

**WRITTEN STATEMENT**

**Of**

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**Hearing**

**On**

**Project SAFECOM: More Time. More Money. More Communication?**  
**What Progress Have We Made In Achieving Interoperable Communication Between Local,**  
**State, and Federal First Responders?**

**Before the**  
**Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census**  
**House Government Reform Committee**

**September 8, 2004**  
**2:00 p.m.**  
**2154 Rayburn House Office Building**  
**Washington, D.C.**

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**Introduction**

Good morning Chairman Putnam, Ranking Member Clay and Members of the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census. Thank you for this invitation to appear before your subcommittee on behalf of the Federal Communications Commission (Commission or FCC) to provide an update on our continued progress in promoting interoperability among our nation's first responders.

On July 20, 2004, I appeared before the Government Reform Committee's Subcommittee on National Security, Emerging Threats and International Relations to discuss our work in facilitating interoperability. On that day, the Government Accountability Office released its comprehensive analysis of Project SAFECOM, and testified as to the challenges inherent in fostering interoperability on a nationwide scale. During the past month, the Commission has taken several steps to further its efforts in this area. First, the Commission released its decision regarding public safety interference in the 800 MHz band, which will go a long way toward alleviating and ultimately eliminating instances of interference to public safety in that band, while simultaneously freeing up additional spectrum for public safety use. Second, the FCC's Homeland Security Policy Council (HSPC) reported to the Commission on the FCC's overall efforts to ensure that our regulations and policies promote public safety interoperability, Enhanced 911 (E911) implementation, network security and reliability, and other vital Homeland Security goals. Also, since I last testified, the 911 Commission released its report, which contains some recommendations that could have an impact on telecommunications policies.

Before discussing these important matters, I would like to review the FCC's background and history in dealing with interoperability and public safety spectrum issues. As you are aware, the Commission's experience working with public safety entities and stakeholders is expansive and far-reaching. Congress began working in this area shortly after the Titanic disaster and today there are more than 40,000 station licenses designated for public safety systems under the Communications Act. The FCC has the unique role of providing spectrum for state and local governments to use as part of these systems. As a result, the Commission has a long-standing commitment to the protection and enhancement of public safety communications systems.

Under the leadership of Chairman Michael K. Powell, the Commission has intensified its efforts and designated homeland security and public safety issues as one of the Commission's six core strategic objectives. As September 11, 2001 demonstrated, the ability of public safety systems to communicate seamlessly at incident sites with minimal on-site coordination is critical to saving lives and property. The FCC remains committed to using all of its resources to promote and enhance the interoperability of the thousands of public safety systems that make up a critical part of our nation's homeland security network.

The Commission's experience indicates that a holistic approach is the best method for fostering interoperability. Achieving interoperability requires an emphasis on more than spectrum, technology and equipment issues – it also requires a focus on the organizational and personal coordination and communication necessary to make interoperability available in times of greatest need. For its part, the Commission directs its efforts toward allocating additional spectrum for public safety systems, nurturing technological developments that enhance interoperability and providing its expertise and input for interagency efforts such as SAFECOM.

There are limitations, however, to what the FCC can do. The Commission is only one stakeholder in the process and many of the challenges facing interoperability are a result of the disparate governmental interests – local, state, and federal – that individually operate portions of our national public safety system. Each of these interests has different capabilities in terms of funding and technological sophistication, making it difficult to develop and deploy interoperability strategies uniformly throughout the country. Regardless of these challenges, we at the FCC continue to advance policies that enable all of the stakeholders to do their best in maintaining a strong and viable national public safety system.

### **Commission Resources**

The FCC works in an integrated and flexible fashion to assign spectrum for public safety purposes. The Wireless Telecommunications Bureau (WTB) and the Office of Engineering and Technology (OET) share significant responsibility for intra-agency projects related to interoperability technology and policy development. The Commission also maintains the HSPC and created the Office of Homeland Security (OHS) within the Enforcement Bureau to facilitate intergovernmental communications on Homeland Security issues.

### ***Wireless Telecommunications Bureau***

WTB underwent reorganization this past year and created the Public Safety and Critical Infrastructure Division (PS&CID). PS&CID administers the licensing rules for public safety radio networks and the related radio networks of critical infrastructure industries such as the nation's utilities. The division also has the responsibility of promulgating rules that require wireless carriers to deploy E911 systems throughout the country for the benefit and use of over 160 million cell phone subscribers – another critical element of the nation's homeland security

system. The division's routine day-to-day contact with public safety licensees, their vendors and other stakeholders allows it to closely monitor industry trends and needs. In 2003, WTB processed more than 529,000 public safety and other private land mobile applications, including applications for new licenses, license modifications and renewals, waivers, and requests for special temporary authority.

### ***Office of Engineering and Technology***

In addition to its responsibility for spectrum allocations, OET routinely assesses vulnerabilities in communications networks and equipment and makes recommendations for facilitating improvements to network security, reliability and integrity. OET also evaluates new technologies and makes recommendations to the Commission for rule changes which would enable their use to improve the communications capability of the nation's public safety community. OET is the agency's principal point of contact with the National Telecommunications and Information Administration (NTIA) and in this role works with NTIA on spectrum issues that affect both non-Federal and Federal government spectrum users, including state, local and federal first responders.

### ***Homeland Security Policy Council and Office of Homeland Security***

The FCC's HSPC, created in November 2001 and composed of senior managers of the Agency's policy bureaus and offices, and the OHS assists the Commission in implementing the Homeland Security Action Plan. Among the directives of the Action Plan is to ensure that public safety, public health, and other emergency and defense personnel have effective communications services available to them as needed.

Homeland Security will continue to be a focal point of the Commission's work. We are very proud of our achievements to date and look forward to building upon these accomplishments to reach new heights in this very important area. Last month, at the FCC's Agenda Meeting, HSPC reported on the status of the Agency's progress with respect to its homeland security objectives. The Commission's staff reported that in the last year alone, the FCC has considered several key proceedings that should have a dramatic, real world impact on Homeland Security. These proceedings include the 800 MHz proceeding, the 4.9 GHz proceeding, and the Intelligent Transportation Systems proceeding. As many of you may know, earlier this summer, the Commission adopted a plan for the 800 MHz band to resolve the problem of interference to public safety radio systems. As mentioned previously, this plan also made additional available spectrum for public safety uses. In the 4.9 GHz proceeding, the Commission accommodated a variety of new applications that will permit, for example, the delivery of floor plans to policemen entering a hostile environment and real time video from inside a burning building. In the Intelligent Transportation Systems proceeding, the Commission advanced benefits such as the ability to monitor traffic from a control point and to direct first responders along the path of least resistance. The Commission considered proceedings that promote new technologies, such as radio frequency ID tags and cognitive radios.

Our proceedings reveal only part of the story. Our expansive outreach efforts have been equally important in achieving our Homeland Security goals. HSPC and OHS ensure coordination with other federal, state, and local entities that are involved with Homeland Security. For example, as a partner with the Department of Homeland Security, the FCC has promoted registration of states and localities in the Telecommunications Service Priority and the Wireless Priority Access Service programs. These programs provide wireline and wireless

telephone dial tone to public safety entities on a priority basis during and following a disaster. HSPC members also are working with disabilities rights organizations to identify and resolve communications issues that have an impact on that community during national emergencies.

In addition, HSPC and OHS work closely to support the Network Reliability and Interoperability Council (NRIC VII) and Media Security and Reliability Council (MSRC), two of the FCC's federal advisory committees. Through NRIC VII, communications industry leaders provide recommendations and best practices to the FCC focused on assuring optimal reliability and interoperability of wireless, wireline, satellite, paging, Internet and cable public communications networks and the rapid restoration of such services following a major disruption. MSRC does much the same with the goal of achieving optimal reliability, robustness and security of broadcast and multi-channel video programming distribution facilities. Public safety representatives are part of this effort since, during emergencies, TV and radio are sources of information for citizens.

### **Coordination**

The FCC recognizes that interagency coordination is an essential factor in developing effective interoperability. To that end, Commission staff routinely confers with the Department of Homeland Security's SAFECOM. The FCC and SAFECOM share the common goal of improving public safety communications interoperability. We are continuing our collaborative efforts to develop a strong working relationship, both formally and informally. For example, the FCC is an active member of SAFECOM's Advisory Group. In addition, FCC staff has met with staff from SAFECOM on several occasions for information exchanges and briefings, including, most recently, a March 11, 2004 presentation to SAFECOM's Executive Committee on matters pending before the Commission. FCC staff also has attended and participated in several events

hosted by SAFECOM, including its 2003 Summit on Interoperable Communications for Public Safety and 2004 Public Safety Communications Interoperability Conference.

DHS Deputy Director David Boyd and I continue to work together to further promote and ensure effective coordination regarding homeland security and public safety communications initiatives. We agree that it is critical that the FCC and SAFECOM work cooperatively to achieve our common interests of promoting homeland security and interoperability. With this goal in mind, we have made a commitment to establish a working group comprised of representatives of our respective staffs who will meet on a regular basis to work collaboratively on interoperability and other issues of relevance to the FCC and SAFECOM. We envision that this new inter-agency “team” will provide an effective forum for informed, innovative and on-going exchanges aimed at ensuring steady progress towards achievement of nationwide interoperability capability. I anticipate that the informational exchanges among the new inter-agency “team” would be in addition to our continued efforts at the executive level. We look forward to participating in SAFECOM’s Executive Committee meeting scheduled for later this month in Washington, D.C., as well as other future opportunities in this regard.

### **Spectrum Designated for Public Safety Interoperability**

The Commission currently has designated throughout the country approximately 97 MHz of spectrum from ten different bands for public safety use. Public safety entities also actively use other bands for a variety of services, including such new ultra-wideband equipment authorized by our rules which can be used for ground penetrating radars and imaging systems that enable public safety officers to detect the location or movement of people behind or within walls or other structures, an important and potentially lifesaving tool. In addition, the Commission has designated certain channels in the public safety bands specifically for

interoperability. A public safety entity may use these designated frequencies only if it uses equipment that permits inter-system interoperability. The frequencies that have these so-called “use designations” include 2.6 MHz of the 700 MHz band, 5 channels in the 800 MHz band, 5 channels in the 150 MHz band (VHF Band), and 4 channels in the 450 MHz band (UHF Band).

Starting on January 1, 2005, the Commission will require newly certified public safety mobile radio units to have the capacity to transmit and receive on the nationwide public safety interoperability calling channel in the UHF and VHF bands in which it is operating. Also, in the case of certain inland areas, known as VHF Public Coast areas (VPCs), the Commission has designated several additional channels in the VHF band to be used exclusively for interoperable communications.

### ***Recent Public Safety Spectrum Allocations***

The Commission is committed to ensuring that public safety operators have sufficient spectrum that is free from harmful interference. In addition to the recent release of the 800 MHz Order, the Commission has made two other allocations, in the last few years, that illustrate the importance placed on ensuring that public safety entities have sufficient spectrum to carry out their critical missions. First, consistent with the Balanced Budget Act of 1997, the Commission identified and allocated 24 MHz of spectrum in the 700 MHz band for public safety use.

Second, the Commission made available for public safety use, 50 MHz of spectrum at 4.9 GHz.

#### **800 MHz**

On July 8, 2004, the Commission adopted – by a unanimous, bipartisan vote – a solution to the ongoing and growing problem of interference faced by 800 MHz public safety radio systems. In addition to providing a means to abate such interference, the Commission’s decision will result in an additional 4.5 MHz of 800 MHz-band spectrum becoming available for public

safety and critical infrastructure licensees. The plan devised in the 800 MHz proceeding will have a direct impact on our first responders and will immediately benefit them, by ensuring that firefighters and policemen hear each other, not static, when keying up their radios. This proceeding was one of the most challenging in our Agency's history and presented a unique opportunity to promote and lend support to public safety communications operators.

The plan adopts a two-prong solution to interference abatement. To address the problem in the near term the Commission established an objective standard for defining "unacceptable interference" to public safety and other 800 MHz non-cellular systems. Any entity causing unacceptable interference must immediately cure it at its own expense, using a variety of technical solutions called "Enhanced Best Practices."

As a long-term solution for abating unacceptable interference, the Commission ordered reconfiguration of the 800 MHz band. In general, the Commission is segregating fundamentally incompatible technologies as far apart as possible in the 800 MHz spectrum. Public safety and other so-called "high site" systems have been grouped in the lower portion of the band; and the "low-site" cellular architecture systems -- the source of most of the interference -- occupy the upper portion of the band. This complex, nationwide reconfiguration of the 800 MHz band must be completed within thirty-six months. As I mentioned, at the conclusion of band reconfiguration, public safety and critical infrastructure licensees will have an average of 4.5 MHz of new spectrum available. We are hopeful that public safety organizations will take full advantage of this additional spectrum to advance their interoperable communications goals.

700 MHz

To better facilitate use of the 700 MHz public safety spectrum, the Commission adopted mandatory interoperability. Every voice and narrowband data radio used in the 700 MHz band must be able to access specifically designated interoperability channels, using a common communications protocol, thus providing “instant interoperability” for every new entrant into the band. The 700 MHz band also contains channels dedicated to wideband data signals, such as real-time video, transmission of fingerprints, mug shots, blueprints and other graphical material that first responders may need in the field. Given the central role that states provide in managing emergency communications, the Commission concluded that states are well-suited for administering the 700 MHz interoperability spectrum and determined that state-level administration of the interoperability channels would best promote safety of life and property through seamless, coordinated communications on the interoperability spectrum.

The FCC’s rules provide that the states may manage interoperability channels in two ways. First, they may establish a State Interoperability Executive Committee (SIEC) or its equivalent; or, second failing that, the Commission- established Regional Planning Committees (RPCs) gives oversight of the 700 MHz spectrum. Thirty-eight states and the District of Columbia have elected to administer their interoperability spectrum. For the fourteen who did not, the RPCs have been delegated that responsibility.

From the beginning, the Commission has recognized that the utility of this spectrum for public safety depended on taking actions, consistent with the current statutory scheme, to minimize, and ultimately clear, the broadcast use of this spectrum. For instance, during the digital television (DTV) transition planning, the Commission minimized the use of channels 60-69. As a result, the new 700 MHz public safety spectrum on TV channels 63-64 and 68-69 is available now in many areas of the country. Because of the significance of this spectrum for

public safety, especially first responders, and interoperability, the Commission is actively considering ways to bring the digital transition to its conclusion. Indeed, under the direction of Chairman Powell, the Media Bureau has developed a bold framework that would provide a soft landing and a clear conclusion for the DTV transition so that, in part, we can provide public safety with this additional spectrum. In executing its proposal, the Media Bureau's objectives include: 1) bringing the transition to a timely and predictable conclusion; 2) reclaiming valuable spectrum; 3) minimizing disruption to consumers; 4) maintaining consumer access to HDTV and other digital services; and 5) complying with Constitutional and statutory requirements. Under this plan, the public would reclaim a significant amount of spectrum by January 1, 2009. In addition to advances in homeland security, public interest benefits will include broadband deployment, economic growth and job creation. The Commission is cognizant of the emphasis placed on spectrum availability in the 700 MHz band, and is aware of the discussion contained in the 911 Commission Report.

#### 4.9 GHz

The Commission's allocation of 50 MHz of spectrum at 4.9 GHz (4940-4990 MHz) promises to permit the use of new advanced wireless technologies by public safety users. This spectrum is part of a transfer of Federal Government spectrum to private sector use. The Commission initially proposed to allocate the 4.9 GHz band for fixed and non-aeronautical mobile services and to auction it to commercial users, with no designation of the spectrum for public safety use. In response to requests from the public safety community for additional spectrum for broadband data communication, the Commission designated the 4.9 GHz band for public safety use in February 2002 and adopted service rules in April 2003.

The 4.9 GHz band will accommodate a variety of new broadband applications such as high-speed digital technologies, broadband mobile operations, fixed “hotspot” use, wireless local area networks, and temporary fixed links. The 4.9 GHz band rules will also foster interoperability, by providing a regulatory framework in which traditional public safety entities can pursue strategic partnerships with others necessary for the completion of their mission.

Licenses for this spectrum will be granted to public safety entities based on a “jurisdictional” geographical licensing approach. Accordingly, the 4.9 GHz spectrum will be licensed for shared use. Under this approach, the Commission will authorize 4.9 GHz licensees to operate throughout those geographic areas over which they have jurisdiction and will require them to cooperate with all other 4.9 GHz licensees in use of the spectrum. In order to increase spectrum use and foster interoperability, the Commission will permit licensees to enter into sharing agreements or strategic partnerships with both traditional public safety entities, including Federal Government agencies, and non-public safety entities, such as utilities and commercial entities.

### **Promotion of Public Safety Interoperability**

There are a range of mechanisms that specifically promote interoperability. As discussed above, the Commission has used its resources to identify additional spectrum. The Commission also has provided for innovative licensing methods, created planning methods that encourage better coordination, and promoted new technologies.

### ***Regional Planning***

The Commission adopted the regional planning approach to spectrum management as an alternative to the traditional first-in-the-door approach to spectrum licensing and management in

the public safety context. Regional planning allows for maximum flexibility of the RPCs to meet state and local needs and encourage innovative use of the spectrum to accommodate new and as yet unanticipated developments in technology and equipment. The Commission has utilized this approach for public safety spectrum in the 700 and 800 MHz bands.

### ***Sharing of Radio (Spectrum) Facilities***

In order to promote interoperability, the Commission has rules for two types of spectrum sharing. First, the FCC's rules specifically provide for shared use of radio stations where licensees, including federal government entities, may share their facilities on a nonprofit, cost shared basis with other public safety organizations as end users. In July 2000, the Commission expanded this sharing provision. This rule also allows Federal government entities to share these facilities as end users. A second type of sharing, unique to the 700 MHz public safety spectrum, permits state and local public safety licensees to construct and operate joint facilities with the Federal government. The Commission took this action to encourage partnering of FCC-licensed state or local government entities with Federal entities to promote interoperability and spectrum efficiency.

### ***Public Safety National Coordination Committee***

The Public Safety National Coordination Committee (NCC) operated as a federal advisory committee from 1999 to 2003 and recommended technical and operational standards to assure interoperability in the 700 MHz public safety band. The over 300 members employed a consensus-based decision-making process to meet its charge. The NCC was guided by an eleven-member Steering Committee and used three subcommittees, each of them having several

working groups to develop its recommendations, many of them highly technical. It submitted its final recommendations in July 2003.

The NCC developed recommendations on a technical standard for the narrowband voice and data channels to ensure that police, firefighters, EMS and other public safety officials using 700 MHz radios can communicate with one another instantly on common voice and data channels. The same channels are designated for interoperability use everywhere in the United States. The Commission adopted the narrowband voice and data standard in January 2001 as the NCC recommended.

The NCC also developed a recommendation for a wideband data standard and forwarded it to the Commission in July, 2003. This standard would give public safety agencies a common “pipeline,” on 700 MHz wideband data interoperability channels, with which to implement such applications as sending mug shots and fingerprints to police vehicles, medical telemetry from EMS units to hospitals, blueprints of burning buildings to firefighters, and video coverage of incidents to the incident commander. The NCC worked with the Telecommunications Industries Association – an accredited standards developer – to develop interoperability technical standards that are open and non-proprietary. The Commission will consider the remaining NCC recommendations, including the wideband data standard, in a future rulemaking.

### ***Intelligent Transportation Systems Radio Service***

In December 2003, the Commission adopted service and licensing rules for the Dedicated Short Range Communications (DSRC) Service in the Intelligent Transportation Systems (ITS) Radio Service in the 5.850-5.925 GHz band. It is envisioned that DSRC would provide the critical communications link for ITS, which is key to reducing highway fatalities, a high priority for the Department of Transportation. The effective and expeditious implementation of DSRC

not only benefits American consumers by providing solutions to today's transportation challenges and allowing life-saving communications. It also provides public safety entities with another communications tool that can assist them in fulfilling their missions. To ensure interoperability and robust safety and public safety communications among DSRC devices nationwide, the Commission adopted rules requiring that the ASTM-DSRC standard be used. The Commission also adopted licensing and technical rules aimed at creating a framework that ensures priority for public safety communications, thereby allowing both public safety and non-public safety use of the 5.9 GHz band. Further, the Commission adopted a jurisdictional licensing approach similar to that used for the 4.9 GHz band.

### ***Cognitive Radios Proceedings***

The Commission is actively exploring the potential of new technologies to enhance interoperability and encourage network efficiency of public safety systems. One example of such new technologies is cognitive radios, which have the capability to change their power and/or frequency, sense their environment, know their location, and optimize their communication path. This technology holds tremendous promise for public safety interoperability by making it possible for radios from different public safety systems to operate seamlessly at an incident site without prior coordination. The Commission has initiated a proceeding to examine the enhanced interoperability potential that these even more flexible technologies may offer.

### **Conclusion**

Public Safety Interoperability is a key component of an effective homeland security network, and the FCC is cognizant of the importance of facilitating related communications

systems. The FCC is dedicated to marshalling all of its resources and expertise in order to ensure that adequate spectrum and technology is available for providing interoperability among the nation's public safety systems. The Commission continues to work with a wide range of stakeholders to foster and promote new policies, rules, regulations and technologies related to public safety interoperability. Although some of the challenges involved in bringing interoperability to public safety systems are outside the scope of the FCC's authority, the Commission continues to take a leadership role in trying to resolve these challenges. Thank you for the opportunity to testify on these important issues affecting our homeland security.