

## Unlocking Game-Changing Wireless Capabilities



Cisco and SITA help Copenhagen Airport develop new services for transforming the passenger experience.

### EXECUTIVE SUMMARY

**Customer Name:** Copenhagen Airport

**Industry:** Transportation

**Location:** Denmark

**Number of Employees:** 1,700

#### CHALLENGE

- Improve efficiency of airport operations
- Provide enhanced passenger experience

#### SOLUTION

- Cisco Mobility Services Engine enabled wireless platform
- SITA Passenger@Airport for Augmented Reality and Passenger Flow

#### RESULTS

- Passengers can navigate around the airport more efficiently
- Potential issues can be identified quickly and removed before passengers are affected
- On target to increase passenger satisfaction and throughput to 30 million a year

### Challenge

Copenhagen Airport (CPH) is one of the oldest major aviation hubs in Europe. On an average day, CPH handles 60 scheduled airlines (a mix of leading international carriers and low-cost operators) and serves over 60,000 passengers, 90 percent of whom are international travelers. In 2010, 21.5 million people passed through the facility, making it the busiest airport in the Nordic region. CPH prides itself on delivering highly efficient operations and excellent customer service, an achievement recognized by frequent industry awards.

As an early adopter of technology, CPH is always looking for new ways to stand out as the “airport of choice” for passengers, airlines, and retailers.

“We place a lot of importance on industry benchmarks and what our customers tell us,” says Jan Zacho, sector manager, infrastructure and telephony, Copenhagen Airport. “IT is a key enabler here, not just for improving satisfaction levels, but also for boosting capacity

and throughput. Ultimately, our aim is to be able to serve 30 million passengers a year.”

The airport’s latest innovation focused on leveraging its existing Wi-Fi investment. This indoor wireless LAN (WLAN) included 200 access points, and was originally designed to provide passengers and workers with basic Internet connectivity.

“We knew we were only realizing a fraction of the network’s real potential,” says Zacho. “Our vision was to optimize passenger flow and make the most of the often limited time they spend with us. Also, we wanted to introduce new intelligent services for improving asset management. And, most importantly, we wanted to achieve all of this with one single deployment and financial investment.”

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## Solution

Eager to avoid a costly replacement approach and maximize wireless assets, Copenhagen Airport was able to tap into the combined resources and expertise of two industry leaders: Cisco and global air transport IT provider [SITA](#).

Both companies are collaborating closely as part of a joint commitment to help airports accelerate business transformation. The Cisco underlying network platform and renowned technical services provide a logical fit with SITA’s knowledge and track record in delivering applications and business services for airports and airlines.

Information exchange is a key part of the collaboration. Cisco presents regular briefings and product updates to various parts of the SITA organization, including [SITA Lab](#), the company’s strategic technology research arm. In return, SITA keeps Cisco informed of the latest challenges facing its customers. These sessions provide both partners with a platform for sharing ideas and developing joint-value propositions. For Copenhagen Airport, this integrated engineering and solutions-led approach provided the catalyst that helped to bring its vision to life.

A Cisco presentation of its [Mobility Services Engine](#) (MSE) capability immediately struck a chord with SITA. Aware of the airport’s interest in deploying location-based and context-aware services, SITA recognized the potential of using the Cisco® MSE and with support from Cisco, arranged a trial program at Copenhagen.

A combination of hardware and software, the MSE transforms disparate Wi-Fi-centric infrastructures into mobility networks by abstracting the application layer from the network layer. By drawing on this information collected and stored in the MSE, the airport can deliver SITA applications across different mediums, including Wi-Fi, Ethernet, cellular, WiMAX, and Radio Frequency Identification (RFID).

Prior to the trial commencing, Cisco provided a consulting systems engineer to conduct an in-depth site survey. “We recognized very early on that it needs expertise to turn a traditional Wi-Fi network into one that delivers accurate location information,” says Kevin O’Sullivan, lead engineer, SITA Lab. “With airports having so much metal and glass, there’s a greater risk of interference than, say, with a typical office building. We also had to consider density of people. Signal strength may be okay in the early morning, but we found that it fluctuated significantly throughout the day as the airport filled up. These challenges really played to Cisco’s strengths and high-touch support.”

Taking the survey results, Cisco came up with a revised WLAN design, which helped ensure maximum coverage and the optimal positioning of existing and new wireless access points. The Cisco Wireless Business Unit provided SITA with the necessary equipment and also helped with final on-site adjustments to the MSE configurations.

With the WLAN fully prepared, SITA Lab worked closely with the airport's IT team to scope, define, and develop two pioneering new applications, SITA Passenger@Airport for Augmented Reality and Passenger Workflow:

- **SITA Passenger@Airport for Augmented Reality:** helps passengers with iPhones to navigate the terminal more efficiently with on-screen maps and information on airport services
- **Passenger Workflow:** provides the airport with real-time information on footfall and key performance indicators, such as average queue times

But more work was still needed. "The proof of concept uncovered valuable learning," says O'Sullivan. "One of the biggest issues was that mobile devices could be active one minute. Then, when they went into sleep mode, they would disappear off the system." By reviewing coverage maps and MSE logs, Cisco fine-tuned the solution to improve refresh times and position accuracy.

"We can monitor and prevent potential choke points. That means passengers spend less time queuing and more time doing the things they want, like dining and shopping."

— Jan Zachø, Sector Manager, Infrastructure and Telephony, Copenhagen Airport

When designing the solution, SITA and Cisco went to great lengths to make sure that it was noninvasive and nonintrusive. Regardless of whether the person's device is in use or not, the MSE performs triangulation calculations between three or more access points to identify their position. At no stage is the device's MAC address associated with the person. This helps ensure that the individual remains completely anonymous throughout the process.

Future possibilities could include developing a range of personalized services, such as "time to go to gate" messages. Because these types of services would effectively tie the device's MAC address to the individual, they would only be activated if the person had agreed to opt-in.

The joint engagement has been a big hit with Copenhagen Airport. "Thanks to Cisco and SITA, we now have a viable alternative to the limitations of deploying GPS-based solutions indoors," says Zachø.

## Results

Following a successful trial, CPH has fully implemented the solution, a move that has seen its wireless network grow from 200 to 600 Cisco wireless access points. As well as tripling the throughput to users, the increase in access points also offers additional services that protect the investment from future obsolescence. In addition, the airport's WLAN also benefits from the latest Cisco CleanAir™ technology, which creates a spectrum-aware, self-healing, and self-optimizing wireless platform that reduces downtime and the risk of interference.

The experience for passengers has been greatly enhanced. "Our Augmented Reality application, the world's first navigation tool of its kind, is averaging over 2000 downloads a week. And that's without any advertising or marketing," says Zachø.

Using an iPhone's camera to scan the surrounding area, Augmented Reality illustrates on-screen the points of interest in the terminal, such as check-in desks, shops, cafes, restaurants, and gates, and shows how far away they are. It also allows passengers to see how other users have rated the stores and dining establishments.

## PRODUCT LIST

### Wireless

- [Cisco Unified Wireless LAN](#)
- [Cisco 3300 Series Mobility Services Engine](#)

To achieve its target of increasing throughput to 30 million passengers a year, CPH knows it must drive up operational efficiency. Thanks to Passenger Workflow, it is already well on its way. "We can monitor and prevent potential choke points," says Zacho. "That means passengers spend less time queuing and more time doing the things they want, like dining and shopping."

Unlike before, the airport can now record how long passengers are waiting to check in. If an underlying trend develops with a particular airline, CPH can request that the airline provides additional resources to make sure the situation does not happen again. Furthermore, with increased WLAN coverage, CPH can enable greater workforce mobility and access to information and tools.

The project has unlocked value for Cisco and SITA. O'Sullivan says: "We were able to spark leading-edge innovation by bringing together thought leadership from the Cisco Wireless Business Unit and SITA Lab. Having created a powerful joint value proposition, we're really looking forward to sharing its benefits with other air transport customers."

The airport is already finding other ways to leverage its Cisco wireless investment. It has implemented RFID tracking to help ensure better use of airport assets, such as cleaning equipment, wheelchairs, and vehicles for assisting passengers with reduced mobility. By optimizing the supply chain, Asset Tracking is expected to help speed up airplane turnaround times, another key ingredient of the customer experience. Increased visibility of assets will also save money by eliminating unnecessary orders for equipment that has been misplaced.

## For More Information

To discover how Cisco is helping airports and transportation companies around the world to transform their services, go to: <http://www.cisco.com/web/strategy/transportation/index.html>.



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