



Why Should I Care About the Context-Aware Healthcare Solution?

Hospitals need to manage costs while delivering high-quality patient care. A context-aware hospital can enhance the quality of patient care, increase staff efficiency, and reduce capital and operational costs. The Cisco® Context-Aware Healthcare solution enables hospitals to improve operational efficiency by integrating real time contextual information such as location and status of medical equipment and staff into the workflow. It also enables access to environmental information (for example, temperature or humidity) to provide an optimal patient experience. The solution enables both real-time tracking of assets as they move throughout the campus and event-driven tracking as they exit and enter areas.

What Problems Need to Be Solved?

Healthcare organizations need to improve asset utilization, optimize complex workflow processes, and ensure patient safety. Healthcare organizations are deploying context-aware services to address the following clinical requirements:

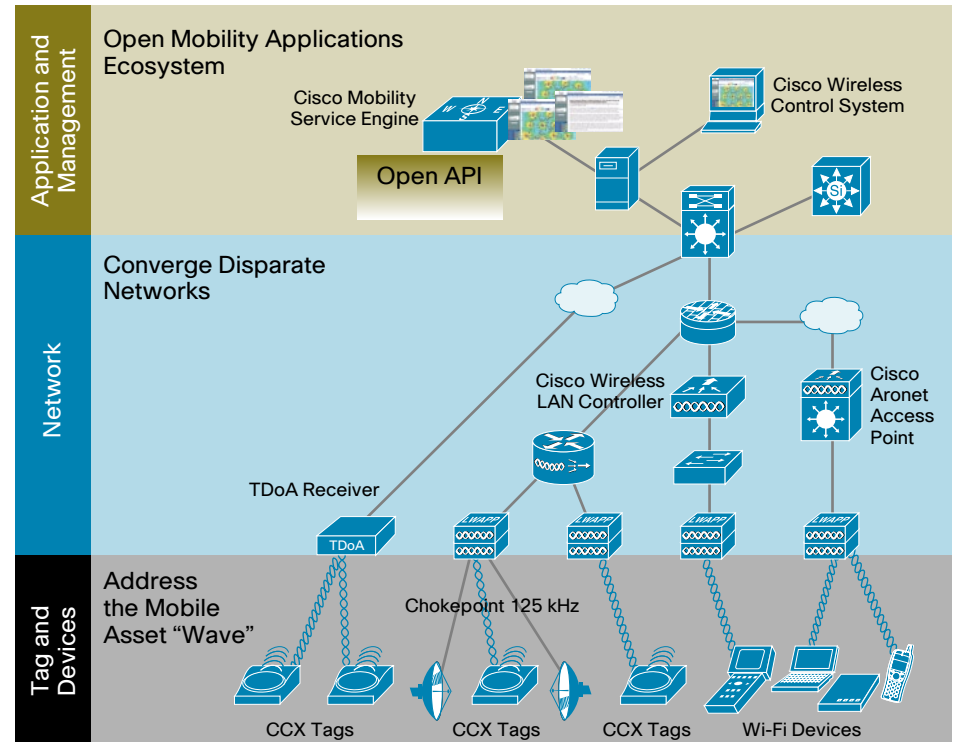
- Quickly locate equipment scheduled for maintenance.
- Automatically relay status information from Wi-Fi tags attached to medical equipment.
- Prevent loss or misplacement of valuable mobile assets.
- Integrate asset management and context-based information into the workflow.
- Increase utilization of diagnostic and test equipment.
- Quickly locate equipment or patients throughout a clinical encounter.
- Ensure patient privacy and regulatory compliance.

Solution: A Context-Aware Hospital

Cisco Context-Aware Healthcare solution enables hospitals to integrate contextual information such as location, temperature and presence information into the clinical workflow to increase staff efficiency, streamline inventory management and improve patient care. Mobile assets and staff can quickly be located for more efficient use of resources and storage conditions can be monitored to reduce waste and improve patient satisfaction.

Figure 1 illustrates the Context-Aware Healthcare architecture. The components of the Cisco Context Healthcare solution include mobile assets such as Wi-Fi devices and Wi-Fi tags from the Cisco Compatible Extensions program, the Cisco Unified Wireless Network, Cisco Mobility Services Engine, and the Cisco open API.

Figure 1. Cisco Context-Aware Healthcare Architecture



What are the Benefits of Context-Aware Healthcare

Deploying a Context-Aware Healthcare solution can benefit the entire hospital, including business decision makers, technical decision makers, and clinical staff:

Business Benefits

Asset Tracking Applications

Manage medical equipment and hospital beds—Receiving accurate information about the status of healthcare equipment and its whereabouts can greatly enhance an organization's operational efficiency and help improve patient care. For example tracking the availability of beds or wheelchairs means that workflow is improved among hospital staff and patient wait times are reduced.



Zone and Inventory Management Applications

Issue patient location alerts—Context-Aware services can cost effectively locate and track patients who require special care such as infants, elderly, or people who have dementia. Alarms can be issued if these patients stray beyond designated areas. This leads to faster staff response times and improved patient safety.

Control asset loss—Nurses sacrifice time with patients to find equipment. An asset tag on equipment, such as a wheel chair, can automatically send a notice to alert facilities when it enters or exits patient loading and unloading areas. Personnel can immediately be dispatched to reclaim the wheel chair. Capital expenditures and asset loss can be significantly reduced when boundaries are defined for when and where assets can move.

Presence Applications

Cost-effectively locate staff—Presence status of medical staff can be tracked and is automatically updated based on location. Bottlenecks can be identified and workflow can easily be adjusted for more efficient use of resources. Caregivers and specialists can quickly be located and re-routed to address emergencies, urgent issues, or patient needs. This enhances staff responsiveness, supports real-time workflow automation, and accelerates patient treatment.

Condition Monitoring Applications

Reduce waste with condition alerts—Environmental conditions such as room temperature can be monitored to ensure equipment or medication storage areas are maintained at acceptable levels. Waste can be significantly reduced by sending an alert when the temperature of medication storage areas drops below a certain threshold.

Network Assure Applications

Manage security and regulatory compliance—Cisco Network Assurance Solutions integrate contextual information about the location or status of network security events and rogue devices to enable faster, more informed decision making and remediation of security threats or network performance issues. This ensures patient privacy and regulatory compliance.

Technical Benefits

Cisco Context-Aware healthcare solution delivers tangible technical benefits:

- Flexibility to track any 802.11 device, including Wi-Fi-enabled equipment, devices, phones, active RFID tags, and active or passive RFID tags.
- Scalability to track up to 18,000 thousands devices or tags over the same network that serves your wireless carts on wheels, laptops and PDAs.
- Accurate pervasive or chokepoint location information reporting.
- Easy integration with third party clinical applications via an open API that support location services or telemetry information and healthcare specific applications.
- Centralized, quick and easy explorer-like browsing of all Wi-Fi devices across different geographies, campuses, buildings, floors, and areas.
- Proactive location-based alerts in response to the movement, entry, exit, or absence of Wi-Fi devices and tags to help reduce costs associated with shrinkage, leasing and equipment replacement.
- Lower total cost of ownership by using the existing Cisco WLAN infrastructure and interoperable tags.

Why Cisco?

Cisco is the leader in healthcare connectivity and a catalyst in transforming healthcare based on its industry innovation, participation, and collaboration. The Cisco Context-Aware Healthcare solution is part of the Cisco Context-Aware solution portfolio. These solutions use the existing Cisco Unified Wireless Network to provide hospitals with up-to-date visibility of resources. This lowers the total cost of ownership of the wireless network and maximizes current investments since specialized location readers are not required. Tags and applications from multiple partners are fully interoperable with the Cisco infrastructure to ensure an optimal solution.

To learn more, visit: <http://www.cisco.com/go/contextaware>.

Specialized Applications: Please contact one of the following Cisco Context-Aware Services partner for specialized healthcare location applications and solutions: AeroScout.