival.** ODIN technologies is the primary RFID vendor for Airbus. Aircraft manufacturing is an attractive fit for RFID technology. The value of each part or assembly to be tracked is usually quite high, which makes the relative cost of an RFID tag less of a consideration than in low-cost industries such as retail logistics. The data-tracking burdens are also quite high, due to government and safety regulations that require manufacturers and airlines to keep detailed records on the history of each serialized part. RFID tags provide benefits in the speed and accuracy of such data tracking, and the physical configuration of the tags can make them much more durable in a manufacturing or maintenance environment than barcodes. ODIN technologies is now helping Airbus design and deploy a network of passive and active RFID technologies throughout their organization. As an example of the size of the problem, ODIN notes that the recently-developed Airbus A380 aircraft already contains 10,000 RFID tags and this was before the initiation of the comprehensive RFID program envisioned by Airbus. An interesting feature of the ODIN project is the scope of Airbus's program. They anticipate deployments in traditional supply-chain logistics, tool and asset tracking and work-in-process inventory management. ODIN Technology's task is to work as a solutions developer for Airbus in managing fast-track rollouts of RFID systems. *[While perhaps not useful PR feature, permanent tags can help find and ID parts in air disasters].* Source: IW.

**RFID Flowers in Plants -** By allowing growers to fit each flowerpot with a TAGSYS



RFID tag, they can optimize the months-long greenhouse growing process. Walking Plant Systems (WPS), a provider for greenhouse botanical growers, has successfully implemented RFID technology into its Plant Order System for commercial greenhouses. By allowing growers to fit each flowerpot with a TAGSYS RFID tag, they can optimize the months-long greenhouse growing process. The project demonstrates the ability to achieve highly accurate item-level tracking

in a variety of environmental conditions. The project also shows how RFID can play a critical role in improving production processes and the quality of goods. Even for a process as delicate as plant-growing, RFID technology allows customers to track the progress of every single plant in a 30,000 square-meter greenhouse from seed to sale – which can take from 6 to 12-months. Source: Business Intelligence Network.

## TECHNOLOGY

**First Organic RFID Badges -** PE badges, in the form of organic RFID circuits, are set to



be used in a field trial at the Organic Electronics Conference (OEC-07) in Frankfurt, Germany later this year. The circuits are the first printed low-cost organic tickets, according to Cintelliq Ltd. (Cambridge, England), organizer of the conference, and have been

developed under the auspices of PRISMA, a collaborative research project on printed smart labels with European Union funding. The tickets are set to be manufactured by printing company Bartsch GmbH and plastic electronics developer PolyIC (Fuerth, Germany). During this first field trial, it is planned to use organic tickets to collect statistical data. Four reader stations developed by PolyIC and about 1,000 organic tickets converted by Bartsch are set to be used to monitor the flow of attendees during the two-day conference and exhibition. The field trial is expected to support the development of a wider range of printed RFID applications, in public transportation and logistics. Source: EE Times Europe.

**UHF-RFID for Steel** - SATO, in collaboration with Accenture, has successfully



developed a passive UHF RFID solution for steel transportation applications with good read performance. ThyssenKrupp Steel will be using the SATO “FlagTagSolution™” technology for slab transportation and distribution logistics at its new steel mill in the Bay of Sepetiba, Brazil. More than 250,000 slabs will be transported every year, and around 100,000 of them to Germany. ThyssenKrupp Steel needs to keep track of every slab in a complex logistics

chain that spans continents. While the slabs have to be identified several times en-route, ThyssenKrupp Steel has only a short time window to identify each slab during the receiving (unloading, allocation and reloading) process. The advantage of RFID, and specifically of UHF RFID, is its capability to read data from a greater distance than barcode without the need for line-of-sight. However, while UHF delivers long read ranges and high data throughput rates, its readability and performance become limited when in close proximity of metal which distort or deflect the radio waves. FlagTagSolution™ is embedded with the UPM Raflatac short dipole Gen 2 inlay, forming a RFID tag in the shape of a “flag” during the encoding, printing and application process thus lifting the RFID inlay (in the “flag”) away from the surface of the product. For this particular application, the “FlagTag™” was customized to meet the requirements of tagging and adhering onto steel slabs. With the “FlagTag™” and its extended read-range, the RFID reader can now uniquely and accurately identify the slabs while they are suspended at times up to three meters from the gantry cranes. Source: Sato website.



**DCS & Labelling Worldwide**

**New Battery for RFID** - a venture-backed startup called Infinite Power Solutions (IPS) is developing battery chemistry that it believes could be incorporated into semi-active RFID tags, thereby widening the potential applications for the technology. Called LiTE\*STAR, IPS' battery technology offers a handful of distinguishing characteristics. First, at 0.13mm, it is extremely thin. LiTE\*STAR can also be recharged many more times than competing battery technologies, virtually unlimited recharge cycles. A user

would more than likely never wear out one of our batteries. It can be stored, unused for a long time without draining its power. Compare that to, say, a cell phone, whose battery is depleted in a relatively short time even if it is not being used. Lastly, LiTE\*STAR can endure extreme temperatures which would cause other batteries to suffer. Taken together, these characteristics make LiTE\*STAR a great enabler of semi-active RFID. Semi-active RFID, also called battery-assisted RFID, uses battery power to strengthen the signal of tags.) Semi-active RFID is an extremely large potential market, and we are trying to enable that market. The company envisions the battery technology allowing semi-active RFID tags to be used in applications or environments which are currently impossible. One area is industrial processing where a device or component passes through some very high-temperature process. You could identify or transmit data from that device even at high temperatures that had precludes using semi-active tags. LiTE\*STAR is not yet in production. IPS is in the process of building the manufacturing facility, and Bradow expects the technology will be in production by early next year. A production team is building clean rooms in Littleton, CO. But there is a high risk inherent to building what would be the world's first thin film battery manufacturing plant. But they are confident, that since its founding in 2001, the company has assembled the right combination of management, expertise, intellectual property, and venture capital to succeed; \$35-million received, to date, from 6 firms. Source: RFID Update.



**Med-RFID Implant Status**



A medical-grade glass capsule holds the RFID chip, a copper antenna and a capacitor. Data is transmitted stored from the chip when prompted by an electromagnetic reader. Implantations are quick, relatively simple procedures. After a local anesthetic is administered, a large-gauge, hypodermic needle injects the chip under the skin on the back of the arm, midway between the elbow and the shoulder. Some physicians have been chipped. One, who was tagged two years ago explained, "If I was ever in an accident, and arrived unconscious or incoherent at an emergency ward, doctors could identify me and access my medical history quickly." A chipped person's medical profile can be continuously updated, since the information is stored on a database accessed via the internet. But people mistrust of microchips and technologies like RFID runs deep. Myths: Chips have global positioning transceivers that would allow the government to pinpoint a person's exact location, 24x7. A tech-savvy stalker can rig scanners to video cameras and film somebody each time they enter or leave the house. [Maybe, but at high cost - why bother]. But thieves could use readers and surreptitiously pluck people's IDs out of their arms with a lot of work. [Why not just snatch a purse or lift a wallet instead?]. A company that makes implantable microchips for humans, VeriChip (Delray Beach, FL), concedes that, "To grab information from radio frequency products with a scanning device is not hard to do, However, the chip itself only contains a unique, 16-digit identification number. The relevant information is stored on a database." VeriChip tags high-risk medical

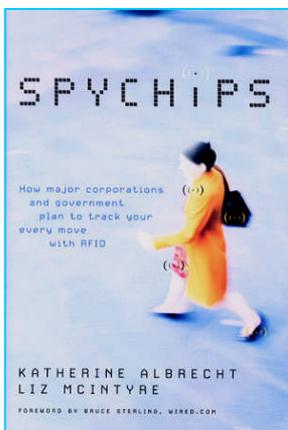


patients VeriChip Corp, whose parent company has been selling radio tags for animals for more than a decade, has sold 7,000 microchips worldwide, of which about 2,000 have been implanted in humans. The company's present push: tagging of "high-risk" patients -- diabetics and people with heart conditions or Alzheimer's disease. In an emergency, hospital staff could wave a reader over a patient's arm, get an ID number, and then, via the Internet, enter a company database and pull up the person's identity and medical history. To doctors, a "starter kit" -- complete with 10 hypodermic syringes, 10 VeriChips and a reader costs \$1,400. To patients, a microchip implant means a US\$200, out-of-pocket expense to their physician. Presently, chip implants aren't covered by insurance companies, Medicare or Medicaid. For almost two years, the company has been offering hospitals free scanners, but acceptance has been limited. According to the company, 515 hospitals have pledged to take part in the VeriMed network, yet only 100 have actually been equipped and trained to use the system. Some wonder why they should abandon non-invasive tags such as MedicAlert, a low-tech bracelet that warns paramedics if patients have serious allergies or a chronic medical condition.



## POLITICS

**Tag Man Phobia** - Is it OK for consulting adults to tag? The chipping of employees with RFID tags to protect vital company data from falling in to the wrong hands is on the rise in the US, and this has privacy groups radiating red. CityWatcher.com, a provider of surveillance equipment, attracted little notice itself until two of its employees had glass-encapsulated microchips with miniature antennas embedded in their arms. The "chipping" of two workers with RFIDs was a simple way of assuring restricting access to vaults that held sensitive data and images for police departments, a layer of security beyond key cards and clearance codes. "To protect high-end secure data, you use more sophisticated techniques," said the company. They compared chip implants to retina scans or fingerprinting. "There's a reader outside the door; you walk up to the reader, put your arm under it, and it opens the door." The news that Americans had been injected with electronic identifiers to perform their jobs fired up a debate over the proliferation of ever-more-precise tracking technologies and their ability to erode privacy in the digital age. To some, the microchip was a wondrous invention -- a high-tech helper that could increase security at nuclear plants and military bases, help authorities identify wandering Alzheimer's patients, allow consumers to buy their groceries, literally, with the wave of a chipped hand. To others, the notion of tagging people was Orwellian, a departure from centuries of history and tradition in which people had the right to go and do as they pleased without being tracked, unless they were harming someone else. Chipping, these critics said, might start with

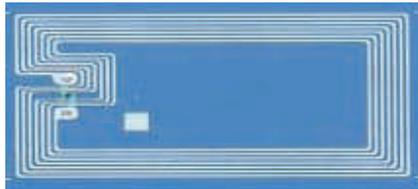


Alzheimer's patients, but would eventually be suggested for prisoners, then parolees, then sex offenders, then illegal immigrants [Sounds good to me]. That got Liz McIntyre, of "Spychips, going, "It was scary that a government contractor that specialized in putting surveillance cameras on city streets was the first to incorporate this technology in the workplace," But CityWatcher.com said their employees volunteered to be chipped. Yet, within days of the company's announcement, civil libertarians and Christian conservatives joined to excoriate the microchip's implantation in people. The privacy advocates fear that the government or your employer might someday say, "Take a chip or starve". Some critics saw the implants as the fulfillment of a biblical prophecy that describes an age of evil in which humans are forced to take the "**Mark of the Beast**" on their bodies, to buy or sell anything. "We're really on the verge of creating a surveillance society in America, where every movement, every action -- some would even claim, our very thoughts -- will be tracked, monitored, recorded and correlated," says the ACLU. Source: ZDNet-Australia.



## PRODUCTS

**Aluminum RFID** - Omron unveiled a new half-size HF (13.56MHz) aluminum RFID inlay that boasts a footprint approximately 50 percent smaller than its current card-sized product. Compliant with ISO/IEC 15693 standards, the new inlay is the second product in Omron's V730 HF aluminum-based range and will be available for shipment from early August 2007. At 46mm wide by 75mm tall, Omron's existing card-sized HF aluminum inlay (V730S-D13-P01) is slightly smaller than an average business or credit card. By contrast, the newly released inlay is approximately 50 percent smaller (46mm by 43mm), while achieving a read range of roughly 35cm, comparable with Omron's copper-based inlay of the same size. One of the most common applications for HF RFID inlays is in library management systems, where they are used in labels attached to books. While card-sized labels are commonly used for such applications in Europe and Japan, half-size labels are standard in the US and in some parts of Asia Pacific. This market is set to grow considerably as governments around the world encourage investment in IT infrastructure. In addition, the inlay's small size opens up avenues to a wide range of other applications, including tags for clothing, logistics and distribution management for pharmaceutical products, asset management and access control to restricted areas. Omron's expanded line-up of HF inlays allows customers to choose the optimum size for their specific application. The new inlay is an extension to Omron's existing range of aluminum-coil antenna RFID inlays that now comprises two HF types (the V730 series) and three UHF band types (the V750 series). Omron initially introduced aluminum-based inlays to complement its copper-based products in 2005, in response to the tightening of waste management regulations in markets around the world and customer concerns over the disposal of copper waste. Now, both aluminum and copper-based RFID inlays are available in card-size and half-size formats in mass-production volumes. Source: Wireless News



**RFID Boozometer** - Over \$7-billion is lost due to “liquor shrinkage”; the result of bartenders giving out free drinks, over pouring intentionally, making mistakes as they mix cocktails, or just plain theft. Enter the “smart bar” and RFID. Capton, Inc. and Nuvo Technologies, Inc. are marketing systems that use RFID-equipped pour spouts that are



fitted on liquor bottles in bars and restaurants. With readers positioned in the bar environment and software that compiles the data and produces analytical reports, the “auto-ID” bar gives restaurant and hospitality managers new heretofore unprecedented visibility on this critical part of their operations. Each company’s system (Capton’s Beverage Tracker and Nuvo’s BarVision) can be installed for \$10,000-20,000 per location, and the early results show significant and quick ROI. [Until patrons go looking for free drinks somewhere else]. When using either system, each bottle of liquor in the bar inventory must be fitted with a reusable smart pour spout containing a battery-powered RFID tag. The battery power source for Nuvo Technologies BarVision smart spout has an expected lifespan of three years, while Capton’s Beverage Tracker is projected to have a lifespan of up to a decade. And, with the smart pour spout at the air-filled top of the bottle and the use of active tags, there are no real readability concerns with the systems, which operate in the 418 MHz range. Physics is key to the operation of both systems. In a free pour environment, in order to mix a drink, the bartender must tip the bottle in order to pour from it. The tipping of the bottle “turns on” the smart pour spout when each drink is mixed, and in essence, it enables the system to measure the volume of liquor poured before the employee tips the bottle back up, which ends the process of making that drink. The smart spout then instantly transmits the information on the pour to the RFID reader positioned above the bar (or in the case of a larger facility, the nearest reader). The information on each pour is then transmitted from the receiver to the bar or restaurant’s computer system, which is integrated with the vendor’s proprietary software that compiles bar and bartender-specific data. In the case of Capton’s Beverage Tracker, there is a flow measure device built-into the smart pour spout, which measures the amount of alcohol poured. It thus records the volume, type of liquor, and the date/time of the pour. Nuvo Technologies uses a different technique, whereby the spout simply transmits the total time of the pour and the angle of the tipping of the bottle. This data is then matched to the type of alcohol in that particular bottle in its BarVision Global software for PCs, which then matches the serial number of the RFID tag to calculate the volume of alcohol poured in each instance to the restaurant or bar’s database (containing information on the date, price, quality, etc. of all tagged bottles). Source: CR80 News.



**Digging RFID** - 3M expanded its family of RFID tags for locating and identifying buried pipes, cables, and other underground assets. The new products work at different depths and provide identification and data about the buried asset, in addition to signaling its location. Underground marker tags have been used for about 35 years to help utilities,

public works departments, and construction firms locate cables, pipes, valves, and other underground assets. There are millions of such markers throughout the world, and 3M sells a new one approximately every 25 seconds. Markers operate at a set range of frequencies between 65 KHz and 135 KHz, with different frequencies used for different types of assets according to American Public Works Association standards. The markers are used to locate items for service and to provide guidance for safe excavation. Willson said traditional marker tags were used only for detection and did not store or transmit any identification data. Similar to anti-theft tags used in retail, they merely emanated RF to signal their presence; no actual data was transmitted by marker tags until 3M introduced intelligent RFID tags in 2002 that could communicate a unique ID number and other information. The new products 3M introduced this week expand its intelligent product portfolio. The new markers are part of 3M's Dynatel Locator System, which also includes a handheld computer used to find and read the underground markers. Users cannot only detect an object, they can get a unique serial number so they know exactly what it is. They can also write new information to the tag. The new products are a "finger marker" and a "full range marker." The finger marker is approximately two-thirds of an inch in diameter. It is for near-surface applications, such as identifying manhole covers that will be paved over. Finger markers can be buried under concrete and extracted by drilling, rather than having to use a jackhammer or other equipment for a larger excavation. The full-range marker can be read from up to nine feet below ground. It is intended for identifying more deeply buried asset like electric lines, wastewater pipes, and related components. Source: RFID Update.

