AeroScout Visibility System Overview

The industry’s most advanced solutions for Unified Asset Visibility, driving context-aware applications with real-time location and status

Overview

AeroScout is the industry’s leading provider of Unified Asset Visibility, delivering complete context-aware solutions based on the location, status and condition of valuable assets. AeroScout solutions use standard Wi-Fi wireless networks to accurately monitor the location and status of any asset or person, and utilize that information to deliver direct business benefits with a high return on investment. The AeroScout Visibility System was designed to work in practically any environment, with the flexibility to meet numerous application and industry needs. By unifying a variety of technologies, including real-time location systems (RTLS) over Wi-Fi and Ultra-Wideband, Active and Passive RFID, choke-point visibility, sensors, telemetry and more, AeroScout addresses all of an organization’s asset visibility needs in a single integrated cost-effective infrastructure.

Key Benefits

- **Unified Asset Visibility for all environments and enterprises**: AeroScout is the only visibility system to bring together all wireless location and status data on a single, unified infrastructure: accurate real-time location indoors and outdoors, presence detection, choke-point visibility, sensor capabilities and more.

- **Standard Wi-Fi infrastructure**: The AeroScout system utilizes standard wireless networks, keeping costs low and enabling enterprises to gain more benefit from their existing WLAN. Through partnerships with all major WLAN vendors, customers can use standard access points as Active RFID readers to determine location and status.

- **Enterprise software for Unified Asset Visibility**: AeroScout MobileView is both a full-featured end user application and a platform for designing and integrating enterprise-class context-aware solutions.

- **Integrated sensors**: Built-in Motion and Temperature sensors as well as wired device telemetry and custom sensor integration capabilities enable tags to wirelessly communicate a wide range of status information.

- **Visibility of any valuable asset with AeroScout Wi-Fi-based Active RFID tags**: AeroScout’s industry-leading tags can be used to track people and a variety of assets. AeroScout tags feature up to 4 years of battery life, use a unique beaconing method to avoid network disruption and enable scalability, and include a wide variety of advanced features.

- **Accurate, reliable real-time location and presence detection**: AeroScout uniquely provides true real-time location based on both Time Difference of Arrival (TDOA) and Received Signal Strength Indication (RSSI) methods. This enables accurate location determination in both indoor and outdoor environments, from corporate office buildings to open industrial areas.

- **Choke-point capabilities**: In addition to real-time location, AeroScout can detect tags immediately and accurately at choke points and other tightly defined areas through the use of AeroScout Exciters. This capability enables a wide range of applications that cannot be performed without choke-point, such as immediate gate arrival/departure alerts or distinction between adjacent workstations.
System Components

AeroScout Tags
AeroScout’s Wi-Fi-based Active RFID Tags enable the wireless network infrastructure to accurately track the location and condition of valuable assets or people. These small battery-powered, rugged, programmable tags send very short 802.11 messages at a predefined interval.

The tags’ main features include a long battery life (up to 4+ years), flexible mounting options, call button and tamper-proof options, on-board sensor capabilities, the ability to store and receive data messages, and a clear channel assessment that avoids interfering with Wi-Fi data traffic.

AeroScout MobileView

AeroScout MobileView is the industry’s most flexible and feature-rich platform for Unified Asset Visibility. MobileView turns asset location information received from any source (AeroScout Engine for Wi-Fi or UWB-based location, Cisco Location Appliance, Passive RFID sources, etc.) into real business solutions, delivering sophisticated mapping, alerting and reporting functions in a scalable, enterprise-ready software platform. With MobileView, developers and end users can apply their own rules and business logic to location information, truly leveraging their asset location and status data for efficient and intuitive applications in many different industries. AeroScout MobileView includes the following main functionality:

- **Track**: Web-based graphical interface enables users to easily search for assets by multiple properties, view their real-time and historical movement, and create custom reports.

- **Alert**: 17 types of location events (enter/exit, overflow, dwell time, etc.) trigger multiple alerts (email, phone, Web Service, etc.) for automating business processes.

- **Manage**: Assets, categories, map zones, and user rights are fully configurable.

- **Integrate**: MobileView contains a complete set of tools for integration with third-party applications, including an open SOAP API.

Wi-Fi Access Points and Other Infrastructure

Signals from AeroScout tags can be read by both standard Wi-Fi access points and AeroScout Location Receivers, offering customers complete flexibility based on their environment. AeroScout has integrated with all major WLAN equipment vendors to provide the ability to locate AeroScout Tags using a signal strength (RSSI) algorithm. In addition, AeroScout uniquely offers optional infrastructure devices to meet the widest variety of customer solution needs and environments.

- AeroScout Location Receivers and Location Points add time difference of arrival (TDOA) location measurement in high-ceiling (i.e. large manufacturing hangars) and outdoor areas. They are available in rugged configurations, as well as with integrated WLAN data and bridging capabilities.

- AeroScout Exciters extend the AeroScout suite to provide immediate and highly configurable choke-point detection capabilities. Exciters trigger AeroScout’s Tags as they pass within a small, definable area, providing instant knowledge that a tagged asset or person passed through a gate or doorway, or has arrived at a specific workstation, shelf or bay.

AeroScout Engine and Other Visibility Sources

AeroScout solutions take advantage of visibility data from a variety of sources, including the AeroScout Engine as well as Passive RFID and other sources.

AeroScout Engine is a software component that manages the collection and processing of TDOA and RSSI data for multiple visibility modes, including multilayer and the use of sophisticated algorithms to combat indoor multi-path. The server component processes data received from Wi-Fi networks and AeroScout Location Receivers, Ultra-Wideband readers and other sources to produce accurate and reliable location and presence data suitable for mission-critical applications. In addition to core location processing, AeroScout Engine also includes system management and in-depth analysis tools.

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