U.S. BORDER PATROL DEVELOPS LARGE-SCALE INTEROPERABILITY SOLUTIONS WITH WAVE

Converged Communications Creates a Law Enforcement and Intelligence Hub at the World's Busiest Border Crossing

The U.S. Border Patrol agents of Tucson Sector work one of the world's busiest and most rugged stretches of international border. To more effectively coordinate security efforts and threat response with other agencies at every level of the government, the Border Patrol implemented a WAVE communications solution. With an extensive radio upgrade already underway, the Border Patrol achieved broad-reaching interoperability by leveraging the capabilities of WAVE software to create a converged communications solution that seamlessly integrates with current and future hardware. The solution empowered better coordination with local, state, tribal and other federal agencies to intercept terrorists, drug traffickers and illegal immigrants.

THE CHALLENGE

Border control is a top political and security priority. Effective border communication is mandated by the Department of Homeland Security (DHS), and it is critically important to mission success.

The U.S.-Mexico border is the most frequently crossed international border in the world. Divided into eight sections for management by the U.S. Customs and Border Protection (CBP) agency, Tucson Sector is the busiest. Staffed by nearly 3,000 Border Patrol agents, Tucson Sector covers 262 miles of linear border and approximately 90,000 square miles. "It is definitely some of the harshest terrain in North America," said Ryan Scudder, a Border Patrol spokesman.

Unfortunately, Border Patrol communications systems fell short of capabilities deemed vital. They lacked any inherent interoperability and portions of the existing hardware had become obsolete, making repairs difficult and expansion impossible. At times, the Border Patrol needed to coordinate with CBP Air and Marine, Arizona Highway Patrol, local law enforcement, the Tohono O'odham Nation Police Department, and others. Using a VHF system, the Border Patrol had no means to quickly communicate with these other agencies using UHF and 800 MHz systems. In daily operations, Border Patrol agents needing local support had to communicate indirectly through dispatch or by mobile phone, an unreliable method due to a significant lack of coverage along the border. To achieve interoperability in the event of a multi-agency on-site response, the Border Patrol was forced to transport one or more radio gateways

WAVE FEATURES

SYSTEM-OF-SYSTEMS ARCHITECTURE
Uses standards-based software to work with existing hardware infrastructure and avoid the unnecessary complexity, limitations and expense of proprietary hardware solutions.

EXTENSIVE INTEROPERABILITY
Creates a tightly integrated communications environment, eliminating borders, boundaries and limitations by uniting all communications devices regardless of technology, manufacturer, frequency or operator.

LOCATION INDEPENDENCE
Capitalizes on the prevalence of IP networks to seamlessly connect an unlimitednumber of users and their devices, no matter where they are in the rugged terrain.

GUARANTEED RELEVANCE
Ensures the system will never be obsolete by using standards-based software as core components.

"Tucson Sector was a test bed for a larger deployment of this WAVE based solution across the entire U.S.- Mexico border. Without relying on any hardware, we have the potential for achieving massive interoperability both easily and affordably. In the end, WAVE is simply a better solution at a cheaper price."

— JOHN HANES, AREA SERVICE MANAGER

to the scene. Each agency then had to surrender a radio to be connected to the console, an action that was not ideal for most agencies.

In addition, although reliable, the Border Patrol's existing radio console was no longer supported by the manufacturer. Expanding the system was out of the question and upkeep had become challenging. In fact, the Border Patrol had already resorted to purchasing some needed components off eBay.

THE SOLUTION

It became clear there was an operational requirement for greater interoperability between phones and radios, and with the varied systems of other agencies.

Alongside a process of upgrading field radios, Tucson Sector was pursuing a new IP telephony system. It became clear there was an operational requirement for greater interoperability between phones and radios, and with the varied systems of other agencies. With the radio upgrade already under way, the most critical criteria was that the group communications solution easily integrate with existing plans and hardware.

In light of the restrictive circumstances and the crucial need for inter-agency communications in securing America's borders, a WAVE-based system was seen as the only solution that could deliver the results Tucson Sector required. Solely reliant on standards-based software, WAVE creates seamless communications between disparate devices. It integrates easily with all Tucson Sector's existing hardware to create a converged communications solution, establishing interoperability with unparalleled flexibility, scalability and cost-efficiency.

WAVE Management and Media Servers were installed on Windows-based machines between the Border Patrol's 11 existing dispatch consoles and the Central Electronics Bank, responsible for sending and receiving signals along the network's microwave backbone. In addition to working seamlessly with this existing infrastructure, the selection of WAVE meant that Tucson Sector did not have to alter its ongoing process of replacing the approximately 2,500 handheld radios, 2,200 vehicle radios and 40 base stations in the field.

While maintaining the majority of its existing core hardware, Tucson Sector has taken a giant step toward becoming an intelligence and law enforcement hub for Arizona. Their WAVE-based solution flawlessly patches in phone lines and includes direct channels to CBP Air and Marine pilots providing crucial air cover and monitoring, as well as to the Tohono O'odham Nation Police Department. Meanwhile, the groundwork is established to create channels for the Arizona Highway Patrol, police for five or six different counties, and as many as 30 other local and state entities.

EMPOWER YOUR MOBILE WORKFORCE

Deliver real-time communication and information collaboration anywhere on any device.

BENEFIT FROM BATTLE TESTED SECURITY AND RELIABILITY

WAVE is the mission critical communications standard for organizations who demand evidence of system performance in real-world operational deployments.

REMOVE BARRIERS TO COMMUNICATION INTEROPERABILITY

Eliminate technology barriers that impede real-time communications so people can effectively and securely share voice, video, and data.

MAXIMIZE CURRENT TECHNOLOGY INVESTMENTS

Gain the benefits of a truly open and unified communication infrastructure and reject the "upgrade your system to gain interoperability" mantra.

WAVE Work Group Communications

Because every operational environment is unique, we offer WAVE solutions that deliver the capabilities and performance required to match your converged communications needs, network size and sophistication, and IT/engineering resources:

WAVE 3000 is optimized for MOTOTRBO systems with a wireline interface, and offers radio extension to smartphones and tablets using a simple appliance server for ease of deployment, management and support.

WAVE 5000 offers a highly scalable, feature and IT rich, enterprise grade PTT solution, enabling full interoperability between different radio systems and extending their reach using smartphones, tablets, PCs, telephones and select enterprise collaboration tools.

For more information about the WAVE Work Group Communications solution, please contact your Motorola representative or visit **motorolasolutions.com/wave**.

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