

American Radio Relay League
Association of Fish and Wildlife Agencies
Association of Public-Safety Communications Officials
International Forestry Conservation Communications Association
International Association of Chiefs of Police
International Association of Emergency Managers
International Association of Fire Chiefs
International Municipal Signal Association
National Association of State Chief Information Officers
National Association of State Emergency Medical Services Officials
National Association of State Foresters
National Association of State Technology Directors
National Emergency Number Association
National Sheriffs' Association

Several federal agencies are liaison members of NPSTC. These include the Department of Homeland Security (the Federal Emergency Management Agency, the Office of Emergency Communications, the Office of Interoperability and Compatibility, and the SAFECOM Program); Department of Commerce (National Telecommunications and Information Administration); Department of the Interior; and the Department of Justice (National Institute of Justice, CommTech Program). NPSTC has liaison relationships with associate members, the Telecommunications Industry Association and the Canadian Interoperability Technology Interest Group (CITIG).

I. The Foundation for Public Safety Broadband Communications

NPSTC welcomes the Commission's initiative in issuing the Notice of Inquiry ("Notice") with its broad scope to ensure that the response to the stimulus legislation is focused on Broadband deployment of most benefit to the citizens of the United States. Much of the focus of the Notice is on providing broadband access directly to the general public. However, the Commission indicates that the Recovery Act requires that the broadband plan take into account

the role of Broadband infrastructure in advancing public safety and homeland security.¹

The Commission includes over 50 questions related to its responsibility to include public safety and homeland security in its broadband plan. Many of these questions are posed in the general context of public safety supporting its broadband communications in some way over systems shared with the general public. While it is impractical for NPSTC to respond individually to each question, the following provides insight into the requirements for public safety broadband communications.

First, it is important to remember that each and every citizen is in some way protected by the nation's public safety community. Therefore, providing solutions for public safety also provides significant benefits to the general public; benefits which accrue whether or not it is ultimately determined that a viable broadband system to serve public safety can also be open to transport communications by the general public. In developing any broadband plan for public safety, it is important to remember that the public safety community first considers its operational requirements and then assesses what technologies and solutions are viable to meet those requirements. For broadband, NPSTC believes that some regions will require their own networks while other regions will rely more on partnering with a third party to deploy, operate and or maintain broadband solutions.

¹ Notice of Inquiry at para. 72.

Communications solutions that provide the requisite degree of operability and interoperability to meet public safety requirements rest on the following foundation, whether or not those solutions are deployed directly by public safety agencies, a third party or some combination of the two:

- a) Sufficient and appropriate spectrum and capacity;
- b) Funding to implement, operate and maintain systems designed to support public safety needs;
- c) Availability of technology that is capable of meeting public safety operational requirements and conforms to relevant industry standards;
- d) Planning across multiple agencies and jurisdictions to ensure compatible communications facilities, operations and information sharing; and
- e) Practice by neighboring first-responders to define communications procedures and incident command structures in advance of any major event.

A key area where the emergency responder community, the FCC and industry have worked diligently, but have not yet been able to implement a viable solution, is the provision for nationwide interoperable wireless broadband data and video communications to support public safety prevention and response initiatives. The FCC, through a series of proposed rulemakings and decisions, established a mechanism for a public-private partnership to deploy a nationwide broadband public safety system. Key goals in establishing this mechanism were to provide nationwide broadband interoperability and to secure a source of funding to deploy the system, since no funding had been provided by Congress. The concept of the public/private partnership entails licensing 12 MHz of spectrum to a public safety broadband licensee (PSBL) and combining that spectrum with an adjacent 10 MHz of commercial spectrum, known as the D

block, to be auctioned. The winner(s) of the D block auction would fund the development of the system on the combined 22 MHz to be built to public safety specifications.²

While progress on a number of the policy issues has been made, and the Commission has issued a nationwide license to the Public Safety Spectrum Trust (PSST), the auction for the D block in March 2008 yielded no winner. Since that time, the Commission has issued revised proposals that reduce the requirements for the network and are focused on attracting bidder(s). However, as of July 2009, the broadband spectrum is still not “on the street” for deployment of systems to serve public safety needs.

Eight major public safety organizations met and developed an overall consensus on an approach to move forward that can address both the operability and interoperability requirements of public safety agencies.³ This approach involves provisions for public safety agencies to “sublicense” spectrum from the PSBL and deploy systems that meet a national framework designed to ensure interoperability. In addition, six public safety entities have submitted requests to waive the rules so they can provide early deployment. These requests signify public safety agency’s interest in broadband systems designed to meet their needs and at the same time conform to some minimum set of requirements that ensure interoperability.

In mid June, 2009, NPSTC, APCO and NENA endorsed LTE technology as the best option for the selection of a radio access network (RAN) to help ensure interoperability across multiple regional networks. This decision was driven in large part by the recognition that two

² In actuality, 20 of the 22 MHz from the consolidated public safety and D Block allocations would be available for broadband deployment since 2 MHz is needed for guardbands to minimize interference.

³ Press release by APCO, International: PUBLIC SAFETY ASSOCIATIONS MEET TO FORM CONSENSUS ON THE DEVELOPMENT OF A NATIONWIDE BROADBAND NETWORK, May 28, 2009.

major commercial licensees had publicly announced their intent to use LTE technology in the commercial blocks of the 700 MHz band and that selecting a compatible RAN technology would provide economies of scale otherwise unlikely to be achieved.

In addition to endorsing LTE technology, NPSTC established a Broadband Task Force. The primary purpose of this task force is to develop recommendations on the minimum requirements needed to for a national framework to achieve interoperability across multiple regional systems and NPSTC has targeted the end of August as the timeframe for these recommendations. The task force is comprised of three working groups focused respectively on operational requirements, governance and technology. The Task Force has vigorous participation from public safety practitioners, manufacturers, commercial operators, chip vendors, consultants and several Federal agencies. Therefore, NPSTC believes its resulting recommendations will have the benefit of a broad-based set of perspectives.

NPSTC believes that regional public safety entities who are afforded the option of deploying their own broadband system, either through waiver or modification to statutes and/or rules, will determine their own requirements to ensure such systems meet the requisite operability needs of their own region. Therefore, the focus of the Task Force is on requirements for interoperability and is not designed to recreate previous work done by NPSTC in developing an overall statement of requirements for a nationwide broadband system.⁴

NPSTC looks forward to assisting the Commission to resolve the rules and policies for 700 MHz broadband public safety solutions expeditiously so systems can be deployed in a manner that meets public safety broadband requirements, and systems can be reliably operated and maintained.

⁴ NPSTC support staff: <http://www.npstc.org/statementOfRequirements.jsp>

The Notice also raised questions whether “off-the-shelf” solutions are sufficient to meet public safety needs.⁵ While a more detailed review is being conducted as part of the Broadband Task Force, NPSTC believes that standardized LTE broadband infrastructure is sufficient to serve most public safety needs for high speed data access. It is important to remember that the adequacy of a solution for public safety often has more to do with the system design and deployment than the technology itself. For these reasons, public safety agencies normally specify guaranteed performance levels regarding coverage, data rates and backup power in their RFPs. Of course once a technology is chosen, adherence to that technology helps enable interoperability.

Public safety agencies will need the flexibility to select interoperable devices and applications that meet their needs and do not harm the network. Off-the-shelf equipment and applications may meet a significant portion of the requirements and can provide economies of scale that help minimize costs. However, experience has shown that public safety operations often require ruggedized mobile and portable devices and applications with added features and security. In addition, public safety agencies are not ubiquitous and are likely to require their own software applications for operability purposes, in addition to a basic set of standardized applications that support interoperability.

Video operations are also being used today to the extent spectrum is available to support such use. NPSTC expects that the deployment of broadband systems will whet the appetite for video operations even more. However, NPSTC is concerned that the relatively small amount of spectrum targeted for public safety broadband operations at 700 MHz will restrict the degree to which agencies can fully realize the benefits of wireless video.

⁵ Notice at para. 75.

The Commission also questions how the 4.9 GHz band can meet the broadband needs of the public safety community.⁶ Because of its location high in the spectrum, the 4.9 GHz band is practical for localized coverage but not for wide-area coverage of a large city, region or state. It is simply impractical to deploy the number of sites needed in the high ranges of spectrum such as 4.9 GHz to provide wide-area coverage. A number of jurisdictions have already deployed 4.9 GHz for localized operations to transmit video surveillance or provide hotspot broadband data capabilities. The Commission's recent modification of the 4.9 GHz rules to allow fixed point-to-point and point-to-multipoint broadband operations on a co-equal basis with base/mobile operations opens additional opportunities for use of this spectrum. In summary, the 4.9 GHz band is one element of the overall spectrum picture needed to meet public safety broadband requirements.

II. Satellite Can Provide a Useful Supplement and Backup to Terrestrial Operations

In its original decision regarding a 700 MHz public-private partnership to serve the broadband needs of public safety, the Commission included a requirement that at least one handset provided by the nationwide operator have satellite capabilities. NPSTC supports including satellite capabilities as one element in the overall set of solutions needed to provide public safety with broadband operability and interoperability. Such satellite capabilities provide a supplement to terrestrial systems, particularly for less populated areas where it may not be cost-effective to deploy a sufficient number of terrestrial broadband base stations to provide full

⁶ Notice at para. 77.

coverage. In addition, while terrestrial systems deployed for public safety are normally designed to handle a certain degree of stress applicable to the environment in the area where they operate, it is impossible to predict every incident that will occur and the impact of such incidents on the day-to-day communications facilities. For example, even when terrestrial stations designed to the stress of public safety remain operational, at times the commercial backhaul facilities connecting those sites do not and communications on the network is impacted. Provisions for connection through satellite facilities can provide a useful backup in such situations.

Even when terrestrial systems are fully operational, satellite connections may provide a useful tool to increase interoperability in cases where all emergency workers on the scene are not on compatible systems. Considering the full range of broadband commercial and prospective public safety systems, there will be broadband solutions that cross multiple frequency bands and technologies. The proliferation of a multitude of broadband networks using various technologies and frequency bands means that public safety, public service and Federal workers at the scene of an event can be impeded in their efforts to react quickly and in a coordinated fashion. Adding to the complexity of full interoperability is the fact that the nature of the event will often dictate which specific emergency workers will be called on to provide assistance – for example a freight train derailment carrying chemical tanker cars will require different organizations than a widespread power outage. Therefore the sheer number of potentially involved first responder organizations necessitates that any interoperability solution must be expandable and flexible.

In its comments, the MSS/ATC Coalition states that handsets which are capable of dual-mode communications with either satellites or terrestrial systems ensure that

first responders are never “out of range” and that first responders will be able to rely on their devices and critical applications working everywhere and at all times.⁷

MSS/ATC also notes that interoperability between satellite devices and terrestrial systems also promotes the inclusion of ordinary citizens in the process. As the MSS/ATC Coalition explains,

“Particularly in rural areas, public safety officials, spread thinly over large areas, often rely on members of the public for assistance. In dry Western states prone to forest fires, for example, authorities rely upon citizens to watch for the start of destructive fires and report fires to authorities as soon as possible.”⁸

Therefore, NPSTC urges the Commission to explore the development of broadband technologies such as dual-mode handsets which would help to implement interoperability among different networks accessible to the public safety and public service communities. Relevant factors include both the benefits of such dual mode handsets, as well as any tradeoffs in battery life, ergonomics and cost of dual mode broadband handsets vs. single mode devices.

III. Interoperability is Critical to Effective Border Security

In addition to efficient communications among public safety organizations within the United States, interoperability with counterpart agencies in neighboring countries is essential to effectively manage respective border security, as well as the efficient movement of international trade goods and services. For example, NPSTC has worked

⁷ Comments of the MSS/ATC Coalition, submitted June 8, 2009, at page 3.

⁸ Ibid, page 5-6.

extensively with its Canadian counterpart, the Canadian Interoperability Technology Interest Group (CITIG), in identifying and resolving issues which currently impede effective exchange of information between cross-border teams, whether border agents, police forces or energy utility groups, to name a few. To date, interoperability is being managed through ad-hoc workarounds, but a comprehensive strategy is necessary to ensure seamless connectivity between first responder groups, particularly as the complexity grows when these groups depend on exchanging information with their counterparts in other countries. While some of these issues should be addressed on mission critical voice systems, NPSTC urges the Commission to consider future needs for such cross-border cooperation and interoperability on broadband systems as well.

IV. Conclusion

The need for broadband communications solutions that meet public safety requirements for both operability and interoperability is an essential part of any broadband plan the Commission provides to Congress. Given that the Commission already has an open proceeding specifically focused on public safety broadband needs, NPSTC recommends resolving the remaining issues in that proceeding expeditiously so the Commissions Broadband Report can include what has been done to provide a solution rather than merely what needs to be done. It is of critical importance that a comprehensive framework be established to enable the requisite degree of both operability and interoperability and that stimulus funding provided by the

Recovery Act provide a realistic opportunity for public safety agencies to deploy systems that meet the needs of their personnel and in turn, benefit the overall public they serve.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ralph A. Haller", with a long horizontal flourish extending to the right.

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