The Big Picture
Activu and Mitsubishi team up to help New Jersey emergency center create real-time situational awareness

It was the largest Atlantic hurricane in recorded history, with winds spanning an area of 1,100 miles and damages estimated at $68 billion. It killed at least 286 people in seven countries, from Jamaica to the Jersey Shore.

While tropical storms like Hurricane Sandy are an ongoing challenge to emergency operations up and down the East Coast, they're not the only ones. According to Scott Di Giralomo, the Director of the Department of Law and Public Safety for Morris County, New Jersey, communities must be prepared for major winter storms, fires, criminal activities, even earthquakes, since the county rests on a large, if inactive seismic fault. Terrorism, though rare, is always on planners' minds. The Boston Marathon bombing took place just 250 miles from the Morris County safety complex in Parsippany, and the World Trade Center attack was just 25 miles away.

For all of those reasons the county began planning a new emergency management facility in 2007, and they began operating it last October. The weather-hardened structure contains some of the most advanced visualization and

Scott Di Giralomo
Director, Department of Law and Public Safety

communications systems available, including a command and control system designed by Activu Corporation.

The ability to see the entire situation and act intelligently based on the facts is crucial to an operation like this," says Paul Johrden, Activu Regional Sales Manager for the Rockaway, NJ-based firm. Activu is a software and integration company specializing in network-based, large-scale visualization and collaboration systems. At Morris County, these systems include two large display walls using a total of 30 Mitsubishi rear-projection cubes powered by their new, low maintenance LED light engines.

County-Wide Emergency Management

Morris County is an area of north-central New Jersey covering 481 square miles, with a population of about
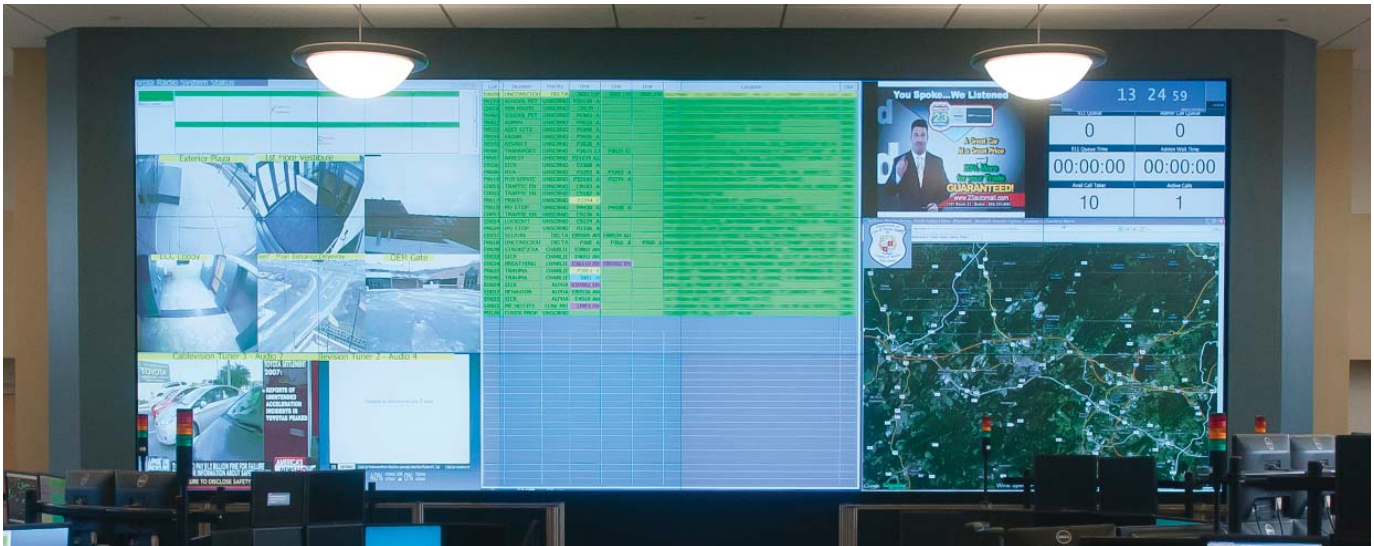
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492,000. Located directly west of New York City, its largest towns include Parsippany, Troy Hills and Rockaway.

The new facility was built as an addition to a public safety complex which provides services to nearly every community in Morris County. The addition includes two major control rooms for emergency management.

The Emergency Communications Center, or ECC, serves as a combination 911 call center and a dispatch room for 23 participating towns' police, fire and emergency medical services. It's manned 24/7/365 with up to 36 public safety

on the number of 911 calls being processed, the status of the radio systems, a summary of open events and what emergency units have been assigned, and the GPS locations of emergency vehicles throughout the county. Using this information, public safety telecommunicators can easily find the nearest available responder to send on any call, and supervisors can see at a glance the status of their staff, immediately bringing additional resources in as needed.

The space also includes 12 individual 52″ flat panels to display additional information, and the ECC supervisor, operations manager, chief of telecommunications and ECC

telecommunicators at their own communication consoles. A three-high, six-wide display wall using eighteen 67″ Mitsubishi XGA rear-projection cubes gives public safety telecommunicators and supervisors an at-a-glance view of all emergency activity going on in the county.

Sources include weather and news feeds, cameras in emergency vehicles and aircraft, traffic cameras and some security systems. "We also use an application called Mutual Link, so that first responders with iPads can stream still and video images to us from the scene of an accident or crime, and we can stream images back to them," Di Giralomo explains. "In addition, we have relationships with various organizations who can give us feeds from their facilities during certain events. For example, if there's an incident in a school, they can turn their security cameras over to us, and we can pump those images out to tactical teams and command posts."
The display wall also routinely shows statistical information

director each have one or more 52″ displays in their work areas which can take feeds from the Activu network.

"The challenge in building a system like this," Johrden says, "is pulling all of the right information together." Because many of the necessary data feeds are very sensitive and running on a secure network, it takes a specialist like Activu to aggregate them into a stream of useful visual information that can be shared across different locations and devices. The Emergency Operations Center, or EOC, accesses these same network sources, but serves as a large-scale emergency and large event command center to be opened, as needed, in addition to the ECC.

The EOC can accommodate up to 85 people, each with his or her own laptop or tablet, phone and/or radio. Depending on the type of emergency, these might include representatives of the police, fire, EMS, utility companies, human services agencies, the National Guard, political leadership, even local

businesses or chambers of commerce. They are seated at tables which can be configured in three different ways, each position with AC power plus wired and wireless access to various public and private-sector networks.

The EOC display wall consists of twelve 67″ Mitsubishi projection cubes in a 2 high x 6 wide configuration displaying information critical to a 'common operating picture' for everyone at work on the emergency. Eight additional 52″ flat-panel displays are available for specific informational sources, and two interactive whiteboards connect to other whiteboards in the building plus the Activu display network. "One of the lessons we learned from Hurricane Sandy was that an emergency can be larger than any EOC can accommodate," Di Giralomo says. For that reason, the Activu network includes two breakout rooms and a situation room with 52″ or 70″ displays plus 52″ displays in supervisors'

offices. "We can use these displays like mini-display walls of our own, giving one or two people the ability to view the entire situation," Di Giralomo explains.

Ready for Anything

Di Giralomo says a crucial concern in the development of the emergency center was its ability to function under any conditions. "We built the facility to withstand earthquakes as well as major storms," he explains. "It also had to be ready for simple things like electrical failures and water system failure. We included redundancy in the building's HVAC systems, so that our people could continue working through catastrophic events even in very hot or very cold weather."

In the same way, the systems had to be exceptionally reliable, since it might not be possible to replace a device or even secure the help of a technician during an emergency.

"We also worried about maintenance costs," Di Giralomo adds. "In government, you never know what your funding situation will be even two or three years down the road. We knew we had our capital investment covered, but we did not want to invest all of this time, money and effort only to find our operating budget cut to a point where we could not keep these systems running."

For those reasons, the new LED-based Mitsubishi projection cubes were extremely attractive to the county, given their expected useful life of more than 80,000 hours, or roughly 9 – 11 years of 24/7 use. Johrden adds that, even when the Mitsubishi cubes reach the end of their service life, they can be updated by simply exchanging the light engines. "There's no need to replace the infrastructure, cabling, software, or even rebuild the wall itself. You simply open up the cabinets, swap out the light engines, and you're good for another nine years or more."

Another crucial advantage of the LED-based cubes is their ability to run far cooler than lamp-based units. "Not only do they lower the county's energy costs, but they made it possible to create much smaller HVAC and AC power backup systems than they would have otherwise needed," Johrden explains. The reduced need for infrastructure fits well with Di Giralomo's goal of keeping long-term maintenance costs at a minimum.

Di Giralomo says the county has been extremely pleased with the performance of the Activu systems so far. While it's true that there has not been a large-scale emergency like Hurricane Sandy, they use the EOC regularly for exercises and manned it for Super Bowl XLVIII, which took place in nearby Bergen County. During the Super Bowl weekend, they used the EOC to help handle increased traffic and be ready for any crowd-related emergencies.

The region has big plans for additional emergency centers. According to Di Giralomo, the Morris County EOC was created as part of an initiative to link emergency facilities in seven New Jersey counties and two large cities via Activu systems. "Once all of these centers are installed, we will have the ability to share our network feeds and real-time situational awareness with each of them. If there is a problem in Newark, for example, we will be able to help support them, and they will be able to support us."