



## Real-Time Tracking Speeds Hospital's Search for Mobile Equipment

### For Carolinas Healthcare, Ekahau's Wi-Fi-based RTLS is a Basic Business Requirement for Effectively Managing Assets

Knowing the whereabouts of sensitive equipment is a necessity in the healthcare industry because such assets are constantly in need of maintenance, cleaning, and recalibration to assure that patients are well served. Carolinas Healthcare System (CHS), for example, may need to locate any one of its more than 3,000 pumps and other pieces of mobile equipment on any given day.

However, their team, which used to spend a lot of time looking in closets and hallways to find their mobile assets, has gained some high-tech assistance. In a matter of seconds, the Ekahau Real-Time Location System (RTLS) can identify the precise location of all tagged pieces of equipment. It can even locate items that are behind locked doors or inside another facility 20 miles away.

#### Gaining Control with Versatile Wi-Fi Technology

With 25 locations – from small community hospitals to large integrated educational facilities – serving 5,000 licensed beds, Charlotte, N.C.-based CHS is the largest non-profit system serving North and South Carolina and the third largest in the nation. Having operations spread across two states presented challenges to ensuring that many of the expensive mobile devices could be found when needed and kept in stock in the appropriate areas. Medical equipment

often stays with patients in transit between facilities, adding to the difficulty of tracking.

When CHS examined options to resolve their equipment location challenges, they focused on technologies that could leverage their existing network infrastructure in order to maximize resource efficiency. After a competitive evaluation, CHS selected Ekahau RTLS.

“While others were unclear about their strategic direction for the future, Ekahau had a visionary perspective of what the location tracking market was going to be. They had a clear concept of who they are and where they were going with their technology,” said Clay Fisher, CHS’s senior director of Information Services. “One of the primary reasons we chose Ekahau was for its accuracy, as well as its ease of deployment.”

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information services

hardware, Ekahau RTLS works over an enterprise-grade, 802.11 standards-based Wi-Fi network. As a pure-play software solution, Ekahau RTLS can enable full visibility of mobile assets or individuals across geographically dispersed campuses from a central location.

"We really aren't interested in measuring this location technology in terms of return on investment. ROI means you are trying to justify your expenditure," said Fisher. "We view our RTLS system as a basic business requirement that is needed to effectively manage our organization's equipment. When you have facilities that are integrated, and larger than 500,000 square feet, you have many challenges doing that in an effective manner."

## The Deployment

After a successful 200-tag pilot test, CHS began a full-scale, organization-wide deployment of 2,000 tags, primarily on intravenous (IV) pumps. IV pumps are very expensive and highly mobile devices. "We have a lot of patients that are transferred between facilities, and they travel with their pumps. With Ekahau RTLS, we can ensure that the pumps go back to the originating facility, so each hospital has the appropriate amount of equipment," noted Fisher.

Ekahau RTLS also enables the IT clinical engineering staff to locate the devices quickly to do preventative maintenance or take them out of service in the event of a recall. The ability to quickly find equipment is important for the hospital to remain in compliance with Joint Commission regulations and easily meet its requests during inspections. Finding specific devices had become one of the bigger challenges across the expansive CHS landscape, as there were instances where the staff spent many man-hours trying to track a single pump when it was due for maintenance.

In addition to IV pumps, Ekahau RTLS is being used by the cardiac catheter lab to track balloon pumps and by the nursing staff to locate their non-invasive vital signs carts. Within a short period of time, CHS was tracking mobile assets at five facilities totaling three million square feet and had deployed in excess of 3,400 tags across the enterprise.

## The Results

Ekahau RTLS has proven to work exactly as promised in their first one-hour presentation, according to Fisher. On average, tagged items can be located within 10 feet or better, which is the level of granularity CHS expected for asset tracking.

Before implementing a tracking solution, CHS couldn't easily account for the location of more than 10 percent of its mobile equipment, requiring the hospitals to rent additional devices to maintain the proper balance across its facilities. "Prior to starting the asset tracking initiative, we had 'lost track' of hundreds of thousands of dollars worth of equipment," said Fisher. "Since implementing Ekahau RTLS, we have saved about \$200,000 in equipment rental fees."

## The Future

With the Ekahau RTLS asset tracking solution solidly deployed, Fisher said he expects to add more tags to the system over time as it expands to other CHS campuses.

In the future, Fisher envisions using Ekahau RTLS to track VoIP handsets used by CHS staff. By incorporating location tracking capabilities with the voice handsets, the hospital can ensure nurses are meeting the expectations of hourly rounds. It also can work in tandem with the nurse call system currently in use to document that patient requests have been satisfied.

Additionally, the location-enabled VoIP handsets can assist with staff safety by offering an emergency call button on the phone that can help pinpoint a person's location when help is needed.

CHS will see more and more benefit as Ekahau RTLS is expanded to other equipment in the future.



**Ekahau East Coast**  
(Headquarters)  
1851 Alexander Bell Drive  
Suite 105  
Reston, VA 20191  
Tel: 1-866-4EKAHAU  
Fax: 1-703-860-2028  
sales-america@ekahau.com

**Ekahau Europe**  
(Sales, R&D, Product Management)  
Hililikatu 3  
00180 Helsinki, Finland  
Tel: +358-20-743 5910  
Fax: +358-20-743 5919  
sales-europe@ekahau.com

**Ekahau APAC**  
(Regional office)  
B38, Tower 8, Imperial Cullinan  
10 Hoi Fai Road, Tai Kok Tsui  
Hong Kong  
Tel: +852 9227 8406  
sales-asia@ekahau.com

Global Tech Support: [www.ekahau.com/support](http://www.ekahau.com/support)

[www.ekahau.com](http://www.ekahau.com)

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