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HOMELAND SECURITY

Challenges in Achieving Interoperable Communications for First Responders

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November 6, 2003

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Highlights

Highlights of GAO-04-231T, a report to Congressional Requesters, Subcommittees of House Government Reform Committee

Why GAO Did This Study

The inability of first responders—police officers, firemen, hazardous materials teams, emergency medical service personnel, and others—to communicate effectively with one another as needed during an emergency is a long-standing and widely recognized problem in many areas across the country. When first responders cannot communicate effectively as needed, it can literally cost lives—of both emergency responders and those they are trying to assist. At the request of the Chairman of the full committee, we are examining the barriers to improved interoperability and the roles that federal, state, and local governments can play in improving wireless interoperability communications.

What GAO Recommends

Because our work is ongoing, we are not yet making recommendations. However based on our work to date, we identify several major challenges federal, state, and local governments must address. Effectively addressing these challenges requires collaboration of all first responders and all levels of government. Failure to do so risks spending funds ineffectively and creating new problems in our attempt to resolve existing ones.

www.gao.gov/cgi-bin/getrpt?GAO-04-231T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact William Jenkins, Jr. at (202) 512-8757 or jenkinswo@gao.gov.

What GAO Found

Interoperability problems existed among public safety agencies for many years prior to the September 11, 2001 terrorist attacks. Reports on incidents have documented a number of problems in public safety wireless communications. For over 15 years the Federal Government has been concerned about public safety spectrum issues, including communications interoperability issues. A variety of federal agencies have been involved in defining the problem and identifying potential solutions. In addition, Congress has taken several actions over the past two decades to address the availability and use of public safety wireless spectrum. The events of September 11 have resulted in greater public and governmental focus on the role of first responders and their capacity to respond to emergencies, including those resulting from terrorist incidents.

The interoperability issues that the nation faces today did not arise overnight and they will not be successfully addressed overnight. Federal, state, and local governments face several major challenges in addressing interoperability in their wireless communications.

- The first challenge is to clearly identify and define the problem. For example, it is important to recognize that interoperable communications is not an end in itself, but it is rather one component for achieving an important goal--the ability to respond effectively to and mitigate incidents that require the coordinated actions of first responders.

- The second challenge is whether and how to establish national interoperability performance goals and standards and balance them with the flexibility needed to address differences in state, regional and local needs and conditions.

- The third challenge is defining the roles of federal, state, and local governments and other entities in defining the problem, implementing any national goals and standards, and assessing alternative means of achieving those goals and standards.

The fundamental barrier to successfully addressing these challenges has been the lack of effective, collaborative, interdisciplinary and intergovernmental planning. No one first responder group or governmental agency can successfully "fix" the interoperability problems that face our nation. It will require the partnership, leadership, and coordinated planning of everyone involved.

Messrs. Chairmen and Members of the Subcommittees:

I appreciate the opportunity to be here today to discuss the critical issue of wireless interoperable communications for first responders. The inability of first responders—police officers, fire fighters, emergency medical service personnel, public health officials, and others—to communicate effectively with one another as needed during an emergency is a long-standing and widely recognized problem in many areas across the country. Reports have shown that when first responders cannot communicate effectively as needed, it can literally cost lives—of both emergency responders and those they are trying to assist. Thus, effective interoperable communications between and among wireless communications systems used by federal, state, and local public safety agencies is generally accepted as not only desirable but essential for the protection of life and property. The effective interoperability of these wireless systems permits a rapid and coordinated response to an emergency incident, whether that incident is a "routine" spill from an overturned tanker truck or railcar, a natural disaster, or a terrorist attack.

At the request of the Chairman of the full committee, we are examining the barriers to improved interoperability and the roles that federal, state, and local governments can play in improving wireless interoperability communications.[1] Our work is ongoing. To date, we have contacted state and local officials in several states, attended professional meetings, and opened discussion with the Department of Homeland Security (DHS) and other key federal agencies. We are conducting our work in accordance with generally accepted government auditing standards. My testimony today focuses on the broad and complex nature of the interoperability issue and the challenges the nation faces in addressing this issue.

Background

Interoperability problems existed among public safety agencies for many years prior to the September 11 attacks on the Pentagon and New York City. Reports on incidents have documented a number of problems in public safety wireless communications. For example, the National Task Force on Interoperability (NTFI) documented interoperability problems in

[1]Our work addresses public safety wireless communications interoperability issues. Thus, we do not address interoperability problems found in other homeland security functions, such as fire equipment, chem-bio equipment, and information technology.

several states - including South Dakota, Indiana, and Minnesota--that had developed over a number of years.[2]

For over 15 years the federal government has been concerned about public safety spectrum issues, including communications interoperability issues. A variety of federal agencies have been involved in defining the problem and identifying potential solutions. In addition, Congress has taken several actions over the past two decades to address the availability and use of the public safety wireless spectrum.

The events of September 11, 2001, have resulted in greater public and governmental focus on the role of first responders and their capacity to respond to emergencies, including those resulting from terrorist incidents. One result has been significantly increased federal funding for state and local first responders, including funding to improve interoperable communications among federal, state, and local first responders. In fiscal year 2003 , Congress appropriated at least $154 million for interoperability through a variety of grants administered by the Department of Homeland Security, the Department of Justice, and other agencies.

In addition to appropriating more funds, the executive branch and Congress have attempted to consolidate federal efforts and coordinate federal grant programs. Within the executive branch, the Office of Management and Budget in 2001 created the Wireless Public SAFEty Interoperable COMmunications Program, or SAFECOM, [3] to unify the federal government's efforts to help coordinate the work at the federal, state, local and tribal levels, in order to provide reliable public safety communications and achieve national wireless communications interoperability.[4]

[2]National Task Force on Interoperability, WHY CAN'T WE TALK? Working Together To Bridge the Communications Gap To Save Lives, February, 2003.

[3]SAFECOM is one of the President's 24 E-GOV initiatives.

[4]The description of SAFECOM's mission is taken from the Administrator for E-government and IT, the Office of Management and Budget letter to the attendees of the SAFECOM, National Institute of Standards and Technology and National Institute of Justice Summit on Interoperable Communications For Public Safety.

Summary

The interoperability issues that the nation faces today did not arise overnight and they will not be successfully addressed overnight. Federal, state, and local governments face several major challenges in addressing interoperability in their wireless communications. The first challenge is to clearly identify and define the problem, recognizing that interoperable communications is but a means to an end–the ability to respond effectively to any incident that requires the coordinated actions of first responders. The second is whether and how to establish national interoperability performance goals and standards and to balance them with the flexibility needed to address differences in state, regional, and local needs and conditions. The third challenge is defining the roles of federal, state, and local governments and other entities in identifying the communication problem, implementing any national performance goals and standards, and assessing alternative means of achieving those goals and standards. The fundamental barrier to successfully addressing these challenges has been the lack of effective, collaborative, interdisciplinary and intergovernmental planning. No one first responder group or governmental agency can successfully "fix" the interoperability problems that face our nation. It will require the partnership, leadership, and coordinated planning of everyone involved .

The First Challenge: Identifying and Defining the Interoperability Problem

In discussing the issue of interoperable communications, it is important to recognize that interoperable communications is not merely a technological issue or an end in itself. It is rather a key means of achieving a desirable objective—the effective response to and mitigation of events or incidents that require the coordinated actions of emergency responders. These events could encompass a wide range of possibilities, such as multi-vehicle accidents, major floods or wildfires, or a terrorist attack that involved thousands of injuries.

Interoperable communications is also but one component, although an important one, of an effective incident command planning and operations structure. As a standard practice, public safety agencies are to establish communications capabilities to support command and control of their operations at an incident scene. Determining the most appropriate means of achieving interoperable communications must flow from an effective planning and operations structure that identifies who is in charge and who must be able to communicate what information to whom under what circumstances. For example, there are likely to be both similarities and differences in the interoperable communications capacities, protocols, and participants associated with responding to seasonally predictable wildfires and terrorist attacks that involve biological agents.

Defining the range of interoperability capacity needed requires identifying the types of events for which interoperable communications would be needed, the participants involved in responding to those events—by professional discipline and jurisdiction—and an operational definition of who is charge and who would need to communicate what types of information (e.g., voice, data, or both) with whom under what circumstances. These are not easy tasks, and they require both a multi-disciplinary and multi-jurisdictional perspective. But these tasks are a precursor to assessing the current problems—e.g., operational, technical, and fiscal—that exist in meeting interoperable communication needs and alternative means of achieving identified interoperable communications needs.

But more importantly, interoperability is not a static issue--it is an issue that is affected by changes in technology and the changing events and threats for which first responders must be prepared. Thus, there is no single, long-term solution; the issue is one that must be periodically reassessed as needs and technology change.

Interoperability Is Not a Static Issue

The issues and problems in defining and scoping what is meant by "interoperability" are not static. They evolve over time in a fluid and ever-changing environment of evolving threats and events for which we need to be prepared to respond, new operational requirements, new spectrum bands for public safety use, and new technology.

The Evolving Definition of First Responders

Public safety officials generally recognize that interoperable communications is the ability to talk with whom they want, when they want, when authorized, but not the ability to talk with everyone all of the time. However, there is no standard definition of communications interoperability. Nor is there a "one size fits all" requirement for who needs to talk to whom.

Traditionally, first responders have been considered to be fire, police and emergency medical service personnel. However, in a description of public safety challenges, a federal official noted that the attacks of September 11, 2001, have blurred the lines between public safety and national security. According to the Commission, effective preparedness for combating terrorism at the local level requires a network that includes public health departments, hospitals and other medical providers, and offices of

emergency management, in addition to the traditional police, fire, and emergency medical services first responders.[5] Furthermore, Congress recognized the expanded definition of first responder in the Homeland Security Act of 2002, which defined "emergency response providers" as "Federal, State, and local emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities."[6]

Reexamining the Jurisdictional Boundaries of Interoperability

The context of the communications also affects the definition of the problem. Two key studies in the late 1990s sponsored by the Department of Justice (DOJ) and the Public Safety Wireless Network (PSWN)[7] program provide a nationwide picture of wireless interoperability issues among federal, state, and local police, fire, and emergency medical service agencies at that time.[8] Both studies describe most local public safety agencies as interacting with other local agencies on a daily or weekly basis. As a result, most local agencies had more confidence in establishing radio links with one another than with state agencies, with whom they less frequently interact. Local public safety agencies interact with federal agencies least of all, with a smaller percentage of local agencies expressing confidence in their ability to establish radio links with federal agencies. The events of September 11, 2001, have resulted in a reexamination of the circumstances in which interoperable communications should extend across political jurisdictions and levels of government.

Interoperable Needs Are Scenario Driven and Change Over Time

Another issue is the broad range of scenarios in which interoperable communications are required. Public safety officials have pointed out that interoperability is situation specific, based on whether communications are needed for (1) "mutual-aid responses" or routine day-to-day

[5]Third Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, December 15, 2001.

[6]Homeland Security Act, P.L. 107-296, section 2 (6).

[7]The Department of Justice and the Department of the Treasury formed the Public Safety Wireless Network Program (PSWN) to promote effective public safety communications and to foster interoperability among local, state, federal, and tribal communications systems. PSWN was incorporated into the new Department of Homeland Security as part of the SAFECOM project in 2003.

[8]The DOJ study concentrated on wireless interoperability issues within the state and local law enforcement community, while the PSWN study assessed communications interoperability issues within the fire and emergency medical services communities.

coordination between two local agencies; (2) extended task force operations involving members of different agencies coming together to work on a common problem; or (3) a major event that requires response from a variety of local, state, and federal agencies. One official breaks the major event category into three separate types of events:

- planned events, such as the Olympics, for which plans can be made in advance;
- recurring events, such as major wildfires and hurricanes, that can be expected every year and for which contingency plans can be prepared based on past experience, and
- unplanned events, such as the September 11th attacks, that can rapidly overwhelm the ability of local forces to handle the problem.

Technological Changes Also Affect Interoperability

As technology changes, it presents new problems and opportunities for achieving and maintaining effective interoperable communications. According to one official, in the 1980s, a method of voice transmission called "trunking" became available that allowed more efficient use of spectrum. However, three different and incompatible trunking technologies developed, and these systems are not interoperable. This official noted that as mobile data communications becomes more prevalent and new digital technologies are introduced, standards become more important.

Technical standards for interoperable communications are still under development. Beginning in 1989, a partnership between industry and the public safety user community developed what is known as Project 25 (P-25) standards. According to the PSWN program office, Project 25 standards remain the only user-defined set of standards in the United States for public safety communications. The Department of Homeland Security has recently decided to purchase radios that incorporate the P-25 standards for the each of the nation's 28 urban search and rescue teams. PSWN believes P-25 is an important step toward achieving interoperability, but the standards do not mandate interoperability among all manufacturers' systems. Standards development continues today as new technologies emerge that meet changing user needs and new policy requirements.

In addition, new public safety mission requirements for video, imaging, and high speed data transfers, new and highly complex digital

communications systems, and the use of commercial wireless systems, are potential sources of new interoperability problems.

Availability of new spectrum can also result in new technologies and require further development of technical standards. For example, the FCC recently designated a new band of spectrum, the 4.9 Gigahertz (GHz) band, for public safety uses and sought comments on various issues, including licensing and service rules. The FCC provided this additional spectrum to public safety users to support new broadband applications, such as high-speed digital technologies and wireless local area networks for incident scene management. The Federal Communications (FCC) in particular requested comments on the implementation of technical standards for fixed and mobile operations on the band. The National Public Safety Telecommunications Council[9] has established a task force that includes work on interoperability standards for the 4.9 GHz band.

Second Challenge: Establishing National Goals and Requirements

When the interoperability problem has been sufficiently defined and bounded, the next challenge will be to develop national interoperability performance goals and technical standards that balance consistency with the need for flexibility in adapting them to state and regional needs and circumstances.

Lack of National Requirements

One key barrier to development of a national interoperability strategy is the lack of a statement of national mission requirements for public safety—what set of communications capabilities should be built or acquired—and a strategy to get there. The report of the Independent Task Force sponsored by the Council on Foreign Relations on emergency responders said national standards of preparedness have not been defined and that the lack of a methodology to determine national requirements for emergency preparedness constitutes a national crisis.[10] The report

[9]Formed May 1, 1977, the National Public Safety Telecommunications Council is a federation representing public safety telecommunications. The purpose of NPSTC is to follow up on the recommendations of the Public Safety Wireless Advisory Committee (PSWAC). In addition, NPSTC acts as a resource and advocate for public safety telecommunications issues.

[10]Independent Task Force Sponsored by the Council on Foreign Relations; Emergency Responders: Drastically Underfunded, Dangerously Unprepared.

recommended these standards be prepared for federal, state, and local emergency responders in such areas as training, interoperable communications systems, and response equipment. SAFECOM officials have noted that no standard, guidance, or national strategy exists on interoperability. DOJ officials told us they are working with SAFECOM to develop a statement of requirements that should be ready for release by May 1, 2004.

Need for an Interoperability Blueprint

To guide the creation of interoperable communications, there must be an explicit and commonly understood and agreed-to blueprint, or architecture, for effectively and efficiently guiding modernization efforts. For a decade, GAO has promoted the use of architectures, recognizing them as a crucial means to a challenging goal: agency operational structures that are optimally defined in both business and technological environments. An enterprise architecture provides a clear and comprehensive picture of an entity, whether it is an organization (e.g., a federal department or agency) or a functional or mission area that cuts across more than one organization (e.g., financial management). In August 2003, DHS released its initial enterprise architecture that it described as conceptual in nature.. We are in the process of reviewing this architecture at the request of the Chairman, Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, Committee on Government Reform.

Need For Flexibility

There is no single "silver bullet" solution to interoperability needs. Our ongoing work indicates that communications interoperability problems facing any given locality or state tend to be situation specific, with no universally applicable solution. For example, the Association of Public Safety Communications Officials (APCO) noted in its White Paper on Homeland Security that various methods are possible to achieve interoperability but planning is an essential first step to choosing a solution. APCO noted that interoperability does not involve a single product or system approach; rather it is accomplished with a variety of solutions with a focus on the first responder. APCO noted that what is an appropriate interoperability solution varies with the operation of the

particular government agencies, their funding, their physical location, and other individual circumstances.[11]

In addition, the Public Safety Wireless Advisory Committee's (PSWAC) final report noted that the public safety community has some common operational requirements, such as dispatch communications and transmission of operational and tactical instructions. However, the PSWAC report also describes agencies' specialized requirements that are based on specific missions and operating environments. For example, the report notes forestry and state police have long distance requirements where foliage can be a problem for higher frequency systems. In contrast, a metropolitan police department may need highly reliable in-building coverage, which is not a requirement for state police mobile operations. Those state and local officials we have interviewed to date have stated that they want to retain flexibility when addressing communications issues. For example, Virginia state officials noted that geographical locations within the state present different interoperability requirements. They said interoperability problems differ from locality to locality, and that solutions must be developed that fit the specific circumstances of the individual geography and situation.

Third Challenge: Need to Define Intergovernmental Roles

As noted above, the federal government has a long history in addressing federal, state, and local government public safety issues–in particular interoperability issues. The Government Reform Committee has also recently contributed to the development of policies. In October 2002 the Committee issued a report entitled "How Can the Federal Government Better Assist State and Local Governments in Preparing for a Biological, Chemical, or Nuclear Attack "(Report 107-766). The Committee's first finding was that incompatible communication systems impede intergovernmental coordination efforts. The Committee recommended that the federal government take a leadership role in resolving the communications interoperability problem.

Federal Efforts to Establish A Leadership Role

The federal role in addressing the interoperability of public safety wireless communications continues to evolve. Today, a combination of many federal agencies, programs, and associations are involved in coordinating

[11]The Association of Public-Safety Communications Officials, The APCO International Homeland Security White Paper, August 2002.

emergency communications. In June 2003, SAFECOM partnered with the National Institute of Standards and Technology (NIST) and the National Institute of Justice (NIJ) to hold a summit that brought together over 60 entities involved with communications interoperability policy setting or programs. According to NIST, the summit familiarized key interoperability players with work being done by others and provided insight into where additional federal resources may be needed.

The SAFECOM program was initially established within Justice in 2001 and was transferred to the Federal Emergency Management Agency (FEMA) in 2002 before being brought into DHS in early 2003. The current director said his program is responsible for outreach to local, state, and federal public safety agencies to assist in interoperability planning and implementation. In an August 2003 briefing, SAFECOM stated its role is to serve "as the umbrella program within the federal government to coordinate the efforts of local, tribal, state and federal public safety agencies working to improve public safety response through more effective, efficient, interoperable wireless communications." In the briefing, SAFECOM officials said they have begun to implement this coordination role by setting objectives to develop a national public safety communications strategy, providing supporting standards and guidance; developing funding mechanisms and guidance, and creating a national training and technical assistance program.

SAFECOM officials have also stated that SAFECOM has taken several other actions to implement its role as the umbrella program to coordinate actions of the federal government. For example, in coordination with officials of other agencies, it developed guidance for federal grants supporting public safety communications and interoperability. The guidance is designed to provide an outline of who is eligible for the grants, purposes for which grant funds can be used and eligibility specifications for applicants. The guidance requires that, at a minimum, applicants must" define the objectives of what the applicant is ultimately trying to accomplish and how the proposed project would fit into an overall effort to increase interoperability, as well as identify potential partnerships for agreements." Additionally, the guidance recommends, but does not require, that applicants establish a governance group consisting of local, tribal, state, and federal entities from relevant public safety disciplines and purchase interoperable equipment that is compliant with phase one of Project-25 standards.

Although SAFECOM is the umbrella program to coordinate actions of the federal government, it does not include all major federal efforts aimed at

promoting wireless interoperability for first responders. Specifically, the Justice Department continues to play a major role in interoperability after the establishment of DHS. Key Justice programs–the Advanced Generation of Interoperability for Law Enforcement (AGILE) and the Community Oriented Policing Services–did not transition to the SAFECOM program in the new Department of Homeland Security. AGILE is the Department of Justice program to assist state and local law enforcement agencies to effectively and efficiently communicate with one another across agency and jurisdictional boundaries. It is dedicated to studying interoperability options and advising state and local law enforcement, fire fighters, and emergency technicians. The SAFECOM program director also said most of the federal research and development on prototypes is being conducted within the AGILE program. The Department of Justice said it is also creating a database for all federal grants to provide a single source of information for states and localities to access, and to allow federal agencies to coordinate federal funding awards to state and local agencies. SAFECOM and AGILE officials told us they have an informal, but close working relationship today, and that they are negotiating a memorandum of understanding between the two programs. Federal officials also told us that efforts are also under way by SAFECOM, AGILE, and other federal agencies to coordinate work on technical assistance to state and local governments and to develop and set interoperability standards. The SAFECOM program may continue to face challenges in assuming a leadership role for the federal government while these significant Justice programs remain outside its domain.

SAFECOM officials will face complex issues when they address public safety spectrum management and coordination. The National Governors' Guide to Emergency Management noted that extensive coordination will be required between the FCC and the National Telecomunications and Information Agency (NTIA) to provide adequate spectrum and to enhance shared local, state, and federal communications. However, the current legal framework for domestic spectrum management is divided between the NTIA within the Department of Commerce, which regulates federal government spectrum use, and the Federal Communications Commission, which regulates state, local, and other nonfederal spectrum use. In a September 2002 report on spectrum management and coordination, GAO found that FCC's and NTIA's efforts to manage their respective areas of responsibility were not guided by a national spectrum strategy.[12] The FCC

[12]TELECOMMUNICATIONS; Better Coordination and Enhanced Accountability Needed to Improve Spectrum Management, GAO-02-906, September, 2002

and the NTIA have conducted independent spectrum planning efforts and have recently taken steps to improve coordination, but they have not yet implemented long-standing congressional directives to conduct joint, national spectrum planning. We recommended that the FCC and the NTIA develop a strategy for establishing a clearly defined national spectrum plan and submit a report to the appropriate congressional committees. In a January 2003 report, we discussed several barriers to reforming spectrum management in the United States.[13]

State Role in Interoperability Issues Is Evolving

The role that state and local governments will play in public safety communications is evolving. This role is being defined by states and local governments as they address problems they recognize exist in their communications systems and by the FCC and the NTIA. As noted by the National Governors Association (NGA), many states are establishing a foundation for cooperation and statewide planning through memorandums of understanding or similar agreements.

Several states have or are taking executive and legislative actions to address communications planning and interoperability planning. For example, the Missouri State Interoperability Executive Committee was created by the Missouri Department of Public Safety to enhance communications interoperability among public safety entities in Missouri by promoting available tools and relationships. The Missouri State Interoperability Executive Committee established a Memorandum of Understanding (MOU) that instructs public safety agencies within the state to use the FCC designated interoperability channels under an Incident Command/Incident Management structure. The MOU also attempts to diminish operational interoperability barriers by creating common operating procedures for the agencies to use on the channels. Furthermore, in order to create a comprehensive approach to interoperability that addresses new homeland security concerns, the State of Missouri enacted the "Missouri Uniform Communications Act for Homeland Security", which established the State's "Public Safety Communications Committee." This Committee is composed of representatives from the Department of Public Safety, Office of Homeland Security, Department of Conservation and Department of Transportation. The committee reviews all public safety agencies' plans that request state or federal wireless communications funds and relies on the

[13]TELECOMMUNICATIONS; Comprehensive Review of U.S. Spectrum Management With Broad Stakeholder Involvement Is Needed,GAO-03-277, January, 2003

recommendations of the Missouri Interoperability Executive Committee to ensure that state decisions enhance interoperability.

Another state that uses the State Interoperability Executive Committee structure to enhance communications interoperability is the State of Washington, whose committee was established by state legislation effective July 1, 2003. The Washington Committee was created under the Information Services Board within the Department of Information Services. The Committee's members include representatives from the Military, Transportation, Information Services and Natural Resources departments; the Washington State Patrol; state and local fire chiefs; police chiefs; sheriffs; and state and local emergency managers. Washington legislation requires the Committee to submit to the State legislature an inventory of all public safety systems within the state and a plan to ensure the interoperability of those systems. The Committee was given the authority to develop policies and procedures for emergency communications systems across the state and to serve as the point of contact for the FCC in the allocation, use and licensing of radio spectrum for public safety and emergency communication systems.

Federal actions to support state efforts that address wireless interoperability issues are still evolving. On the one hand, the Public Safety Wireless Network program has supported state efforts to improve multistate and individual statewide planning and coordination through a number of projects that emphasize a regional approach. However, two agencies of the federal government–the FCC and the NTIA–set rules and regulations for state and local governments and federal government wireless systems respectively.

The Regional or Shared Approach

State and local efforts to address interoperability issues are widespread. The National Governors Association said in its recent Guide to Emergency Management that interoperable equipment, procedures, and standards for emergency responders are key to improving the effectiveness of mutual aid agreements with other states and other jurisdictions. The NGA guide calls for governors and their state homeland security directors to:

- develop a statewide vision for interoperable communications;
- ensure adequate wireless spectrum is available to accommodate all users;
- invest in new communications infrastructure;

- develop standards for technology and equipment, and partner with government and private industry.

Specifically, states are taking action to facilitate strategic planning and interoperability planning that emphasize a shared approach at the multistate, state, and local levels. The Public Safety Wireless Network report notes that although 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. The report also notes that officials at all levels of government are now taking action to improve coordination and facilitate multi-jurisdictional interoperability. We talked to officials from several states about their states' efforts to address interoperability issues on a regional basis. For example;

- State officials from Kentucky, Indiana, Illinois, Ohio, and Michigan have combined efforts to form a Mid-west Consortium to promote interstate interoperability. They have taken actions to form an interstate committee to develop interoperability plans and solicit support from key players such as local public safety agencies. The governors of the states have agreed to sign an MOU to signify that each state is willing to be interoperable with the other states and will provide communication assistance and resources to the other states, to the extent that it does not harm their own state.

- In Florida, the governor of the state issued an executive order in 2001 to establish seven Regional Domestic Security Task Forces that make up the entire state. Each of the regional task forces has a committee on interoperable communications under Florida's Executive Interoperable Technologies Committee. The Florida legislature supported that effort by establishing the Task Forces in law and formally designating the Florida Department of Law Enforcement and the Division of Emergency Management as the lead agencies. The Task Forces consist of agencies from Fire/Rescue, Emergency Management, and public health and hospitals, as well as law enforcement. In addition, it includes partnerships with education/schools, business and private industry.

Statewide Interoperability Plans

Public safety representatives have stressed the importance of planning in addressing communications interoperability issues. The Association of Public Safety Communications Officials (APCO) has emphasized the importance of planning in addressing communications interoperability problems. In its Homeland Security white paper, APCO said that a plan for responding to terrorist events should include a section on how to address interoperability requirements. The creation of state interoperability plans

could help reduce the current fragmented public safety communications planning process. Public safety agencies have historically planned and acquired communications systems for their own jurisdictions without concern for interoperability. This meant that each local and state agency developed communications systems to meet their own requirements, without regard to interoperability requirements to talk to adjacent jurisdictions. For example, a PSWN anlaysis of Fire and EMS communications interoperability found a significant need for coordinated approaches, relationship building, and information sharing. However, the PSWN program office found that public safety agencies have traditionally developed or updated their radio systems independently to meet specific mission needs. Each agency developed a sense of "ownership", leading to "turf issues" and resistance to change.

The SAFECOM program has reached similar conclusions. According to SAFECOM, the priorities of local and state public safety communications systems are first, to provide reliable agency specific communications; second, to provide local interagency communications; and third, to provide reliable interagency local/state/federal communications. In a August 11, 2003, briefing document, SAFECOM noted that limited and fragmented planning and cooperation was one barrier to public safety wireless communications. SAFECOM noted a complex environment of over 2.5 million public safety first responders within more than 44,000 agencies and the fragmented command structure–where each Chief of Police sees himself as the Chairman of the Joint Staff in his jurisdiction–but the Fire Chief disagrees. The briefing also noted that a multitude of federal programs provide funding for interoperable communications with no coordination of requirements or guidance and that local funding was also stove-piped to meet individual agency needs. In a recent statement, we identified 10 separate grant programs that could be used for first responder equipment, including a number of these that can be used for interoperable communications equipment. We stated that the fragmented delivery of federal assistance can complicate coordination and integration of services and planning at state and local levels.[14]

[14]Homeland Security: Reforming Federal Grants to Better Meet Outstanding Needs, GAO-03-1146T, September 3, 2003

The Fundamental Barrier to Success: The Absence of Effective Coordinated Planning and Collaboration

The barriers to successfully addressing the three challenges we have outlined are multifaceted. Among the organizations we have contacted or whose reports we have reviewed, we found a variety of identified barriers, with a number of common barriers. For example, the SAFECOM project and a task force of 18 national associations representing state and local elected and appointed officials and public safety officials[15] identified similar barriers: (1) incompatible and aging communications equipment, (2) limited and fragmented funding, (3) limited and fragmented planning and cooperation, (4) limited and fragmented radio spectrum, and (5) limited equipment standards.

Of all these barriers, perhaps the most fundamental has been limited and fragmented planning and cooperation. The regional chairs of the Florida State Interoperability Committee have noted that non-technical barriers are the most important and difficult to solve. Police and fire departments often have different concepts and doctrines on how to operate an incident command post and use interoperable communications. Similarly, first responders, such as police and fire departments, may use different terminology to describe the same thing. Differences in terminology and operating procedures can lead to communications problems even where the participating public safety agencies share common communications equipment and spectrum.

No one first responder group, jurisdiction, or level of government can successfully address the challenges posed by the current state of interoperable communications. Effectively addressing these challenges requires the partnership, leadership, and collaboration of all first responder disciplines, jurisdictions, and levels of government—local, state, federal, and tribal. In the absence of that partnership and collaboration, we risk spending funds ineffectively and creating new problems in our attempt to resolve existing ones.

[15]National Task Force on Interoperability, WHY CAN'T WE TALK? Working Together To Bridge the Communications Gap To Save Lives, February, 2003.

That concludes my statement, Mr. Chairmen, and I would be pleased to answer any questions you or other members of the Subcommittees may have.

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