

- IP Telephony
- Contact Centers
- Mobility
- Services

CASE STUDY

Miami-Dade Fire Rescue Uses Avaya IP and Business Continuity Solutions to Improve Effectiveness and Cut Costs

Challenge	Solution
Increase communications continuity and reliability for emergency service workers and facilities, while reducing operating costs, increasing responsiveness and providing new communication services.	Miami Dade Fire Rescue (MDFR) implemented Avaya IP Telephony and Mobility Solutions, including Avaya MultiVantage® Communications Applications that power Avaya S8700 Media Servers and Avaya G700 Media Gateways to improve efficiency, ensure business continuity, and enhance emergency readiness response.
Value Created	
<ul style="list-style-type: none"> More productive internal collaboration yields a five-year net benefit of \$232,000, driven by avoidance of internal administrative charges and reductions in phone lines. Faster linkage of people, processes and resources enhanced call processing features extended to dozens of fire stations over economical IP connections. More agile, secure and reliable operations improved reliability provided to key emergency facilities through use of redundant processor technology and backup network connections. An annual ROI of 25 percent and a payback period of 3 years, 9 months. 	

Paves the Way for More Avaya Intelligent Communications Solutions in the County

Miami, Florida, USA – Their ability to quickly deliver reliable telecommunications has turned the communications department at Miami-Dade Fire Rescue (MDFR) into the “go-to guys” for Miami-Dade County public servants. Due to their extraordinary commitment and success in serving the County’s firefighters, MDFR telecommunications was asked to extend communications to the headquarters of Miami-Dade County’s closely-scrutinized Elections department. And when protesters threatened to “shut down the city” during a major free trade conference, MDFR leveraged the flexibility of their IP telephony communications to provide backup for police.

And it didn’t stop there. Miami-Dade Fire Rescue’s outstanding results paved the way for the implementation of additional Avaya IP applications elsewhere in the County.

For Miami-Dade Fire Rescue, faced with such critical and even life-threatening situations, the risk of having their communications system “getting shut down” is simply unacceptable.

Surprisingly, the agency’s telecommunications managers accomplish all this with a small staff.

Shunning the bureaucracy that can entangle larger organizations, they respond quickly and directly to every service request. This lean approach, made possible by the Avaya communication solution, allowed MDFR to save enough to pay back its Avaya communications investments

in a little over three years, and cut costs by \$1 million over a period of five years.

On a Mission to Serve more Efficiently

Led by Chief Herminio Lorenzo, a seasoned firefighter and 32-year fire service veteran, Miami-Dade County Fire Rescue is the largest fire and emergency services department in the southeast United States and the seventh-largest in the United States, with an annual budget of \$328 million. In 2005, MDFR responded to more than 218,500 emergency calls. That’s an average of 599 calls each day.

The agency operates 60 fire stations and manages the Miami-Dade County Emergency Operations Center, used by government and private agency officials to coordinate activities in times of trouble. MDFR also provides telecommunications support to both the Miami-Dade County Elections Department and the Miami-Dade County 311 Answer Center, a 24x7 contact center set up to answer public inquiries.

The MDFR Communications Division strives for a simple goal, set forth in the Miami-Dade Fire Rescue Mission Statement: *“To effectively and efficiently employ all of the necessary resources to provide a service deemed excellent by the people we serve.”* It’s a mission that proved ideal for Avaya MultiVantage® Communications Applications.

MDFR sounds the Alarm over Too High Costs

For Miami-Dade Fire Rescue, an initial determination to save telecommunications dollars opened the door to state-of-the-

art IP communications. Expectations were high: the new system would have to deliver a richer set of features than the old and be easier to use, yet save money. In addition, since millions depend on MDRF to serve them in the worst of circumstances, the new system would have to meet the most rigorous standards for operational continuity — what the commercial world knows as business continuity.

Funded by taxpayers separately from the rest of county government, MDRF exercised its independence when it sought a less-costly alternative to the outmoded PBX and mechanical key telephone systems it shared with other agencies. MDRF engaged an Avaya Platinum BusinessPartner, to help the agency explore the options for a new communications system capable of delivering world-class communications and reliability.

It soon became clear that Miami-Dade Fire Rescue needed more than just a new telecommunications switch. The agency needed a comprehensive solution that would be easier to use and less costly to administer than the device in place. After carefully weighing the options, MDRF selected the Avaya DEFINITY® Communications Server.

In addition to delivering more features and improving reliability (the existing system had gone out of service several times), the Avaya DEFINITY system could be maintained and administered by fewer people in less time than the existing PBX or other alternative systems. Tangible cost savings closed the deal. But the benefits didn't stop there.

The Avaya DEFINITY system provided MDRF with an easy migration path to IP communications and its benefits. Tests showed the value of extending the sophisticated call processing capabilities of Avaya Communication Manager directly to fire stations over frame relay IP connections. Performance improved when MDRF replaced the frame relay links with 60 point-to-point T1 connections. And the agency used its savings in telecom costs to upgrade the Avaya DEFINITY server to an Avaya S8700 Media Server, with Avaya G700 Media Gateways serving larger Division offices. It has since upgraded to Avaya Communication Manager 2.0.

One Man, One System

MDRF hired Michael Crisler, an unemployed, nuclear engineer with extensive radio communications experience, to manage the system installation and head the telecommunications department, supporting daily operations. Crisler's challenge: those cost savings were focused in his office. Though some predicted it would require 2½ full-time people, Crisler would be the sole professional to administer and manage the new Avaya solution — a system he had to learn from the ground up, as he had never had experience with a large PBX system!

Impossible? Not at all.

"Avaya assured us that we could do this by ourselves," says Crisler. "The real feature that made this work was terminal translation initialization (TTI), which is an Avaya Communication Manager feature that makes it easy for an

administrator to remotely separate a telephone from its port, move the phone and merge the phone to its new port. This means the end user can handle the physical move by simply unplugging the phone, moving it and re-plugging it in at the new location. Everything about the system is simple, logical and in plain English — no code strings to learn or remember."

"When anybody wants to move in the building, I can give them the codes to do it. I never have to go searching for jumpers on patch panels; I never really have to leave my office," says Crisler.

And, to speed service for end users requesting a change in their service, Crisler replaced printed internal purchase orders, with their three-week turnaround times and a price tag of \$50 to \$75 per move, with a simple e-mail to Crisler requesting the change.

"When anybody wants anything, I just say 'drop me a note and I'll take care of it.' Ninety-nine percent of our moves, adds and changes are done before the next day; 85 percent in the same hour." Changing MDRF's 1,600 Avaya INTUITY® AUDIX® voice mailboxes is just as easy and quick.

For Nearly Three Million Citizens, It's Reliability First

Trained as a nuclear engineer, Crisler knows the importance of system reliability and redundancy — critical factors for MDRF and the two million people it serves.

In addition to MDRF headquarters, Avaya Communication Manager handles communications for 60 fire stations and other key, high-profile emergency operations. These include the County's 42-seat 311 Answer Center and the Emergency Operations Center (EOC), located in the same building. Due to the incidence of hurricanes that hit South Florida, this is reputed to be the busiest EOC in the U.S.

"Our 311 Answer Center was the first successful municipal-based center of its kind," Crisler said. "All non-emergency, county and municipal-related questions come into the center through a single number. The center serves about 3 million people from 40 municipalities."

"Avaya Communication Manager routes the calls down a structured path, depending on the nature of the call. If an emergency call inadvertently comes into 311, our operators are able to redirect the call to 911."

"Moreover, using the Avaya vectoring feature, we are able to broadcast announcements in three languages — English, Spanish and Creole — for callers who are on hold. This expedites getting information to the public and takes callers out of the queue by proactively giving them the information they need. Agents are then better able to handle other calls, as needed."

Avaya reliability was tested on September 11, 2001, when 175 public officials and emergency services experts rushed to the EOC in the wake of terrorist attacks. Inside, images of the disaster broadcast by Miami's ten television

stations audio flashed over ten huge monitors. To prevent the station's audio from drowning each other out, audio was broadcast through the Avaya Communication Manager, using a separate phone number for each channel — another unique Avaya solution that was provided to MDRF.

“The EOC was full. I've never seen it so full,” says Crisler. *“Every person there had a phone in their ear, and they were on their cell phones as well. So right off I knew if the Avaya system was ever going to break, this would be the day. But the system did not fail.”* Though some callers encountered busy conditions in the public network, the Avaya Communication Manager functioned flawlessly.

“That was an important day for us, because it showed that we'd engineered our system correctly, and the processor power was ample,” says Crisler. This ability to withstand unexpected demand was critical for MDRF's emergency service mission, but Crisler had more in mind. He explored the benefits of upgrading to the more powerful Avaya S8700 Media Server. The team found that the S8700 Media Server would provide vastly greater capacity to handle traffic spikes and serve more clients, and could easily extend advanced call-handling capabilities to remote locations, such as fire stations.

“Now, with the Avaya S8700 Media Server, we've increased our capacity to something that's so much bigger, we don't even think about the possibility of overloading it,” says Crisler. Upgraded to an Avaya S8700 Media Server with nearly 50 times the call-processing power, the MDRF IP telephony solution now is more able than ever to provide the business continuity MDRF demands. Maintenance services from Avaya provide an added level of backup, and increased confidence that when any request comes, MDRF will be ready to serve.

“My department was so impressed with all the disaster recovery plans we made, and the way we went through 9/11, that they were more than willing to sign up for this upgrade. They had seen the savings and seen Avaya Communication Manager produce results,” says Crisler.

The results with its first Avaya S8700 Media Server were so good that MDRF has since purchased another Avaya S8700 Media Server for the County's 911 center.

Moreover, a new building that will house the 311 Answer Center, as of June 2006, will utilize the Avaya IP Telephony Solution and run off of that same switch.

Building on a Reputation for Performance

In addition to rock-solid reliability, the Avaya S8700 Media Server means Crisler can extend the full range of Avaya Communication Manager features and benefits to MDRF fire stations, with significant savings.

- With dedicated T1 circuits now extending from headquarters to fire stations, Crisler has reduced the number phone lines at each station from four to just

one in most cases, saving on the average about \$67 per month at each location.

- By substituting Avaya IP phones for the dozen or so key system phones at the stations, he can avoid the internal maintenance charges he once paid to maintain the old phones. Those charges: \$8 per month, per phone. Newer key systems installed at fire stations built recently will remain in place for now. *“What will probably cause them to be replaced is peer pressure,”* says Crisler, *“because they (firemen) all want these new Avaya IP phones.”* Fire Chiefs as well as firefighters in about 40 percent of MDRF's extended network of 77 facilities – fire stations, division offices and supply buildings – now use an estimated 150 Avaya IP Telephones.
- As an added benefit he has been able to offer toll free calling to the adjacent counties where many of the fire fighters live due to servicing them from HQ versus the local carrier. This benefit offers another savings for the Department as well.

More savings stem from deft use of the department's Call Accounting System (CAS). Using a classic quality control approach, Crisler looks for exceptions in his department's calling pattern.

“If you manage the outliers, you will eventually have the process in control, and the CAS gives me that ability. Each day, the CAS gives me a top-ten report — top ten employees who made the most calls, top-ten longest calls, and top-ten most expensive calls. Each day I look at those reports and I decide, using some intelligence, ‘why was this two-hour call here?’ In every case, that's completely stopped any abuse. It's one of the most important tools I have,” says Crisler.

Another effective tool has been the Avaya Extension to Cellular application. By linking the user's office system with their cell phone, this feature bridges the gap between the two systems. Calls to the office ring on both cell phone and office phone at the same time, and callers hear no difference. Users can respond faster, and they benefit by directing all voice messages to their office message system.

MDRF also uses Avaya Meet-Me Conferencing, a feature of Avaya Meeting Exchange® Conferencing Solution, to keep its team more connected – and more productive – than ever.

“Our executives are able to collaborate readily by calling into the bridge as needed,” Crisler said.

“Our battalion chiefs think it's incredible — they can get their calls whether they're in the fire truck, in the back room at the station, or in their office,” says Crisler. *“They can answer the call on their cell phone, walk back into the office and pick up the same call on their office line, with no interruption.”*

As its reputation spreads for delivering results, the MDRF Communications Division is handling requests to solve communication problems outside the fire department. When the Miami-Dade County Elections Department moved into Miami-Dade County's newest building, they wanted the finest communications available. Now, department

supervisors and managers are using 300 Avaya 4620 IP telephones, connected to three Avaya G700 Media Gateways linked to the Avaya S8700 Media Server at fire department headquarters.

When protesters threatened to “shut down” a Free Trade Area of the Americas (FTAA) summit, Miami police asked MDRF to provide telecommunications support for their tactical command posts. So Crisler’s team installed almost 200 Avaya 4620 IP telephones in several strategic locations, and brought them online when the disturbances began. There was no “shut down” in Miami.

Miami-Dade Fire Rescue takes a “can do” approach to telecommunications. Performing on a global stage, the department’s Avaya solutions are expected to deliver the right answers to every communications question: cost effectiveness, rich features and utter dependability.

And they do.

Learn More

For more information on how Avaya can take your enterprise from where it is to where it needs to be, contact your Avaya Client Executive or Authorized Avaya BusinessPartner, or access other collaterals by clicking on **Resource Type** under “Do Your Research” at www.avaya.com

ABOUT AVAYA

Avaya enables businesses to achieve superior results by designing, building and managing their communications infrastructure and solutions. For over one million businesses worldwide, including more than 90 percent of the FORTUNE 500®, the Avaya embedded solutions help businesses enhance value, improve productivity and create competitive advantage by allowing people to be more productive and create more intelligent processes that satisfy customers.

For businesses large and small, Avaya is a world leader in secure, reliable IP telephony systems, communications applications and full life-cycle services. Driving the convergence of embedded voice and data communications with business applications, Avaya is distinguished by its combination of comprehensive, world-class products and services. Avaya helps customers across the globe leverage existing and new networks to achieve superior business results.

ABOUT MIAMI-DADE FIRE RESCUE

Miami-Dade Fire Rescue Department is one of the youngest departments of its size in the country, yet is one of the fastest growing, and leads the nation in Fire Suppression, Emergency Medical Services, Search and Rescue and other specialized areas. The efforts of MDRF have garnered world recognition. The unique terrain, diverse demographics and distinctive South Florida weather make the job an exciting challenge for the men and women of this department. For more information, please visit: <http://www.miamidade.gov/mdfr/>.

Applications	Systems	Services
<ul style="list-style-type: none"> • Avaya MultiVantage® Communications Applications • Avaya Communication Manager • Avaya Extension to Cellular • Avaya INTUITY® AUDIX® Voice Messaging • Avaya Meeting Exchange® Conferencing Solution • Call Accounting System (CAS) 	<ul style="list-style-type: none"> • Avaya DEFINITY® Communications Server • Avaya S8700 Media Server • Avaya G700 Media Gateways • Avaya 4600 Series IP Telephones 	<ul style="list-style-type: none"> • Avaya Global Services Product Support (Maintenance) • Additional Services provided by Avaya BusinessPartner

All statements in this Case Study were made by Mike Crisler, Telecommunications Manager, Miami-Dade Fire Rescue. Crisler has since assumed new responsibilities as the Director of Public Safety and Cyber Security in the Miami-Dade County Chief Information Office.

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