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# **AeroScout                      Intros                      New Ultrasound                      and                      Sensor                      Wi-Fi RFID                      Tags**

AeroScout, a Redwood City, Calif., provider of a Wi-Fi-enabled RFID real-time location system (RTLS), is unveiling several new additions to its product portfolio. These include a new

tag that incorporates ultrasound technology to make it easier to locate an item, such as an infusion pump, in a specific room, as well as new humidity and temperature sensors designed to help health-care organizations more closely monitor environmental conditions that can affect devices, patients, medicines and more.

The ultrasound solution includes new Wi-Fi active RFID tags that feature integrated ultrasound receivers. The solution also comprises ultrasound exciters that detect and communicate with the receivers, as well as AeroScout's MobileView software, which provides users with graphical maps, reporting and analytical tools, and alerting so organizations can track tagged assets, patients and staff members in real time.

AeroScout's Wi-Fi tags transmit 2.4 GHz signals and communicate their unique ID numbers to a wireless network composed of Wi-Fi access points. Based on a particular tag's transmissions, the AeroScout Engine employs triangulation to compute its location. But with the active tags, the RTLS can identify an object's whereabouts only to within approximately 10 feet. Moreover, RF signals can transmit through walls, making it difficult to pinpoint a tagged item's exact room location. Ultrasound signals, on the other hand, are unable to penetrate walls, thus reducing the likelihood of tracking errors, and enabling items to be located within a specific room.

Basically, the tag remains dormant, continuously listening for an exciter's ultrasound signal. The exciter, which emits a signal encoded with a unique ID number, can be plugged into an electrical outlet or connected to power-over-Ethernet cabling. When the tag detects an exciter's ultrasound signal, says Joel Cook, AeroScout's marketing director for health-care solutions, it awakens and transmits its own unique ID number, as well as the exciter's ID number, to the nearest Wi-Fi access point.

The AeroScout Engine contains a database that correlates the ultrasound exciter's ID number with the room in which the exciter was placed, then sends that information, along with the tag data, to the MobileView software. The software accesses a database that correlates the tag number to an asset, then maps the tagged asset's room location.

"This is the easiest and most accurate way to provide room-level resolution," says Steffan Haithcox, AeroScout's senior director of marketing. "We've embedded ultrasound technology into our current Wi-Fi tracking solution. You don't have to add more [Wi-Fi] access points; you can plug the ultrasound exciters in the wall, and put the new tags on the items that you want to track at room-level resolution. So that simplifies deployment—nothing else changes."

AeroScout has also added new tags to its portfolio of environmental monitoring tools. The company unveiled its AeroScout T5h Tag, which has an integrated humidity and temperature sensor. The tag sends regular updates over the Wi-Fi network regarding the measured relative humidity and temperature in the area in which it is located. The T5h can be mounted on a wall in a specific room. Monitoring humidity levels, Haithcox says, can have "regulatory implications for health-care companies, operational and productivity implications, and, most importantly, patient care and safety implications. Humidity levels have to be monitored consistently in the operating rooms, in storage rooms, even in patient rooms, because high levels of humidity aren't good for patient care." Typically, humidity levels have to be manually checked, he says, noting, "We've automated the process."

The two new temperature sensor tags, which also communicate their temperature data via the Wi-Fi network, have an external temperature probe connected by a cable so they can be utilized to monitor very low temperatures at which sensitive materials—such as bacteria, DNA, cells and tissue samples—must be stored. The temperature probes can be inserted into liquids

placed within the refrigerators that have similar thermal properties to the items being monitored. This method is known as potting. The new temperature tags come in two models: the T5b Tag, designed to accurately measure temperatures as low as -70 degrees Celsius (-94 Fahrenheit), and the T5c Tag for accurately measuring temperatures as low as -100 degrees Celsius (-148 Fahrenheit).

The humidity and temperature tags share their data and unique ID numbers with the AeroScout Engine via the Wi-Fi network—which, in turn, shares the location, tag ID number and humidity/temperature data with the MobileView software. Health-care organizations can pull up maps displaying humidity levels in rooms, check the temperatures of various refrigerators, or set up the software to send out alerts if conditions fall beyond safe ranges. MobileView software also provides reporting and logging tools, to facilitate regulatory compliance.

In addition to the new products, AeroScout announced new customer implementations. The Dartmouth-Hitchcock Medical Center (DHMC), located in Lebanon, N.H., is implementing AeroScout's Wi-Fi RTLS to automatically track the hundreds of new infusion pumps it is deploying across its 10-building, 1.8 million-square-foot facility. The initial phase of the project, completed in January of this year, tracks approximately 500 such pumps across multiple departments. DHMC is working on the implementation with systems integrator Red River, also in Lebanon.

Yale-New Haven Hospital in New Haven, Conn., is using AeroScout's Wi-Fi RTLS to manage and track approximately 1,000 medical assets, such as infusion pumps. In addition, the 944-bed hospital is employing one of AeroScout's older temperature sensor tags to monitor the air temperature within refrigerators. The hospital completed the first phase of the deployment in February, consisting of AeroScout's MobileView software and approximately 200 AeroScout Wi-Fi tags, and is

now in the process of deploying the remaining 800 tags.

Finally, AeroScout also recently announced that Providence Health & Services (PH&S), which operates 27 hospitals in western United States, is implementing its RTLS and first-generation T5 sensor tags at its 390-bed facility in Olympia, Washington, to help log temperature information in storage units and refrigerators that house medications, food, organs, blood bags, vaccines, tissues, breast milk and other sensitive items. AeroScout says it worked with systems integrator World Wide Technology (WWT) to implement the system, which can proactively alert staff members whenever temperature thresholds are crossed. The system leverages the hospital's existing Wi-Fi based network from Cisco.



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