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Are You Service-Oriented? Reducing Divergent Networks to Increase Airport Efficiency

The air transport industry has a highly mobile workforce with millions of individuals at airports that must quickly access and act on real-time information. These needs create a complex and dynamic workflow that must be carefully managed. However, even with recent technology advancements, many business processes remain static and paper-based, reducing efficiency and effectiveness while increasing inaccuracies and cost. In many of today's airports, different constituencies have separate communications networks and platforms. That variation inevitably leads toward too many people spending too much time trying to use, manage and coordinate platforms.

That's where the service-oriented network comes into play. Airport workers no longer need to piece together a solution themselves or to be concerned with device obsolescence and software patching. They now have the ability to swap between different wireless networks and use devices in online or offline mode. The networks are combined with rugged devices that are designed with the mobile airport worker's needs in mind and are available in a wide range of form factors. The combination of functionality and durability enhances the user experience and increases productivity throughout the workforce.

Create Service-Oriented Networks

In service-oriented networks, IT designers create an architecture that allows the common use of a core system of converged services including voice, video, real-time location services, deployed mobility and sensor arrays. These are used by virtually every application in the airport and in nearly every environment — from control tower to terminals to maintenance to security. The benefits are significant: seamless high-speed connectivity and interoperability among all crucial constituents. The results are just as significant: faster, more efficient performance, improved airside and landside operations, enhanced security, reduced costs and higher customer satisfaction.

As airports begin moving to the transportation hub/destination model, they are finding that a wireless platform enables the network and its IT support to more closely align with the communications needs of every constituent — from the business organizations that run the airport to the commercial businesses and other constituencies that share the system. The wireless platform also facilitates the goals of both passenger and cargo operations: the safe, secure movement of people, baggage and goods as fast and as efficiently as possible.

A wireless platform approach eliminates the need for upgrading and deploying miles and miles of physical cable across the airport. Operators are replacing or extending difficult-to-deploy wired networks with equally powerful and reliable — but much less disruptive and costly — service-oriented wireless networks.

Focus on Security

Because of increased security and flight delays, people are spending more time in airports. Security technology solutions are being implemented for threat detection and multi-channel response. Wireless networks enable real-time capabilities through a variety of advanced fixed, mobile and application-specific functions. Among the most important are:

- **COMMAND AND CONTROL SYSTEMS** An end-to-end wireless system leads to a command and control infrastructure that provides for all voice, video and data to be backhauled to a centralized Command and Control Center for decision support and coordination of activities from a wide variety of resources. The command and control network enables real-time management of all security issues and facilitates voice dispatch, text messaging dispatch and computer-aided dispatch (CAD) systems to speed and optimize response.

- **RADIO SYSTEMS FOR EMERGENCY RESPONDERS** Over the years, radio systems dedicated to two-way voice services have helped most airports coordinate the activities of emergency responders. Now, however, as airport police are seeing more and faster access to data and information

> *"It is vital that the industry embraces mobile technology for the workforce. Inefficiencies have been shown to cause 333 days of aircraft delays in the USA alone each year and between 5 – 10% of ramp operations workforce time is wasted due to lack of on-time/real-time information."*
>
> *– Gregory Ouillon Vice President, Portfolio Management & Consulting, SITA*

in the field, many of these radio systems of the past are being augmented or replaced by updated digital systems. New digital radio technologies operating on wireless networks advance intelligence at the emergency responder and command levels and are critical in facilitating the force multiplier effect of effective communications.

- **INTELLIGENT VIDEO SURVEILLANCE** Today's intelligent video cameras integrate with the services-oriented network to provide real-time images from perimeters and other remote or especially vulnerable areas of the facility. Video solutions can include infrared and thermal imaging for night surveillance. Video surveillance also contributes to more effective management of traffic into and away from the airport. In addition, today's video analytics and forensics capabilities allow for both real-time and post-analysis of data.

- **MOBILE DATA COMMUNICATIONS** Mobile connectivity empowers safety and security personnel to assess and address situations in real time through in-vehicle and handheld devices with data capabilities. The mobile network provides the ability to see or capture streaming video, is vendor- and frequency-agnostic and compliant with interoperability standards, allowing real-time communications with local police and other public safety organizations. Benefits include improved situational awareness, streamlined methods of calling for backup if and when it is needed and tight integration with the on-airport CAD function.

- **EDGE SENSORS** An edge sensor network layer enables the airport operator to constantly monitor perimeters and includes connectivity solutions for surface management systems, biological, chemical and radiological sensors, shot detectors, underwater systems, highway sensors, gate/doorway and other layered technologies that enable advanced intrusion prevention, detection and response. All of these technologies can be deployed on and off airport property and connected to centralized functions without wires.

Conclusion

More than ever, today's airports rely on communication to be secure, complex, high-functioning environments. The end-to-end wireless network provides a blueprint for combining divergent environments and creating a functional airport interoperability plan for better communications and overall efficiency.

To help transform inefficient and costly business processes, SITA and Motorola Solutions jointly developed a real-time solution designed specifically for the air transport industry that connects mobile workers at airports to back office systems simply, cost-effectively and securely.

The Mobile Workforce Solution is an end-to-end managed service for mobilizing airport workers which leverages existing investments in business applications to save money and improve productivity. The solution combines Motorola and SITA's ability to mobilize all types of applications and manage wireless connectivity.

Key improvements to and significant business benefits based on a 2010 SITA Benchmark and Pilot Study include:

- Reducing aircraft turnaround times by up to 50%
- Speeding up passenger check-in: up to 147 passengers can be boarded in 12 minutes
- Achieving up to 10% savings in workforce labor cost
- Increasing revenues by up to 20% through improved billing accuracy