Case Study:

Vermont State Police Boosts E-911 Dispatch Performance, Deploys Next Generation System

Like many regional and statewide emergency communications systems, the Vermont State Police (VSP) reached a pivotal point. Its legacy dispatch consoles, which had been announced as end-of-life by the vendor, were creating time-consuming issues both inside command posts and out in the field. These console user and network maintenance challenges were impacting the VSP's ability to reliably and efficiently carry out its day-to-day charge—providing primary law enforcement services to 200 towns and 50% of the population in Vermont, handling 69% of the state's E-911 calls, and supporting local, county and federal agencies in mutual aid situations.

It was time for a change.

"We reached out to Avtec and Burlington Communications," said Terry LaValley, radio technology services director for Vermont's Department of Public Safety (DPS). The DPS handles the planning, design, installation and maintenance of all of the state's voice communication systems, including the VSP. Avtec provides dispatch console solutions for commercial, transportation, energy and public safety markets. Burlington Communications is an authorized Motorola Two-Way Radio Service Center and Avtec channel partner.

"Our existing system was difficult to support and didn't easily integrate with existing LMR and telephone networks," LaValley explained. "Keeping the system consistently stable and optimized took a lot of specialized engineering, and the dispatch process itself was not smooth."

Instead of touching a single radio button to access a channel, for example, dispatchers had to click through to alternate screens, which introduced the potential for errors and consumed valuable seconds during emergency response situations. Consistent audio quality was lacking—with frequent highs, lows and distortions across monitored channels—which required a considerable amount of the staff's time to reset levels and mute some channels simply to maintain clear, deviation-free voice communication. Firefighters would receive tones, but not the critical accompanying voice communications. And because the dispatch platform itself was built around an older operating system, LaValley's design and maintenance team was spending far too much time searching online sites for compatible PCs and spare parts to keep the system functioning.

"We needed a vendor that would meet our immediate and future requirements, while also being cost effective," he stated. "Vermont is somewhat unique because we share common radio sites, networks and equipment, which means our department must maintain service to all users, including the VSP. We quickly realized Avtec's Scout™ dispatch consoles could resolve our current issues as well as deploy a system that would be expandable, interoperable and survivable as our organization grows and requirements change."

"From an engineering and service standpoint, Avtec is a leader," he continued. "They listened to what we needed to achieve and thoughtfully reviewed it, then came back with a solution that would meet our requirements. They even made adjustments to accommodate how we use the system—no one does that anymore. It was a very collaborative effort with our team, Avtec and Burlington Communications, which we found refreshing."

Now that the Avtec Scout system is fully deployed, LaValley said his technicians see the dispatch consoles as an exceptional solution that is extremely flexible. As for the users: "I talk to our dispatchers quite often and they love the new Scout system. They no longer assume that if something is wrong, the console must be the problem," he stated.

Looking ahead, LaValley sees Avtec's Scout platform as one that can move in lockstep with the state's long-term plans to continue evolving and adding functionality for all Vermont Communications System (VCOMM) users, including the VSP. "Now, if I lose a dispatch center because of a disaster, I can put up a command post and dispatch with a laptop from any location with network connectivity. Our plan is to continue to expand our deployment of Avtec's technology so that all public safety agency and dispatch system users have interoperability and survivability throughout Vermont. And with ScoutCare™, we will also have 24/7/365 post-warranty tech support as well as an evergreen product because of the continual software updates. We see our relationship with Avtec as a true partnership."

Vermont State Police Case Study Snapshot

SYSTEM CHALLENGES:

- Inconsistent audio streams that were either too high, too low or came through with distortion, causing dispatchers to spend a considerable amount of time adjusting levels or muting channels they needed to monitor.
- Multi-step process to access and connect radio and telephony channels, increasing the possibility of introducing errors during mission-critical moments.
- Difficult-to-maintain system with multiple servers in geographically dispersed locations, each with unique interfaces—translating into a resource drain to accommodate more time-consuming, specialized engineering.
- End-of-life, legacy dispatch console that operated on an older operating system, making it increasingly difficult to find PCs and interface components needed to maintain the system.
- Frequent instability that required the need to reboot the system, which meant dispatchers often needed to pick up others' call traffic during moments of console unavailability.
- Challenging architecture that would make future system expansion for statewide interoperability and survivability inefficient and a continued drain on the radio technology services team supporting the VSP and all VCOMM users.

Vermont State Police Case Study Snapshot

THE SOLUTION:

Avtec's Scout™ dispatch platform, including:

- 40 Scout EX consoles with the addition of Frontier™ software for added flexibility with future integrations and to enable resource sharing between the VSP's two main dispatch centers and other Public Safety Answering Points. The two call-taking sites, based in Williston and Westminster, currently handle 69% of the state's E-911 call volume.
- Interfaces with the VSP's existing Motorola Solutions P25-capable radios as well as KENWOOD and Harris radios used by other state and local departments.
- Software-only Scout licenses for the ability to easily deploy mobile command centers and conduct routine maintenance.
- National Emergency Number Association (NENA) telephone adaptor units to ensure distortion-free audio to headsets used for both radio and telephone communications.
- Updated Outpost™ Radio Controllers to transmit radio site communications from remote locations directly to the Scout consoles.
- Customized Eventide® recording systems to replicate the recording capacity of the existing units.
- A barracks intercom system that provides the flexibility to manually control doors from multiple dispatch centers and transmit voice communications across locations without tying up radio resources.

Vermont State Police Case Study Snapshot

THE RESULTS:

- Consistent, high-quality audio across public safety channels, without the need for users to spend valuable time adjusting levels while trying to perform their duties quickly, safely and accurately.
- Customizable touchscreens that dispatchers find easier to use performing routine tasks, such as changing radio channels.
- Easier-to-maintain architecture that was built to accommodate Vermont's unique way of using its public safety communication system, allowing the radio services technology team and resources to be channeled towards future expansions and upgrades.
- Expanded interoperability and survivability for the VSP as well as multiple departments throughout the state, reducing the need for specialized engineering to easily interconnect existing radio and telephone networks.
- Improved system stability to ensure reliability and availability for dispatchers 24/7.
- Easy-to-expand, scalable platform to future-proof the system for planned growth and enhancements throughout Vermont, including the capacity to put up mobile command posts in any area with network connectivity for disaster recovery or to dispatch during times of inclement weather.

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