ON JANUARY 15, 2009, Capt. Chesley “Sully” Sullenberger glided US Airways Flight 1549 to a smooth water landing on the Hudson after a flock of birds caused complete engine failure. The plane’s splash landing into the river sent local ferry boats and first responders motoring toward the scene. The quick response, combined with Sullenberger’s skill, meant there was, miraculously, no loss of life. While those events have been widely reported, less appreciated was how the city leveraged video feeds from news networks, traffic cameras, and its own mobile video units and shared them with incident commanders and first responders, dramatically improving their situational awareness.

This capability owes its existence to post-9-11 efforts to overcome the interoperable communications challenges first responders experienced that day. The process began when New York City awarded Northrop Grumman IT (NGIT) a $500 million contract in 2006 to construct the New York City Wireless Network (NYCWiN), a citywide private and secure wireless network dedicated to first-responder communications. The network, managed by the city’s Department of Information Technology and Telecommunications (DoITT), was designed to enhance emergency communications by enabling high-speed, mobile access to myriad data and video applications.

While the NYCWiN network had no problem providing a point-to-point video stream, sharing video among multiple entities proved harder. But video sharing was integral to the system. With this capability, New York City could collect, stream, and share video images of an incident from disparate camera sources in real time during a crisis, bringing revolutionary situational awareness to first responders and incident command.

To build DoITT’s Interoperable Video System (IVS), NGIT went looking for a software vendor that could provide the desired interoperability. It found VidSys, a 5-year-old start-up that offers VidShield/RiskShield, a physical security information management (PSIM) software solution. The VidShield/RiskShield software acts like an “operating system” for tying together disparate physical security “applications,” explains founder and CTO James Chong. The open platform allows an authorized user to integrate the software used by various security devices and systems, regardless of manufacturer, and control and view them together in a common Web-based environment. Chong likens the VidShield/RiskShield information presentation to a race car driver’s dashboard—it provides everything the user needs to make a split-second decision.

While the PSIM can manage data, voice, and video, New York City initially used the software to access and manage the various static and mobile cameras from private and public sources stretching across its 300-square-mile urban jungle. They are now expanding to include other sensors and mobile assets, including transportation systems.

The Web-based aspect of VidSys was crucial for DoITT, because it allowed the city to centralize control of all video feeds while also allowing secure remote access to those feeds from anywhere; authenti-
cated users can log on to the application’s interface wherever there’s a way to get an Internet connection. “What VidSys allows us to do is have this video integrated from either mobile or fixed cameras and through NYCWiN be able to share that video amongst and between all these different responding entities,” says DoITT spokesman Nick Sbordone.

This means first responders in the field can access video feeds of an incident on their laptops and hand-holds while City Hall and incident command centers at the New York City Fire Department (FDNY) and Office of Emergency Management can see the incident in real time and coordinate responses better. In the past, first responders had to rely on radios and cell phones to describe to their particular command centers what was happening on the ground rather than “a commander being able to see it live,” according to Steve Harte, DoITT’s associate commissioner for wireless technologies.

Approximately six weeks after the system went live in December 2008, Sullenberger’s emergency landing on the Hudson presented the first big test of its capabilities. As soon as the emergency calls were received, authorized VidSys users were able to log on to the application and access the best available video feeds from the interface menu. In this instance, the best video available came from net-work news helicopters hovering above because the plane continued to drift downstream during the response. The VidSys PSIM captured these televised images and allowed first responders on location and traveling to the scene to log on and watch the video in real time whenever they had an Internet connection.

“We’re talking about first responders, in the field—at or on the way to the incident—with real time video from a unique vantage point streamed right to their vehicles or tablets,” Harte said. “So rather than simply hear a description of what’s going on at the scene over the radio, responding units can actually see exactly what they’re getting into as well.”

Additional video feeds came from a specialized mobile unit of the FDNY, called the Command Tactical Unit (CTU), which was deployed to the piers off the Hudson River when the initial calls of the plane crash were received, says Peter Mandel, NYCWiN’s program director. The truck is sent to significant incidents, such as two-alarm fires or greater, and unusual events like the Hudson River crash, giving VidSys users even more camera angles to choose from during big events.

Arriving at a scene, CTU operators set up wireless cameras, activate the vehicle’s tower camera, and build a wireless network to send video footage back to the fire department’s operations centers. Both CTU staff and operations staff can control the cameras up to 180 degrees and zoom in on a target, ensuring they get optimum situational awareness.

An additional benefit of the VidSys Web-based, centralized video solution is that it breaks first responders’ dependency on news coverage. In the Hudson plane crash incident, for example, the news cameras hovering above went away as the drama of the active rescue ended. Prior to VidSys, this would have meant that incident commanders and first responders had no more access to video. But in this case, the CTU continued to follow the plane’s carcass as it floated downstream, giving incident commanders and first responders situational awareness until the plane was finally secured and tied to a lower Manhattan dock.

“Often the incident scene continues well beyond the time of the story,” says Mandel. “What VidSys provided was an extended video viewing capability far beyond what the network was providing an average citizen.”

The marriage of VidSys and NYCWiN is one of those “things you don’t notice until it comes into play in an event like the Hudson River rescue,” DoITT Commissioner Carole Post says. “It’s really a mission critical and day-to-day operational tool that is transformational for New York City.”

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