

Ambient ID has released a UHF Gen 2 solution that provides near-real-time visibility into the locations of vials containing human tissue or blood as they travel from hospitals to laboratories for diagnostic testing.

By Claire Swedberg

June 30, 2009—Working with some of the largest American hospitals and laboratories, [Ambient ID](#) a Seattle-based provider of business-management technology for hospitals and clinics, has developed a tracking system for monitoring specimen vials as they are transported to and from laboratories for testing, as well as while they are in storage. The system, dubbed LabTrack, is designed to offer labs and health-care providers near-real-time visibility into the vials' locations.

LabTrack is commercially available now, and is already in use by 14 hospitals and laboratories, says Peter Allison, Ambient ID's chairman and president, with that number expected to rise to 75 by the end of this year. Allison declines to name the labs and health-care providers his company worked with to develop LabTrack, but says the collaborative effort is what makes it a good fit for the industry.



Ambient ID's Peter Allison

According to Allison, because those earliest participants included some of the largest labs in the United States, they represent a higher percentage of pathology lab work conducted on human specimens. For that reason, a large number of health-care providers (some of which are "member hospitals" for those labs) could share data with them regarding the locations of specimen vials as they travel from hospital to lab, using the LabTrack system.

In the spring of 2008, according to Robert Grenley, Ambient ID's executive VP of business development, the company first joined forces with potential customers—primarily laboratories—to learn which issues needed to be resolved when it came to tracking human tissue and blood samples as they pass through several hands, from hospitals to laboratories and sometimes into storage.

After a tissue sample is taken—from a biopsy, for instance—or blood is drawn, the sample, in a vial, can often take a lengthy journey through several laboratories or health-care facilities before it is tested and the results are reported back to the physician and patient. The patient's name, as well as other identifying information, is typically printed on each vial. The vials are loaded into a box, which is labeled with a bar-code label. The label is then scanned with a bar-code reader, or the human-readable characters are recorded by the box's recipients.

The boxes are loaded in larger bags before being shipped to pathology labs, and those bags can change hands several times as they are channeled to a laboratory that specializes in diagnostics specific to the tissue or the test being conducted. They are often transported to a collection center, then to a pathology lab and finally to a specific pathology station within that lab.

The problem for health-care providers is that the information system used to track each vial is limited. Once a vial is loaded and shipped, the health-care provider has no visibility into where that vial is located. And when lab employees receive vials, they know where the items came from, but have little other data, such as when they shipped and how long they have been in transit. If a hospital, physician or patient is waiting for results from a laboratory, there are times when they don't know whether a particular sample was received by a laboratory, or which lab currently has that vial.

Allison declines to indicate the number of vials lost or misplaced, but once a search is launched, he says, the average cost in labor hours spent looking for that vial runs between \$52 and \$64. Ambient ID's LabTrack system would eliminate the need for those searches, he adds, and thus deliver an immediate return on investment (ROI) for users.

LabTrack UHF Gen 2 RFID tags are manufactured by an unnamed third party for Ambient, to fit the tissue sample vials. The tags can be read from a distance of 10 to 30 feet by interrogators that Ambient ID installs in doorways, as well as in ceilings and under countertops around a laboratory or storage area. Ambient ID uses interrogators from [ThingMagic](#), Allison notes, three to nine of which are typically required in a laboratory, depending on its size.

Ambient tests each tag before sending it to the hospital, where the tag can be applied to a disposable vial as a patient's data is input into the system. The tag is then read to link its unique ID number to the necessary details regarding that sample, the patient and the tests to be administered.

LabTrack software, which can either reside on a user's back-end database or be accessed on a server hosted by Ambient ID, is designed to provide alerts if an unexpected or unauthorized action occurs, such as a vial being shipped to the wrong lab. It can also alert a user when a tissue sample has remained for too long in any given location (since human tissue samples deteriorate over time). "The alerts indicate when something isn't where it's supposed to be," Grenley explains, "and how long it has rested at any point of its journey."

The LabTrack system is billed on a monthly or quarterly basis. For that reason, Allison says, users get a quick ROI based on the reduced time spent searching for samples in hospitals and labs.