CASE STUDY

MCVs

UPGRADING TO Z-SERIES

Mobile Command Vehicles (MCVs) provide the capability for on-site communications links during emergency response, multi-agency management activities, enforcement or support scenarios, and more. They do this by the very virtue of being mobile, and – importantly – by having the communications gateways they'll need in order to link everyone's communication systems when deployed on site.

CHALLENGES

The JPS gateways traditionally used in MCVs have been so reliable, there has been no urgency to replace them. However, the technologies used in newer gateways provide desirable features and capabilities such as Push-to-Talk over Cellular (PoC) integration, improved network negotiation and traversal for SIP devices, better integration and experience when using trunking radio systems, portability, easier scalability, etc.

Since the decision to upgrade and replace is obvious considering the evolving communications landscape, the question becomes simply how to do so while retaining access to legacy equipment and existing capabilities. This case study highlights solutions adopted by four different agencies.

▶ #1 SCALABLE

- ▶ Build a distributed system of RSP-Z2s and a Z-Series Controller plus MCC-4s.
- ▶ Technology that connects everyone – from civilian responders to statewide agencies.

▶ #2 LEGACY-FRIENDLY

- ▶ Z-Series and desktop microphones enhance capabilities of legacy ACU-2000.
- ▶ Features like mobile dispatch increase system control while saving taxpayer dollars.

▶ #3 RIGHT-SIZED

- ▶ RSP-Z2 and ACU-M replace six-channel ACU-1000 in new MCV.
- ▶ Cost-effective reduction in communication gaps & strengthened response capabilities.

▶ #4 ALL IN ONE

- ▶ ACU-Z1 provides significant upgrade over ACU-1000.
- ▶ Updates communications capabilities to incorporate modern device types.

SCALABLE
#1

THE NEED

Being prepared for anything is easy to say, but hard to do. Fortunately, emergency management never gives up, planning how to link EOCs, remote locations, dedicated VPNs to the Sheriff's Department, peer agencies from other counties/states, local responders, and more.

THE SOLUTION

The Suwannee County Sheriff's Office, Division of Emergency Management (FL) implemented a complete Z-Series system to fully benefit from the built-in Unity feature set that streamlines scaling and managing larger systems.

Four RSP-Z2s, a Z-Series Controller, and several MCC-4s occupy one MCV and provide a centralized mobile command post. Another two RSP-Z2s, two repeaters, and two base stations reside in another remotely deployed trailer. Plus, an MCC-4 desktop microphone will be going into the EOC at the Sheriff's office.

The system covers radio, SIP for VoIP, JPS RoIP for linking with legacy gateways, Push-to-Talk over Cellular (PoC), and more, including a pair of JPS Bridge channels linking Suwannee County to the State of Florida Emergency Management's own Z-Series Controller.

This configuration provides not only standalone resources, but also the ability to link multiple responder agencies together by providing wide area interoperability.

FEEDBACK

"Our partnership with JPS has upgraded our ability to have functional and interoperable communications with our 800 MHz system. The JPS software solution gives a new network approach to using our system and also integrating other County comms systems.

"We could not be more pleased with the JPS solution and the ease of use for our employees. We will continue to add to our system and grow the JPS technology solution within our agency!!"

LT. Chris Volz
Director, Emergency Management
Suwannee County Sheriff's Office

LEGACY-FRIENDLY
#2

THE NEED

When local, regional, and state-wide units are all using different communications systems, effective emergency response management relies on bridging the gaps between systems.

THE SOLUTION

Since all JPS interoperability equipment shares protocols (e.g., JPS RoIP or SIP) that enable the gateways to pass audio, it can be a perfectly viable option to keep older equipment active while also adding in new models.

That's the approach Blanco County Emergency Management (TX) opted for, to hold onto an inherited ACU-2000 and integrate the channels into a new Z-Series Controller using JPS RoIP. Interfacing with the Z-Series Controller are three MCC-4 desktop microphones, which offer a light dispatch capability, in addition to the light dispatch capabilities natively offered in the Z-Series Controller user interface.

Looking to the future, the system can be expanded with additional RSP-Z2s, which could either replace or work alongside the legacy equipment. Regardless of the role they play, integrating new RSP-Z2s into the system will be straightforward thanks to the built-in JPS Unity feature set shared with the Z-Series Controller.

This legacy-friendly solution provides important cost savings and the opportunity for future growth. Importantly for the residents of Blanco County, it simplifies communications so Emergency Management can be more efficient when responding to local, regional, or even state-wide emergencies.

FEEDBACK

"Being able to utilize the new and old systems saved our taxpayers. The issues that Blanco County faces are being part of the larger GATRRS System, but on a VHF level. Our surrounding counties are also on a different system – that always creates a challenge when trying to communicate with each other. JPS equipment allows us to patch these different channels together during an incident without having to make multiple calls to get the patch done.

"Recently, we deployed the command bus with the new equipment, and this is one of the comments from the dispatcher working, 'The equipment did allow us to communicate on multiple channels far easier than the old way, and quickly relay information from and to multiple sources.' I did see where this will allow us to better control our communications from the bus."

Chris Liesmann
**Blanco County Commissioner PCT #3**

RIGHT-SIZED
#3

THE NEED

Investing in new communications infrastructure can seem challenging, but it doesn't have to be expensive. Replacing legacy equipment and modernizing to integrate new technologies can be done on a budget.

THE SOLUTION

Upgrading their MCV from a decommissioned trailer to a Sprinter van, Haywood County (NC) Emergency Management opted to save money and add capability by replacing a truly old ACU-1000 with an ACU-M and an RSP-Z2. These two gateways combine to cover the six LMR resources the County requires. The ACU-M offers four LMR links, and the other two connect from the RSP-Z2 using JPS RoIP.
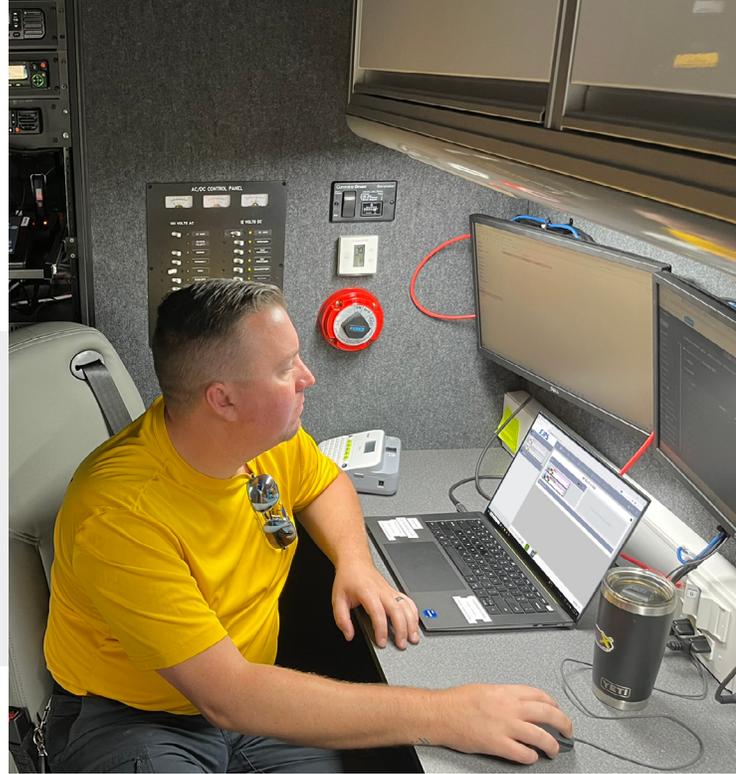
Both gateways may also be used standalone for LMR without a network connection, or for any of the available audio resource types when connected to a network (via satellite, hotspot, Wi-Fi, etc.). The built-in versatility of the two gateways makes them easily deployable on their own separately, ensuring that they can still be used even as the MCV continues to be upgraded and equipped.

" FEEDBACK

"As the Emergency Management Coordinator for Haywood County, I am pleased to highlight the advancements in our on-site incident management capabilities through the integration of the JPS ACU-M, paired with the RSP-Z2. This technology has significantly enhanced our ability to coordinate during emergency response efforts, especially in overcoming the long-standing challenge of communication interoperability.

"The ACU-M system is a versatile and reliable solution that allows multiple agencies, regardless of their communication platforms, to connect seamlessly during critical incidents. By pairing it with the RSP-Z2, we've been able to ensure that all first responders – whether they are using UHF, VHF, or 800MHz – can communicate in real-time, without delays or disruptions.

"This enhanced capability has proven invaluable during multi-agency responses, where time-sensitive decisions are crucial for protecting lives and property. For example, during a recent large, planned event, the ACU-M and RSP-Z2 system ensured that law enforcement, fire services, and EMS could maintain a cohesive communication line, mitigating the need for relaying information and improving the efficiency of operations.

"The deployment of the JPS equipment in Haywood County has strengthened our response capabilities, reduced communication gaps, and significantly improved our interoperability during complex emergency situations. This technology represents a critical asset in our ongoing mission to protect and serve our community."

Zack A. Koonce IV
Haywood County Emergency Services
Emergency Management Officer

ALL IN ONE
#4

THE NEED

It can seem overwhelming, but in today's communications-heavy world, being prepared to accept and link comms from nearly any device type has become a key piece of effective agency coordination and emergency response.

THE SOLUTION

Taking into consideration the sheer number of LMR, SIP, and JPS RoIP requirements that needed to be met when replacing their old ACU-1000, the FEMA MERS group in Maynard (MA) opted for an ACU-Z1.

They chose the modular ACU-Z1 because it would allow them to connect up to 24 JPS RoIP or SIP resources coming from a network of legacy JPS gateways (ACU-1000/2000/T) in other MCVs and their FEMA SIP call manager, respectively. Beyond retaining intra-agency communications capability, they have the installed ACU-Z1 modules (VIM-Z1 or PSTN-Z1) they can use as needed with other communication types: LMR, MCC, PoC, PSTN, JPS RoIP, RTP, and SIP.

This setup provides them with the connections they require for their agency, plus the flexibility to interact with on-the-ground responders wherever the next emergency takes them.

Z-SERIES INTEROPERABILITY

EASE OF USE

▶ Multi-user, web-based UI with personal preference options

▶ Resource status & connection information, including RX and TX

▶ Audio available in the web browser

▶ Context-sensitive help & resource guides

MANAGEMENT

▶ Selectable Backup, Restore, & Reset to apply settings as desired

▶ Configurable user management & permissions

▶ JPS Unity to build & manage distributed systems

▶ Network troubleshooting tools to help resolve routing issues

FEATURES

▶ Agnostic radio interfacing & enhanced features for trunked systems

▶ Native Push-to-Talk over Cellular integrations

▶ SIP system-wide & resource-specific settings

▶ MCC Console resource type links easily with MCC desktop microphones

JPS

CONCLUSIONS

JPS has been a trusted name in interoperability solutions for over 30 years and the longevity of our equipment in the field has minimized the need for responders to upgrade equipment. Plainly stated, planned obsolescence just isn't something JPS does.

Despite that, technologies used in communication have advanced significantly and emergency responders need to keep up. Modern JPS Z-Series gateways expand communication capabilities, allow for legacy system use, and remain an economically and technologically sound investment.

BENEFITS

RETAIN

- Existing radio equipment & other devices
- Legacy JPS equipment
- Free JPS customer support, online resources, & software updates

ADD

- Modern communications types like PoC (ESChat, Motorola WAVE PTX, Zello, AT&T Enhanced PTT, Verizon Push to Talk Plus, & more)
- Specialized features to enhance operation

DO MORE

- Reduce costs & improve response efficiency
- Create ad-hoc dispatch
- Expand intra-agency & multi-agency communications interoperability

TO LEARN MORE

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