



# 20TH SUPPORT COMMAND COUNTS ON WAVE FOR RAPID DEPLOYMENT COMMUNICATIONS



## CBRNE Units Benefit from Improved Reachback and Decision-Making

For the U.S. Department of Defense, and the U.S. Army in particular, the scale of possible chemical, biological, radiological, nuclear and high-yield explosives (CBRNE) threats is greater than ever before. The U.S. Army's 20th Support Command (SUPCOM) is at the forefront of modern CBRNE detection and elimination. They depend on WAVE Work Group Communications as part of their rapid deployment communications equipment to improve reachback from worldwide field locations to subject matter experts at headquarters, as well as tight coordination with on-scene agencies and first responders in emergency situations.

### THE CHALLENGE

**The communications environment that exists when a mobile WMD Coordination Elements unit arrives on scene typically lacks the capabilities required to allow reachback communications.**

SUPCOM was established in 2004 with the mission of being the primary Army provider of specialized CBRNE capabilities. The Command united existing CBRNE response elements under one standalone command-and-control headquarters and maintains a highly capable rapid-response force for threats on U.S. soil. It routinely supports the President, other dignitaries and national security events.

In 2008, elements of the Command deployed in support of Operation Iraqi Freedom and have since deployed over 20 units a year in support of Operations Iraqi Freedom and Enduring Freedom for counter-IED operations. At any time, more than 20% of the Command is deployed abroad. Today, the 20th SUPCOM is capable of exercising full command and control of CBRNE operations to support Joint and Army

force commanders primarily for overseas events and warfighting operations, as well as providing support for homeland security.

A typical incident-response scenario for 20th SUPCOM sees them first deploying a subordinate unit, such as a specialist chemical or explosives team, to the scene. These subordinate units are located worldwide in current theaters of operation and work directly with 20th SUPCOM's mobile WMD Coordination Elements (WCE). WCEs are larger command-and-control groups that have direct access to airlift support for transporting men and materials, such as mobile command vehicles, to the scene. Once on scene, WCEs support local commanders or lead federal agencies with their significant CBRNE expertise and communications assets.

## WAVE FEATURES

### EXTENSIVE INTEROPERABILITY

Removes limitations by uniting all communication devices regardless of technology, manufacturer, frequency or operator for comprehensive communications with on-scene agencies and first responders.

### SYSTEM-OF-SYSTEMS ARCHITECTURE

Relies on standards-based software to avoid the unnecessary complexity and expense of proprietary hardware solutions and empower unlimited scalability.

### LOCATION INDEPENDENCE

Capitalizes on wireless classified networks and the global prevalence of IP networks to seamlessly connect an unlimited number of users no matter where they are in the world.

### MOBILITY & ACCESS INNOVATIONS

"Lightens the load" by eliminating rigid, cable-laden footprints to keep logistical overhead to a minimum and improve reachback from the field to headquarters.

### COMPLETE SURVIVABILITY

Provides groundbreaking redundancy and self-healing properties, including autonomous offline operations, peer-to-peer communications and automatic failover.

A primary requirement of WCE on-scene operation is reachback communications connectivity. It needs to connect units in the field, which could be anywhere in the world, to subject matter experts at 20th SUPCOM headquarters or at national-level laboratories, industries, academia or other state/federal CBRNE resources. Communication with other on-scene agencies and other first responders is also critical to effective incident response, especially during the very early stages, and WCEs must rapidly establish a comprehensive communications network.

Unfortunately, the communications environment that exists when a WCE arrives on scene typically lacks the capabilities required to allow reachback communications.

## THE SOLUTION

**As the Command continues to add new subordinate units to its structure, WAVE Work Group Communications provides the communications flexibility and radio extension that WCEs need to succeed.**

Having deployed WAVE at a previous command and seeing firsthand how it solves the many communications issues facing a highly mobile unit with critical communications needs, 20th SUPCOM G-6 (Communications Officer) LTC Hunter chose to equip his WCEs with WAVE-enabled communications.

According to LTC Hunter, the use of IP as a primary transport mechanism for radio communications removes the need for retransmission of radio network traffic. It also creates new opportunities for extended reach of communications and wider involvement and collaboration between WCEs, CBRNE teams and other tactical and strategic assets and resources spread throughout the region of operations and beyond.

## 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.

The quality of voice communications over established radio networks can be badly affected by both geographical location and excessive signal latency from retransmission from mobile radio towers. (Signal retransmissions are the main cause of voice quality degradation in radio networks.)

Finally, WCEs also need to coordinate with on-scene units such as local law enforcement, National Guard and others, all of which typically operate different communications systems. To do that, WCEs are forced to carry their own radio gateway units in order to provide a means of accessing the communications of local agencies and responders.

"Extending radio networks to other devices such as PCs and telephones is a major scalability benefit of WAVE that CBRNE operations fully utilize," says LTC Hunter. "Any PC at the operations center running WAVE is essentially another radio on one or more networks that we can use to communicate with other assets in the field. That gives us great flexibility in the way we can deploy equipment and respond to incidents."

Today, WAVE software is a crucial element of 20th SUPCOM's communications capability. As the Command continues to add new subordinate units to its structure, WAVE provides the communications flexibility and radio extension that WCEs need to succeed.

## THE RESULTS

### FULL COMMUNICATION CAPABILITIES, LOWERED BANDWIDTH

WMD Coordination Element personnel can quickly configure WAVE to support any network type, enabling full communications interoperability across multicast, unicast and mixed-mode networks while keeping bandwidth requirements to a minimum.

### IMPROVED REACHBACK FOR FASTER DECISION MAKING

As an interoperability solution, WAVE offers the unprecedented ability to reachback and exchange mission-critical information in real time, allowing for faster and more informed decision making before, during and after a mission.

### UNLIMITED SCALABILITY

WAVE offers the potential to connect an unlimited number of users at all levels of the Army and government regardless of their communications device, including PCs, radios and smartphones.

"WAVE gives us the reach and interoperability that we need to execute our mission and we continue to demonstrate its worth during our operational readiness exercises and in the field. WAVE definitely gives us an edge, and in this business I'll take every advantage I can get."

— LTC HUNTER, 20TH SUPCOM G-6

For more information about the WAVE Work Group Communications solution, please contact your Motorola representative or visit [motorolasolutions.com/wave](http://motorolasolutions.com/wave).

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. [motorolasolutions.com](http://motorolasolutions.com)

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2015 Motorola Solutions, Inc. All rights reserved. W-CS-0003

