Microsoft Enhances Security Vehicle Fleet with Automated, Rugged Video Solution

Overview

Country or Region: United States
Industry: Public safety

Customer Profile
Headquartered in Redmond, Washington, Microsoft is a worldwide leader in software, services, and Internet technologies. Its Global Security (MSGS) group monitors and protects the physical enterprise and its people.

Business Situation
MSGS wanted to improve the effectiveness and streamline the tasks of its security officers as they operate the company's fleet of security vehicles.

Solution
To simplify vehicle-patrol-related tasks, MSGS implemented an automated license plate recognition solution based on Microsoft and IRSA software running on rugged Getac notebooks.

Benefits
- Increased productivity and security through automation
- New analysis and investigative capabilities
- Reduced costs, rapid return on investment

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Microsoft Global Security (MSGS) officers spent too much time monitoring and enforcing parking policies on Microsoft corporate campuses. To address this challenge, MSGS worked with IRSA Video to customize an automated License Plate Recognition solution. Security officers interact with the system through the Getac B300 Ultra Rugged Notebook that runs IRSA-authored client software on Windows 8.1. Officers complete tasks in minutes that used to take hours. Return on investment took only 20 months.

Situation

Microsoft Global Security (MSGS) includes seasoned veterans from law enforcement, military, and public safety communities, former Secret Service, FBI officials, and security technology and intelligence experts. For Microsoft and its myriad customers, MSGS protects people and property from threats ranging from theft to assault.

MSGS also take cares of the necessary task of parking management and enforcement on Microsoft corporate campuses. On the Redmond campus alone, this includes issuing parking permit tags and monitoring parking compliance of tens of thousands vehicles. The budget just for the tags was US$25,000 annually, and the related tag processes have historically been manual.

For example, in the past, Microsoft guests had to pick up their tag from a building receptionist and place it in their car. To get replacement tags or tags for multiple vehicles, employees had to appear in person in a designated department.

The Redmond Campus has roughly 48,000 vehicles registered. Conservatively assuming that employees needed only 15 minutes to register, pick up, and place tags represents a productivity loss of 12,000 labor hours. Additionally, security officers had to cruise through parking lots and verify tag numbers, which was not easy when windshields were blocked or turned away from patrol cars. At some campus locations, there are also issues with tags fading in sunlight. In other cases, some Microsoft staff were concerned about being targeted because the tags identify their place of employment.

"We have 900 sites worldwide, and one of the biggest logistical headaches is parking—assignment, validation, and enforcement of parking policies," explains Brian Tuskan, Senior Director of Microsoft Global Security. "Checking parking passes is tedious, and, when necessary, identifying owners or locating drivers takes a lot of MSGS labor."

MSGS sought to simplify and automate its parking monitoring and enforcement practices, but as part of a broader strategy, it also wanted a more comprehensive solution: Tuskan says, "We wanted to provide a higher level of security—the ability to identify license plate numbers, to immediately and automatically recognize which cars belonged in a particular lot, which ones did not, and which ones may pose security threats." He adds that another goal was analysis. "We wanted the ability to gather parking data to determine if, for example, the company was providing enough spaces in certain areas, if carpool and visitor parking were being efficiently allocated, and if new parking areas were needed."

Solution

Microsoft Global Security decided to complement its existing Microsoft operating system and other enterprise technology with solutions from Microsoft Partner Network member IRSA Video and with rugged notebook hardware from Getac. The result is a license plate recognition (LPR) system that is not only automated but also connected to, and interoperable with, databases that contain detailed information about the cars parked at Microsoft facilities.

Partners' Solution Components
After considering several alternatives, MSGS chose the IRSA In Car Video and LPR solution. It includes a combination of cameras and software that not only captures video, audio, and images but also

provides situational awareness to officers on the ground. It combines data from cameras with data from other systems, such as ticketing and speed detection systems. All media and data are searchable in a secure, web-based system. IRSA uses infrared cameras designed for plate reading.

Another key part of the security solution is the Getac B300 Ultra Rugged Notebook. The notebook is designed to maximize the space available inside the vehicle by using a small docking station footprint. Antennas, peripherals, and power are all available through the docking station.

MSGS chose the Getac B300 because it provides state-of-the-art processors, long battery life, high-bandwidth wireless, and one of the brightest 13-inch displays in the industry. It also operates in some of the most extreme conditions on the planet, ranging from desert heat to polar cold. Thanks to its sealed, fan-less case, it's protected from water, sand, and grit; and

Getac B300 Ultra Rugged 13-inch Notebook

importantly, it has a five-year bumper-to-bumper warranty that protects against accidental damage and exposure to environmental conditions.

MSGS conducted tests on campuses in the Seattle area, starting with one vehicle for a proof of concept and quickly moving to a limited test of two vehicles equipped with the hardware, software, and two cameras. Full production covering the local MSGS vehicle fleet rolled out in May 2013.

Microsoft Components and the Cloud
The solution created for MSGS uses a Microsoft platform, which in this case is hosted in a private Microsoft cloud. (In general, IRSA supports full cloud capabilities through Microsoft Azure, which is a key IT labor-saving and cost-saving benefit.) The LPR solution's platform components include Windows 8.1 to support the user-facing client software; Microsoft SQL Server 2012 for data storage, analysis, and reporting; Microsoft InfoPath for customized forms; Bing Maps for location information; and Windows Phone mobile devices.

"We use Microsoft technology to do the heavy lifting—which means we have much stronger integration capabilities than any code we would have written for Linux, for example," says Tom Guzik, Chief Executive Officer of IRSA Video. "Because the solution is built to run on Windows, it offers maximum deployment flexibility and does away with the need for a trunk full of proprietary hardware or DVD burning."

Summary of Solution Capabilities
Although some work remains to complete the solution, MSGS expects that its new parking security solution will soon be able to:

- Replace the current parking tag system.

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Using IRSA Video cameras (top center), officers verify registration and issue citations without leaving their security vehicle.

- Integrate vehicle data with License Plate Recognition technology.
- Identify unregistered vehicles on campus and detect unregistered and staff vehicles in visitor parking spaces.
- Identify long-term parking violators.
- Detect carpool violators.
- Detect service vehicle violators.
- Integrate with the Visitor Control Center (for candidates, event attendees, and other visitors).
- Alert security officers to persons of interest.

Benefits

By deploying automated License Plate Recognition using Microsoft software, IRSA software and cameras, and the Getac B300 Ultra Rugged Notebook, Microsoft Global Security greatly improves staff productivity and strengthens security at Microsoft facilities. The group also gains new analytical capabilities to optimize resources, and it reduces ongoing costs.

Increased Productivity and Security Through Automation

Tuskan says that the technology was at first a little daunting to security officers who had never seen such comprehensive LPR in action, but it is now very popular with them. "Officers now drive through lots, scanning parked vehicles as they go, and identify vehicles that require us to take some sort of action, which takes officers only minutes instead of hours."

As a specific example, he notes that the LPR solution gives officers the information they need to determine if there is a parking infraction and issue a citation. "We use the Windows client driven by IRSA software on the Getac B300 to print tickets inside the car," says Tuskan. "This is much faster than getting out and writing a ticket by hand."

When these timesavings are extended across parking lots with 50 to 100 cars, a typical facility can save significant labor hours. Additionally, the system has a 90 percent capture rate, which means errors are few and officers have to stop and manually check numbers only occasionally.

The solution has also had a positive impact on officer and employee safety. "The LPR system can identify vehicles associated with persons of interest—someone who might pose a risk to the campus," says Tuskan. "These might include people who have threatened our employees, or anyone we believe might be unwelcome or warrant closer attention."

Finally, Tuskan notes that officers appreciate the fact that they don't have to look at the Getac screen in order to get security alerts, that finding information through the client software is intuitive, and that search capabilities are robust.

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The entire fleet of security vehicles for the Redmond Campus are now equipped with the LPR solution.

New Analysis and Investigative Capabilities

Because the new solution stores parking data (and data in general as officers conduct their patrols), Microsoft SQL Server analysis and reporting tools provide MSGS with key insights to optimize resources. "Are we providing enough parking in particular areas, and are people parking in the proper places?" Tuskan asks. "Are carpools and visitor parking spots being properly utilized? Do we need more spaces in different locations? We now have both data and analytical tools to find these answers."

The solution also offers tools for after-the-fact investigations. If an incident does happen on campus, whether it's a collision or theft, MSGS has the ability to retrieve records of what vehicles were parked where during the incident, and then do follow-up interviews with vehicle owners.

The ability to investigate incidents plays an important role in maintaining the open campus environment that's part of Microsoft corporate culture. "Redmond is an open campus, more like a community or a college campus," says Tuskan. "There are no gates here. The new solution enables us to better protect that type of environment." He also notes that the solution can scale, without limit, as the campus grows and as his group is tasked with protecting more facilities—all with minimal investment, thanks in part to cloud support. Consequently, Tuskan envisions eventually deploying the solution worldwide.

Reduced Costs, Rapid Return on Investment

Tuskan notes that going with the Getac/IRSA solution has already proven itself cost-effective, with both an initial on-budget price and minimal annual outlay for maintenance and repair. He says, "We were able to pay off our acquisition cost in the first year. Taking all expenses into account, we achieved full ROI [return on investment] in 20 months. Knowing that we're saving money after only 20 months is very satisfying."

MSGS expects ongoing cost reduction of tens of thousands a year after full implementation.

"A solution with such comprehensive capabilities will never be snapped into place right out of the box," Tuskan concludes. "Nevertheless, a key takeaway from this project is that automated license plate recognition can be flexibly adapted to meet the needs of diverse facilities, quickly and cost-effectively, and bring them valuable tools for better security, analysis, and productivity."

For More Information

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For more information about Getac, call (949) 681-2900 or visit the website at:
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