



ADVANTAGE

MISSION-CRITICAL COMMUNICATION SYSTEMS

VOL 22 ISSUE 6

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Redmond, WA 98073-9704

PRSRIT STD
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Kirkland, WA
Permit No. 319



Top: Cuenca firefighter using IP FSA. Bottom-right: Rooftop view of Cuenca. Photo courtesy of Erik De Leon. Bottom-left: El Cajas National Park near Cuenca. Photo courtesy of Diana Bradshaw.

IP Fire Station Alerting Helps Save Lives in Cuenca, Ecuador

New Four-Station System Improves Response Times and Efficiency

In 2007, the volunteer fire department of Cuenca, Ecuador, began seeking ways to improve their fire and emergency response capabilities. They solicited bids for a project to design, develop, and deploy a comprehensive dispatching and fire station alerting solution that would interconnect four of its fire stations.

Zetron reseller, Electrocom, won the bid for the project with its proposal for a complete turnkey solution that included Zetron's IP Fire Station Alerting (IP FSA) system.

"We were selected for the project because we were the only bidder who fully met the requirements," says Gustavo Crespo, Electrocom's general manager. "We now know without a doubt that IP FSA was a key factor in winning that project."

A rich past

Located at about 8,200 feet above sea level in the Ecuadorian Andes, Cuenca is a city that has undergone numerous incarnations. It was originally a Cañari settlement called

Guapondeleg, believed to have been founded in around 500 A.D. It was later conquered by the Incas and named Pumapungo, "the Door of the Puma"—a city whose beauty was said to rival that of the Inca capital of Cuzco. But by the time the Spaniards reached the legendary city, all that remained were ruins. Some say that it was "El Dorado," the fabled "City of Gold," which is also believed to have been burned by the inhabitants themselves and then abandoned when rumors arose of the Spanish conquests.

Present-day Cuenca

The Cuenca of today was founded in 1597 by the Spanish. Its name, roughly translated, means "basin caused by a confluence of rivers."

Cuenca's population is currently about 400,000. With its cobblestone streets, towering cathedrals, and marble and whitewashed buildings, it is known for its cultural offerings and colonial air. Indeed, the city's history is so well preserved that it is listed as a UNESCO World Heritage Trust site.

"The time it used to take to send alerts, open doors, and summon the firefighters is now being used to save lives."

*Dorian T. Carrasco,
Director,
Cuenca Fire and Rescue
Training Center*

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The city of Zion's new call-taking and dispatch center. Photo courtesy of Robin F. Pendergrast Photography, Inc.

New Comm Center Combines Dispatch and Call-Taking at Each Position

Integrated Solution Is Cost Effective, Future Ready, and Easy to Use

The City of Zion, Illinois, recently completed an extensive project to plan, design, and equip a new communication center for their city. They wanted to create a center that would meet their immediate needs, sustain them into the foreseeable future, and be economically feasible.

With the help of Zetron reseller, Radicom, Zion realized these goals in March of 2008 with the inauguration of their new communication center.

"The new center gives us the well-equipped facility we were hoping for," says Zion Police Chief, Larry Booth. "Even some of our long-time dispatchers are impressed."

Utopian beginnings

Careful planning has been a guiding principle for Zion since its inception in 1901. Indeed, it is one of the few cities in the world to have been completely planned out before it was constructed. Founder Dr. John Alexander Dowie's vision for Zion was that it would be a forward-looking, Christian utopia with streets named after biblical people and places, and alleyways designed to accommodate utilities and garbage removal.

These days, Zion is a bustling city of about 25,000. Although it never completely fulfilled Dowie's original utopian vision, it has fared well by modern standards. In 2007, it was a contender for *Money* magazine's list of best places to live.



Save Money & Space with Zetron's Combined Dispatch/Call-Taking Solution

Get the best of radio dispatch and call taking in a single solution. Combine Zetron's Series 4000 and Integrator RD with Zetron's Series 3200 or 3300 and Integrator 9-1-1.

Features:

- Easy one-stop solution for your products and services.
- Double-duty call-taker/dispatch positions.
- Easy integration of your radio and phone systems.
- Highly configurable and easy to use.

Down with downtime

Responsibility for Zion's 9-1-1 emergency call answering and public-safety dispatching falls to its 9-1-1 call center. Housed in the Zion Police Department, the center is the city's primary public safety answering point (PSAP), providing 9-1-1 call-taking and dispatching for the city's police, fire, and rescue departments.

According to Radicom President and CEO, Phil Bartmann, prior to the recent project, the center and its aging equipment "...consisted of obsolete radio equipment of various vintages and a separate 9-1-1 call answering system. Parts were difficult to get, and downtime was becoming a real issue."

Faced with these mounting equipment problems and the area's recent surge in growth, the City of Zion decided the time had come to create a new center. They chose Radicom as their partner for the project.

Radicom, Inc.

Based in McHenry, Illinois, Radicom designs, installs, and services advanced communication systems for public-safety organizations and businesses throughout northern Illinois and southern Wisconsin.

Chief Booth says that Radicom was an easy choice for the project: "We had worked successfully with Radicom on several minor projects," he explains. "Radicom also has a good reputation with local agencies where they have installed systems similar to those we wanted. They came highly recommended."

Planning the new center

Considerable thought and effort went into the project. "We worked for over two years to develop a plan and design that fit into Zion's budget and met their goals," says Phil Bartmann.

It was decided early on that the center should be moved into a larger, remodeled space in the basement of the police department. The project planners agreed that the communications equipment for the center should be a single-vendor Zetron solution that would combine dispatching and call-taking at each of the operator positions.

Choosing Zetron

"To choose the equipment, we went to industry trade shows, talked to other agencies, and visited sites where Radicom had previously installed Zetron systems," says Chief Booth. "We liked what the equipment could do and what people said about it. In addition, based on our previous bad experiences dealing with multiple vendors, we really wanted the dispatch and phone systems to be handled by a single vendor."

The center's new 9-1-1 and dispatching solution would include: Zetron's Series 4000 Communication Control System with three positions of Zetron's Integrator RD Workstation; and three positions of Zetron's Series 3200 E9-1-1 Call Taking System with Integrator 9-1-1 software.

We have up-to-date, reliable equipment that we can expand as the need arises. It is designed to meet our needs now, in five years, and well beyond that."

Chief Larry Booth,
Zion Police Dept.

The project would also involve installing new RF equipment, including repeaters, satellite receivers and voting comparators; replacing most copper circuits with RF links; and replacing the security video equipment and call-center furniture.

A four-phase installation

Cliff Hammarstrom, Radicom's vice president of technical operations, explains that the project was completed in four phases.

"The first phase involved the RF equipment, tower work, and other field work," he says. "For the second phase, the Zetron Series 4000 and Integrator RD dispatch equipment were installed in the old center. The third phase involved installing the furniture and the Zetron Series 3200 and Integrator 9-1-1 call-taking equipment in the new facility. When training on the new 9-1-1 equipment was complete, the final phase kicked into gear: the new radio control equipment was moved into the new space, and the final cutover was completed."

Challenges

Hammarstrom admits that the installation posed a few challenges. For one thing, much of the outdoor work had to be done during the harshest months of winter. In addition, one of the tower sites was on the grounds of the Zion Nuclear Power Station, so work on the tower was sometimes hindered by the site's strict security requirements.

Yet another issue was that the center's call-taking and dispatching operations had to continue without interruption throughout the entire remodel and installation.

Despite these problems, however, the installation and cutover were completed on time and without incident.

"The transition was flawless," says Chief Booth.



Operator position at Zion's new center. Photo courtesy of Robin F. Pendergrast Photography, Inc.

A resounding success

When asked his opinion of the project outcome, Bartmann is enthusiastic: "Our goal was to install a state-of-the-art communications center that would meet Zion's needs now and for many years to come," he says. "These goals were met with resounding success."

Chief Booth concurs: "This has been a huge step forward for us. We have up-to-date, reliable equipment that we can expand as the need arises. It is designed to meet our needs now, in five years, and well beyond that." ■

IP Fire Station Alerting Helps Save Lives in Cuenca, Ecuador

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Although Cuenca takes pride in its rich past, it is also committed to being prepared to deal with the exigencies of present-day city life. This includes having an up-to-date emergency response system that will deliver fire-fighting, ambulance and emergency medical services wherever they are needed, as quickly and efficiently as possible.

These were the goals the City of Cuenca was seeking to meet when they initiated their recent fire dispatching and alerting project.

Scope of the project

The project for Cuenca Volunteer Fire Department would involve equipping and creating a shared network for four fire stations in the city and would include:

- A private, radio-based wireless network to link the four fire stations.
- A centralized command center.
- A complete central office system at each station, with full interconnection among them.
- Video surveillance at each station.
- The capacity to record and play back toll-free emergency 102 calls (similar to 9-1-1 calls used in the U.S.).
- LAN, Internet, and WiFi access at each station.
- Broadband mobile IP with WiFi access for ambulances and fire trucks.
- Remote-controlled alerting at each station.

The solution Electrocom proposed thoroughly addressed these and all other project specifications.

Electrocom

Based in Guayaquil, Ecuador, Electrocom has been providing radio and telecommunications solutions to customers throughout South America for over 28 years.

"We provide everything from Internet access to complete solutions that include audio, video, and data," says Gustavo Crespo. "Our customers include small to medium businesses, large corporations, and municipalities."

"For this project," he continues, "the bid had to be a complete 'turnkey solution.' No partial offers would be accepted. The Cuenca Volunteer Fire Department selected us because our solution met their criteria. And it included IP FSA. None of the other bidders offered a comparable solution."

With Zetron's IP FSA, the fire department would be able to manage the assets of the four fire stations from their central location. Using IP to send commands between the central site and the stations would also increase their efficiency and alerting speeds.

The solution and implementation

The fire station alerting portion of the solution for the Cuenca Fire Department included:

- Zetron's IP FSA Server software
- Zetron's IP FSA Console software



Cuenca fire and emergency personnel.

- Four Zetron IP FSA 6203 Station Controllers
- Four programmable logic consoles (PLCs)

"We started the deployment as soon as the equipment arrived at the customer's warehouse," says Crespo. "First, we installed all of the wiring necessary for the entire solution. Then we installed the central office, the WiFi network, IP FSA, and the mobile IP. When this was all done, we tested the system, got customer verification, and conducted the training at the stations. The customer certified the project. It was signed off as complete in February of 2008."

Old vs. new

Prior to this installation, at least three people had to be present at each of the four stations to receive the radio calls, manually turn on the siren to summon volunteers, and open and close the gate.

The IP FSA system greatly simplified these procedures.

"Now, all sirens are turned on from the central command," says Crespo. "This can include sirens at all four stations or at one or more selected stations. The electronic doors are automatically opened from the command center by using Zetron's Model 6203 Station Controller. The doors are then automatically closed once the officer in charge has verified that all required units have responded and are on their way."

"Zetron's IP FSA has made a big impact on the city," Crespo continues. "It has reduced by three to four minutes the time it takes to get someone to the scene of a fire or medical emergency."

"The time it used to take to send alerts, open doors, and summon the firefighters is now being used to save lives," adds Dorian T. Carrasco, director of the Cuenca Fire and Rescue Training Center. "If the new system helps us save even one more life than we could before," he says, "our goals have been met." ■



IP Fire Station Alerting System

Features:

- Faster alerting speeds
- A choice between IP and radio for voice dispatching
- CAD integration with existing M26 interface or XML CAD protocol
- Notifications of alerting success or failure
- Supports up to 255 stations
- Supports up to 24 dispatch positions
- An easy upgrade from existing model 6/26
- NFPA 1221 compliant

Getting the Message to Thousands at Once

Why a Zetron-Based Paging Service Keeps Expanding in a Cell-Phone World

In an era when virtually everyone carries a cell phone, can an older technology like paging still be an important and useful means of communication? Karl Rinker, president and owner of Rinkers Communications in Barre, Vermont, answers this question with an unequivocal "Yes." Rinker is a Zetron reseller who also owns and operates a large paging-subscriber service based on Zetron paging equipment. The system he originally built about 30 years ago is still evolving. And its subscriber base for public safety and medical applications is still expanding.

Rinkers Communications' paging infrastructure consists of Zetron's Model 2200 Paging Terminal, 85 Zetron Model 66 Transmitter Controllers, and 85 paging transmitters located across six states. The paging services and options they offer include:

- Alphanumeric paging, numeric paging, Simple Network Paging Protocol (SNPP), Telelocator Network Paging Protocol (TNPP), and e-mail and Web paging.
- Canned text messaging that allows pre-set messages to be sent to any alphanumeric pager from a touch-tone phone.
- Pagers with a built-in relay that can be used to turn equipment on and off remotely.

Cost-effective, fail-safe coverage

Rinkers says that one reason paging remains viable is that cell phones simply don't offer the coverage that some situations require and that paging continues to provide. "In the rural areas we serve, and in some buildings, cell coverage can be spotty and unpredictable," he says. "Our coverage area includes New Hampshire and Vermont, and parts of New York state, Maine, Connecticut, and Massachusetts. Customers quite frequently come in and say 'Wow, I got paged way up in East Overshoe, third buckle up'—somewhere they didn't expect to get paged. But they got their page, and they're very pleased about it."

"A police officer who steps into a building that cell or radio communications can't penetrate is still reachable through a page."

Karl Rinker, President, Rinkers Communications

Local control

Because Rinkers Communications controls all of their paging transmitters with VHF or UHF control stations, they never have to worry about a satellite going down. This offers advantages over companies that use satellites to control their systems.

"If a paging company's satellite has a problem, their users lose their coverage," he says. "Because we can fix most of our equipment problems ourselves, our service is stable, and our coverage is continuous."



Paging base station with Zetron Model 66 Transmitter Controller.

Who's paging whom?

Rinkers' subscribers include a range of state and local agencies. "The State of Vermont has been a customer for about as long as we've been in business," he says. "Our contract with them extends our services to many state and local entities, including state colleges and municipalities."

"Many police, ambulance, and fire departments also use our paging services," he continues. "A police officer who steps into a building that cell or radio communications can't penetrate is still reachable through a page. Ambulance agencies use our pagers to get on-call people to come in. And fire departments use paging to summon volunteers."

Rinker says that as paging replaces hospital intercom systems, doctors, nurses, and other hospital personnel are also joining the ranks of those who rely on paging. "An overhead intercom can broadcast a message to those who are in the hospital building, but a page can reach any user who is within the coverage area," he says. "And it's a lot quieter than an overhead intercom."

The Vermont Yankee Nuclear Power Plant

The Emergency Management Division of the Vermont Department of Public Safety uses Rinker's paging service, along with other notification methods, to help ensure the safety of those living near the Vermont Yankee Nuclear Power Plant.

"Emergency Management gives each of the 15 towns in three states that surround the plant a pager on our system," says Rinker. "If the plant experiences a mishap, the service notifies each of the towns as well as first responders and others who must be informed when there's an incident at the site."

Campus safety

Rinker recently hatched yet another idea for using pagers to protect public safety. It came to him shortly after the tragic shootings at Virginia Tech in 2007.

"For a minimal fee, a college could get one telephone number and pager-ID for hundreds of pagers, and give pagers to all of their students and personnel. If there's an incident, a canned text message could be sent to thousands of people at once, notifying them of the danger. This could be a very effective way to improve campus safety and security," he says, "but I don't believe it's ever been done."

The future of paging

The uses of paging are many, and its value for certain types of messages is undeniable. But as cell-phone technology improves, will the need for paging be eliminated?

"Not in the near future," says Rinker. "Cell technology has a ways to go before it will be able to offer the level of coverage and reliability paging provides." ■

Zetron Paging Terminals

Model 2200 Paging Terminal



Features:

- Supports 2 to 58 Telco trunks.
- Supports 2,000 to 50,000 pager IDs with Windows based configuration.
- Includes TNPP networking and system voice prompts.

Model 2700 Paging Messaging Gateway



Features:

- Supports up to 1,000,000 subscribers.
- Features RAID-1-disk drives, Windows operating system, and remote subscriber.
- Provides Ethernet interface for TNPP, e-mail and paging over the Internet.



ZETRON TRADE SHOWS

Washington APCO

Jun. 25 - 26, 2008
Wenatchee, WA

IACLEA

Jun. 28 - 29, 2008
Hartford, CT

Expo Syscom

Jul. 23 - 25, 2008
Mexico City, Mexico

APCO International

Aug. 4 - 6, 2008
Kansas City, MO

Fire Rescue Intl (IAFC)

Aug. 15 - 16, 2008
Denver, CO



The Advantage is published monthly by Zetron, Inc.
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6:30 a.m. - 5:00 p.m. Pacific Time

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