



Jaguar To Use RFID Tags

As part of the Jaguar Tradelane Project to provide real-time location information and security alerts for shipping containers packed with replacement parts, Jaguar and its logistics partner, Unipart Logistics, will use sensors and ISO-standard active RFID tags by Savi Networks on shipping containers at the Port of New York/New Jersey and the Port of Oakland in California. The tags will track inbound Jaguar shipments, reports RFID Update.

"As you can imagine for an automotive company, Jaguar's supply chain is very sophisticated," said Lani Fritts, chief operating officer of Savi Networks. "They already get shipping data by EDI. They'll use active tags on containers to provide security, get location information and automate some of the data feeds they're getting now. They're looking for ways to supplement their existing data and make it easier to collect and analyze."

Unipart and Savi Networks will monitor the location, security status and condition of cargo container shipments when they pass by readers at factories, ports, distribution facilities and other key supply chain nodes.

"Supply chains are more and more competitive, and it's especially important for automotive companies to find new ways to compete," said Fritts. "The adoption cycle of RFID technologies is accelerating. I see it as a continuation of the ongoing process in the automotive industry. There was total quality management, then Six Sigma. RFID is part of the continuous improvement process."

The Jaguar Tradelane Project tracks RFID-tagged containers filled with automobile parts from inland warehouse and distribution centers to the United Kingdom's Port of Felixstowe. The containers are tracked when they arrive in the U.S. at two destination ports: the Port of New York/New Jersey and the Port of Oakland in California.

The SaviTrak captures data from all types of standards-based Automatic Identification and Data Collection devices, including bar codes, sensors, passive and active RFID and GPS satellite location systems. The information service generates real-time reports and exception-based alerts to each customer, including routes, missed shipments, or environmental conditions.

IndustryWeek's RFID Strategy, Settembre 2006

Assintel propone le regole per l'Rfid. Redatto un documento in collaborazione con l'ente austriaco Ubit

Assintel, l'Associazione nazionale delle imprese che operano nel settore dell'Information and communication technology, ha sottoscritto un documento che contiene una serie di proposte per la regolamentazione delle tecnologie Rfid in Europa. Il documento è frutto della collaborazione che Assintel ha avviato con Ubit, l'Associazione austriaca dei consulenti d'azienda e delle imprese It, con l'Aiip, Associazione italiana internet provider, con Vita, distretto dell'informatica e delle tecnologie avanzate del Veneto e con Rfid Lab dell'Università di Parma. Il documento redatto da questo gruppo di lavoro italo-austriaco è assai articolato e comprende non solo le

proposte volte ad armonizzare le regole per l'impiego dell'Rfid in Europa, ma anche motivazioni capaci di favorire il finanziamento a coloro che sono attivi nella ricerca e nello sviluppo delle tecnologie Rfid, viene inoltre posta enfasi sull'importanza dell'applicazione delle normative che regolano la privacy e la sicurezza dei dati al fine di rendere l'Rfid trasparente agli occhi degli utenti finali.

Il documento sarà presto sottoposto al Pan-European Ict network for Sme and e-business e al Commissario europeo per la Società dell'informazione.

Data Business, Settembre 2006

Un gruppo di ricerca contro gli hacker

La National Science Foundation statunitense ha concesso un finanziamento di 1,1 milioni di dollari a un consorzio costituito per indagare i problemi legati alla privacy e alla sicurezza connessi all'uso dell'Rfid.

Si tratta del Rfid Consortium for Security and Privacy, un gruppo di ricercatori e rappresentanti del mondo aziendale che userà i fondi per suggerire modalità di applicazione dell'Rfid tali da assicurare la completa sicurezza tanto dei consumatori quanto delle aziende sull'utilizzo dei dati. In particolare, il gruppo proverà a sviluppare protocolli crittografici e incorporare sistemi di protezione dei dati più efficaci negli attuali standard per lettori e tag.

A capo del consorzio c'è Kevin Fu, professore associato di informatica all'Università del Massachusetts, e sono coinvolti ricercatori della stessa università e della Johns Hopkins University. Per quanto riguarda la controparte industriale, del consorzio fanno parte rappresentanti di Rsa

Laboratories, una società specializzata nelle soluzioni per la sicurezza informatica.

Incorporare sistemi di crittografia dei dati nei tag Rfid pone notevoli problemi tecnici, viste le limitazioni di memoria e (nel caso dei tag passivi) di potenza di questi dispositivi. Ma è vitale per metterli al riparo da possibili hacker in particolare quando sono usati per sistemi di pagamento o per chiavi elettroniche.

Del consorzio farà parte anche un comitato consultivo composto da rappresentanti delle aziende clienti di sistemi Rfid, che avrà il compito di assicurare che tutte le soluzioni proposte abbiano senso in contesti commerciali concreti. Nella fase iniziale di questo comitato faranno parte, oltre alla stessa Rsa, Bay Area Rapid Transit, l'azienda che gestisce i trasporti pubblici di San Francisco, interessata a testare l'utilizzo di smart card per accedere ai suoi treni.

Rfid Italia, Settembre 2006

Cresce l'Rfid "pesante"

Continua ad essere l'industria pesante il settore trainante della crescita dell'Rfid. Secondo una ricerca appena pubblicata dalla società statunitense Frost & Sullivan, nel complesso il valore del mercato Rfid nei settori automobilistico, aerospaziale e della produzione industriale è arrivato, nel 2005, a 71,3 milioni di dollari. Frost & Sullivan prevede che la crescita prosegua al ritmo del 17,9 % all'anno, arrivando nel 2012 a 225 milioni di dollari.

A crescere più marcatamente sarà il settore aerospaziale, che arriverà a un 23,1 % in più all'anno. Segue l'automobilistico con il 18,8 %, mentre la produzione industriale (che qui include macchinari pesanti, elettronica e settore energetico) crescerà del 13,3 % l'anno.

Prese nel loro insieme comunque, questi tre settori stanno crescendo molto meglio della maggior parte degli altri settori verticali, come quello dei prodotti confezionati di largo consumo. "Considerato che nel 2005 il mercato complessivo dell'Rfid non è andato bene" commenta Priyanka Gouthaman, research analyst di Frost & Sullivan, "questi tre settori se la sono cavata egregiamente". Tuttavia, a

continuato, per la prevista grande crescita del settore aerospaziale si dovrà attendere ancora un paio d'anni. Per il momento, quello automobilistico e quello della produzione industriale sono ancora maggiori consumatori di Rfid.

A contribuire in modo determinante alla crescita dei tre settori analizzati dal rapporto è la progressiva decentralizzazione dei processi produttivi. "Sono settori predominati dalla produzione, e molte delle loro attività oggi sono date in outsourcing" continua Gouthaman. "L'Rfid può aiutare a mantenere integrate le attività, e a monitorare a livello centrale quelle parti della catena produttiva che sono delocalizzate".

Altro fattore importante sarà in futuro quello normativo. In particolare, la Federal Aviation Administration statunitense dovrebbe introdurre presto norme sulla tracciabilità delle componenti meccaniche degli aerei, stimolando la domanda di soluzioni Rfid.

Rfid Italia, Settembre 2006

RFID In China

There is a massive internal RFID market in China, according to IDTechEx technical consultant Ning Xiao. He has toured China visiting RFID companies, users and the government to uncover the latest developments.

Even though 65% of goods sold by Wal-Mart come from China, they are not yet required to have RFID tags, according to Xiao, and he doubts whether they will be able to afford RFID technology. But RFID use in China will center on the local market. One example Xiao found was a university that ordered smart tags with a potential of 120 million tags just for one province.

Currently, China has issued the world's largest order for RFID -- a \$6 billion order for a national ID card program. These are contactless cards, operating at HF. By the end of 2005, China had issued 110 million national ID cards. The target is to issue 900 million ID cards by the end of 2008. Each card costs about \$2.50, and only Chinese companies have been chosen to provide the entire solution reports Xiao.

The driving force for RFID comes from the government which provides support for major companies to deploy RFID projects. One example Xiao found is the Shanghai Hsic company which has implemented RFID for tracking potentially dangerous items such as fireworks and gas cylinders.

With regard to a national RFID standard there is some debate. "If the RFID standards cannot be supplemented, adjusted or modified by China, the tremendous economic benefit brought by RFID will be abated", said Dr Wenfeng Wang, executive secretary of the new national standardization workgroup, speaking to IDTechEx. "We cannot buy everything from other countries. We cannot store all our real-time information abroad," commented Ms Qi Zhang, director of The National Golden Cards Project.

However, both Ms Zhang and Dr Wang emphasized that China should not isolate itself from the rest of world, reports Ziao. The national RFID standard should include China's own IP, as well as be compatible and interoperable with international standards, they told Xiao.

IndustryWeek's RFID Strategy, Settembre 2006

RFID-enabled Locks Secure Bags of Blood

Ospedale Maggiore, a hospital in Bologna, Italy, has been using a system involving RFID-enabled seals to be sure patients are given only the blood intended for them.

At hospitals around the world, workers continue to make mistakes matching blood groups, and some studies show human error rates for blood transfusions have not improved during the past two decades. Ospedale Maggiore, located in Bologna, Italy, has been using an RFID-based system to match patients and blood bags, ensuring that transfusion patients are given the blood intended for them. Tiomed, an Italian medical-device company, designed and installed the system, which has been in operation since May.

Daniele Luppi, a doctor at Ospedale Maggiore who worked on the project, says the hospital is moving away from its current system, using an ID bracelet with an iButton from Maxim Integrated Products. The iButton consists of a computer chip enclosed in a 16-millimeter stainless steel circular case. It can be read at a rate of 16 or 142 kilobits per second, but instead of transmitting that data via a radio signal, the iButton requires direct electrical contact with a handheld device by means of a cable.

The hospital is moving toward an RFID system for several reasons: It is more user-friendly, it has faster reading and writing capabilities, it has larger data-storage capacities, and it can perform some steps of the positive-identification process automatically. Luppi says the most important advantages for the hospital have been better compliance with procedures and higher acceptance from both blood-service operators and clinical unit operators.

Tiomed's system features MediLock, an RFID-based electronic seal attached to bags of blood. MediLock can be unlocked only when a multifunctional, wireless handheld device, the Palmed, communicates the correct identity of a patient receiving the blood.

The basic idea behind the system is to identify, in a unique way, every single item used in the transfusion process—from the test tube and request form to the patient, explains Sonia Rubertelli, Tiomed's head of

operations. "It works by linking all these unique codes, and all the information gathered throughout the process, to the unique patient code, so that we are sure that all information is related to that patient and not another," she says.

After receiving a request form filled out by a doctor, a nurse goes to the patient's bedside with the form, a test tube with a bar-code label on it and the Palmed. About the size of a mobile phone, the Palmed includes an RFID interrogator that conforms to the ISO 15693 standard and operates at 13.56 MHz. It also comes with a bar-code reader, a fingerprint reader that may be utilized later for user authentication and the software needed to run the device. The RFID reader on the Palmed is supplied by U.S. company SkyeTek, while the bar-code reader is manufactured by Symbol Technologies.

The test tube is used to hold a blood sample that will be analyzed to confirm that a patient's blood group is the same as that of the blood being transfused.

At the bedside, a nurse first uses the Palmed to read his or her own ID badge, which has an RFID tag attached to it. She places a Tiomed wristband containing an embedded RFID tag on the patient's arm, using the Palmed to read the unique ID number on the wristband's RFID tag. Tiomed buys these RFID-tagged wristbands from Precision Dynamics Corp. The nurse also uses the Palmed to read the bar code on the test tube filled with the patient's blood. The system then links all three numbers.

Another RFID tag, placed inside an adhesive label, comes attached to the blood-request form. (In Italy, hospitals are required by law to use paper request forms at transfusion centers.) The tag on the form has a unique code provided by the factory, as well as memory capability. The operator encodes the linked data (patient ID, test tube number and operator ID) to the RFID label on the form, again using the Palmed.

The request form containing all the data is then taken, along with the test tube, to the transfusion center's Tiomed workstation. The station is outfitted with a PC running Tiomed's Basic Hemo and Emoguard software programs, which manage the process; a Palmed; a supply of MediLocks; a "tagger," a small RFID reader connected to the PC and used to recall the information saved on the tag on the request form; and two other small devices connected to the back of the PC, called Medilinks. Medilinks use Bluetooth technology to allow communication between the Palmed, the MediLock and the PC.

In the next step, the operator places the form's tag on the tagger and reads it. The information on the tag is then transferred to the database and updated immediately. After filling out the form by hand, testing the blood in the tube for blood type and selecting a corresponding bag of donor blood, the operator uses the Palmed to read the tag on the request form and the bar code on the bag of donor blood. The bar code is a standard ID code for blood bags, used worldwide,

and the Palmed communicates with it via the Bluetooth connection to the PC.

"In this way, we have assigned the bag, with its unique identification code, to that specific patient and linked it to the request form and to all the information gathered until that moment," says Rubertelli.

The operator then puts the assigned blood bag into another clear plastic bag with a ziplock closure and applies a MediLock. The nurse uses the Palmed to read the bar code on the blood bag inside the outer bag, and the information on the request form. If all the information matches, this confirms that the operator has inserted the proper blood bag into the holding bag. The MediLock is then sealed (after receiving notification via Bluetooth) and can only be opened after a Palmed operator transmits the proper electronic combination via a Bluetooth connection. The electronic combination is made up of a series of numbers, including the request code, the bar code of the blood unit and the patient's ID.

The MediLock contains a temperature sensor allowing it to monitor the temperature of the air outside the blood bag and its carrier. Once the MediLock is sealed, it begins to keep a log of the external temperature and the time, since blood can spoil at certain temperatures.

Back at the bedside, the nurse scans a patient's wristband with the Palmed. Since they both contain Bluetooth modules, the Palmed and the MediLock communicate continuously.

Therefore, once the wristband has been scanned, the MediLock compares the patient ID of the wristband with the patient ID that is part of the MediLock combination.

The MediLock knows that only one particular patient ID can be used to open the seal, so it compares the patient ID number on the wristband with the one encoded in its combination. If the codes match, the lock opens. The unlocking procedure takes about two to three seconds. If the temperature at which the blood bag was stored is higher or lower than the parameters set, the lock will not open.

The transfusion can now begin. Once finished, the nurse uses the Palmed to record the time it was completed, along with any reactions the patient may have experienced. Some 25 reactions are codified, and the operator simply enters a few digits into the Palmed. The information is then shared with the MediLock and returned to the blood bank. All information on the MediLock is updated into the database via the Medilink, and the Emoguard software keeps a record of each step of the transfusion process for every patient.

During the implementation, Luppi says, the hospital and Tiomed faced challenges training staff on the concepts of the system and how to use it.

"The biggest challenge is organizational. It's a change of mentality," Rubertelli explains. "We're asking the

operator, who used to work manually, to use a device to do something that was done without one before."

Tiomed offered training to a small group of people, who then became responsible for instructing others. Presently, more than 60 people are trained to use the system. In 2007, the hospital will implement the blood-tracking system across all departments. The system

will also be implemented at hospitals in four other cities: Ospedale S. Martino, in Belluno; Ospedale Civile dello Spirito Santo, in Pescara; Ospedale Civile, in Venice; and Ospedale S. Anna, in Ferrara.

RFID News, Settembre 2006

Calendario delle prossime Iniziative IIR - Istituto Internazionale di Ricerca



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