The University of Arkansas

RFID READER

Volume 3, Issue 3

May-June 2008

RFID RESEARCH CENTER

Inside this issue:

EPCglobal Accredited Test Center • 9501101260000000063

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Item-Level RFID Conference

The Item-Level RFID Conference is swiftly approaching and will be held September 9-10, 2008 here in the Lab and on the campus of the University of Arkansas. This conference will be very similar to that of the Voluntary Interindustry Commerce Solutions/Council of Supply Chain Management Professionals (VICS/CSCMP) Conference that was held earlier this year. The Conference features both speakers and demonstrations alike and will focus on some of the newest technologies that are housed within the RFID Research Center. The following topics will be covered during the two day span: Creating an RFID Pilot, Transforming RFID Data into Business Value, RFID as an EAS, Results of Dillard's RFID Pilot, Sam's Club RFID Initiative, and Privacy Concerns. For more details on the Conference or to register, please visit the CSCMP website at http://cscmp.org/events/rfid/index.asp.

Happy Anniversary!

The RFID Research Center celebrated its third anniversary this June. The last three years have been exciting ones, with much to look back upon. From humble beginnings, the Lab was officially opened June 10, 2005 and from that day on, the staff has never looked back. Relationships have been established, providing the incredible opportunity to work alongside hundreds of companies and be a part of the cutting edge of RFID research. Together with our numerous sponsors, we look forward to many more years of working with this technology and those associated with this ever-changing industry. The Research Center extends their thanks to all who have helped make the Center what it is today.

VRF Holdings' Dressing Room

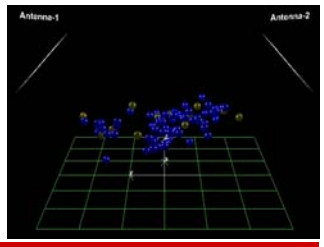
VRF Holdings recently constructed an interactive RFID dressing room designed around their RFID/E-paper apparel hang tags; one such unit is housed within the Lab. Antennas are built into the walls and are capable of reading the unique ID of each garment's hang tag. The cubicle's flat screen shows the selected item's color, size, and real-time availability options. The experience is much like shopping on the Internet while having actual access to the products. Promotional, complementary, and accessory options are displayed and encouraged; a store associate can also be requested to locate and supply any of these options the buyer clicks on the touch screen, all the while remaining in the dressing room. Once finished, a button on the screen encourages bulk discounts and a simple card swipe enables an instant purchase. Due to each hang tag's E-paper display capabilities, discounts accepted by the customer are instantly reflected on the actual price label of each item; this negates discrepancies or confusion and simultaneously updates the POS and on-hand inventory data. An associate is wirelessly notified of the sale and meets the customer with bags, any other requested items, and the ability to remove and recycle the tags; these tags also serve as security tags if door readers are activated upon exit of store.

Item Level Testing

The UA, in conjunction with CSCMP, VICS, Dillard's, and Proctor & Gamble, has released a white paper discussing Item Level Testing. The RFID Lab underwent a study featuring passive UHF tags applied to a number of different apparel items. The items were then tested for read rate success using multiple use cases, including: lifecycle management, inventory management, loss prevention, dressing room management, and point of sale. The overall purpose for this testing phase was to examine the feasibility of the use of RFID in item level tagging. The paper discusses the results of the testing and gives evidence for the bright future of RFID in the apparel industry.

Zonal Monitoring

In previous newsletters, there has been much discussion of long range Zonal Monitoring systems, which achieve identification, location and tracking of items tagged with passive UHF tags. One of the companies whose products are featured in the lab is RF Controls. Their Intelligent Tracking and Control System (ITCS™) comprises smart antennas connected to a Location Processor (edge server). ITCS has been installed in the retail area of the Lab and uses two antennas to cover the area. Tests have shown the successful capture of all 500 tagged apparel items on the Lab's store fixtures. Below is a representation displaying ITCS' ability to capture both unique tag IDs and precise 3-D location. ITCS' ability to monitor RFID tags present in a zone facilitates cycle counting, which, then gives continuous, real-time inventory data. ITCS also records changing tag location, thus providing additional benefits of dynamic inventory and asset monitoring.



CAEN RFID

CAEN RFID is one of the newest sponsors of the RFID Research Center and has donated equipment to the Lab for research studies. The items the Lab have focused on are Semi-Passive UHF Temperature Loggers. These are the first UHF temperature sensing tags made available to the Lab for testing. While HF temperature loggers have been around for several years, the increase in read range through the use of UHF promises easier harvesting of temperature data without close proximity to the tag. In other words, a pallet's temperature data can be read while moving the product through the dock door with a forklift in like fashion to Gen 2 RFID.

CAENRFID
THE ART OF IDENTIFICATION

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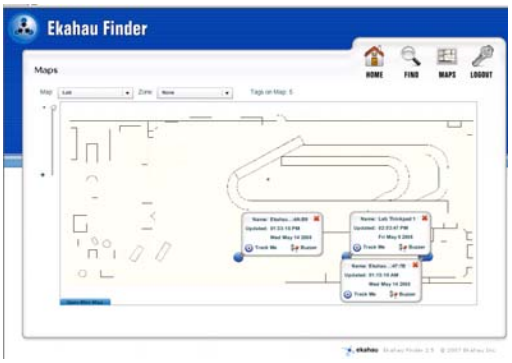
Lab Adds WI-FI Tracking System



The RFID Research Center is always examining new technologies. One such technology is that of 802.11 Wi-Fi based RTLS systems. This allows the staff in the lab to trade information using minimal infrastructures. By using 802.11 hardware, such as that found in everyday laptops, PDAs, and other wireless devices, systems are capable of tracking and/or locating such items within a set geospatial footprint. A user first walks a known 802.11 PCMCIA device through, for example, a building or along a desired route. The system is able to program itself with this route and its location information. This is then used as a baseline for all subsequent devices the user has a desire to track. The Research Center has recently teamed up with one of the newest lab sponsors, Ekahau, a company who specializes in location-enabling Wi-Fi networks. Unlike many traditional asset management systems, the company allows the user to view the location of assets on a two-dimensional map. What makes Ekahua interesting to the RFID Lab is their ability to leverage existing Wi-Fi network devices as "tags" to provide the location of any Wi-Fi device being used.

RFID Journal LIVE!

April 16-18, 2008 found thousands of attendees at the RFID Journal LIVE! event in Las Vegas, Nevada. Dr. Bill Hardgrave, Justin Patton, and David Cromhout represented the RFID Research Center at the conference and had the opportunity to present on several topics. Dr. Hardgrave led a Breakout Session on the overall effect of RFID on improvements in inventory accuracy, as well as a discussion on using RFID for improved fresh item quality. The lab has performed several cold-chain temperature profile characterizations for numerous industries over the past two years. Justin Patton spoke on the newest tagging compliance set forth by Sam's Club. This included sweet spot testing for correct tag placement at the case-level, pallet tagging and capabilities available at the Center allowing real-world solutions to tagging difficult-to-read products. He further presented a general overview of all lab services provided by the University of Arkansas, with an emphasis on the uses of conveyor and dock door portals.

Student Profile

Brad Adams

Brad Adams is currently an undergraduate from Pine Bluff, Arkansas, pursuing a degree in Information Systems with a minor in Enterprise Resource Planning. He will be graduating in the Fall of 2008 and hopes to obtain his graduate degree in Enterprise Resource Planning Management. Since joining the lab in November of 2007, Brad has been a part of multiple testing studies, among his other lab responsibilities. While not busy with work or school, he enjoys golfing and playing his guitar. For more information on Brad or to receive his resume, please email him at bmadams@uark.edu.

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