IP-Based Communications Survive Florida Tornadoes

Mar 27, 2008, By Joy DeFay

IN THE EARLY MORNING HOURS of Feb. 2, 2007, a series of violent tornadoes ripped through central Florida. The first hit Sumter County just after 3 a.m., and then moved through Lake County and onward to Volusia County.

Frightened residents reported sounds like a freight train, along with continuous lightning, high winds and flying debris.

By the time the tornadoes dissipated, more than 20,000 residents between Marion and Volusia counties were reportedly without power. Two areas of Lake County — Paisley and the highly populated Lady Lake — were devastated. In addition, communication in the Paisley area was knocked out.

"We lost a communications tower, which created a huge hole in one portion of our network," said Greg Holcomb, communications technologies manager for Lake County Public Safety. With the tower down, coverage was literally nonexistent to and from radio towers, leaving first responders completely isolated from those not at the scene. And it's imperative that emergency workers communicate directly — radio to radio — with responders and other public safety officials off-site during an event.

But thanks to the Florida Interoperability Network (FIN), which uses Motorola's MOTOBRIDGE™ IP hardware and software, communication among emergency response personnel in Lake County and the other counties affected by the tornado went virtually uninterrupted. This gateway device converts data and allows networks to be patched together, and was designed to facilitate communication among disparate networks when disaster strikes.

"Had the gateway not been in place, our surrounding counties could not have assisted in patching mutual aid radio channels from their system to the first responders," Holcomb said, adding that using MOTOBRIDGE, Volusia County assisted communications by patching in coverage to make up for the loss of Lake County's tower. "We patched the mutual aid system using the MOTOBRIDGE to cover the areas of the county we had communications in."

Statewide Interoperability

FIN — whose goal is to provide secure interagency and interoperable communications for Florida's public safety community, including users with dissimilar systems, as well as enable more timely and effective emergency responses to critical events —

signed its contract with Motorola in October 2004. Another goal of the network is to utilize on a daily basis the MOTOBRIDGE technology, which lets federal, state and local agencies connect during crises when communication is most critical and most likely to be lost.

Mutual aid agreements also are part of FIN, and were utilized during the tornado response — eight counties, the Florida Highway Patrol, the Florida Department of Law Enforcement, the Governor's office and volunteers all helped Lake County.

Part of what allowed these other entities to help is that MOTOBRIDGE IP is frequency- and vendor-agnostic, providing a high level of interoperability, said Scott Adler, vice president of Government and Commercial Markets for Motorola.

In Florida, the gateway connected hundreds of systems together in seconds. "MOTOBRIDGE allowed Lake County to jump on mutual aid networks that had been prearranged," Adler said. "Without the MOTOBRIDGE technology, the county would have had a difficult time connecting to an operable, or surviving, network."

Holcomb said the recent tornadoes illustrate the type of event for which the gateway is designed. "It shows the partnership of how the MOTOBRIDGE works ... being

a statewide system, and multiple agencies actually having the capability to use it."

Lake County implemented the gateway device in the Sheriff's Department, Lake Sumter EMS and Lady Lake, as well as Volusia, Marion, Sumter, Polk, Orange, Seminole and Osceola counties.

The gateway terminals, Adler said, are housed in 225 to 230 dispatch centers across Florida. "That really allows those dispatch centers to patch multiple networks — into the hundreds — just within Florida," he said. "And if we expand that to a national level, I think it's fair to say we've got hundreds of systems throughout the United States that leverage this technology."

Other states that use the technology include Georgia, Alaska, central Maryland and Virginia. Motorola spokesman Steve Gorecki said 32 states currently use some form of a statewide communications system that allows emergency personnel — police, fire and various agencies — to communicate with one another. Of those 32 states, 29 use Motorola systems as the operating basis for the statewide system.

MOTOBRIDGE complements those systems, allowing other networks — networks whose service may be provided by another carrier — to communicate with one another.

For example, Michigan employs a Motorola statewide system. If during a disaster, the state needs to use an agency or county that's operating on a system provided by another vendor, MOTOBRIDGE would connect the two networks.

"That's the key to MOTOBRIDGE: It allows the patching together of disparate networks, whether it's different vendors' networks, or different types of frequencies," Gorecki said. "MOTOBRIDGE in those states is a complementary aspect of those statewide systems."

Practice Makes Perfect

Planning and training for this type of technology is important, Adler said. "One of the things I think is very important to note," he said, "is that technology is only as good as the regional planning done beforehand to understand protocols and logistics."

Gorecki agreed.

"The technology is one thing, but for any communications technologies to work for a disaster or an emergency response like this — where you have multiple jurisdictions coming into play — [you] need regional planning," he said. "And here in Florida, and other places where MOTOBRIDGE has been deployed, a prerequisite for that is the agencies work with each other and know the plan going into it."

Worth the Cash?

Though some counties use interoperability tools only when absolutely necessary, Lake County reported no difficulty using the technology during the recent tornadoes, Holcomb said, because FIN's goal was to use the technology daily.

One way Lake County is accomplishing this is by "patching" disparate networks regularly when providing mutual aid to another agency. This allows both of the involved dispatch centers — or Public Safety Answering Points — to follow the call from start to finish, regardless of whether the call was initiated on the county's radio system or that of another agency.

And with the county's Regional Domestic Security Task Force training, Holcomb said this gateway technology has become a day-to-day operational device, so when it's needed for an emergency, there shouldn't be any troubles.

An exact price tag for the solution is difficult to pin down due to each county's differing requirements, Gorecki said, even though two counties may have what appear to be seemingly similar systems or technology.

"No two systems are exactly the same. Motorola works with each customer to design each system unique to their needs, regardless of how many towers they need, how many microwave lengths or what type of coverage" he said. "So there is no way to put an exact dollar amount [on the solution]; for each customer it will be different."

For Holcomb, the technology is worth the price, and by implementing it, Florida achieved interoperability statewide. Though all governments struggle to fund and sustain communications, Holcomb said Florida has embraced interoperability and continues to fund the project year after year. "The user community has embraced the utilization and continual training," he said, adding that by using existing systems that are readily familiar to, the autonomy of local systems has been maintained.

Holcomb said he believes the intercounty partnerships created by the interoperability have "identified Florida as a leader and national interoperability model of success."

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