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## RFID News Roundup

The following are news announcements made during the past week by the following organizations:

DHL Global Forwarding;

EM Microelectronic;

SkyeTek;

Precyse Technologies; and the University of Texas at Dallas.

## **DHL Adds 13 Locations Throughout the Americas to Its Life-Sciences Thermonet Network**

DHL Global Forwarding, the air and ocean freight specialist within Deutsche Post DHL, has announced that it has expanded its RFID-based air-freight service offerings for the life-sciences and health-care industries at 13 locations throughout the Americas, thereby adding to the company's worldwide Thermonet network of Certified Life Sciences Stations. The service allows customers to monitor the temperatures of their goods throughout the shipping process, for such temperature-sensitive products as pharmaceuticals or biomedical items. DHL uses ultrahigh-frequency (UHF) tags with built-in temperature sensors applied to containers. The service also sends customer alerts if any temperatures exceed accepted ranges, and temperature data and logistics events can be accessed via the proprietary LifeTrack IT platform. The service was first introduced in mid-2013 (see DHL Thermonet Tracks Drugs and Life-Sciences Goods With RFID Temperature Tag). The Americas Thermonet locations added to the network include Buenos Aires, Argentina; Santiago, Chile; Bogotá, Colombia; Toronto, Canada; Rio de Janeiro and São Paulo, Brazil; Mexico City, Mexico; Panama City, Panama; San Juan, Puerto Rico; Caracas and Valencia, Venezuela; and Boston, Mass. and New York, in the United States.

The facilities offer cold storage space at a range of 35 degrees to 46 degrees Fahrenheit (2 degrees to +8 degrees C) to serve DHL's global customer base in the life-sciences and health-care sectors with temperature-controlled air-freight shipment needs. DHL Global Forwarding reports that it had previously added eight locations in the United States to its list of Thermonet facilities: Atlanta, Ga., Chicago, Ill., Cincinnati, Ohio; Los Angeles, Calif.; Miami, Fla.; Philadelphia, Penn; San Francisco, Calif.; and Washington, D.C. "With the expansion of our Thermonet certified facilities this means consignors and consignees have access across the

Americas to a reliable end-to-end cold chain,” said David Bang, the CEO of LifeConEx, a part of DHL Global Forwarding, in a prepared statement. “These DHL Global Forwarding facilities include highly trained personnel capable of handling any type of temperature sensitive pharmaceutical or biomedical items.”

According to DHL, all certified stations are audited against globally defined Good Distribution Practices (GDP) to ensure conformity across the network. Several of the facilities provide temperature monitoring, dry ice replenishment, and active and non-active container handling, in order to ensure product quality at all times. The company says it will continue to expand its Thermonet network of Life Sciences Certified Stations, and that it plans to integrate more than 65 stations across the globe by the end of 2014, and 80 by the end of next year. DHL notes that it plans to further expand some of the station’s capabilities with additional storage space during the coming months.

## **EM Microelectronic Announces COiN Bluetooth Smart Beacon**



### **EM Microelectronic’s COiN Bluetooth beacon**

Swiss semiconductor company EM Microelectronic has announced the availability of its COiN Bluetooth beacon. COiN is an optimized Bluetooth Smart beacon that leverages EM’s EM9301 ultra-low-power Bluetooth Smart Controller and EM6819 ULP 8-bit Flash microcontroller. The beacon features a read range of up to 150 meters (492 feet), with power consumption low enough

that it can be powered purely by harvested energy instead of its CR2032 battery.

According to EM Microelectronic, COiN can be deployed anywhere that Apple iBeacon technology is used, and also supports wireless sensor networking and many other applications via Bluetooth Smart (Bluetooth with a Low Energy Core Configuration) wireless communications. The beacon consumes an average of less than 20 $\mu$ A in a typical application, the company reports, resulting in more than 18 months' operation from a single CR2032 battery, which is included in the beacon. COiN also contains a built-in pushbutton switch and integrated red and green light-emitting diodes (LEDs) that provide users with feedback regarding the device's operating mode. It features an integrated printed circuit antenna, and at the 0dBm output power setting, EM's beacons can be detected from a distance of 75 meters (246 feet) by an Apple iPhone 5S. At maximum output power, the company notes, that distance extends up to 120 meters (393 feet). In addition, EM says the beacon's optimized circuit architecture makes it immune to over-the-air attacks, and that it prevents anyone from hacking or modifying it unless the perpetrator has complete physical possession of the device.

COiN is shipped pre-programmed, with a Renata CR2032 battery and a weatherproof plastic enclosure that can be customized to sport any embossed logo desired. Although the COiN beacon is available in-stock, pre-programmed and with a standard housing, EM reports that the standard COiN hardware and firmware can be easily modified to fit most applications. At the most basic level, COiN's firmware can easily be modified to change the universally unique identifier (UUID), major ID, minor ID, output power and beacon interval. According to the company, these changes are useful for adapting the beacon for whatever smartphone software application or application programming interface (API) is being used, segregating beacon populations and sub-populations, and for optimizing its

battery lifetime based on the desired use case. EM offers a development kit if more extensive firmware modifications are required.

The COiN Development Kit includes five COiN beacons, a programming board and a programming cable, and is fully compatible with the company's line of software-development tools for the EM6819, EM's ultra-low-power microcontroller. To assist in attaching and deploying the COiN beacon, EM offers a suite of accessories. The Key Fob Accessory snaps over the COiN for attachment to key rings, or for hook- or loop-based attachment methods, such as zip-ties. The Wall Mount Accessory can be nailed or screwed to a solid surface, with the COiN snapped into place, completely hiding the Wall Mount. The beacon can also be snapped into the Watch Band Accessory or any of a number of wristbands for wrist-worn applications.

"COiN leverages EM's expertise in ultra-low power wireless and computing as well as our high quality standards and synthesizes them into a high performance, Bluetooth beacon that is ready to deploy out of the box, but flexible enough to be modified for many different applications," said Michel Willemin, EM Microelectronic's president, in a prepared statement. "We are already engaged with many companies who are using COiN with their App, API, SDK, or service to improve their performance and lower their overall cost. We believe that the availability of such a flexible, optimized Bluetooth beacon will enable a truly pervasive Internet of Things." The COiN beacon, the COiN Development Kit, and the Key Fob, Wall Mount and Watch Band accessories are all available via EM's local sales representatives and/or distributors.

## **SkyeTek Unveils New UHF RFID Module**



### SkyeTek's SkyModule Nova

SkyeTek, a provider of RFID reader technology headquartered in Denver, Colo., has announced a new ultrahigh-frequency (UHF) EPC Class 1 Gen 2 RFID module known as the SkyModule Nova. According to SkyeTek, the Nova features a completely revamped architecture, including a fast and efficient ARM Cortex M0 microcontroller and the latest UHF chip technology from ams AG. The module measures 25 millimeters by 30 millimeters (1 inch by 1.2 inches), uses the Mini-PCI Express half card form factor, and utilizes a new micro-electro-mechanical systems (MEMS)-based adaptive antenna tuning circuit. Specifically, the Nova offers 500mW of output power with a read range of up to 10 meters (33 feet), nominal input power of 2W at maximum output power, two antenna ports (with SkyeTek Adaptive Antenna Tuning), and a sleep mode that powers current down to 10uA. It supports several host interfaces, including USB, transistor-transistor logic (TTL) level RS232, serial peripheral interface (SPI) and inter-integrated circuit (I2C).

“We now offer a product that is extremely high performance, power efficient, ultra small, and contains adaptive antenna tuning not seen before from an RFID module,” said Brad Alcorn, SkyeTek’s president, in a prepared statement. “We expect to embed this module into thousands of mobile computing devices in the next few years, giving our customers the perfect alternative to expensive, purpose built RFID scanners.” The SkyModule Nova is now in production, the company reports, and SkyeTek is currently accepting preorders.

## **International Oil and Gas Company Implements Precyse Technologies' RTLS to Boost Worker Safety**

Precyse Technologies, a manufacturer of real-time location system (RTLS) and supply chain visibility solutions based on active RFID technologies, has announced that an international oil and gas company, which has asked to remain identified, is implementing Precyse Technologies' Remote Entity Awareness and Control (REAC) system at ten CO2 recovery plants, to track more than 1,000 workers in Texas. The solution supports wireless sensors, machine-to-machine (M2M) control and real-time location using a single reader infrastructure with a 1-mile range.

Precyse's solutions are designed to monitor the locations and movements of employees or physical assets inside and outside a facility, using patented assisted GPS (A-GPS) and active RFID technologies to identify the locations and statuses of personnel inside and outside that facility, as well as in transitional areas commonly found within complex industrial environments. The system employs battery-powered intrinsically safe devices, known as Bridge xPorts (which act as routers) and Micro xBeacons (standalone devices that transmit their ID numbers over the air for location reference purposes), coupled with Precyse's network infrastructure and sophisticated software, to remotely identify, locate, monitor and communicate with personnel during mustering events and normal day-to-day operations.

To date, Precyse has installed its solution at five of the oil and gas company's sites. By the end of next month, it expects to have deployed the technology at 10 facilities. Precyse says the oil and gas firm has approved the system's installation at seven additional sites, also located in Texas. The facilities span several hundred acres in size and, due to the ever-present risk of flammable gases, are rated Class I, Division 1 and 2 hazardous areas (similar to IECEx and ATEX Zone 0). According to Precyse, there will be four to five Bridge xPorts

per site and an average of 75 xBeacons. The number of xBeacons, Precyse reports, depends on a particular plant's size and complexity—for example, the amount of metal present.

In addition to tracking employee locations and statuses, the system helps to improve operational efficiency via the tracking of personnel and high-value assets—for instance, worker attendance, location dwell-times and time reporting—and features built-in man-down detection. If a field worker falls, the system will automatically report that event in real time. Automated alerts and notifications can be configured against business rules. For example, if a worker falls, presses a panic button or enters an unauthorized area, Precyse's software automatically displays a message to system users—and, when warranted, sends e-mails and text messages to emergency responders, control room operators, security personnel and/or supervisors. The system also offers text-notification capabilities, Precyse adds, thereby enabling control room operators to communicate with workers in the field, and further enhancing the remote visibility and management of a workforce. Post-muster reports can help companies meet OSHA requirements to demonstrate compliance, while historical reports show workers' onsite presence and specific work areas or zones, by individual, work group (such as electricians) or other category.

## **RFID Takes Part in University of Texas at Dallas Commencement Ceremony**

In May 2014, RFID helped the University of Texas at Dallas celebrate graduation. The RFID technology used, based on the ultrahigh frequency (UHF) EPC Gen 2 standard, ensured that family members and friends watching the ceremony, either in person or via the Web, knew exactly when their loved ones walked across the stage during the commencement ceremony. Designed by graduating electrical engineering student Johanan Rodriguez and classmates Timothy McGuire, Julian Torres and Jasmine Singh, as part of the senior design program at the



Erik Jonsson School of Engineering and Computer Science, the system allowed a graduate's name, degree and major to be displayed on an on-stage video screen as he or she crossed the stage and shook the hand of Dr. Mark W. Spong, Jonsson School's dean.

The information was collected via an Alien Technology ALR-9650 reader, with which the orator scanned each graduate's RFID-enabled badge as he or she walked onstage. The scans sent a signal that was wirelessly transmitted to a computer system that then projected each student's information on a video screen. In this article posted on the university's website, the students who developed the system said they did so, in part, because graduates are onstage for such a short time—approximately three seconds—that it can be difficult for families to see them cross the stage and receive their diplomas. "What would be terrible," Rodriguez told the reporter, "is during [those] three seconds, your parents wouldn't even be able to recognize you."

According to the article, the system was developed through the senior design program, in which seniors design a capstone project using the knowledge they have acquired in traditional classroom settings and outside the classroom. The team opted to deploy RFID because the technology would not interfere with the ceremony or add to the orator's duties of reading the names. Rodriguez and Torres (also an electrical engineering major) had to learn about software and graphics, the article notes, while McGuire and Singh (computer engineering majors) had to learn about the RFID technology required for the project.



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