

**The Texas hospital is the first to use a low-priced solution from U.S Med-Equip that involves bar-code scanners, handheld UHF readers and a hosted server.**

By Claire Swedberg

July 27, 2012—[Memorial Medical Center](#) in Lufkin, Texas, is the first customer to deploy a new solution that employs passive RFID tags for tracking assets. The system is being provided by [US Med-Equip](#), which reports that its Star Trax system costs considerably less than real-time location systems (RTLS) utilizing active radio frequency identification tags—typically a few thousand dollars a month—and provides an opportunity for hospitals to ramp up their RFID application slowly, as their budget allows and use cases become apparent. The Star Trax solution is now being marketed commercially to other hospitals across the United States, according to Mike Pandher, US Med-Equip's IT director, and the company is currently in discussions with multiple potential customers.

US Med-Equip provides rental, sales and biomedical service of movable biomedical equipment. During the past three years, the firm has been developing and testing a system that would enable medical facilities to track their assets (not only those provided by US Med-Equip, but any objects of value), at a much lower cost than that of active RFID or other RTLS offerings. Instead, the system is designed to be simple to install, and then expandable as hospitals identify a need for more functionality. It consists of a bar-code scanner, an RFID reader, EPC Gen 2 ultrahigh-frequency (UHF) passive RFID tags, US Med-Equip RFID software (residing on the company's hosted server), and software provided by [Radiant RFID](#) for managing data related to locating equipment using a handheld reader equipped with Geiger functionality.

"Over the past three or four years," Pandher says, "we had been looking at the RTLS landscape, and realized there was a need for a solution that would overcome the barrier of cost. Hospitals needed a low-cost solution." Approximately 18 months ago, the company began working with Memorial Medical Center to test the technology.

The Star Trax system features RFID tags encased in hard plastic, each encoded with a unique ID number that is also printed as a bar code on the tag. The tag is affixed to a piece of medical equipment, with its unique ID and a description of that object stored in the hosted Radiant RFID software. Memorial Medical Center has attached EPC Gen 2 passive RFID tags with printed bar codes to the front to its infusion pumps, deep vein thrombosis (DVT) pumps and portable oxygen containers, says John McAdams, a US Med-Equip's management specialist who works at the medical center on a contractor basis.

McAdams is responsible for managing assets, including pumps that are highly coveted by the staff since they can be misplaced or hoarded, and are thus sometimes difficult to locate when needed. Prior to the system's installation, he often walked the hospital's floors, seeking equipment that appeared to be missing. With the Star Trax system, he now automatically knows which items can be considered missing, based on their inactivity for a specified span of time, and can use an RFID reader to search for

those assets more quickly.

First, when moving an asset from one location (such as a patient room) to another, a staff member (usually McAdams) uses a tablet PC with a bar-code scanner to read the bar code printed on that item's RFID label, and selects the location from which he is taking that assets, chosen from a list on the tablet's screen. The worker then takes the object to another location, such as the cleaning room, and again scans its tag's bar code, indicating where it is being relocated. That information is transmitted via a Wi-Fi connection to the cloud-based US Med-Equip software, where the asset's location data is then updated.

The software lists not only each asset's existing location, but also its location and movement histories. If a predetermined amount of time passes without a particular item being moved, the Star Trax system concludes that it is missing, and compiles a list of all non-moving assets for hospital management, including their unique ID numbers. Workers can then load that list of missing items' IDs into a handheld [Motorola Solutions MC9090-Z](#) RFID reader. The interrogator then begins seeking those ID numbers as the staff member walks around the hospital. When the device comes within read range of a missing item, it makes an audible sound, as well as highlighting that asset on the reader's screen, acting as a Geiger counter by leading the individual to the item. The employee then indicates where the item was located, inputting any change to that location if he moves the asset.

Since the system's installation about one year ago, the hospital has begun expanding some of its functions. To make identifying a location easier, the medical center is applying passive UHF RFID tags with printed bar codes to the walls throughout its facility, and is storing each tag's ID with the details of that area in the Star Trax software. When personnel locate or move an asset, they can use a [Tertium Blueberry](#) UHF reader with a Bluetooth connection to the tablet, or the tablet's bar-code scanner, to scan or read its RFID inlay or bar code and also read the wall tag, thereby linking the asset to that particular location.

To date, McAdams says, 310 assets have been tagged, all of which can now be accounted for via the Star Trax system; previously many items ended up missing. He says he recently received an update from the Star Trax software, indicating that 15 IV pumps were missing, and was able to use the reader to locate all of them. Because he can read the tags through walls, he adds, he can determine whether an asset is within a patient room while he is in a nearby hallway, and can then contact the appropriate nurse for that patient, in order to retrieve the item. Soon, McAdams reports, the hospital plans to tag other assets as well, such as telemetry modules and wheelchairs.

In addition, US Med-Equip is in the process of conducting a proof-of-concept test using two Motorola [FX7400](#) or [FX9500](#) fixed readers in the hospital. One reader will be installed at the entrance to the facility's garbage chute, the other at the laundry room. The facility had previously been challenged by assets becoming lost in linens, bedding or items destined for disposal, and thus being accidentally thrown into the garbage or sent through the laundry. Thanks to the RFID system, any tagged item that passes through the portal would now be detected by the fixed reader, which could then sound an alert to warn

workers that a tagged asset had entered an unauthorized area.

The RFID solution has benefited Memorial Medical Center-Lufkin in several ways, the hospital reports. The system enables staff members to locate equipment more easily, and acts as a deterrent to hoarding, since hidden items can now be pinpointed. What's more, because the reader can interrogate tags from up to 15 or 20 feet away, the staff can detect that an asset is located within a patient's room from the hallway, without having to disturb that patient by walking into his or her room and rummaging for equipment.

"For the last nine months, we have achieved an average utilization of 79 percent compared to industry averages of 35 to 40 percent," Pandher states. "As a result, the hospital did not have to rent any of these items, even during peak times."

The hosted solution that US Med-Equip is offering customers is charged on a monthly basis. According to Pandher, the price is about 60 to 70 percent less than a typical RTLS solution, on average.