ekahau
Business Intelligence Through Location

Case Study

Southeast Alabama Medical Center

Southeast Alabama Medical Center (SAMC) Uses Ekahau Wireless Business Intelligence Solution to Optimize Equipment Use and Increase Patient Safety

SAMC Southeast Alabama Medical Center

"By re-using our Cisco Wi-Fi network to deploy Ekahau's real-time asset tracking and temperature monitoring solutions, we were able to quickly and cost-effectively help our nurses remain productive and boost morale, while improving patient safety."

- Aaron Cole, Network Analyst, SAMC

Challenge

As a cutting edge, 420-bed hospital in Dothan, Alabama, Southeast Alabama Medical Center (SAMC) is known for innovation. When SAMC's nurses began spending significant portions of their shifts searching for GE Healthcare DINAMAPs™, stretchers and IV pumps in the 1 million square foot facility, the hospital's Biomedical and IT teams investigated the use of Real-Time Location System (RTLS) technology as a possible solution to the nursing team's challenges. SAMC managers understood that freeing up caregiver time could boost morale, improve patient experience and throughput, as necessary equipment became available.

At the same time, SAMC's IT team was upgrading their Cisco Wi-Fi network to better support data and voice requirements and the team wanted to leverage their Wi-Fi to enable asset tracking. The IT team began investigating the use of Real-Time Location Systems (RTLS), which uses an existing Wi-Fi infrastructure, thereby forgoing the need for costly, wired readers in each hospital room. The newest breed of RTLS solutions on the market re-purposed existing Wi-Fi networks in hospitals, ensuring that whole-hospital RTLS adoption was cost-effective, thus improving the effectiveness of a hospital-wide asset tracking application.

The SAMC IT team was interested in an asset tracking solution that used active Radiofrequency Identification (RFID) technology for its RTLS. Unlike passive RFID systems which relied on wired in-room readers, RTLS using active RFID could dynamically locate equipment on real-time maps, essentially 'seeing through walls' and making equipment searchable via web browser. RTLS software provided an asset's location and could also indicate its status and condition. By making equipment more accessible caregivers could use RTLS software to search for equipment and the hospital could optimize it's asset utilization rate and equipment availability (par levels) so that nurses could avoid looking for equipment in every room, saving time and improving productivity.

Solution

After a live demo with the top two vendors in the RTLS industry, SAMC chose the Ekahau RTLS solution. Ekahau's RTLS demo impressed SAMC executives by showcasing instant over-the-air- tag activation, fast floor map loading and by yielding highly accurate results quickly. Ekahau's RFID-over-Wi-Fi™ deployment leveraged the hospital's existing Cisco Wi-Fi infrastructure investment to deliver room-level accuracy for a variety of asset tracking use cases,

and the system offered chair-level (1 m. / 3 ft.) accuracy using wire-free, low-cost Ekahau infrared beacons. Southeast Alabama Medical Center adopted Ekahau's RTLS using a phased approach that allowed the hospital to validate the system. The project's first phase included asset tracking of high dollar value medical equipment (i.e., IV Pumps, Beds, Stretchers and GE Healthcare DINAMAPs™). Afterwards, the hospital focused on rapid cycle testing in order to justify broader RTLS adoption. Following testing, the hospital found that locating Welch Allyn® thermometers (valued at approximately $100 each) took up a significant amount of nurse search time, therefore validation for tracking these lower value items was found and could result in significant productivity gains and labor savings while boosting staff morale.

Successful cycle testing ultimately resulted in broader, whole-hospital RTLS adoption. As the hospital finalized its first and second phases of RTLS deployment, SAMC tracked a total of 1,000 assets using Ekahau tags and Ekahau Vision™ software and the hospital also employed an additional 80 Ekahau temperature sensors in order to wirelessly monitor their blood, tissue and medication refrigerator units. The hospital also takes advantage of 'geo-fencing', alerting Biomedical engineering staff if equipment moves into restricted zones. For example, if a GE Healthcare DINAMAP™ is accidently dumped in the laundry or trash bins, staff members are alerted so that accidental removal can be avoided.

Results with Ekahau

In an effort to estimate their RTLS Return on Investment (ROI), SAMC staff calculated that the hospital's long-term savings from using Ekahau RTLS to total $454,223 for the first five years. The hospital's cost savings were based on a reduction in the loss of equipment and shorter equipment search times resulting in improved productivity and labor savings.

Aaron Cole, Network Analyst, of SAMC is pleased with Ekahau's RTLS because, "By re-using our Cisco Wi-Fi network to deploy Ekahau's real-time asset tracking and temperature monitoring solutions, we were able to quickly and cost-effectively help our nurses remain productive and boost morale, while improving patient safety."

Today, SAMC leverages the benefits of location analytics with the Ekahau Vision™ business intelligence software platform which allows their staff to study equipment utilization rates and isolate workflow bottlenecks related to equipment availability. For example, if the hospital is considering the purchase of 180 additional IV pumps and the Ekahau Vision™ asset report indicates that IV pump utilization rates are 55%, it could mean that only 100 units are ever used on average at any given time, therefore the hospital should consider improving the maintenance cycle times related to maintaining pumps, instead of purchasing more pumps.

Ekahau RTLS (RFID-over-Wi-Fi™) is assisting SAMC by increasing caregiver productivity and morale and creating a high quality patient experience and throughput through asset tracking. Refrigerator temperature are tracked and recorded for Joint Commission Compliance to assist the hospitals biomedical engineers. All asset tracking and temperature monitoring is easy to assess using Ekahau Vision™ web-based software and since Ekahau RTLS is highly scalable, SAMC can expand their system and continue to solve new workflow bottlenecks.

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