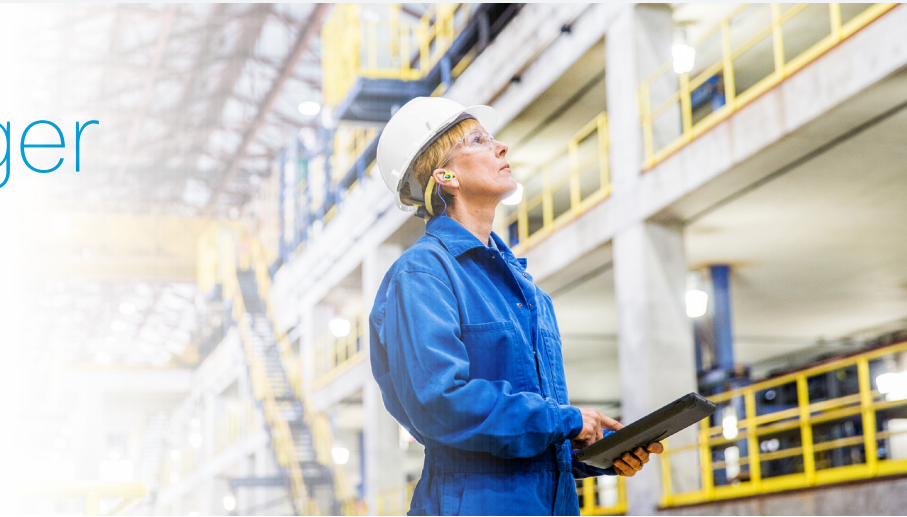


Connected Assets Manager for IoT Intelligence Location-Based Services



Benefits

- Optimize industrial production and equipment utilization.
- Track assembly components to ensure the right part arrives at the right location at the right time.
- Prevent delays by locating missing tools and test equipment quickly.
- Use standards-based 802.11 technology with the option to use your existing WiFi network.
- Extend Cisco security solutions to the wireless network.
- Use analysis of trends to allocate workers and equipment more efficiently.

Track Parts in Real Time, Locate Slowdowns, and Speed Cycle Times

A vital component on your production operation is missing. Your production line has stopped. Among thousands of moving parts, people, and tools across your factory, how do you find the missing part quickly and minimize delay and wasted worker hours?

Now imagine that a real-time location system (RTLS) is tracking the component. A material handler instantly sees the precise location and status of the component on his handheld device. He retrieves the component, the production line restarts, and updates are automatically sent to all online manufacturing execution and scheduling systems. Total time lost: 3 minutes. Downtime avoided: hours.

This is Connected Asset Manager for IoT Intelligence in action, the wireless network that acts as a visibility platform for assets. With location-based services, CAM for IoT Intelligence combines rugged 802.11 access points with industry-leading security and manageability to provide a wireless umbrella of visibility.

Visibility Enables Mapping, Alerting, and Reporting

CAM for IoT Intelligence with Location combines asset management with location service technologies from Cisco partners. Cisco provides the wireless network infrastructure along with the wireless LAN controller and Cisco Connected Mobile Experience, a platform that uses Wi-Fi to increase visibility into the network by calculating locations.

Partners provide RFID tags, excitors, and other software to transform asset visibility information that it receives from Cisco's Connected Mobile Experience into real business solutions. CAM for IoT Intelligence provides sophisticated mapping, rules-based alerting, and reporting functions.

With this solution, you can:

- Time stamp the movement of assets.
- Record asset progress through production.
- View historical location and movement of assets.
- Generate pull signals for restocking.
- Set boundary conditions and generate alerts.
- Reuse RFID tags.

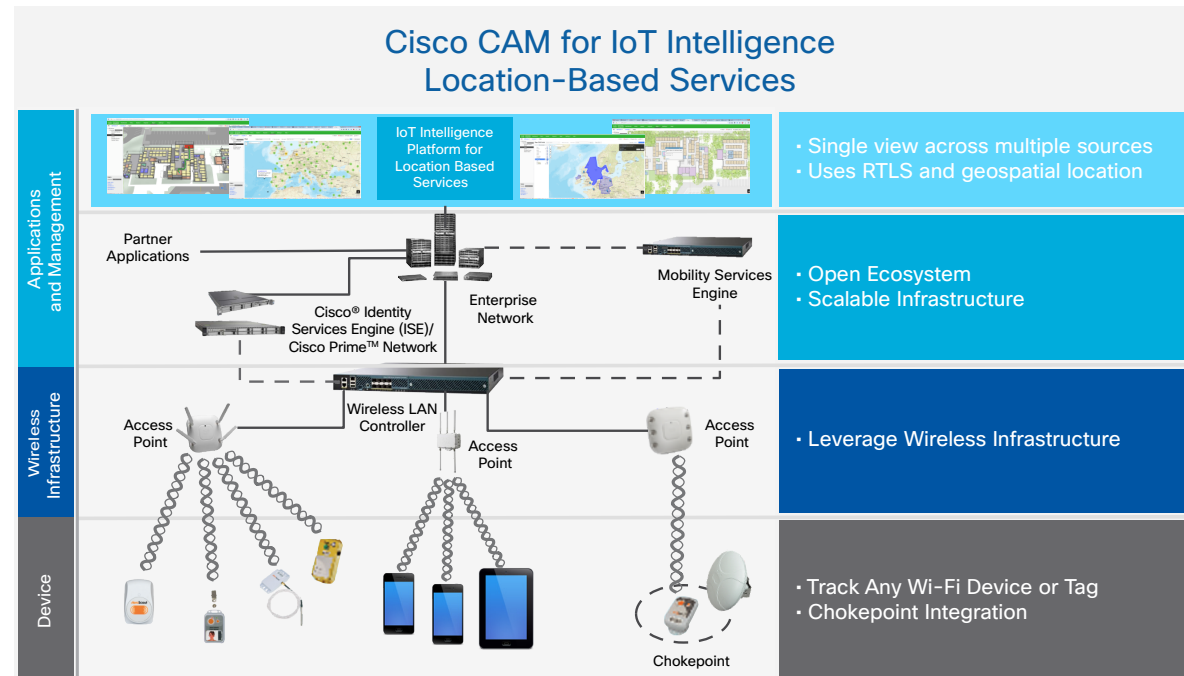
Manage Work in Progress

CAM for IoT Intelligence uses location-based services to help you manage and control all work-in-progress (WIP), raw materials, equipment, people and finished products in and throughout the supply chain. This connected solution provides real-time locations, condition monitoring (for example, temperature), and status of high-value manufacturing assets through 802.11 LANs and location services technologies.

Unique, identifiable RFID tags are small and you can attach them to virtually any item. They can identify and locate devices, tools, work pieces, and more in a manufacturing context. Used heavily in large discrete manufacturing facilities, the tags communicate with Wi-Fi networks and provide location information

based on triangulation between access points. As shown in Figure 1, you can use these to create context-aware manufacturing through Cisco wireless infrastructure, adding capability at minimal cost.

Figure 1. Context-Aware Manufacturing Solution Architecture



Leading manufacturers have deployed Cisco and partner technologies to help drive the following goals:

- Ensure the careful flow of material for lean manufacturing.
- Track works in progress and personnel movement to meet engineered-to-order schedules.
- Enable just-in-time replenishment of inventory following e-Kanban principles.
- Reduce time spent hunting for tools, test equipment, production material, and more.

Next Steps

To learn more about the Cisco location-based solution, visit <http://www.cisco.com/web/strategy/manufacturing/connected-factorywireless.html>.