SECURE, REAL-TIME RADIO COMMUNICATIONS FOR THE UNITED STATES COAST GUARD

WAVE™ TECHNOLOGY PROVIDES CRITICAL SUPPORT FOR RESCUE OPERATIONS

UNITED STATES COAST GUARD

The US Coast Guard is one of the five armed forces of the United States and the only military organisation within the Department of Homeland Security. Since 1790, the Coast Guard has safeguarded the country's maritime interests around the world. It is an adaptable, responsive military force of maritime professionals who provide a persistent presence along the country's rivers, ports, littoral regions and the high seas.

The US Coast Guard is using the WAVE™ Work Group Communications system from Motorola Solutions to facilitate real-time conversations between radio users and those located at bases on land. The system has provided a more reliable communications infrastructure and, as a result, the organisation has been able to reduce costs, enhance security and improve overall response times.

CUSTOMER PROFILE
Organisation:
The United States Coast Guard

Industry:
Government

Location:
Washington, US

Motorola Solutions Products:
- WAVE™ Work Group Communications

Applications:
- Real-time communications for rescue operations
- Individual and group calls using radios and desktops
- Secure remote access from home or on the road
- Centralised communication management system

"During rescue operations, key personnel can now be at home or on the road and be constantly in touch – no matter where they are. WAVE has allowed us to move beyond our original goal of providing seamless radio access from multimedia computers. Our staff are now using it as a quick and easy communications mechanism to conduct meetings, ask questions and stay in touch with others right from their PCs. The solution has also positioned us for interoperability with other agencies on a scale we never thought possible."

Bob Winters, Network Branch Chief of the Coast Guard Electronic Systems Support Unit in Seattle

THE CHALLENGE

Coast Guard personnel stationed at bases on land needed real-time access to the multichannel radio conversations between Coast Guard ships, boats, planes and helicopters participating in rescue actions, security operations and drills. Not only did they need to listen in on these radio channels, but they also needed to conduct real-time conversations with the crews of the ships and aircraft involved in these critical operations. The organisation also wanted to ensure that personnel had secure access to these radio channels from any location they found themselves at – be it at a Coast Guard base, at home or on the road.

Understanding the benefits of using a converged network infrastructure, the 13th Coast Guard Electronic Systems Unit decided to deploy the WAVE Work Group Communications system from Motorola Solutions. By extending the radio system to its existing IP network, the system would help deliver multiple real-time transmissions to personnel desktops and give them the ability to speak back on the radio systems.

THE SOLUTION

Radio systems across the 13th District – which ranges from Oregon to the Canadian border – are now connected to the IP infrastructure using standard routers. The router equipment makes use of E&M (Ear and Mouth) interfaces to carry audio signals between the routers and radios. Audio received from radios is relayed by the routers to the IP network, making use of IP Multicast channels that WAVE PC Clients have direct access to. On the flip side, audio transmitted by PC users is relayed by the routers to the radios for transmission over the air.

A WAVE Management Server is installed in the Coast Guard network, which centralises control and configuration of users, radio systems, WAVE channels and tone definitions. The technology allows administrators to manage the WAVE system from any computer on the network using a standard web browser. The server also provides the log-in point for personnel accessing the radio network, allowing them to 'tune in' to the WAVE channels assigned to them. As with system administration, end-user access is via a web browser eliminating any need for software installation. The WAVE PC Client software is hosted inside the web browser and is automatically installed on first use (and upgraded automatically).

The WAVE Media Servers provide dial-in access for those personnel who need to participate in radio conversations but only have home or mobile phones available to them. They are also used as spanned conference systems, allowing the conference to not only provide a bridge onto WAVE channels (and ultimately to PC users and radio systems), but also to exist in multiple locations at once and be seamlessly connected using WAVE's unique trunking technology.

THE BENEFITS

The WAVE system offers a number of features that, ultimately, provide the US Coast Guard with a more responsive communications system. The technology allows land-based personnel to use their desktop PCs to stay informed on the latest developments during emergency situations. Coast Guard administrators have complete control over who has access to which radio channel and what privileges are available on those channels. The system's Simulcast feature reduces response times by allowing users to speak to multiple radio systems at the same time, while the WAVE Instant Replay feature allows the saving of all communications to standard audio files. This gives personnel the confidence that they don't miss any important communications and the option to play back conversations at a later date.

The IP network's routing capability all but eliminates the chances of the radio trunking system becoming disabled during outages caused by weather, accidents, terrorist attacks and other unforeseen events. VPN support also allows users to securely access the entire communications system from home or on the road, saving time and ensuring the right people are talking when they are needed most.

The system also saves money. The US Coast Guard has realised tremendous cost savings by using existing desktop PCs to interact with the radio system, rather than issuing radio handsets to all its users. Also, costs associated with radio trunking are brought down by using the IP infrastructure to manage radio communications instead of costly leased circuits.

The US Coast Guard fills a vital role in the security of the United States and, as such, needs to interoperate with other branches of Homeland Security, as well as the US Military, US Forest Service, State and local law-enforcement agencies and the like. Deployment of WAVE at these agencies means that the foundation has been laid for instant bridging of WAVE channels across the various organisations in times of crisis.

Benefits:

- **Improved communications** – system extends radio conversations to desktops of critical land-based personnel, ensuring faster response times
- **Cost reductions** – integration with existing IP infrastructure more economical than costly leased circuits
- **Remote access** – VPN support allows users to securely access communications system from home or on the road
- **Service assurance** – routing capability eliminates radio system becoming disabled during outages caused by weather, accidents and emergency situations
- **User-friendly system** – web-based interface simple to use and can be managed from any computer on the network
- **Better security** – system provides complete control over who has access to which channels and what functions are available on those channels
- **Faster response times** – WAVE's Simulcast feature allows users to speak to multiple radio users at times of emergency
- **Increased scalability** – system can allow for interoperability with other branches of the US Homeland Security Department

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

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