PUBLIC SAFETY WIRELESS NETWORK

Saving Lives and Property through Improved Interoperability

Coordinated approaches and partnerships among public safety officials and government leaders (elected or appointed) are an essential part of improving wireless interoperability. Shared systems planning and coordination and partnership activities help make public safety communications systems more compatible, so that law enforcement personnel, firefighters, emergency medical personnel, and other public safety officials can talk with each other more efficiently and coordinate their efforts to save lives and protect property.

Traditionally, public safety agencies have developed or updated their radio systems independently to meet specific mission needs. More recently, individual public safety agencies have come to realize that they cannot solve challenges to interoperability alone. In an effort to raise awareness of complex coordination and partnership issues and suggest some possible solutions, the PSWN Program has developed this guide. I recommend it to you as a potential catalyst for improving and evolving existing coordinated communications efforts in your respective areas.

Sincerely,

Mr. Steven Proctor
Executive Vice-Chair, PSWN Executive Committee, and
Executive Director, Utah Communications Agency Network

About The PSWN Executive Committee

The PSWN Executive Committee is composed of senior-level executives from local, state, and federal public safety agencies from across the country. Members have proven expertise or accomplishments in the field of law enforcement, fire and rescue, emergency medical services, public safety communications and information technology. The objectives of the committee are to raise awareness on the communications difficulties encountered by public safety personnel and to provide program guidance to the PSWN Program as it works to achieve interoperable public safety communications.

This guide was prepared by the Public Safety Wireless Network (PSWN) Program. This program is a joint initiative of the Department of Justice and the Department of the Treasury. For more information, visit the Web site at www.pswn.gov or call 800.565.PSWN.

PUBLIC SAFETY

Coordination and Partnerships
Awareness Guide

coordination

partnerships

Today, emergency incidents increasingly require a high level of multiagency and multifunctional response by emergency service providers. A growing number of acts of domestic terrorism, civil disturbance, youth violence, and natural disasters have demonstrated the need for local, state, federal, and tribal public safety providers to better coordinate their efforts at the scene of an incident. In many instances, responding to such incidents is a new experience for all involved. Imagine the on-scene confusion when a police or fire department responds to a mass casualty incident such as a train derailment or a commercial airline crash. Typically local agencies are the first responders to these incidents, with state and federal resources called in to assist. The problems are compounded if, during these responses, emergency personnel have limited radio communications. Despite public safety efforts to mitigate the consequences of these incidents, the risk of losing lives and property has grown as a direct result of the substantial time spent establishing on-scene communications.

Often, inadequate technology becomes the scapegoat for these problems. Fortunately, wireless technology solutions are becoming widely available to public safety agencies to assist in facilitating communications interoperability. However, technology is not always the issue. The lack of coordination and partnerships among government leaders and public safety officials in planning for, and implementing, public safety land mobile radio (LMR) systems has created a much more significant challenge. In fact, findings resulting from the PSWN Program's *Analysis of Fire and EMS Communications Interoperability* indicate a significant need for coordinated approaches, relationship building, and information sharing. These elements have long been seen as critical to solving a number of key interoperability issues such as spectrum sharing, funding, standards development, and systems security—each of which is a critical element in implementing successful public safety radio communications systems.

What Is the Problem?

The problems associated with the lack of coordination and partnerships in the public safety community cross all jurisdictional boundaries. For example, routine law enforcement activities, such as narcotics investigations, generally require participation by multiple local, state, and federal law enforcement agencies. Naturally, these situations require agencies to work together to ensure that information exchange, whether by voice communications or data communications, is available to assist public safety in performing its critical missions. As it stands now, several key issues have emerged as challenges to successful coordination and partnerships activities. These issues include "turf issues" over the management and control of radio systems, the lack of a shared priority for interoperability, and limited sharing of interoperability solutions within the public safety community.

Jurisdictional boundaries and unique missions often create perceived barriers that hinder cooperation and collaboration in situations where they are necessary. Historically, individual communications managers and technical radio specialists were solely responsible for providing communications for their agency. As such, they developed a sense of ownership during these projects that creates "turf issues" as planners now attempt to facilitate interoperability by developing shared systems. Stovepipe systems that served the mission of a single agency or jurisdiction were developed at the expense of interoperability. The changing mission of the public safety community and the scarcity of public safety resources have necessitated coordinated system planning efforts. However, these efforts are hindered by perceptions that management control of radio system development and operations will be lost. As a result, coordination and partnership efforts do not evolve, and "stop gap" measures are implemented to address specific interoperability requirements.
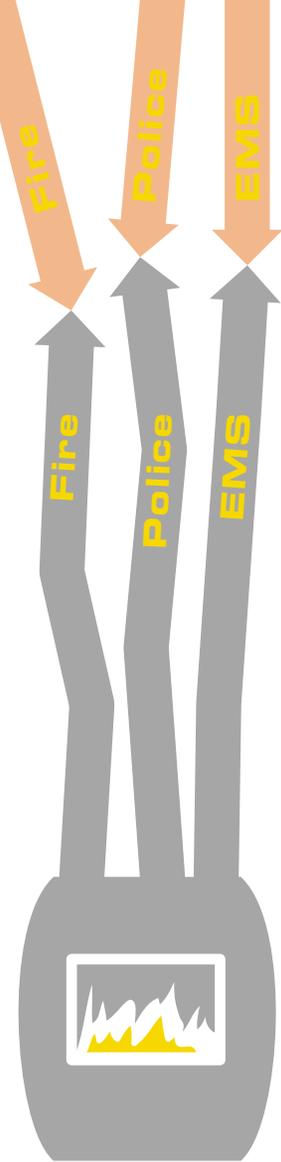
Stovepipe systems serve the mission of a single agency or jurisdiction, at the expense of interoperability.

Fire   Police   EMS

Fire   Police   EMS

The importance of, and need for, interoperability is not sufficiently understood by decision makers or the organizations that influence those decision makers. Raising the priority of the communications interoperability issue with senior government executives has been difficult. Often, it takes natural or manmade disasters to bring the issue to the fore. Elected and appointed officials are routinely faced with prioritizing issues affecting their jurisdiction. Without sufficient knowledge of the importance of communications interoperability, critical coordination and partnerships may never evolve at this level. Some associations of elected and appointed officials and public safety executives have begun working to raise awareness of their position supporting multijurisdictional interoperability as a high public safety priority. An important step would be to encourage relevant associations to continue to develop overt positions on the issue and to highlight its importance at their meetings and conferences.

Finally, information sharing and best practices regarding interoperability are not established or available at all levels of government. Although public safety agencies have found "on-the-spot" solutions to deal with the lack of communications interoperability on scene, they generally do not have strategies or the financial resources to establish forums that would regularly address communications interoperability issues. Typically, agencies at all government levels rely on after-action reports detailing their lessons learned to prepare for future emergencies of similar magnitude. However, without established forums or other opportunities to share and incorporate local, state, and federal communications experiences and needs, the option to coordinate efforts to develop common approaches and best practices to address interoperability is often overlooked.

RAINBOW Communications System

For nearly 20 years, the State of Hawaii has worked in partnership with federal agencies to provide communications connectivity among all the major islands in the state. Known as the Rainbow Communications System, the network serves three federal participants (the U.S. Customs Service [Customs], the U.S. Coast Guard, and the Drug Enforcement Administration) and three state agencies (the Department of Land and Natural Resources, the Information and Communications Services Division, and the Office of Civil Defense). The longevity and success of this system make it an excellent example of coordination and partnerships.

The system is governed by the Rainbow Executive Council, comprising representatives from each of the six partner agencies. Customs serves as system manager and oversees all system management and maintenance. As manager, Customs is responsible for enforcing the terms of the interagency memorandum of understanding, developing engineering guidelines, and overseeing the maintenance vendor.
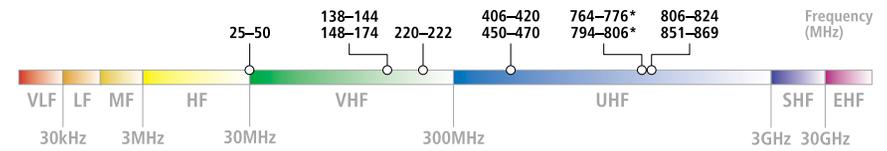
What Has Been Done?

In the past, public safety agencies have addressed interoperability on an individual basis. More recently, local, state, and federal agencies have come to realize that they cannot do it alone. Officials at all levels of government are now taking action to improve coordination and partnerships and facilitate multijurisdictional interoperability. Specifically, state and local agencies are exploring partnerships to develop shared systems. Shared systems have many benefits, including lower costs, widespread interoperability, community interaction, and shared management and control. One common approach is to work toward developing regional and statewide interoperable public safety wireless systems that provide multijurisdictional coverage for local, state, and federal agencies. States can establish member-ship agreements and fee-for-service arrangements with local public safety agencies as an incentive to attract local subscribers to the system. At local levels

				138–144		406–420	764–776*	806–824	Frequency (MHz)
			25–50	148–174	220–222	450–470	794–806*	851–869	

VLF	LF	MF	HF	VHF	UHF	SHF	EHF
30kHz		3MHz	30MHz	300MHz		3GHz	30GHz

Not available until 2006 or beyond

of government, shared wireless communications systems are becoming increasingly prevalent and fiscally necessary. Local agencies often find success in shared system development by obtaining community buy-in resulting in increased awareness by local government leaders and partnering with other local government entities to share land or facilities for tower sites.

States have also identified the need to have senior-level leadership and sponsorship for interoperability efforts to break down barriers caused by the lack of coordination and partnerships. Some states have established or are in the process of establishing executive committees to address interoperability issues. These committees, often created with the participation and endorsement of the state's chief executive or through legislative action, can provide a rich venue to discuss and facilitate planning and policy development to improve wireless interoperability. These forums have been established from scratch or by enhancing the role of an existing committee to address wireless interoperability issues. In addition to their coordination role, these bodies are leveraged to help leaders stay informed and engaged in the

development of multijurisdictional interoperability efforts. In addition, states have recently been authorized to apply for a state license for public safety services in the newly allocated 700 megahertz (MHz) band. The Federal Communications Commission (FCC) has decided that each state has the option to administer 2.4 MHz of the 700 MHz band spectrum. The governor of each state, or his/her designee, is authorized to apply for the state license. This important action will allow states to coordinate wireless systems planning efforts throughout the state and ensure that all public safety agencies are able to operate within the same channel band.

> "At local levels of government, **SHARED** wireless communications systems are becoming increasingly prevalent and fiscally necessary."

COORDINATION AWARENESS

The 700 MHz band has also enabled the FCC to foster coordination and partnerships. Specifically, the FCC has established the Public Safety National Coordination Committee (NCC). This committee's mandate is to formulate an operational plan to achieve nationwide interoperability. This plan will be designed to include a shared or priority system for both day-to-day and emergency operations in the 700 MHz band. This coordinated effort will also, for the first time, include rules that allow federal users access to shared interoperability spectrum. Furthermore, the NCC is working to standardize plans and procedures using the Incident Command System (ICS), which is a systematic approach to managing priority access to the 700 MHz band public safety interoperability spectrum for response to incidents of any size.

Other federal agencies have also been leading coordination and partnership efforts. In 1996, the Department of the Treasury and the Department of Justice entered into a memorandum of understanding (MOU) formally recognizing the Federal Law Enforcement Wireless Users Group (FLEWUG). The MOU tasked the FLEWUG with planning the development of the Public Safety

Wireless Network (PSWN) Program. These two groups work to raise awareness of the issue of interoperability and shape best practices with public safety community. Specifically, they sponsor regional symposiums and national forums that bring together public safety officials and elected and appointed officials to network and share lessons learned in shared system development. The PSWN Program also explores technical solutions to interoperability by sponsoring pilot projects that require extensive coordination and partnerships to provide interoperability. In addition, the program engages in outreach and media relations to expand awareness of the importance of wireless interoperability and has undertaken a campaign to promote the development of communications committees at the state level. Further, the program has partnered with the National Institute of Justice to engage elected and appointed officials and public safety executives at all levels of government. Specifically, the two groups are coordinating a National Interoperability Forum to provide a clear understanding of the issues and challenges to interoperability and to identify collaborative ways to actively address this national problem.

What Remains To Be Done?

Although public safety leaders have begun to address many of the challenges, there is still much to be done. It is vital that information about the benefits of coordinated communications efforts, and the partnerships that can be formed to support these efforts, flow down through all levels of government. Continued support of, and active participation in, outreach activities—through regional symposiums, publications, and piloted solutions—can greatly assist in raising awareness on interoperability. To improve interoperable wireless communications networks, the public safety community, as well as senior leaders at all levels of government, should use Public Safety WINS: Wireless Interoperability National Strategy, developed by the PSWN Program, to learn about solutions to the technical and policy issues critical to improving interoperability.

Local, state, and federal agencies should also form working groups or interoperability executive committees to coordinate interoperability activities. In doing so, broader communications requirements

In 2001, the Washington State Patrol (WSP) began the process of organizing a State Interoperability Executive Committee (SIEC) to address a variety of communications issues in the state. The SIEC is being fashioned according to guidelines prescribed by the FCC based on the recommendation of the Public Safety National Coordination Committee. To begin the process, the WSP has proceeded to develop a series of memoranda of agreement (MOA) between various agencies at all levels of government within the state. Once in place, the MOAs are designed to function in the same manner as would an executive order or statutory language, and do so in a purely voluntary manner. The Washington SIEC is being designed to leverage existing relationships and ongoing cooperation efforts, rather than create a new and possibly conflicting redundant administrative structure.

and mutually beneficial solutions can be used to meet response needs. Government leaders can work with these groups to provide leadership by issuing executive orders, when necessary, or making policy changes that require evidence of coordinated efforts and shared development efforts. The invaluable outcome of these efforts will be a spirit of cooperation that breaks down barriers through direct interchange on issues affecting communications interoperability.

Furthermore, associations that represent elected and appointed officials and public safety executives should energize and solidify their support to foster interoperability. More specifically, these organizations can develop policy statements that highlight the priority of interoperability to their member governments or officials. They can also issue a formal resolution that announces their organizational commitment to work to address this issue and to dedicate resources to meet key challenges to interoperability, including coordination and partnerships.

Finally, the public safety community must be more willing to work together on interoperability challenges. Improving communications interoperability requires a willingness to collaborate, despite jurisdictional boundaries or political barriers. The public safety community should continually participate in efforts, such as the PSWN Program, that facilitate opportunities to work together on interoperability solutions. Public safety officials should regularly remind their lawmakers and senior officials that interoperability is an important public safety issue and that many agencies, at all levels of government, have been successful in enhancing their working relationships to improve interoperability. Senior leaders should evaluate the current condition of their public safety wireless communications and interoperability within their jurisdiction, region, or state, and where possible, call area leaders together to address deficiencies in interoperable communications.

Why Does It Matter?

Public safety is an important issue that affects us all. Our public safety personnel must have reliable communications regardless of the type of emergency response. In some cases, technical solutions provide interoperability. However, in many situations, the lack of coordination and partnerships has impeded the ability to communicate via radio. The public safety community has already identified the issue of coordination and partnerships as its greatest challenge in achieving communications interoperability. Elected and appointed officials, senior government executives, and communications managers must foster and support effective interoperability initiatives. Not doing so will surely cost lives and property, and affect the quality of life within communities across the Nation.

For Additional Information

1 *Public Safety WINS: Wireless Interoperability National Strategy. The PSWN Program's Roadmap for Improving Interoperability Among Public Safety Wireless Networks Around the Nation* [CD-ROM]

2 *Public Safety and Wireless Communications Funding Awareness Guide*

3 *Public Safety and Wireless Communications Interoperability Guide*

4 *Public Safety Radio Spectrum: A Vital Resource for Saving Lives and Protecting Property*

5 *Public Safety Wireless Communications Security Awareness Guide*

6 *Public Safety Wireless Communications Standards Awareness Guide*

7 *Public Safety Wireless Communications Systems: A Priority Investment for America's Future Safety*

These and other publications are available from the PSWN Program by visiting the Web site at www.pswn.gov or by calling 1.800.565.PSWN.