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To help protect the lives of government employees, citizens and visitors on Washington's remote Olympic Peninsula, the Olympic Public Safety Communications Alliance Network (OPSCAN) was created to unify the communications of more than 40 international, federal, state, local, tribal, and utility agencies. In one of the first and largest interoperability networks of its kind, OPSCAN chose WAVE as the core component for its 'system-of-systems' network, leveraging software to enable seamless interoperation among existing radio systems and extend their reach to analog and IP telephones, mobile phones and computer systems across the state and beyond.

Building a Safer State

How a Law Enforcement Officer's Desire to Protect Life Became a Poster Child for Multi-Agency Communications Interoperability

The Challenge

At the furthest northwest corner of the continental United States lies Clallam County, 1,700 square miles of rugged terrain on Washington's Olympic Peninsula. With its remote location and sparse population, the region presents a number of challenges for government agencies seeking to ensure public safety and protect the lives and property of agents, residents, and visitors.

"Public safety agencies must cover not only the towns and roads, but 300 miles of coastline, part of Olympic National Park, the Canadian border, two marine ferries, and several Native American Nations," says Clallam County Sheriff Joe Martin. Matching the vast land and seascapes is a broad force of more than 40 local, state, federal, utility, tribal, and Canadian entities that are responsible for handling the county's public safety issues.

The involvement of so many agencies in managing daily affairs and responding to criminal activities, accidents, and natural emergencies, made Clallam County's situation a perfect example of the challenges faced by all levels of government across the U.S. in the post-9/11 environment. The ability to work together and communicate effectively is not only a responsibility of state and local governments mandated by the Department of Homeland Security (DHS), it is essential to preventing and responding to public safety threats.

At the federal level, agencies include the Department of Homeland Security, the FBI, the U.S. Coast Guard, the U.S. Customs and Border Protection Bureau, and the National Forest Service. The state's presence ranges from the Emergency Management Agency and the Washington State Patrol to the Department of Transportation and the Department of Natural Resources, Fish and Wildlife. And finally, local to the peninsula itself is the usual network of first responders, hospitals, schools, and utilities, along with the S'Klallam, Lower Elwha and Makah Indian Nations. At times, situations may require cross-border collaboration with the Royal Canadian Mounted Police and British Columbia Parks Police.

Each of the entities involved in Clallam County use completely different methods of communication, from landlines and cell phones to radios broadcasting on VHF, UHF, 700 MHz and 800 MHz frequencies. With the need to communicate both on a daily basis and in the event of an emergency, the use of completely disparate technologies made inter-agency communication difficult, inefficient, and at times, dangerous.

Following two events in particular - months of conflict in 1998 and 1999 over Makah whaling rights, and the involvement of multiple agencies in a 25-hour standoff following the shooting death of a Sheriff's Deputy - in 2001 Sheriff Martin spearheaded the formation of the Olympic Public Safety Communications Alliance Network (OPSCAN). Sheriff Martin was able to secure the participation of each of the more than 40 agencies involved with the county's public safety, and so OPSCAN was formed with the purpose of determining, implementing, and managing a plan for seamless communications interoperability.

The Solution

With the tragic events of 9/11, and the shortcomings of inter-agency communication they highlighted, Sheriff Martin's formation of OPSCAN proved to be truly prescient. Following the formation of DHS and its goals of prompting states to

Customer Pain Points

- **Inter-Agency Communication Breakdown.** More than 40 public agencies using different devices were unable to communicate effectively to manage daily operations or emergency events.
- **Remote, Rugged Geography.** Rural location limited network coverage, delayed on-site presence of personnel, and hampered repair and maintenance efforts.
- **Significant Budget Restrictions.** Multiple small, local agencies meant a patchwork of devices and facilities with virtually no technical personnel, eliminating the possibility of broadly replacing and upgrading radio equipment.

WAVE™

Solution Features

- **System-of-Systems** Unifies your existing communication systems,eliminating the costly and time consuming need to replace whole systems to achieve inter agency interoperability.
- **Extensive Interoperability.** Creates a tightly integrated communications environment, eliminating borders, boundaries and limitations by uniting all communication devices regardless of technology, manufacturer, frequency, or operator.
- **Complete Survivability.** Provides groundbreaking redundancy and self-healing properties, including autonomous offline operations, peer-to-peer communications, and automatic failover.
- **Cost-Effectiveness.** Uses only standards-based software to deliver highly affordable interoperability by incorporating existing communications devices without requiring any expensive new hardware.

achieve widespread interoperability, in 2003 OPSCAN applied for and received a FEMA grant of $5.8 million.

At the time, most grant funds were being used to purchase expensive digital radio equipment - a costly strategy that has since proven to be highly ineffective at achieving any significant level of interoperability. OPSCAN, however, recognized that the sheer scope of participating agencies meant pursuing radio system upgrades was not an effective option. They needed to find a solution that could integrate all of their disparate individual technologies into a single unified system. The only technology with a proven ability to accomplish that goal was WAVE™ from Twisted Pair Solutions.

WAVE is an entirely software-based solution to group communications interoperability. Built to open standards and requiring no additional or proprietary hardware, WAVE enables organizations to operate in ways they never thought possible. Rather than purchase unnecessary hardware and spend a disproportionately large amount of their budgets for a smaller user footprint, coalitions like OPSCAN can instead vastly extend their communications network, linking counties, states, nations, and continents. By choosing WAVE, OPSCAN empowered themselves with the ability to communicate with anyone, anywhere, using any equipment they see fit, both now and into the foreseeable future.

"We felt that WAVE was the best fit to help us enhance public safety communications," says Sheriff Martin. "By using IP to tie legacy radio systems together for interoperability, we are able to increase communications between first responders using disparate radio systems and frequency bands. The IP platform also allows for migration to future technologies, without locking us into any one specific vendor or protocol."

As the first project of its kind in the U.S., and the first to follow the guidelines for interoperability established by the DHS SAFECOM program, the success of the OPSCAN project has garnered much attention. "We've been named by Homeland Security as the best example of a rural interoperability solution capable of connecting local agencies in an affordable manner," says Patti Morris, Grand Administrator for OPSCAN. "We firmly believe that no other emergency responder will lose his or her life because we have not provided them with a reliable means of communication." As a result, IP-based software solutions have become a key component of the DHS grant funding rules for the $1 billion appropriated for supporting states in their pursuit of interoperability.

In fact, many other agencies and groups are already working towards employing the seamless, cost-effective approach used by OPSCAN and championed by DHS. Plans are already in place to expand the network to the five other counties on the Olympic Peninsula, the Washington State Interoperability Executive Committee (SIEC) is developing a plan for the implementation of systems statewide, and the 2010 Olympics Security Subcommittee for Interoperability is planning to test the OPSCAN solution to enhance both security and the management of daily operations.

About Twisted Pair Solutions

Twisted Pair Solutions, Inc. designs and builds enterprise software solutions that enable interoperable group communications. Our WAVE software manages real-time, secure, group communications over the IP network, linking in people and devices. The application suite serves an unlimited variety of devices including radios, personal computers, cell phones, and IP phones and allows previously incompatible systems to work together seamlessly. In addition, Twisted Pair's management server capabilities enable robust device and user management over the IP backbone. Twisted Pair Solutions is headquartered in Seattle, Washington, USA, with offices in the Netherlands, UK and Australia.

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