Highway Patrol Uses IP Technology to Improve Interoperability

Missouri State Highway Patrol deploys Cisco® IPICS to integrate communications during multiagency operations.

Executive Summary

Missouri State Highway Patrol

- **Industry:** SLG; Public Safety
- **Location:** Jefferson City, Missouri
- **Number of Students:** 1350

CHALLENGE

- Need to increase interoperability between agencies to improve coordinated response
- Desire to respond more agilely in emergency situations, including a method for easy on-the-ground management and reliable communication tools

SOLUTION

- Deployed mobile command vehicle to respond quickly to emergency situations
- Used Cisco IPICS to effectively bridge different agencies' radio networks for improved communication

RESULTS

- Increased response time to emergency situations around the state
- Improved interoperability of agencies due to ease of single-source communications

Challenge

The Missouri State Highway Patrol (MSHP) is one of the largest law enforcement agencies in the state of Missouri, with more than 1350 officers. MSHP is responsible for law enforcement across the state, mainly for highway safety. The agency also works in conjunction with state, county, local, and federal agencies to support the coordination of communications in response to both emergency and nonemergency situations.

MSHP and law enforcement agencies across the country have historically faced collaboration and communication challenges. When trying to coordinate communications across multiple forces, which often use different types of radio or other communication tools, the lack of consistency makes it difficult. In a crisis situation, where response time is critical, the confusion over communication can drain agencies' time and resources. After the events of September 11, 2001, there was a big push across the country for increased interoperability to help improve security.

While some law enforcement agencies have been resistant to changes made in the name of greater interoperability due to the concern that other agencies would assume control of a situation, the MSHP knew that interoperability was critical to help keep the residents of Missouri safe. MSHP had identified several statewide events and natural disasters where communication had been a problem, particularly due to disparate communication technologies, especially over the radio between state and local agencies.

"It's one of those things that you don't think about until it's a problem. When you've got it, you've got it, but when you need it, you really need it," said Lieutenant Les Thurston, assistant director of the Information & Communications Technology Division for MSHP. So the agency set out to find a solution that would enable it to more easily connect and coordinate with other agencies, ensuring a more effective response to a disaster if the occasion arose.

Solution

When the MSHP was looking to identify new technology solutions to help its officers protect the public, it turned to Cisco. The MSHP was already a Cisco® shop and had been using Cisco VoIP phones for years. And when it came to increasing its interoperability capabilities, MSHP was looking for the greatest amount of interoperability it could get for the price, and it knew that Cisco could deliver.

To help increase the agility of its response to and improve the ease of its communications during emergency situations, MSHP decided to deploy a mobile command and communications vehicle (MCCV). The vehicle can go onsite when disaster strikes and act as a command center for on-the-ground management, as well as a central processing center for communications. The vehicle is equipped with

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Assistant Director,
Information & Communications Technology Division,
Missouri State Highway Patrol

multiple Cisco solutions to help the agency more easily connect during a crisis, including Cisco TelePresence® technology, video surveillance, satellite communications, and IP telephony. These tools allow the MCCV to do everything from receiving video feeds from a helicopter to sending information easily back to the State Emergency Management Agency.

The real key to the MCCV's success, and what allows it to do all this onsite, is Cisco IPICS (originally called the Cisco IP Interoperability and Collaboration System). The IPICS server software enables radio communications over a reliable, secure, and scalable IP network. It bridges different types of communications networks to allow emergency responders to exchange information quickly and easily using radios, telephones, mobile phones, and PCs. "Honestly, I love the whole Cisco environment we have, I love the conferencing ability, but the most impressive thing I've seen is the IPICS system in the mobile command vehicle," said Lt. Thurston.

Using IPICS, the MSHP is able to bridge the communications networks of multiple agencies, even if they are using different technologies. According to Lt. Thurston, IPICS allows officers from Agency A to talk to officers from Agency B because both communications are routed easily through the MCCV. "To be honest, most of the officers don't understand how the technology works, but they know it makes it easier for them to coordinate with the other agencies," explained Lt. Thurston. This easy-to-use communication across the dotted jurisdictional line is of the upmost importance during times of crisis when federal, state, and local agencies all need to work together to keep citizens safe.

Results

The MSHP has seen good results in both major and small deployments of the MCCV with IPICS. The IPICS ability to patch and bridge radio systems that are independent of each other has been paramount in law enforcement's involvement in a number of recent events in the state. The technology helps MSHP get up and running quickly when the MCCV arrives onsite and allows them to rapidly link to other agencies without wasting precious time trying to figure out how to most easily communicate.

For example, in 2011 the seventh-deadliest tornado to ever hit the United States struck Joplin, Missouri. The tornado caused more than $2.8 billion in damage, including much to the area's communications infrastructure. This made it even more difficult for the multiple Missouri agencies that responded to the disaster to coordinate their operations. However, MSHP deployed the MCCV, whose technology allowed it to prop up the radio infrastructure that groups needed to make the operation successful. After the MCCV was established, MSHP used IPICS to bridge different agencies' radio systems and easily allow the Joplin Police Department, other Joplin county agencies, and MSHP to communicate during the disaster.

MSHP also used this bridging technology during the events in Ferguson, Missouri, in

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Product List

WIRELESS

- Cisco Wireless technology

VIDEO

- Cisco TelePresence solution

VOICE AND IP COMMUNICATIONS

- Cisco IPICS
- Cisco Unified Communications Manager (CallManager)
- Cisco Mobile IP Phones
- Cisco IP Phones

the summer of 2014 and in 2015. MSHP was called in to support agencies from both St. Louis and St. Louis County that were responding to the protests. However, MSHP was operating on a new P-25 radio system, the city was operating on a different, older P-25 version, and the county agency used a legacy system that was wideband instead of narrowband like the other two. In a matter of minutes, IPICS was able to join the three disparate systems and allow the agencies to communicate easily as if they were all on the same network. The bridged communications network allowed officers from multiple jurisdictions to communicate transparently during the event. The MCCV also has the ability to use Cisco TelePresence technology to transmit real-time information, which was used in Ferguson to relay information to the command staff and the governor.

"The great thing about IPICS is that once agencies use it once, it changes the game," said Lt. Thurston. "For example, we went to Ferguson multiple times to support the law enforcement on the ground. By the second time, the question wasn't how we were going to bridge all the different types of communications, but just what channel we were using." By providing a single source for communication, IPICS allows for true interoperability between agencies, making it easier for law enforcement agencies to focus on doing their jobs and keeping the citizens of Missouri safe.

Next Steps

While there have been some updates to the MCCV's technology since its initial deployment, including an update to the video-conferencing unit and Cisco Unified Communications Manager (CallManager), MSHP is planning on continuing to improve the vehicle's technological capability. Currently, MSHP is working on an upgrade to IPICS to keep up with changing radio technology. Additionally, the agency has plans to integrate more Cisco Jabber® technology with its emergency response. Lt. Thurston would ideally like to use the Cisco Jabber solution to communicate with his officers when they are out in the field.

For More Information

To find out more about Cisco IPICS, visit http://www.cisco.com/c/en/us/products/physical-security/ipics-server-software/index.html.

