

The Role of the

public safety Community in Wireless Interoperability



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The local public safety community is the primary protector of life and property in the cities, counties, and towns throughout

the United States. Every day, local public safety personnel are cast in the role of first responders whether that entails rushing into a burning building, pursuing a suspect, or caring for ill or wounded citizens. These personnel provide the critical aid that prevents the loss of life and property during the crucial moments immediately following an emergency. During their daily high-tempo, life-saving operations, members of the local public safety community must provide a coordinated response that requires seamless, wireless communications. Interoperable wireless networks enable the vast array of local public safety entities to communicate among themselves and with state and federal agencies to most effectively serve the public.

The events of September 11, 2001, demonstrated the critical part local public safety personnel play in responding to emergencies, even those of national importance. In these incidents, the local public safety community played a prominent role in the immediate response and throughout the recovery. As was seen at the World Trade Center

and the Pentagon, the local public safety community's responsibilities range from stabilizing the situation to establishing initial communications links. In cases where local public safety resources stretch beyond capacity, state and federal agencies may provide additional resources. It is clear that as emergency response efforts grow to include a broader range of responding entities, local public safety officials have an even greater role in coordinating and establishing interoperable wireless communications.

Today, local agencies across the Nation face serious obstacles to seamless, wireless communications. A recent survey of more than 1,500 local and regional public safety agencies found that nearly one-third of these agencies have had difficulty responding to incidents because of a lack of wireless communications interoperability. The study cited funding, disparate frequency bands, and inadequate planning as the primary barriers to interoperability. Because of these barriers, the local public safety community reported a lack of confidence in its ability to conduct joint operations with other organizations. These difficulties, and the increasing need for local public safety personnel to respond to emergencies of local and national importance, accentuate their need for interoperable communications systems.

Public safety wireless interoperability

Wireless interoperability is the ability for public safety personnel to communicate across different wireless systems when necessary. Seamless and secure radio communications are often their only lifeline when operating in a crisis environment, and without communications interoperability, both life and property are put at risk.

Three types of interoperability are needed:

Day-to-day interoperability involves coordination during routine public safety operations. For example, day-to-day interoperability is required when firefighters from various departments join forces to battle a structural fire or when neighboring law enforcement agencies must work together during a vehicular pursuit. Day-to-day is the most common form of interoperability used by local public safety agencies.

Mutual-aid interoperability involves a joint and immediate response to a catastrophic incident or natural disaster and requires tactical communications among numerous groups of public safety personnel. Airplane crashes, bombings, forest fires, earthquakes, and hurricanes are all examples of mutual-aid events.

Task force interoperability involves local, state, and federal agencies coming together for an extended period of time to address a public safety concern. Task forces lead extended recovery operations for major disasters, provide security at major events, and conduct operations in prolonged criminal investigations.

practitioner

of wireless interoperability

Partnering

Strategy
Formal Agreements
Informal Agreements

Breaking down barriers at all levels of government to improve interoperability and save lives.

The Local Public Safety Community as a Practitioner

Promoting

Spectrum
Standards
Funding

Being active in forums, associations, and government organizations that can affect the availability of resources.

Implementing

Tailored Technical Solutions
Shared Systems
Exercises

Establishing systems based on best practices for interoperability and resource sharing.

The local public safety community as the practitioner of wireless interoperability

The local public safety community's main role in wireless interoperability is that of practitioner. The local public safety community fulfills this particular role because its members are typically the first responders to an emergency incident. As the first responders, the local public safety officials must establish interoperable communications as an initial element of their response. For this to occur quickly and successfully, these first responders require support from the local government and the public safety community as a whole.

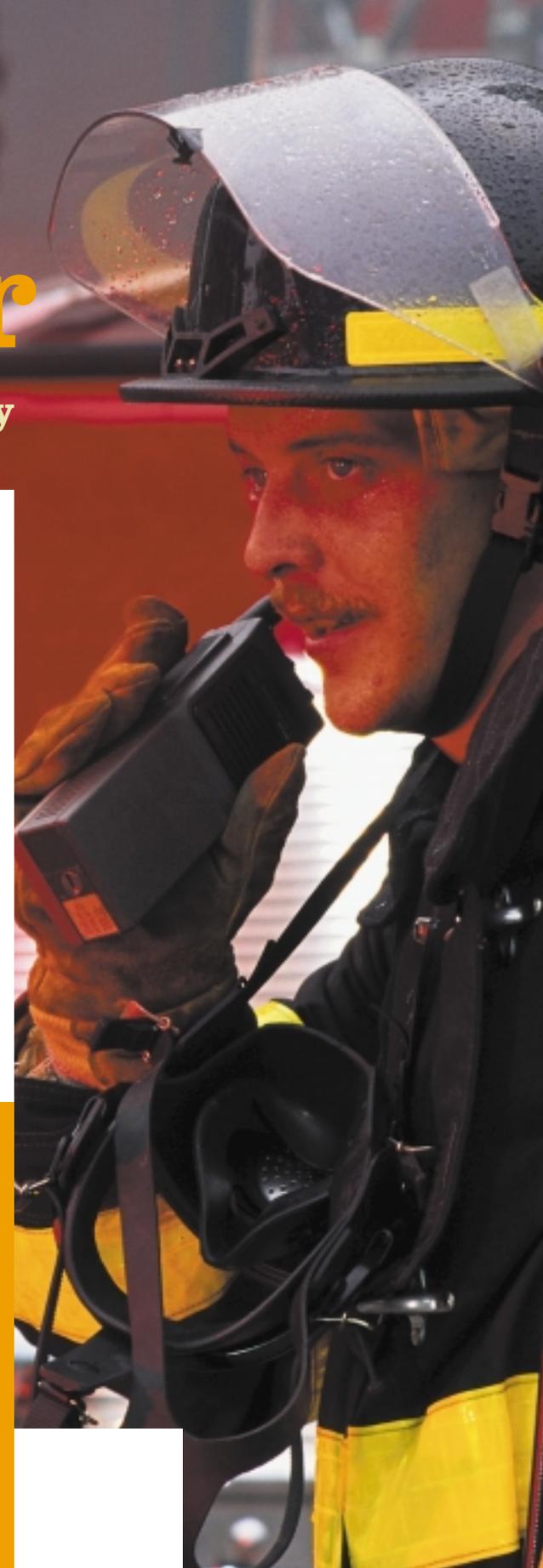
As the practitioner of interoperability, members of the local public safety community must take the initiative and responsibility to develop a comprehensive approach to improving their wireless communications. This comprehensive approach will provide first responders the communications capabilities they need.

To improve interoperability and fully support the wireless communications requirements of its operational personnel, the local public safety community can—

Partner with other agencies to build relationships that foster interoperability strategies and institute formal and informal agreements

Promote the local public safety community's interoperability requirements by addressing funding issues and by participating in forums and committees that could help allocate and manage spectrum or establish system standards

Implement improvements by adopting tailored interoperability solutions, developing shared systems, and preparing personnel for emergency situations.





partnering

Partnering—Building Relationships and Breaking Down Barriers

Public safety agencies can seek to partner with each other and other organizations to break down barriers at all levels of

government. These efforts to build relationships will help improve interoperability and save lives. Partnering to plan, develop, and/or implement interoperability solutions can also lead to shared resources, reduced duplicative efforts, and more efficiently operated and maintained radio systems for the local public safety community. These benefits can be achieved when individual agencies actively seek to partner with each other to develop an interoperability strategy and establish agreements. In addition to other local, state, and federal public safety agencies; transportation, public service, hospitals, industry, and several other organizations may be candidates for interoperability partnerships. By building relationships with these organizations and reviewing problems regionally, agencies can address “turf issues” and identify wireless communications and interoperability issues they have in common. While local agencies partner to solve problems regionally, they should also be open to and take into consideration the advantages that can be realized by joining a statewide system.

Potential Partners for Interoperability			
Federal Border Patrol Coast Guard Department of the Treasury Federal Bureau of Investigation Federal Emergency Management Agency Federal Marshals Forest Service HAZMAT Parks Service	State Community Health Corrections Emergency Management Fire Marshal State Police Transit Authority Transportation	City/Town Animal Control Bridge Authority Fire/EMS Parks Police Public Works Schools	County Bridge Authority Emergency Management Fire/EMS Game Warden Metro Parks Parks Road Commission Sheriff
Transportation Airport Harbor Master Railroad Toll Road	Public Service Ambulance Service Red Cross Salvation Army	Hospitals Private Public	Industry/Other Convention Centers Stadiums Tribal Nations Universities Utilities

After identifying issues relevant to the cities, towns, and counties within their region, local public safety agencies should coordinate the development of an interoperability strategy that meets all regional requirements. The goal of the strategy should be to address regional interoperability problems by building relationships with other organizations that will foster cooperation and the development of both short- and long-term plans. A comprehensive strategy is the crucial product of the partnering process because without it, agencies will develop their own plans without considering the unified, long-term objective. Because the local public safety agencies in a region have common interoperability problems, the strategy should include technical and operational solutions that can be implemented by all partnering organizations. The plans that make up the strategy, taken together, should address all of the interoperability problems.

Local officials should identify agency needs and interoperability shortfalls by focusing on specific individual agency goals and missions. The goals and missions of the partnering public safety agencies will differ depending on their discipline and jurisdiction, which, in turn, affects their interoperability requirements. By examining the various operational objectives and specific interoperability requirements of each agency, planners can identify the common problems that must be addressed. To address the current, near-term, and future interoperability requirements of the various organizations in the region, the local public safety community should develop short- and long-term plans. As part of a short-term plan, the partnering organizations can develop procedures for on-scene communications based on their current system capabilities. They may also consider adopting additional short-term interoperability solutions to provide interim improvements

in their communications until long-term solutions can be implemented. The partnering agencies should fully support their future goals and objectives and address those interoperability issues that cannot be resolved in the near term with a long-term plan. These long-term plans may include joining a statewide system or partnering with surrounding jurisdictions to establish a regional system. Together, the short- and long-term plans provide a complete interoperability strategy for achieving the communications needed by the partnering organizations. This interoperability strategy, or critical portions of it, can become the basis for various agreements among the partnering agencies.

To effectively implement the interoperability strategy, the public safety community can use formal agreements to define and establish interoperability partnerships at the local level. Three types of formal

Northern Virginia

On January 13, 1982, an Air Florida jetliner crashed into the 14th Street Bridge, which crosses the Potomac River between the District of Columbia and Virginia. During this incident, Virginia and District public safety officials could not communicate with each other because of the lack of interoperability. This incident stimulated a series of debates and actions directed at improving interoperability in the metropolitan region. In the late 1990s, as many Northern Virginia public safety agencies began to implement new communications systems, they established the Northern Virginia Trunked Mutual Aid Interoperability Group and invited the District of Columbia Fire Department to participate because of their involvement in joint operations. One example of their efforts is the scalable, regional Northern Virginia Trunked Mutual Aid Agreement, a document that defines the policies and procedures for greater inter-agency system usage. The value of the regional cooperation and planning efforts was evident during the response at the Pentagon on September 11, 2001. The majority of first responders were able to establish immediate interoperability and complete their respective operational missions effectively. The proactive efforts of the region's leaders and public safety officials were instrumental in ensuring this level of interoperability was readily available for the local first responders. Today, through a complete interoperability strategy and formal agreements, the local public safety community in the northern Virginia area is fully leveraging its partnerships to achieve interoperability. ★

Specifically, formal agreements may deal with—

Identifying communications resources that will be shared during specific response situations

Developing regulatory recommendations related to response communications

Obligating signing parties to financial and operational commitments

Defining jurisdictions, lines of authority, and system maintenance issues.

vehicles that local entities can use to formalize partnerships are the memorandum of understanding (MOU), memorandum of agreement, and mutual-aid agreement. These formal agreements can serve many public safety purposes and are often used to establish contractual obligations for communications interoperability. The responsibilities covered in these agreements may be as simple as a commitment to meet once a month or as complex as a commitment to provide millions of dollars from multiple agencies to support shared system development efforts.

By establishing formal agreements, local agencies can be confident of their communications capabilities and the support they will receive from the other signers of the agreement.

Agencies can also use informal agreements to solve problems that do not necessitate formal commitments. Informal agreements usually relate to practices and procedures that provide the participating agencies with a flexible approach for solving

on-scene interoperability problems. Such solutions could call for agencies to provide each other with radios for their command vehicles or for agencies to hand out portable radios on scene in the case of a joint response. When task force interoperability is required, informal agreements could be developed at the scene to handle the communications needed for temporary operations. For instance, local agencies from multiple jurisdictions can establish common resource management techniques such as the use of an incident command system (ICS). ICS is an organizational technique that local agencies use to facilitate the on-scene dissemination of information, implementation of strategies, and assignment of tasks during an emergency incident. By partnering with other jurisdictions, local agencies can ensure that the chosen solution will allow for a seamless, coordinated response in the critical first hour of a mutual-aid incident.



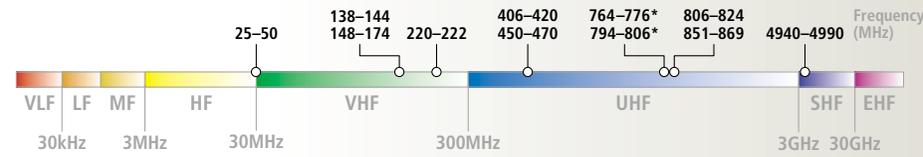
Promoting Interoperability—Being Involved—Making a Difference

To improve long-term system capabilities and capacity, market competition among equipment manufacturers, and

interoperability, the local public safety community must promote its needs with local, state, and federal government officials, equipment manufacturers, and the citizens it protects. By proactively promoting its communications requirements and being active in the often under-publicized Federal Communications Commission (FCC) rulemaking process and other forums, associations, and government organizations, the local public safety community can influence the availability of resources and reap significant long-term benefits. Involvement in spectrum, standards, and funding-related activities promotes the public safety community's views, experiences, and needs from the frontline—without this involvement, related rulemakings and decisions may never reflect local public safety needs.

Local public safety communications and improved interoperability often require increasing amounts and efficient management of public safety spectrum. Additional allocations of spectrum are important because local public safety agencies can deploy

Public Safety Spectrum Bands



*Not available until 2006 or beyond

more effective and comprehensive systems and incorporate emerging technologies that enhance interoperability and augment public safety capabilities. Through efficient management of the public safety spectrum, local public safety agencies can obtain additional channels, reduce interference, and improve interoperability to enable communications with other authorities responding to an incident, as well as for day-to-day communications needs. To have these spectrum requirements satisfied, the local public safety community must promote its long-term spectrum needs at the national, state, and regional level. Although many of these efforts may take years to achieve results, they are critical to the future of all local public safety communications.

The local public safety community can promote its spectrum needs at the national level by participating in procedures established by the FCC. This participation is crucial because public safety agencies compete for spectrum with commercial entities and other interests as the value of scarce spectrum soars to billions of dollars. Because of this competitive pressure, the FCC must make difficult decisions about the timing and amount of spectrum to allocate to public safety. To provide input, local public safety officials can draft filings for FCC dockets, including comments, reply comments, ex parte letters, or petitions for reconsideration,

highlighting the importance of public safety spectrum issues. Local officials can also schedule ex parte meetings and presentations with FCC Commissioners and staff members to demonstrate local public safety needs and focus the Commission's attention on the issues that affect those interests. Unlike submitting comments and other filings to the Commission, this direct interaction can produce immediate feedback and engage the policymaking personnel in a dialog to promote public safety concerns.

Local public safety representatives can also promote their requirements by participating in national forums that have an impact on the quality of public safety communications. The input provided by local public safety officials at the national level has a direct impact on missions at a local and regional level. For example, the Public Safety National Coordination Committee (NCC) is the federal advisory committee that provides assistance to the FCC regarding the regulation of the new 700 megahertz (MHz) spectrum dedicated solely to public safety communications interoperability. The NCC consists of local, state, and federal public safety communications officials, as well as representatives from equipment manufacturers. Through the NCC, local public safety members can weigh in on issues such as voice and data standards, channel plans, and guard bands.

FCC Dockets of Interest to the Local Public Safety Community

The FCC develops rules by analyzing the positions and opinions among relevant personnel at the Commission, users, vendors, and other interested parties represented within a docket. Dockets represent the feedback and response concerning policy-related, technical, and administrative issues identified by the Commission. Several FCC dockets include matters that affect the interests of the public safety community. To promote its interests, the local public safety community should regularly review new FCC announcements, notices, and statements to assess the impact of proposed initiatives on public safety concerns, and to evaluate, research, draft responses, and develop support for the public safety community's point of view.

In addition, national user groups, such as the Association of Public-Safety Communications Officials International, Inc. (APCO), the International Association of Chiefs of Police (IACP), the International Association of Fire Chiefs (IAFC), and the National Public Safety Telecommunications Council (NPSTC) are respected and effective advocates of the public safety community. They represent local, state, national, and regional groups, many of which have similar concerns and face the same communications challenges. Local agencies, such as county sheriffs, city administrators, or volunteer fire departments, can affiliate themselves with state, national, or international organizations to share information, strategies, and other resources to help get their voices heard. These groups can demonstrate the common and widespread, or specific and localized, concerns of the public safety community and tailor a proposed course

Dockets of interest to the local public safety community include—

- WT 96-86** Addresses the operational, technical, and spectrum requirements for meeting local, state, and federal, communications requirements through the year 2010. Also addresses the establishment of rules and requirements for public safety Priority Access Service by commercial wireless service providers
- WT 99-168/MM 00-39** Addresses development of the service rules for spectrum that is adjacent to the new 700 MHz public safety spectrum and the digital television transition
- WT 00-32** Addresses the licensing and service rules for the newly allocated 50 MHz of spectrum for public safety use in the 4.9 gigahertz (GHz) band
- WT 02-55** Addresses commercial interference in the 800 MHz band and related issues

- WT 01-90** Addresses the proposed deployment and usage of dedicated short-range communications technologies for public safety in the 5.850-5.925 GHz band
- ET 00-258** Addresses the allocation of spectrum below 3 GHz for mobile and fixed services to support the introduction of new advanced wireless services (i.e., third-generation wireless systems)
- ET 00-47** Addresses equipment standards, interference, and other issues related to software defined radios
- ET 98-153** Addresses issues involving licensing and interference from ultra-wide band (UWB) devices
- RM-10432** Addresses unfulfilled public safety communications needs through 2010 including the need for standards to ensure consistency and prevent interference. ★

of action that will help to accomplish the desired objectives. The authority, knowledge, and expertise of public safety advocacy organizations often influence the policies the FCC develops to resolve the issues addressed in the rulemaking process.

The local public safety community must promote its needs at the state and regional levels through participation in committees such as state interoperability executive committees (SIEC) and regional planning committees (RPC). Already established in several states, SIECs, work to coordinate interoperability improvements on a statewide level. Through their participation in an SIEC, members of the local public safety community collaborate with other officials in their state to develop a unified interoperability voice, vision, and solution set. The SIECs enable the local agencies to raise their unified



MHz

SIEC

Washington State Interoperability Executive Committee

In early February 2001, the Washington State Radio Interoperability Subcommittee took the lead in recommending the development of an SIEC. As part of this recommendation, the SIEC would be charged with drafting an interoperability plan and developing a strategy covering existing and future systems. Local public safety agencies are one of the primary groups that now participate in this committee. The SIEC, under the administration of the governor, has been allocated 2.4 MHz of 700 MHz band public safety spectrum that the FCC has made available for state licensing based on the establishment of an SIEC or equivalent entity. This spectrum will now become available for use by local public safety entities throughout the state. By participating in the SIEC, the local public safety community in Washington State collectively addresses interoperability problems to create a unified approach to promoting its needs. ★

voice to promote their spectrum concerns and impact decisions on a statewide issue. Participation is critical because many of the interoperability solutions piloted at the state level by an SIEC, such as consolidated towers and MOUs, have a direct impact on local public safety interoperability. Locally, RPCs are responsible for regional spectrum allocations, planning, and coordination in the 700 MHz and 800 MHz bands; however, lack of participation by local representatives can result in a failure to consider local communications requirements. The promotion of local public safety agencies' needs is crucial to the success of the RPC and wireless communications interoperability in their jurisdiction.

Local public safety leaders should also promote the continuing development of standards to improve interoperability and lower equipment costs. Until recently, manufacturers have been producing radios that do not adhere to common standards. The result is equipment that uses proprietary technologies that are incompatible with one another, hindering the ability of public safety personnel to communicate. The development of standards-compliant equipment helps alleviate this problem. In a market governed by standards, local public safety agencies can purchase interoperable equipment from multiple vendors that provides narrowband voice and data transmissions, digital

modulation, encryption and other advanced technologies, while having backward compatibility to legacy systems. In addition, if several equipment manufacturers adopted standards, the land mobile radio (LMR) marketplace should become more competitive, and therefore equipment costs should decline.

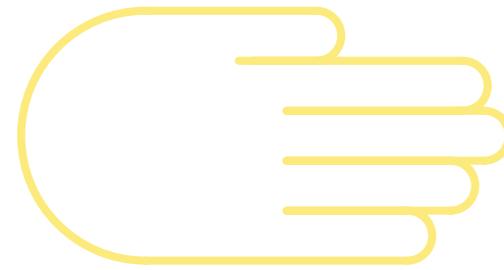
Numerous organizations (e.g., APCO, Telecommunications Industry Association [TIA], Electronics Industries Alliance [EIA], and the American National Standards Institute [ANSI]) are involved in the standards development process. Together these organizations are developing a suite of wireless radio standards known as TIA/EIA-102, which is also called Project 25. This development effort includes many representatives from the vendor community and also provides opportunities for the local public safety community to promote its views. By participating in standards development efforts, local public safety agencies can influence the standards that are adopted and demand manufacturers meet their requirements. In addition, by purchasing standards-compliant equipment, local public safety agencies promote the adoption of standards and may significantly improve interoperability in their region—manufacturers that develop standards-compliant equipment will continue to do so only if the public safety community purchases their products.

Most interoperability solutions, especially those of a technical nature, require significant funding commitments from elected and appointed officials and support from the local community. These funding commitments are difficult to obtain because of the wide variety of competing interests that also represent priorities for government leaders and the larger community. In an effort to make public safety communications a funding priority, local public safety agencies must effectively garner support from three essential audiences: the system users, decision makers, and the local community. Local public safety officials must promote to users the benefits of improved interoperability for day-to-day activities and responsibilities. Local officials must also ensure that decision makers understand the importance of interoperability, as well as the technical and financial aspects that may factor into their decisions. Finally, local agencies must educate the local community on the importance of interoperability by targeting specific segments of that community and framing the message to address their interests. This message can be disseminated through community meetings and informational materials.

For some audiences, a business case or a well-written grant application is the best means to promote public safety funding needs. When seeking major capital

investments in wireless communications systems infrastructure from state or local government officials, local public safety agencies must fully justify the funding required with a thorough and accurate business case. A business case analysis must include an assessment of current infrastructure, a requirements analysis, cost analysis, benefits and risk analysis, and performance measures. When completed, the business case should provide answers to any question decision makers or the local community might have. An effective business case will create support as long as the reader agrees with the agencies' fundamental mission and goals. In addition to typical government funding sources, there are a wide variety of grants, especially for law enforcement agencies, that may be available for communications systems. Specifically, through the Department of Justice, National Telecommunications and Information Administration, Federal Emergency Management Agency, and National Highway Traffic Safety Administration, the Federal Government administers grant programs that may provide funds for communications systems projects. An effective application for these grants, like a business case, will clearly link the requested funds to important improvements in public safety services.





implementing

Implementing Interoperability Solutions—Systems That Save Lives and Cost Less

The local public safety community can implement a variety of technical and operational interoperability solutions to

meet its short- and long-term interoperability requirements. It is important for local agencies to implement these solutions because they are the first responders and in the best position to establish interoperable communications during the first hour of an emergency incident. Furthermore, it would be far too expensive and heavy-handed for the Federal Government to implement interoperability solutions for each local jurisdiction. Although providing interoperability solutions is within the scope of states' responsibilities, many are not in a position to provide local interoperability for several years. Thus, local agencies have the responsibility to implement solutions, based on best practices, that permit resource sharing and provide immediate interoperability for the Nation's public safety officials.

Local agencies typically implement two types of interoperability solutions: tailored technical solutions and shared systems. Local agencies implement tailored technical solutions customized to overcome specific interoperability shortfalls with their existing network. Implementing a shared system is a joint solution that inherently provides interoperability by consolidating infrastructure or having many agencies using the same system. In addition, agencies should develop and implement exercises to give the operational personnel the practice and training they need to coordinate an efficient response. Collectively, local agencies must bring together the right mix of technical and operational solutions for improving interoperability.

In many regions of the country, interoperability solutions tailored to an existing system meet the needs of the local public safety community. These customized solutions provide the communications links needed to conduct joint agency operations and are a more cost-effective means for local agencies to

establish interoperability than upgrading or replacing multiple systems. In many situations where interoperability is inadequate, issues such as radio frequency coverage, proprietary technology barriers, and spectrum availability may be the root cause. Tailored technical solutions address the specific technical problem that is blocking the systems from sharing information. By developing and implementing solutions to solve these specific interoperability problems, the local public safety community can improve the effectiveness of its wireless networks in a cost-effective manner. Examples of tailored technical solutions include fixed and mobile switches and radio frequency and wireline links between different system consoles, allowing patches between users on different systems.

As stated earlier, regional strategies can support the development of long-term partnerships by implementing shared systems. Shared, regional, or statewide networks inherently provide interoperable communications through the common network infrastructure available to all

El Paso, TX and Las Cruces, NM

In an effort to establish direct interoperability between the cities' two 800 MHz trunked radio systems, each configured with proprietary technology, El Paso, Texas, and Las Cruces, New Mexico, partnered with the Public Safety Wireless Network (PSWN) Program to develop a tailored interoperability solution. Currently, the City of El Paso uses a Motorola SmartZone system, while the City of Las Cruces uses a system configured with M/A Com's (formerly Com-Net Ericsson) Enhanced Digital Access Communications System (EDACS) technology. To establish interoperability, the cities collocated remote trunked desktop console radios for each system at one of the other system's existing trunked sites to provide a radio frequency link between the two systems. The communities recently used this interoperability solution when the El Paso Police Department was in pursuit of a vehicle believed to be occupied by members of the "Texas 7" as it moved west from El Paso to Las Cruces. With this solution, it was possible to set up a patch between the El Paso and Las Cruces systems. As a result, when the suspects moved from the El Paso to the Las Cruces system coverage area, the El Paso police dispatchers were able to communicate directly with the El Paso officers and then Las Cruces patrol officers to coordinate the pursuit. ★



San Diego and Imperial Counties

Together, San Diego and Imperial counties have implemented a shared, regional communications network in southern California. The Regional Communications System (RCS) has become the platform for interoperable wireless communications in the region. It is an 800 MHz, mixed mode (analog and digital), trunked, voice and data communications system that supports more than 12,000 users. The system also uses technologies such as global positioning system and automatic vehicle location. The system consists of 50 sites that provide coverage for approximately 10,000 square miles in the region. To promote interoperability, the counties designed the system to allow other local, state, and federal users access to the system. The implementation of this shared system is a good example of the local public safety community achieving interoperability while also expanding its coverage and attaining advanced technologies. ★

users and in turn lead to the improvement of day-to-day and mutual-aid interoperability. In addition, the local public safety community reaps other benefits from joining shared regional or statewide systems such as—

- Reduced system operation and maintenance cost per local entity
- More efficient use of the limited radio frequency spectrum
- Greater coverage area
- Lower costs to obtain advanced technologies like encryption.

Typically, local public safety agencies use three approaches to shared systems implementation: traditional, shared ownership and joint operation, and fee-for-service. Under the traditional approach, local jurisdictions and agencies formally come together and pool their resources to plan, build, own, operate, and maintain a common communications infrastructure. Vital to the success of this approach is the significant “grassroots” support from radio managers and users, which generally begins with high-level political and programmatic commitments. Although the shared ownership and joint operation approach is similar to the traditional approach, it involves bringing together existing systems to establish a shared resource rather than building a completely new infrastructure. Finally, under the fee-for-service approach, a third-party organization provides radio communications services to local public

safety organizations for a recurring fee. This approach is significantly different from the others because participating user agencies do not own or operate the infrastructure. Essentially, through the joint use of third-party communications infrastructure, the participating agencies lease a shared system to fulfill their needs.

The local public safety community can implement exercises that train and prepare its personnel to operate in situations where interoperability is a key component to fully leverage its communications resources. The first step in implementing exercises requires public safety officials to train and educate personnel to properly use the equipment. These officials must work with vendors to determine what training is necessary for the various levels of users on the system, ranging from dispatchers to field users. After ensuring that the users are trained on their equipment, officials should implement exercises that test and validate interoperability solutions and operating procedures. Well-practiced solutions and operating procedures permit personnel to quickly establish interoperable communications in emergency situations. These exercises may also expose interoperability shortfalls. Identifying training or resource deficiencies before an emergency incident occurs is critical to successful operations. By implementing training and exercises, local agencies can take the necessary steps to prepare their personnel for emergency situations and ensure the protection of life and property.

Summary

While the local public safety community routinely practices wireless communications interoperability, more progress still remains to be made. Specifically, local agencies must continue to take responsibility for improving interoperable communications to protect the lives and property of the citizens they serve. This responsibility includes partnering with surrounding organizations to create local, regional, or statewide interoperable networks. Local public safety officials, through participation in spectrum rulemaking and standards development activities, should also continue to highlight local public safety requirements. Participation in these activities not only helps local agencies voice their needs, but also contributes valuable time and resources to important national-level issues. Finally, it is critical that local public safety leaders continue to identify their available solution alternatives and effectively employ them to meet the needs of the user community. By incorporating sound policy and technical solutions in its wireless communications activities, the local public safety community can help meet this important public safety challenge.

In the end, public safety operations present great challenges to governments at all levels. The responsibility for the protection of lives and property crosses all levels and presents numerous opportunities for partnering and cooperation among government entities. A robust and interoperable public safety communications infrastructure is a critical component in fulfilling local, state, federal, and tribal public safety missions. Challenges to wireless interoperability can be met through greater emphasis on collaborative partnerships, interoperability issue promotion, and resource sharing. While the Federal Government helps enable interoperability improvements on a national level and the states serve as the linchpins for systematic improvements in the Nation’s public safety communications infrastructure, local public safety personnel are the first responders in the field using the equipment and implementing solutions that can help make public safety wireless communications interoperability a reality.

About the Public Safety Wireless Network Program

The PSWN Program, a jointly sponsored endeavor of the Department of Justice and the Department of the Treasury, was created in 1996. The program is responsible for planning and fostering interoperability among public safety wireless networks so that local, state, federal, and tribal officials can better communicate with each other while serving the Nation's public safety needs. Through a variety of activities, the program strives to achieve the vision it shares with the public safety community—seamless, coordinated, and integrated public safety communications for the safe, effective, and efficient protection of life and property.

During its first several years, the PSWN Program has actively supported local, state, federal, and tribal entities in improving public safety wireless interoperability. Examples include:

- Convening the PSWN Executive Committee, which comprises prominent local and state public safety officials, to provide strategic guidance and promote the need for improved communications interoperability
- Producing tools for systems planning to foster the development of shared systems and the inclusion of interoperability requirements in systems designs
- Hosting regional symposiums in 15 different states that bring together local, state, and federal public safety agencies to share information on wide-ranging issues such as regional planning, site acquisition, funding, and systems planning
- Developing a national strategy for public safety interoperability that provides proven, high-level implementation guidelines, best practices, innovative designs, and operating procedures to help the public safety community improve and implement interoperable communications networks
- Engaging in a high-profile communications campaign to educate government decision makers and public safety personnel on the importance of wireless interoperability
- Providing leadership through the development and implementation of pilot projects and interoperability assistance initiatives targeted at local, state, federal, and tribal agencies
- Working with the NTIA and the Institute for Telecommunication Sciences (ITS) in Boulder, Colorado, on technical issues affecting interoperability
- Pressuring for further resolution of unanswered public safety spectrum needs at the FCC, within the NCC, and in open publications.

checklist

for Ensuring Effective Public Safety Wireless Communications

Partnering for Interoperability

- Build relationships with other organizations to identify wireless communications and interoperability issues
- Establish an interoperability strategy that will accommodate the current, near-term, and future needs of the surrounding organizations
- Draft formal agreements to improve interoperability and help reach common communications goals
- Generate informal agreements through relationships with neighboring agencies that lead to improved communications during initial response

Promoting Public Safety Needs

- Contribute in FCC rulemaking activities that impact frequency allocation for public safety use
- Participate in regional, state, and national forums that influence public safety wireless interoperability
- Purchase only standards-compliant equipment
- Remain involved in standards development activities to ensure that local requirements are accurately reflected in emerging standards
- Sponsor a thorough and accurate business case to justify funding needs
- Share alternative funding approaches with government leaders

Implementing Interoperability Solutions

- Develop tailored solutions to overcome interoperability shortfalls when possible
- Join or build a shared regional or statewide interoperable network
- Conduct exercises to test and train personnel to operate in situations where interoperability is a key component