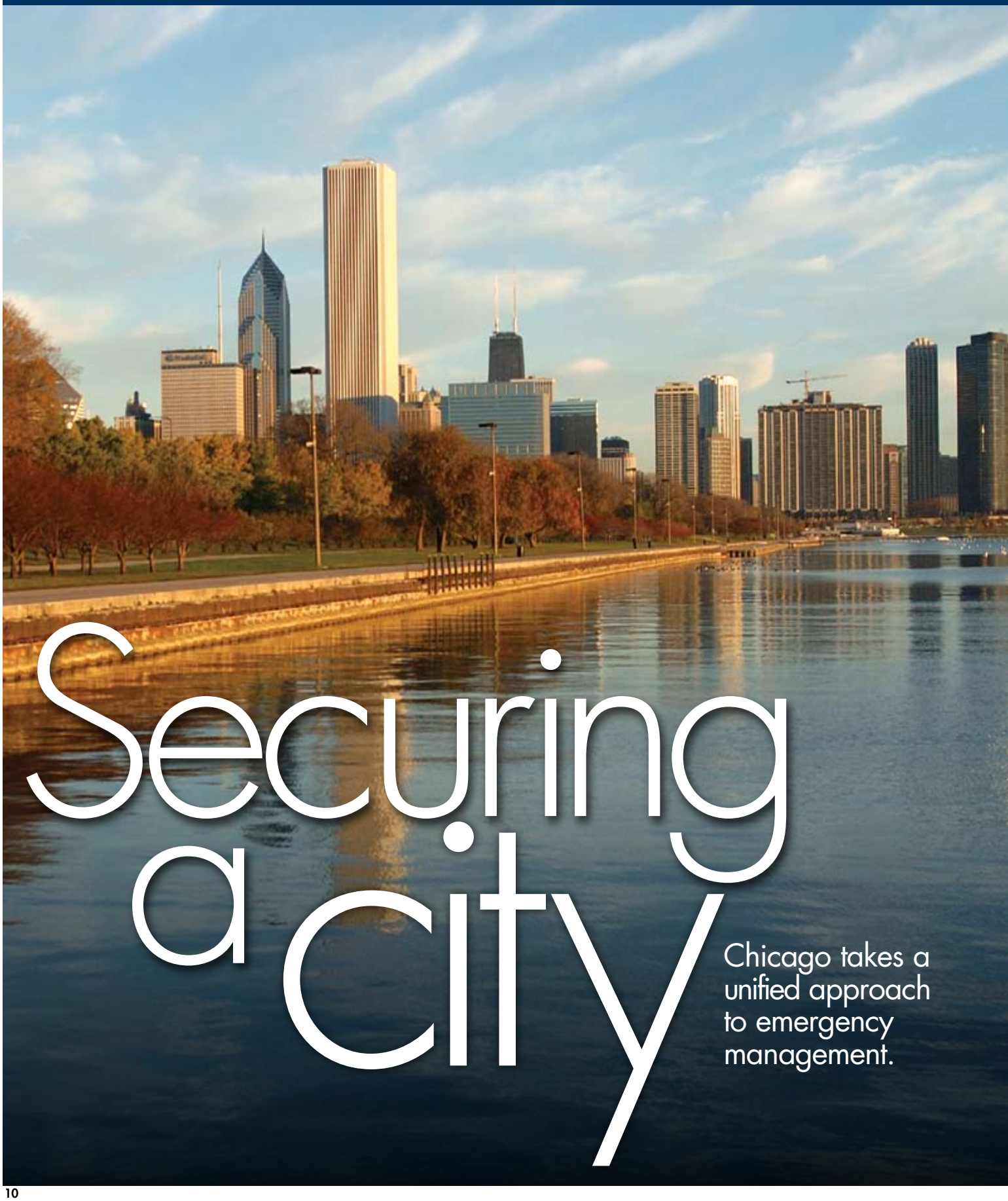

Securing a city

Chicago takes a unified approach to emergency management.

Chicago houses multiple emergency response disciplines in a single operations center, improving its disaster management capabilities.

When half a million people arrive in Chicago this summer for the annual Taste of Chicago festival, the city's Office of Emergency Management and Communications will be ready for any eventuality.

OEMC officials expect to deploy a new Unified Communications Vehicle (UCV) on site to monitor activities, coordinate public safety operations and direct any necessary emergency response during the 10-day event.

The UCV is brimming with technology, including an array of satellite dishes, nine servers and a large complement of wireless laptops. With the ability to support 120 voice over IP phones and 50 cellular connections, the rig can establish a complete 911 call center in the field, as well as handle comprehensive police and fire dispatch.

Customer snapshot

Agency: Chicago Office of Emergency Management and Communications (OEMC)

Mission: The Chicago OEMC is responsible for 911 communications and coordinates emergency management operations for the nation's third-largest city.

Business case

Requirement: Using a coordinated approach, the Chicago OEMC is charged with responding to emergency incidents of all sizes in the city.

Solution: In addition to the city's highly integrated emergency operations center, the OEMC now has a Unified Communications Vehicle, which enables city staff to continue operations from any location. The OEMC also uses surveillance cameras to enhance response to incidents and analyze data with an eye toward more efficient city management.

Results: The Chicago city government now can continue operations in an alternate location in the event that it is unable to return to government buildings. The OEMC can use surveillance cameras to increase situational awareness when responding to 911 calls, and historical surveillance data will help the city improve services.

"In a worst-case scenario, we could assist in the continuity of city government right from this truck."

Jim Argiropoulos, managing deputy director of information services, Chicago OEMC

The vehicle enables OEMC officials to re-create the agency's high-tech operations center—and maintain continuity of government oprations—at any location in the city, according to Jim Argiropoulos, managing deputy director of information services for the Chicago OEMC. Satellite links between the UCV and information systems in the OEMC operations center give the mobile unit access to virtually all resources available in the agency's main facility.

"In a worst-case scenario, we could assist in the continuity of the city government right from this truck. We have the seats, we have the capacity and we have the computing power," Argiropoulos said. "In a more moderate event—a commercial airliner accident, for example—we could bring the truck to the site, establish communications and assist with coordinating police and fire activities at the scene."

At this year's Taste of Chicago event—an annual tradition that draws exhibits from nearly 70 restaurants—the UCV will be the centerpiece of on-site security and emergency response operations. A video camera atop a 50-foot mast on the vehicle will give OEMC officials a bird's-eye view of the festivities. In addition, technicians aboard the rig will be able to tap video feeds from a network of remote cameras scattered throughout downtown Chicago to watch for trouble.

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Data integration solution

The Chicago OEMC operates a tightly integrated information platform based on its 911 system. HP technology supports integration strategies.

Photo by Loren Santow

Coordinated approach

The Unified Communications Vehicle mirrors—on a smaller scale—the capabilities found in the OEMC's recently completed Operations Center. The high-tech center supports some of the nation's most tightly integrated public safety and emergency response operations—housing under one roof everything from a 911 call center and police and fire dispatch, to video crime surveillance, homeland security and towing services.

"We've taken a very comprehensive, hand-in-glove approach," said Argiropoulos. "We have strategically augmented our operations floor by creating this hub of information."

Locating multiple public safety and emergency management disciplines in a single facility yields powerful results by promoting better communication and cooperation.

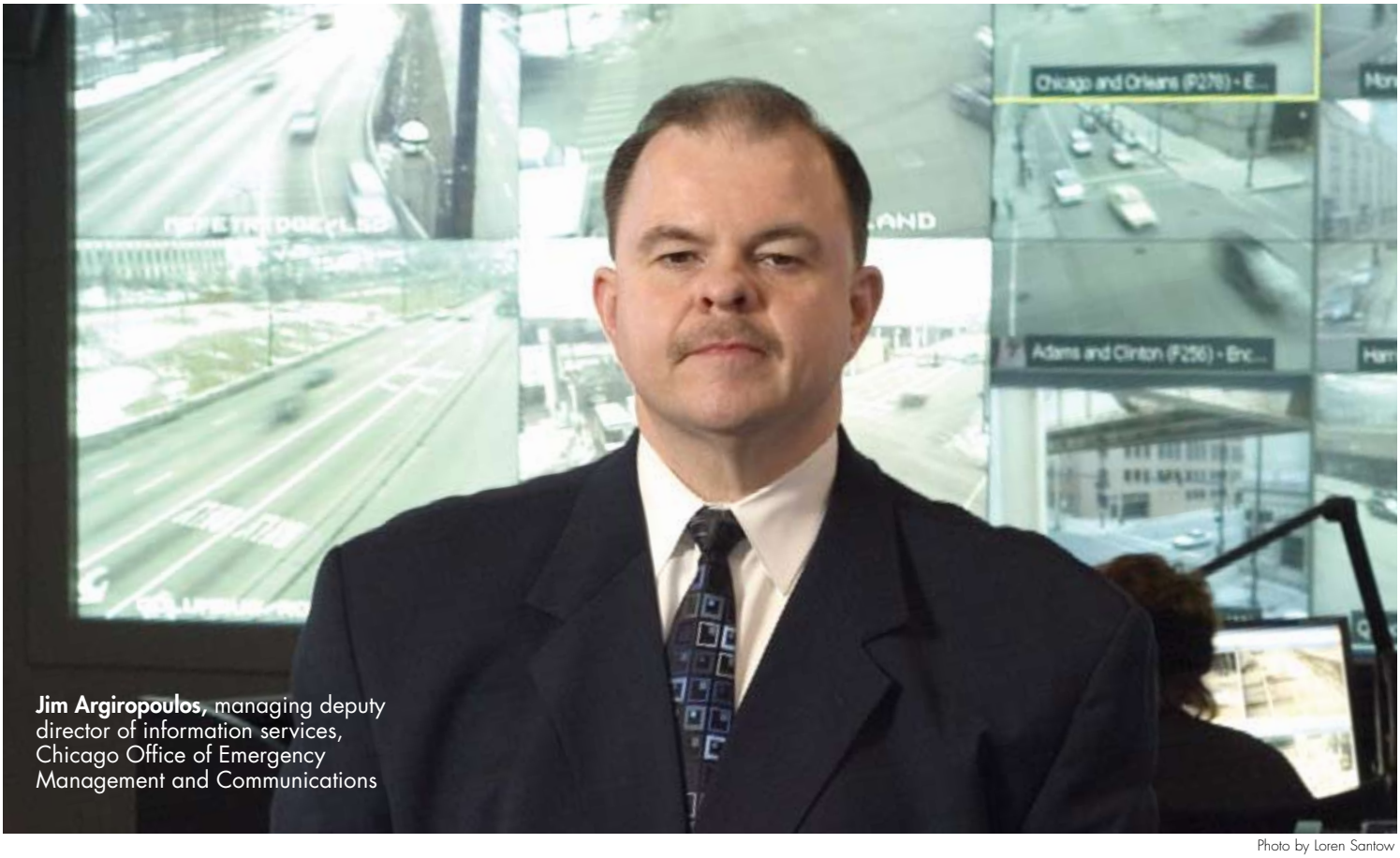
If, for instance, an explosion occurred in downtown Chicago, a series of OEMC response activities would spring to life. When the 911 operator received the call reporting an explosion, police, fire and emergency medical personnel would be immediately dispatched to the scene. At the same time, homeland security experts would start scouring local, national and international intelligence sources for evidence of terrorist activities.

While emergency responders rushed to the scene, OEMC crime detection specialists would use Chicago's video camera network to survey the disaster site and surrounding area, looking for evidence of foul play and providing incident information to emergency personnel before they arrive. In addition, city and private tow trucks would be dispatched to clear vehicles blocking fire hydrants and access roads at the disaster site.

Building the right tools

Chicago's highly synchronized emergency operations are supported by an equally well

The Chicago Office of Emergency Management and Communications' Unified Communications Vehicle can serve as a complete 911 call center in the field.



Jim Argiropoulos, managing deputy director of information services, Chicago Office of Emergency Management and Communications

Photo by Loren Santow

coordinated technology infrastructure. The OEMC's 911 system is the focal point of a tightly integrated information and communications platform, Argiropoulos said.

"We've really built on our multi-million dollar core of 911 gear, instead of ripping and replacing separate systems or trying to hook them together using IP interfaces," he explained. "We bring all of the video imaging, all of the information databases, all of the satellite data into the same facility. So we're all on the same page and we're all talking to exactly the same systems."

The OEMC's operations center and Unified Communications Vehicle both use HP technology. Fault-tolerant servers power Chicago's 911 system and critical emergency response databases, and dispatchers and technicians on the operations floor use HP desktops and workstations to access the data they need. The UCV carries an array of HP servers and wireless notebooks to support sophisticated mobile operations.

Argiropoulos, a 27-year emergency response veteran and former paramedic, ensures that OEMC technology responds to the real-world requirements of Chicago's police officers, firefighters and emergency medical personnel.

"I've been out there on the street; I understand what it's like to see human tragedy at its worst," he said. "We implement the most methodical strategies possible with a strong emphasis and vision on what the first responder needs."

Getting the picture

Chicago is making growing use of video to strengthen emergency response and improve safety for citizens and first responders. The city recently completed a $28 million project to deploy hundreds of remote video cameras linked to OEMC facilities by miles of fiber-optic network.

The video network is integrated with Chicago's 911 system, allowing OEMC crime detection specialists to scan crime scenes or incident sites after an emergency call arrives.

"When a 911 call comes in, the dispatch system instantaneously polls the video server. If there's a camera within 150 feet

> "We've really built on our multi-million dollar core of 911 gear, instead of ripping and replacing separate systems or trying to hook them together using IP interfaces."
>
> **Jim Argiropoulos**, managing deputy director of information services, Chicago OEMC

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End-user solution

Personnel in the OEMC operations center use sophisticated end-user technology to access information they need. HP desktops and workstations reliably support critical operations.

of the caller's address, it sends an alert to the crime detection specialists," Argiropoulos said. "They'll dial up the camera and use the pan, tilt, zoom capabilities to look at the situation. If they find something relevant to officer safety or to help that responding officer, they have a digital radio system in front of them to contact the responders on the way to the incident."

In addition, Chicago is in the early stages of implementing advanced analytics capabilities that will add intelligence to cameras and sift through days' worth of stored video searching for suspicious activities and useful trend data.

"We're setting dynamic algorithms depending on the placement of the cameras that will look for suspicious packages and suspicious persons, or watch traffic flow," Argiropoulos said. "We can set a camera to send an alert if anyone drops a package within its viewing angle for a specified length of time."

Since Chicago must, by law, retain video captured by remote cameras, the OEMC also will use analytics to extract valuable insight from the stored footage. "We're required to store it, so we want to make the most of the situation," Argiropoulos said. "By implementing the analytics, we can start to build metadata models from the video. So we can start to look at trends analysis of when intersections are busiest and which locations have traffic congestion."

City officials expect the data will allow better management and planning especially in matters involving crowd movement, pedestrian flow and traffic management.

Of course, the video-retention requirements generate significant demand for storage. The OEMC stores 56 terabytes of video data on fiber channel storage arrays, Argiropoulos said. "We're really taking our video analytics to the next level. There's a ton of intelligence there, and it's waiting for us to pull it out."

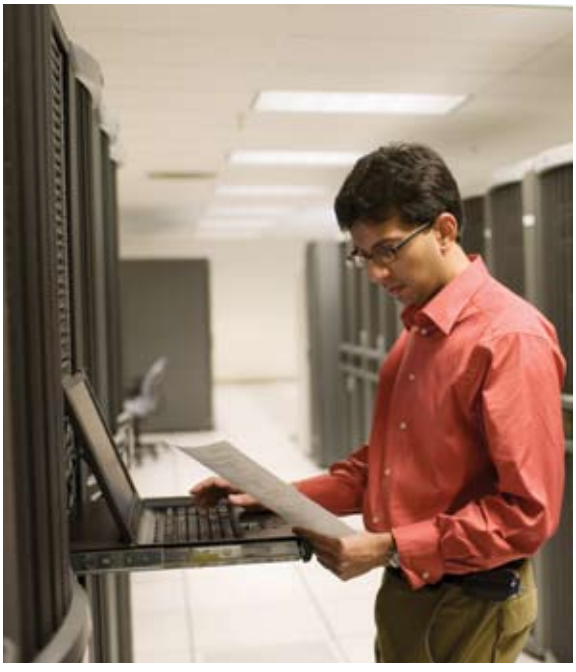
Strong leader

Chicago has unified its emergency response resources to a degree that's uncommon among major cities—both from an operational and technological perspective. Argiropoulos credits Chicago Mayor Richard M. Daley with driving a strategy of cooperation among public safety agencies.

The approach, Argiropoulos said, creates a safer community for city residents.

"We have a very strong mayor, with a very strong desire to ensure that public safety is of paramount importance and that police, fire, EMS, homeland security, and health and human services all work as one, in unison, as a family," he said. "It's a no-nonsense approach to running city government, and it makes our job easier because we don't have to worry about turf battles.

"At the end of the day," he added, "that makes a big difference to those 3 million people out in Chicago that we serve." ■



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