Helping Ensure Planes Spend Less Time on the Ground

Customer Case Study

Cisco Borderless Network helps Athens International Airport improve service to airlines and passengers.

EXECUTIVE SUMMARY

Customer Name: Athens International Airport

Industry: Transportation

Location: Greece

Company size: 715 employees

Challenge

- Improve plane turnaround times by optimizing airside operations
- Provide anytime, anywhere access to information, resources, and IT services

Solution

- Cisco Aironet Wireless LAN solution, using Cisco Borderless Network Architecture to protect and integrate with existing airport IT investment

Results

- Better co-ordination of operations and workflow management across the apron
- Process streamlining and business automation, through fast provisioning of IT services
- Easier to collect statistics and measure performance

Challenge

Athens International Airport (AIA) is the largest airport in Greece and one of the most important aviation hubs in Europe. It operates as a private-public partnership and manages more than 16 million passengers, 100,000 tonnes of cargo, and over 200,000 flights every year. In 2010, these operations accounted for €400 million in turnover.

Like all airports, AIA is always looking to improve safety, security, service, and capacity. The end goal is to grow airline market share, increase passenger numbers, drive commercial revenue, and improve productivity, by providing a cost-effective and efficient service to airlines, developing offerings that meet concessions' needs and providing a highly satisfying experience for passengers.

"Our customers, whether they are business people, holidaymakers, visiting family and friends, meeters and greeters, or airport workers, expect the very best experience," says Leonidas Daravelis, Director Information Technology & Telecommunications Business Unit for Athens International Airport. "As a result, IT has become intrinsically linked to all aspects of airport operations."

AIA's approach has been to use its Cisco® IP network as a platform to provide the optimum common-use infrastructure for most of the airport functions: from building and tarmac management, ground transportation and handling, through to passenger operations, security, retail services, and business communications.

The airport's campus network works in parallel with a Cisco Aironet® Wireless LAN (WLAN), providing employees within the terminal buildings with access to people, information, and tools. The WLAN also acts as a Wi-Fi hotspot for passengers wanting to use the Internet. This critical infrastructure serves over 30,000 active users during a month.

With constant pressure on speeding-up plane turnaround target times, AIA wanted to find a way of improving the efficiency of airside operations and optimizing the existing assets through integrated solutions.

"Some agents used walkie-talkie radios and would have to write instructions down on paper," says Marios Sentris, Head of IT Business Development and Automations for Athens International Airport. "Others had handheld devices, but with limited wireless coverage outside, they were unable to access applications. So they often had to make repeat trips between the terminal buildings and the aircraft. This ineffective process could result in the plane missing its scheduled take-off time or, in extreme cases, the airline facing potential penalties."

"With the new wireless solution, planes now spend more time in the air and less time on the tarmac."

Leonidas Daravelis
Director, Information Technology
& Telecommunications Business Unit
Athens International Airport

Solution

Following a competitive tender, AIA selected the Cisco Borderless Network solution, an architectural approach that unifies fixed and wireless access infrastructures within a simplified IT management framework.

"The Cisco Borderless Network solution provided guaranteed integration between the old and new wireless networks," says Sentris. "Having that seamless handover is very important because it allows wireless devices to smoothly transition between indoor and outdoor locations. There is no risk of losing connectivity to systems and applications."

Unlike normal enterprise wireless deployments, implementing a WLAN within an airport setting presents many unique technical challenges. Airports tend to contain lots of metal and glass, which, depending on the weather, affect the wireless network in different ways. They also tend to have very high concentrations of people in relatively confined areas, another key factor in creating interference and reducing signal strength.

To eliminate these issues, and ahead of the formal tender, Cisco worked with a Specialized WLAN Channel Partner to carry out a comprehensive site survey to determine the best outdoor coverage design. A post-implementation mobility assessment was also conducted, to help ensure optimal wireless coverage and performance, including the ability to successfully withstand adverse weather conditions.

The solution comprises Cisco 5500 Series Wireless LAN Controllers, Wireless Control System (WCS), and 55 Cisco Aironet Access Points, a combination of 1520 Series Lightweight Outdoor Access Points and 1242 / 1252 Series Ruggedised Access Points.

In addition, the Cisco Borderless Network Architecture has introduced new wireless capabilities. The airport benefits from Cisco Motion, which provides a spectrum-aware, self-healing, and self-optimizing wireless platform that makes it easier to mesh together indoor and outdoor WLANs, while also reducing downtime.

AIA was also keen to protect IT investment. Cisco ClientLink helped avoid a "rip and replace" approach. The pioneering beamforming technology in the Cisco Access Point enables faster speeds for older devices and eliminates "dead spots" in coverage. It also improves performance on both the uplink and downlink. This feature is significant because the majority of client traffic, such as web browsing and file downloads, is in the downlink direction.

Results

The airport's Cisco Borderless Network has helped optimize airside operations by enabling greater access to information, resources, and IT services, anytime, anywhere, using any device. Although it is still early days, AIA expects to see quantifiable benefits in the form of productivity gains and more streamlined processes, for example, for disembarking, re-fuelling, catering, cleaning, portable water and waste services, and embarking.

For airlines, this transformation is significant for two reasons: it provides a practical approach for lowering ground handling costs, and increasing aircraft utilization.

"With the new wireless solution, planes now spend more time in the air and less time on the tarmac," says Daravelis. "By harmonising all elements of the supply chain and providing significantly faster turnarounds, the aim is to help airlines improve profitability and customer experience."

"We are now able to streamline and automate more operational processes. And there are advantages at the back end. For example, it naturally becomes easier to collect statistics and run reports based on key performance indicators."

Marios Sentris
Head, IT Business Development and Automations
Athens International Airport

Workflow management is already more efficient and effective. For example, handlers no longer need to make constant trips between the terminal buildings and the aircraft. By using their PDAs to view real-time information from the baggage reconciliation system, they can instantly pinpoint the location of luggage within the loading and unloading procedure. Any unaccompanied luggage is removed from the aircraft, eliminating delays and the need to reallocate parking positions for arriving planes.

Using their PDAs, cleaners can see the latest expected arrival information. When the plane lands, and all of the passengers have embarked, the cleaners automatically receive an alert to attend the plane. Once the cabin has been cleaned and checked, the job is closed, and the resource management system is updated.

"We are now able to streamline and automate more operational processes," says Sentris. "And there are advantages at the back end. For example, it naturally becomes easier to collect statistics and run reports based on key performance indicators."

And it's not just operations out on the apron that have been transformed. The Cisco outdoor wireless network supports the telemetric monitoring of vehicles across the campus, alerting traffic control to potential problems so they can take proactive action and ease congestion to and from the airport.

Over the forthcoming months, AIA plans to launch a new service to cater for passengers with reduced physical mobility (PRM). The application will capture the needs of individuals and help ensure that a member of staff is available with the appropriate support equipment to make their stay at the airport as comfortable as possible. Other possibilities include using the Cisco Aironet Wireless LAN to introduce location-based services that help to improve the management of people and assets.

For More Information

To discover how Cisco is helping airports and transportation companies around the world to transform, please go here

For a detailed guide on Designing Enterprise Mobility Deployments and Cisco Wireless MESH , please go here

For a technical guide on how to integrate Cisco Mobility Services Engine (MSE) and run Context Aware Services via a Cisco Aironet Wireless LAN, please go here

Product List

Wireless

- Cisco Unified Wireless LAN
- Cisco Aironet 1520 Series Lightweight Outdoor Access Points
- Cisco 5500 Series Wireless Controllers
- Cisco Wireless Control System (WCS)

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