

Through partnerships with Time Domain and Reva Systems, the company's Wi-Fi-based RTLS system now supports ultra-wideband, for more precise location information, as well as passive UHF RFID tags.

By Beth Bacheldor

Feb. 4, 2008—[AeroScout](#), a San Mateo, Calif., provider of a Wi-Fi-enabled RFID real-time location system (RTLS), is unveiling an enhanced version of its software. In conjunction with the software release, the company has also partnered with [Time Domain Corp.](#) and [Reva Systems](#) to create a unified platform that organizations can use to work multiple RFID technologies, thereby achieving more comprehensive tracking of assets, processes and personnel.

AeroScout's MobileView 4.0 software allows organizations to utilize a single platform to access and act on data from not only Wi-Fi RFID tags but also passive and ultra-wide band (UWB) tags. This upgrade from MobileView 3.1 provides users with a variety of views, from an entire organization to individual zones and even rooms, via graphical map displays, as well as numerous reports that can blend data to present historical trends and other information. In addition, users can create more types of alerts than they could using the previous version of MobileView, and employ a range of media, including e-mail and cell phones, to send such alerts. MobileView 4.0 also acts as a middleware platform that brings together information from multiple sources and shares that data with third-party applications.

"This really reflects the core message of our company's strategy and where we are going, and that is unified asset visibility," says Josh Slobin, AeroScout's director of marketing. "Our customers need more than just Wi-Fi RTLS. Our customers are asking us for a wide variety of visibility technologies, and they want a single system and one network that can handle all those technologies."

For instance, a hospital may want to use Wi-Fi-based RTLS to track the location of infusion pumps or other hospital equipment because it already has a Wi-Fi network throughout the facility. Tracking the infusion pumps makes it easier for nurses to locate the devices, and by using a Wi-Fi RTLS, the hospital doesn't have to install a new network infrastructure. Wi-Fi active RFID tags such as AeroScout's can transmit 2.4 GHz signals and communicate their unique ID numbers to the hospital's Wi-Fi network, which can consist of [Cisco](#) access points. To compute location, the hospital can use either the AeroScout Engine, or a Cisco 2710 Wireless Location Appliance.

But Wi-Fi-enabled RTLS generally identifies an object's whereabouts to within 10 feet, making it difficult to pinpoint its exact room location. UWB-based RTLS, on the other hand, can discern an object's location to within a few feet. A UWB device emits a series of extremely short signals (billionths of a second or shorter), with each signal spanning a wide band of frequencies.

The pulsed signals act a lot like sonar waves, enabling the system to determine distance by measuring how long it takes a pulse to travel from one point (such as the tag) to another (such as the interrogator), and using time distance of arrival (TDOA) technology to calculate location. What's more, because UWB

systems pulse the data rather than passing it along in longer stream durations, UWB systems do not typically fall victim to interference from other nearby RF sources.

AeroScout partnered with [Time Domain](#) to create Ultra-Wi-Fi, which consists of a new active tag and reader. The new tag has both UWB and Wi-Fi-enabled RFID capabilities integrated onto a single form factor that shares the same battery. When in Wi-Fi mode, the Ultra-Wi-Fi tag can communicate with the nearest Wi-Fi access point; once in range of a UWB receiver, it automatically switches to that mode. The switch occurs because the AeroScout Engine can calculate position location in either mode.

A hospital using a Wi-Fi-based system may decide that in certain scenarios, it also wants to use UWB active RFID tags and interrogators so it can determine the exact location of assets. It may want to use UWB to document that an infusion pump was in a specific room at a given time, for instance, and within inches from a patient (also identified by means of a UWB tag), thereby indicating the pump is being used on that person.

"There are companies that have spent a considerable amount of money in recent times putting in Wi-Fi networks. In many places in those facilities, they don't really need to know, down to 12 inches, where an asset is," says Greg Clawson, Time Domain's VP of worldwide sales and marketing. "But they also see the value in precision tracking. Think of an infusion pump, sitting in a storage closet. A Wi-Fi system can handle that. But what if they want to document not only where a pump is, but what it is doing? If they can document that a particular pump is within 30 inches of a particular patient, they could probably use that information for billing, and to flag that pump for a cleaning in the near future."

To enable the tracking of passive UHF RFID tags, AeroScout worked with [Reva Systems](#) to integrate the Reva Tag Acquisition Processor (TAP) appliance, which manages passive UHF RFID interrogators, including those complying with the EPC Gen 2 or ISO 18000-6C standard. The TAP appliance feeds data directly into MobileView 4.0. According to Slobin, the combination of active Wi-Fi and passive RFID would provide a company the ability to track, in real time, the location of a Wi-Fi-tagged container filled with individual items fitted with less expensive, passive RFID tags.

Regarding the updated MobileView 4.0, Slobin says AeroScout has improved the graphical user interface (GUI) to make the software easier to navigate, as well as viewable on handheld devices. The software platform is also more scalable, thanks to improved database design. "Instead of being able to track tens of thousands of assets in [MobileView 3.1]," Slobin says, "now we can track up to hundreds of thousands of assets."

The software now has 17 different alerts that can be triggered (compared with 11 in the prior version), including if an asset moves from one zone to another, if there are too few assets in a specific zone, or if the tag's battery is running low. Companies can now institute access control, thanks to support for the standard Lightweight Directory Access Protocol (LDAP), which defines a method for organizing directory hierarchies and interfacing to directory servers.

AeroScout Unveils New Asset-Tracking Platform

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The Ultra-Wi-Fi tags and interrogators are expected to ship toward the end of the first quarter of 2008, with MobileView 4.0 available in the second quarter.