Photo Courtesy of AVI-SPL, February 2013

Crestron control and Crestron Digital Media™ make error-free operation practical in a stressful emergency situation.

Challenges

It had been over 30 years since the city of Minneapolis faced a large-scale emergency when the I-35W bridge collapsed into the Mississippi River in 2007. In the months after the incident, the Federal Emergency Management Agency (FEMA) studied the city's response. While they concluded that the police, fire and other agencies had handled the situation well, they recommended that the city build a larger, unified emergency operations center.

Because large-scale emergencies are rare, city officials felt that a multi-use facility would be their best investment. They set about building a facility that would provide world class police operations support and first-responder training, as well as command, control and analysis of major events, incidents and emergencies.
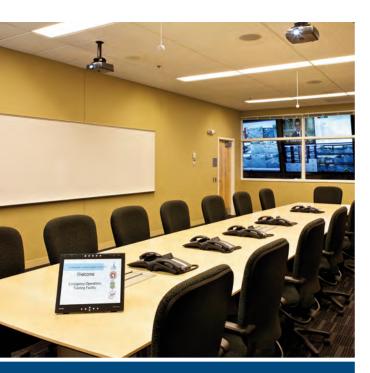
At the heart of this new Emergency Operations/Training Center (EOTF) is a sophisticated audio/video monitoring and communications system designed by AVI-SPL, based on Crestron DigitalMedia™ and Crestron control technology.

Solutions

The new facility has three main components. First, the Strategic Information Center (SIC), with a highly flexible multi-screen video wall, is used 24/7 to support the day-to-day operations of the Minneapolis Police Department.
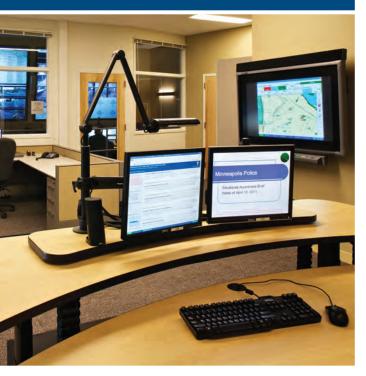
The SIC enables police analysts and commanders to support officers in any situation where they ask for backup. It's fed by a network of cameras deployed by the Minneapolis police including permanently mounted cameras placed in high-traffic and commercial areas. and portable cameras on squad cars, helicopters and mobile camera trailers. "We can look at a video feed and understand a situation almost instantly," says Deputy Police Chief Robert Allen. He adds that responding officers especially value the live feeds as they are traveling to a call. "With this new technology, we can see something happen even faster than a police officer 50 feet away."

Photos Courtesy of AVI-SPL, February 2013

Second, five additional rooms, called the Emergency Operations Center (EOC), are available with the SIC for use in any large-scale emergency. These include rooms for command, finance, logistics, operations and planning, housing city officials and specialists in each of these areas.

One of these rooms, the Incident Command Room, is reserved for the chief of police, fire chief, mayor and other municipal leaders in a large-scale emergency, but may be used on its own for a smaller incident or event. It contains all of the capabilities and controls of the full EOTF, and it can emulate the larger command room on a smaller scale.

"One important difference between the five rooms of the EOC and the SIC with its video wall is that the EOC may be manned by public officials, planners, even media members," says Gerry Pehl, design engineer for AVI-SPL. "The SIC, on the other hand, is open only to a limited number of trained analysts, investigators and supervisors. While others may view their work through an observation window, they are not allowed to distract them."

Third, the five rooms of the EOC are also used as a training center by the Minneapolis Police Department, Fire Department and the city's Emergency Management Department, as well as several regional partners. When used for training, a larger combinable room may be divided to accommodate smaller groups.

"It's crucial that these rooms are used on a daily basis, even though the type of emergencies envisioned by FEMA may be years or decades apart," Pehl explains. "When and if 'the big one' happens, the city needs to know that the facility will work properly, and emergency leaders and staff have to be comfortable using it."

As part of its training mission the EOTF as a whole is used to monitor large public events, such as city parades, playoff games and, coming up in 2014, the Major League Baseball® All-Star game. These 'dress rehearsals' offer an added measure of security for major events, since the facility is manned and instantly available should something go wrong.

The AV systems throughout the facility are quite sophisticated.

Photos Courtesy of AVI-SPL, February 2013

Twelve computer workstations in the SIC receive transmissions from hundreds of remote cameras via a city-wide WiFi® network. Operators, in turn, route these images to three projectors. Three Crestron DVPHD-PRO multi-window video processors allow each of these screens to be divided into as many as eight images for a total of 24 images across the three 10' x 13.3' screens. Since each computer can display 30 or more camera windows, analysts can display hundreds of camera views simultaneously. The net result is a 10' high by 40' front-project video wall that can show a detailed panorama of areas across the city or instantly zoom in on one.

Other equipment in the facility includes five video conferencing systems, three annotation devices, and eight satellite TV receivers for monitoring local and national news. Normally these sources are reserved for the EOC rooms, but a Crestron DM32X32 DigitalMedia switcher can route any source to any display in the facility.

Crestron DigitalMedia technology makes the extreme flexibility of the EOTF possible. The system can accept any analog or digital video signal and transmit it over twisted-pair network wiring at full resolution without compression. "Because the city's emergency operations rely heavily on broadcast television as an information source," says Pehl, "it was critical that the system be HDCP compliant. We never wanted to allow the possibility that some change in a satellite service or cable television could just shut the system down – a key reason we wanted to use the Crestron DigitalMedia system."

Crestron control makes error-free operation practical in a stressful emergency situation. AVI-SPL installed a six-inch touch screen near the door in each room, but, according to Pehl, "In reality we rely on Crestron XPanel software to make this system work. Any authorized user can control the entire system from any PC in the facility, making it as close to fail-safe as possible." AVI-SPL programmers worked hard to ensure that system operations are very simple and intuitive. "We can't afford to have something go wrong in an emergency, even if some of the users have little or no familiarity with the system."

Results

The Emergency Operations/Training Facility and its video systems have been very well received by the city. Lisa Dressler, Director of Emergency Management, says that "The technology in this building is amazing. We couldn't be more pleased with how it's used and what we can do with all of it."

The facility has been recognized with a number of awards, including a Pro AV Spotlight Award for 'Best Government AV Installation,' and the Minnesota Tekne award for Technology Excellence in a Non-Profit Organization.

Jesse Garcia III, a sergeant in the Strategic Information Center, sums up the feeling across the city: "This is the benchmark and we want people to either meet it or exceed it."

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