City Implements Advanced Emergency Communications

Rapidly Deployable Communications improves City of Austin's emergency response time, effectiveness, and mobility.

EXECUTIVE SUMMARY

CITY OF AUSTIN

- City government
- Austin, Texas
- Nearly 2000 emergency personnel

BUSINESS CHALLENGE

- Extending communication mobility
- Establishing operational command
- Delivery of essential services during critical events
- Providing disaster recovery capabilities

NETWORK SOLUTION

- Rapidly Deployable Communications solution connects emergency field personnel with the operations center.

BUSINESS RESULTS

- Integration with existing city wide outdoor mesh helped in offloading city resources and greater scalability of deployment.
- Cisco iComm extends the city's wireless network to a remote and mobile location, and adds a satellite system to the existing network.
- Voice, wireless, data, video, and satellite technology enables commanders at a critical incident to make better decisions and ultimately save lives.

Business Challenge

The fourth largest city in Texas, and sixteenth in the nation, Austin continues to be the fastest growing big city in the country. Described by Mayor Will Wynn as, "a young, educated, dynamic, safe, and progressive city," Austin has consistently made infrastructure investments to support that claim.

One of those investments was a city network. Starting with a fiber network that covers more than 300 miles, the city then extended the infrastructure with a wireless mesh network that covered the

convention center and a seven-square block area of downtown Austin.

But emergency services in the city and surrounding county were not able to take advantage of this growing wireless infrastructure, and still suffered from the communication issues faced by many state and local government agencies. In fact, a recent report by the Department of Homeland Security found only six of 75 major cities and urban areas had advanced communication facilities that would allow them to respond adequately in the event of an emergency. These communication challenges are common to many types of emergency services agencies. Peter Collins, chief information officer for the City of Austin, describes it this way, "In an emergency inside the City of Austin, whether we are supporting somebody external or our own natural disaster, we know that communications are the most critical thing—voice, video, and data. But we also have to be able to be mobile enough that we can redeploy somewhere else."

The city wanted to give first responders the communication and collaboration tools to do their jobs quickly and efficiently so they could save lives. To achieve this level of communications, Austin needed to allow city personnel and cooperating agencies to connect to a rich set of features from the site of the event or emergency, using wired, wireless, or satellite networks.

Network Solution

An early adopter of wireless technology, the City of Austin put wireless access points in all maintenance locations for policy and other emergency personnel some years ago. That was the beginning of a citywide mesh wireless network being explored for use in the public-owned utility, Austin Energy, and for a wide range of public services.

> **"Technology makes better use of our non-labor investments in public safety—the fundamental priority in this town—to allow us to have a few more cops and firefighters on the street."**
> **—Will Wynn, Mayor, City of Austin**

However, one of the first applications has been for a state-of-the-art emergency response system. Working with Cisco Gold® Certified Partner Calence, LLC and Cisco Wireless ATP Partner Wireless Facilities, Inc., the City of Austin first implemented their Command Technical Emergency Center (CTEC). This center handles every 9-1-1 call in Travis County, as well as some surrounding counties. They also take calls for the City of Austin fire, police, emergency medical services, plus the Texas Department of Transportation. But, in addition to handling incoming calls, CTEC serves as a central clearinghouse for the information that response teams need to do their job.

Using the standards-based Cisco Rapidly Deployable Communications solution, CTEC can provide voice, video, and data wherever emergency services personnel are. Because the system can handle these communications over wired, wireless, or satellite networks, public safety personnel can go where they are needed, set up where they are, and respond as the situation calls for.

So, instead of bringing people to information, Austin emergency services agencies can now bring information to the people on the front lines. First responders operate where they need to be, with immediate access to the information and communication tools that they need to be more effective where lives are affected and property is lost. It provides personnel with the information to allow them to make decisions wherever they are, or wherever they need to be.

But Austin added even more flexibility and mobility to these powerful communication tools by equipping a state-of-the-art emergency response vehicle with the Cisco Tactical Communications Kit.

Also running on the Internet Protocol (IP) standard, the communications tools that it provides for this mobile response vehicle allow Austin to take advantage of multiple types of networks and provide the security of advanced encryption.

With multiple ways to power the system including shore power, a fixed power source, a generator, or a car battery, the City of Austin can maintain communication services from this mobile-command vehicle—even during a catastrophic event.

Business Results

The Cisco Rapidly Deployable Communications solution leverages the existing infrastructure investments in Austin and extends them to places that they could not previously reach. So the range of their fixed infrastructure is now extended to any area under any conditions.

iComm (formerly IMICS), part of the Cisco Rapidly Deployable Communications solution, extends the city's wireless network to a remote and mobile location, and adds a satellite system to the existing network. In case of an emergency, city personnel can use that satellite system to connect to the wireless technology, or to connect iComm endpoints to existing IP systems.

But the benefits are not confined to an emergency. James Shamard, a division commander with Austin Travis County Emergency Medical Services says, "We use it every day to get the information to the front of the fire apparatus, to the police car, or to the ambulance."

"We can communicate live voice and video with our emergency operations center, or multiple emergency operation centers to coordinate getting the resources that we need to the places that we need them. We can even send the front lines live footage of the event so the personnel there do not have to extrapolate from what I am saying the situation looks like. They can see it for themselves."

Best of all, the solution offers good value for the investment. Shamard says, "Because it is public safety, and we are funding most of our equipment with tax money, we have to be smart in our deployment of equipment. Whenever possible, we purchase and use things that work on a daily basis, so they do not just sit on the shelf. But, when the big event happens, we can scale them up, so we can implement them in a way that meets the need of a large-scale disaster. That is one of the most attractive things about this solution."

PRODUCT LIST

Routing and Switching

- Cisco 3845 Integrated Services Router (ISR) with LMR Capability

Network Management

- Cisco Content Engine
- Cisco IP VSAT Satellite WAN Network Module
- TracStar Auto-Aiming VSAT Satellite Antenna

Voice and IP Communications

- Cisco 7960 IP Phones
- Cisco Unified 7920 Wireless IP Phones
- Cisco Unified CallManager
- Cisco Unified CallManager Express
- Cisco IP Telephony
- Cisco 32-Channel Packet Voice/Fax DSP Module

Wireless

- Cisco Dual Radio Wireless Access Point
- Cisco Aironet 1500 Series Outdoor Lightweight Mesh Access Points
- Cisco Wireless LAN Controller Module for Integrated Services Router (NM-AIR-WLC)

Because the system is there to support personnel who are not technicians, it is also easy to set up and use. Shamard says the Cisco system also delivers that critical ease of use. "We deploy the command post, turn the equipment on, and it adapts to whatever connectivity is there. There is no change in configuration; it links back to whatever we need it to link with every time."

It is also fast to deploy, saving time when it is at a premium. Tony Williams, a communications commander with the Austin Travis County Emergency Medical Services says, "The heart of the right communication system is definitely rapid deployment of these resources. You do not always have a technical expert at that scene. So the key to success is to be able to flip a switch, plug some things together, and, and off you go." That is what Austin gets with Cisco Rapidly Deployable Communications.

But the biggest benefit is not how it delivers, but what. Shamard says, “It literally has delivered all of the resources right to the scene, and allowed all those people throughout the country, or all over the world to interface in a way, just like they were right on the scene. It is like taking any data center, any emergency operations center and setting them down right on the scene, and having that as a resource whenever you need it.”

Says Collins, “Having all the different types of technologies tied together in a transparent fashion enables commanders at a critical incident to make informed decisions and get those decisions out to the field as quickly as possible. Because we can give them voice, wireless, data, video, and satellite technology at their fingertips, they can utilize that information to make better decisions and ultimately save lives. That is the bottom line.”

Next Steps

Planning is under way to use the mobile emergency vehicle as a command center for the city council or state agencies in any kind of a catastrophic event across the City of Austin.

With the ability to project a mesh network to about a mile in linear length and provide services, the city plans to have discrete staging areas with wireless coverage to take advantage of all the services that the vehicle provides. It can also provide a discrete staging area for search and rescue or SWAT (Special Weapons And Tactics) teams, chemical decontamination units, or even nongovernment organizations like the Salvation Army or Red Cross as the situation demands.

Each organization can be on its own virtual private network, and it can be in discrete physical areas, so it can have any level of privacy that it needs for the mission.

For More Information

To find out more about iComm, part of the Cisco Rapidly Deployable Communications solution, please visit:

www.cisco.com/gordc
www.cisco.com/web/strategy/government/index.html
www.cisco.com/web/strategy/government/public_safety.html

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