Cisco Wireless with the Ekahau Real-Time Location System (RFID over Wi-Fi)
Delivering Business Intelligence to Healthcare Organizations

What Is the Value of Real-Time Location Using Wi-Fi?
Ekahau’s Real-Time Location System (RTLS) gives managers and end users unprecedented visibility into the location, condition, and status of assets, as well as people and workflows, across emergency departments, operating rooms, and other departments. The Ekahau Vision location analytics platform, along with Ekahau Wi-Fi tags, uses Cisco® wireless infrastructure to deliver RFID-over-Wi-Fi applications.

What Are the Use Cases for a Healthcare Organization?
The Ekahau RTLS platform provides hospitals with indoor and outdoor location visibility, as well as automated alerting and 2-way messaging triggered by location-based events. Ekahau RTLS enables a healthcare organization to:

• Locate critical equipment and personnel quickly on real-time maps, thus improving productivity and workflow
• Send and receive alarms with automatic text alerts triggered by location and status-based events
• Reduce emergency response times with 2-way messaging between staff and security using Ekahau badge tags
• Report on asset utilization, inventory levels, dwell times, and location history and view real-time dashboards
• Monitor high and low inventory, equipment conditions (sterilized or unsterilized), and refrigeration unit temperatures (Joint Commission International compliant or noncompliant) across departments and buildings
• Reduce patient wait times and improve throughput by queuing patients via Wi-Fi badges and smart scheduling based on patient load

What Are the Components of this Solution?
The solution has several components:

Cisco Wireless LAN
The position of the Ekahau Wi-Fi tags is determined by fingerprinting the RF signals as detected by the Cisco Wi-Fi network. A robust, well designed Wi-Fi network is central to the solution.

Cisco Mobility Services Engine
Other than access points and controllers, the Cisco Mobility Services Engine (MSE) is required. The MSE aggregates the signal strength data from all wireless controllers, making raw received signal strength indication (RSSI) data available to the Ekahau Vision server. The MSE also provides a rich set of security functions, including Cisco CleanAir®, rogue detection and location, wireless intrusion prevention system (wIPS), and wireless attack mitigation.

Ekahau Wi-Fi Tags, Sensors, and Badges
Lightweight, battery-powered, and rechargeable Ekahau Wi-Fi tags (clients with radios) transmit standard 802.11 (Wi-Fi) signals periodically to Cisco access points, communicating with Ekahau software for location calculation and positioning. Tag communications are programmable and may be activated automatically based on location or tag button presses. Ekahau badge tags feature an LED text display, button controls, 2-way messaging, and a pull-down safety switch.

Ekahau tags are certified under the Cisco Compatible Extensions program to operate with Cisco Wi-Fi infrastructure and Cisco MSE. Ekahau RTLS software and hardware are Cisco Compatible, and Ekahau is a Cisco Developer Network partner with AssureWave certification.

Optional Ekahau IR Beacons
If microzone location accuracy is required, Ekahau’s wire-free, low-cost infrared (IR) beacons can achieve subroom, bed, or chair-level accuracy (~3ft\1m). The Cisco wireless infrastructure “decodes” the beacon flashes so that the Ekahau Vision software can make use of this information.

Ekahau Vision Location Analytics and Business Intelligence Software
Ekahau Vision software has two main functions:

1. Accurately determine and display the location of each tag, while considering RF signal fluctuations, quality of data, device location history, and predictive analysis.
2. Handle tag management, provide an open API for third-party systems, enable alerts, and generate reports and dashboards to help support improved decision-making.

What Are the Benefits of Ekahau RTLS?
• Lower inventory expenses, increased utilization rates, shortened equipment search times, avoidance of theft, and automated asset maintenance with real-time visibility into the location and status of high-value equipment (examples of status are dirty/clean, broken/fixed, and in use/available), using your Cisco Wi-Fi network.
• Reduced patient and customer wait times and increased throughput with real-time monitoring. The solution can automatically alert caregivers of patient activity or inactivity and automate routine workflows with alerts that help improve care, safety, and staff productivity.
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- Reduced security response times and lower risk of injury in cases of staff duress, with wearable Wi-Fi-based badges that instantly alert security badges with a staff member’s exact location or entry/exit into a secure zone with automated notifications, to help ensure staff and asset security.
- 24x7 monitoring of blood, tissue, medication, and food refrigerators with automated real-time temperature monitoring and alerts if parameters are outside of safe temperatures. Joint Commission International reports and automated alerting to prevent spoilage.

Why Ekahau RTLS Using Cisco WLAN?
The joint Cisco and Ekahau RTLS solution provides a powerful and rich set of tools that enable hospitals to manage and optimize the hospital environment. The solution has been tested and certified by the Cisco AssureWave program, thus helping ensure that the solution will be reliable, consistent, and secure, with zero impact on the performance of the Wi-Fi network.

For More Information
www.cisco.com/go/healthcare
www.ekahau.com

Figure 1. Ekahau Vision

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About Ekahau - The Ekahau RTLS is a patented solution, providing Wi-Fi-based Real-Time Location Systems (RTLS) and Wi-Fi planning and deployment tools. Ekahau RTLS with Ekahau Vision™ software and Wi-Fi-based smart tags give staff and managers unprecedented visibility into the location, condition and status of assets, people and workflows. Thousands of Fortune 500 companies, hospitals and other facilities rely on Ekahau’s patented technology to reveal business intelligence that drives decision-making. Ekahau partners include leading wireless software developers, systems integrators and WLAN providers. Learn more about Business Intelligence Through Location at: www.ekahau.com or on the Ekahau Blog, Facebook, Twitter and LinkedIn.