

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of)
)
Implementing a Nationwide, Broadband,) PS Docket No. 06-229
Interoperable Public Safety Network in the 700)
MHz Band)
)
Development of Operational, Technical, and) WT Docket No. 96-86
Spectrum Requirements of Meeting Federal,)
State, and Local Public Safety)
Communications Requirements Through the)
Year 2010)

To: The Commission

COMMENTS OF AT&T INC.

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February 26, 2007

SUMMARY

AT&T supports the Commission's proposal, with slight modifications, to reallocate a portion of the 700 MHz public safety band for use by a single, nationwide, interoperable, broadband public safety network. A new approach to public safety spectrum allocations is necessary and the instant proposal is a giant step in the right direction.

The current allocation model for public safety spectrum promotes fragmentation and inhibits interoperability. The best approach for achieving public safety interoperability is to establish a national, public safety spectrum allocation for the creation of an interoperable network. Moreover, spectrum is a limited resource and should not be allocated to address a perceived public safety need if the utilization of new, more efficient technologies would be sufficient to satisfy the need and sufficient spectrum is already available. AT&T agrees with the Commission that future public safety spectrum allocation decisions must take into account the efficiency of existing public safety networks.

Congress has determined that the 700 MHz spectrum currently allocated to public safety "would be ideal to provide first responders with interoperable communications channels" and the Commission has determined that: (i) a nationwide, broadband, interoperable public safety network would serve the public interest; and (ii) an additional spectrum allocation should not be made to public safety until they have fully deployed over their existing spectrum allocations and improved spectrum efficiency. Given these findings, the public interest would be served by reallocating a portion of the 700 MHz public safety band for broadband use and assigning this spectrum to a single public safety broadband licensee.

By awarding a single national license for the construction of a nationwide, broadband network, the Commission will ensure the availability of an integrated, efficient, and interoperable network. Any public safety entity that utilizes this network will be able to use its equipment on a national, regional, or local basis and will be able to communicate with every other public safety entity that also utilizes the network. By opting for a single nationwide licensee, the Commission also will reduce costs. This, in turn, will reduce the funding requirements for the public safety network. The Commission's proposal further reduces funding requirements by permitting the public safety licensee to make spectrum available for a fee on a secondary basis for use by commercial licensees.

The Commission's proposal does require modification, however, because it does not account for the need for a guard band between broadband and narrowband spectrum. The need for guard bands effectively reduces the spectrum available for broadband use from 12 MHz to 8 MHz. To maximize the spectrum available for broadband, the public safety band should be optimized by combining the entire narrowband allocation into the upper portion of the band. This would require the use of a single 1 MHz guard band to separate broadband and narrowband spectrum and would permit 10 MHz of spectrum to be allocated for broadband. This is enough spectrum to satisfy public safety spectrum needs.

Finally, clear and binding national standards should be adopted for the construction and operation of the proposed public safety network. National standards that are clear, competitive, and technically sound will accelerate the development of the necessary economies of scale. Standards also will drive down the cost of deployment and speed interoperability. The linchpin of any standards should be a requirement that the new public safety network utilize a standardized IP-based approach, such as IMS. Networks based on IP protocols eliminate many of the barriers to interoperability associated with proprietary technologies designed by vendors for very narrow uses. This will eliminate the ability of a vendor to "lock" the public safety licensee into a technology that is not widely used and will soon become outdated.

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COMMENTS OF AT&T INC.

AT&T Inc., on behalf of its affiliate, AT&T Mobility LLC (f/k/a Cingular Wireless LLC) (“AT&T”), hereby submits comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) *Ninth Notice of Proposed Rulemaking* in the captioned docket which proposes to reallocate 12 MHz of the 700 MHz band public safety spectrum for use by a single, nationwide, interoperable, broadband public safety network.¹ AT&T strongly supports public safety organizations and their need for efficient, cost-effective communication systems. It is an active participant in a variety of organizations established to improve public safety communications, such as the National Security Telecommunications Advisory Committee’s Emergency Communications and Interoperability Task Force, which was formed to analyze potential interoperability approaches and provide solutions to address public safety needs.

¹ *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, PS Docket No. 06-229, *Ninth Notice of Proposed Rulemaking*, FCC 06-181 (rel. Dec. 20, 2006) (“*Ninth NPRM*”), summarized, 72 Fed. Reg. 1201 (Jan. 10, 2006).

AT&T also has worked extensively with a variety of vendors to develop a suite of broadband services targeted for public safety use² and provides Wireless Priority Service to numerous public safety entities. Additionally, AT&T recently donated \$1 million to support public safety programs.³

The communications needs of public safety organizations will not be solved, however, by focusing only on the traditional channels for designing and building public safety communications networks, nor will these needs be satisfied merely by allocating additional spectrum for public safety use. As discussed below, a new approach to public safety communications is necessary. The Commission's proposal to reallocate a portion of the 700 MHz public safety band for use by a single, nationwide, interoperable, broadband public safety network is a giant step in the right direction. The public interest would be served by adoption of this proposal, with slight modifications.

BACKGROUND

In 1998, the Commission allocated 24 MHz of spectrum in the 700 MHz band for public safety use.⁴ At the time, there was no significant public safety demand for broadband

² On May 2, 2006, at Rash Field in the Inner Harbor of Baltimore, Maryland, AT&T participated in a demonstration of the wide variety of public safety/national security applications possible over commercial UMTS/HSDPA networks via a commercial IP multimedia subsystem ("IMS"). A similar demonstration was conducted late last year in Washington, DC. IMS permits the sharing of different media during a single transmission — *i.e.*, numerous applications such as voice communications, video feeds, and file transfers can be utilized simultaneously.

³ See Press Release, AT&T Inc., "AT&T Extends Commitment to Public Safety Organizations with \$1 Million in Contributions (Feb. 1, 2007).

⁴ See *Reallocation of Television Channels 60-69, the 746-806 MHz Band*, ET Docket No. 97-157, *Report and Order*, 12 F.C.C.R. 22953 (1998).

communications and the spectrum was divided into narrowband and wideband channels,⁵ with 2.6 MHz dedicated for nationwide interoperable communications.⁶

Since that initial allocation, public safety's need for a national, broadband interoperable public safety network has been identified.⁷ Numerous parties, including public safety entities, have urged the Commission to reconfigure the 700 MHz Public Safety Band to accommodate broadband use⁸ and Congress has determined that this spectrum "would be ideal to provide first responders with interoperable communications channels."⁹

Interoperability is not a recent concern. Although many parties have assumed that this issue was first raised by the events of September 11, 2001, it actually first came to national prominence *almost 25 years ago*.¹⁰ Tremendous resources have been devoted to the problem:

⁵ *Id.*

⁶ See *Ninth NPRM* at ¶¶ 6, 13.

⁷ See *Report to Congress on the Study to Assess Short-Term and Long-Term Needs for Allocations of Additional Portions of the Electromagnetic Spectrum for Federal, State, and Location Emergency Response Providers — Submitted Pursuant to Public Law No. 108-458, DOC-262865, 14 F.C.C.R. 7772, ¶ 26 (2005) ("Report to Congress"); Consumer & Governmental Affairs Bureau Reference Information Center Petition for Rulemakings Filed, Report No. 2794, Public Notice, (rel. Oct. 30, 2006) ("Cyren Call PN"); Wireless Telecommunications Bureau Announces That M2Z Networks, Inc.'s Application for License and Authority to Provide National Broadband Radio Service in the 2155-2175 MHz Band Is Accepted For Filing, WT Docket No. 07-16, Public Notice, DA 07-492 (rel. Jan. 31, 2007) (proposing a nationwide network that would be available for public safety on a secondary basis for interoperable communications).*

⁸ See *Report to Congress* at ¶ 100; Comments of Access Spectrum, LLC and Pegasus Communications Corporation, WT Docket Nos. 06-169 and 96-86, at 4-9 (filed Oct. 23, 2006).

⁹ See Intelligence Reform and Terrorism Prevention Act of 2004, Pub. L. No. 108-458, § 7501, 118 Stat. 3638, 3855 (2004) ("Intelligence Reform Act").

¹⁰ See Safecom, *Improving Public Safety Wireless Communications and Interoperability* at 5 (Mar. 17, 2004); Op-Ed by Rep. John D. Dingell (D-Mich.), "Digital-TV debate should focus on consumers, first responders," THE HILL (Oct. 20, 2005).

- Congress has allocated billions of dollars toward establishing interoperable, public safety networks;¹¹
- Nearly 100 MHz of spectrum has been allocated for public safety use;¹²
- The process for developing basic standards for interoperability — the APCO Project 25 standard — was commenced in 1989;¹³
- the Wireless Public Safety Interoperable Communications Program — SAFECOM — was created by OMB in 2001 to unify efforts to achieve national wireless interoperability;¹⁴
- Numerous federal agencies, including the Department of Homeland Security, the Department of Justice, the FCC, the Department of Commerce (through the National Telecommunications and Information Agency), have worked to evaluate and address public safety interoperability.¹⁵

Yet, despite these efforts, no nationwide, interoperable public safety network exists today.

In 2004, Congress directed the Commission to study “the need and efficacy of deploying nationwide interoperable communications networks.”¹⁶ The Commission completed its analysis the following year and determined that “[e]mergency response providers would benefit from the

¹¹ See Maryann Lawlor, “Homeland Security Department Releases Interoperability Scorecards,” Signal Connections Newsletter, *available at* http://www.imakenews.com/signal/e_article000728130.cfm?x=b11,0,w.

¹² Public Safety is currently allocated 24 MHz in the 700 MHz band, 50 MHz in the 4.9 MHz band, 9.5 MHz in the 800 MHz band, 6.3 MHz in the 25-50 MHz band, 3.6 MHz in the 150-174 MHz band, and 3.7 MHz in the 450-470 MHz band.

¹³ See *The Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010*, WT Docket No. 96-86, *Notice of Proposed Rule Making*, 11 F.C.C.R. 12460, 12495 (1996).

¹⁴ See General Accounting Office, *Project SAFECOM: Key Cross-Agency Emergency Communications Effort Requires Stronger Collaboration*, GAO-04-494, at 4 (Apr. 16, 2004).

¹⁵ See General Accounting Office, *Homeland Security: Federal Leadership and Intergovernmental Cooperation Required to Achieve First Responder Interoperable Communications*, GAO-04-740, at 10 (July 20, 2004) (“First Responder GAO Report”).

¹⁶ See Intelligence Reform Act, 118 Stat. at 3854-55.

development of an integrated, interoperable nationwide network capable of delivering broadband services throughout the country.”¹⁷ The Commission recognized that public safety entities generally claimed that additional spectrum was necessary, but concluded that it would be premature to allocate additional spectrum:

[T]here is a lack of unanimity within the public safety community regarding how much spectrum will be needed. We expect that public safety’s long-term needs will become clearer as existing spectrum allocations in the 700 MHz, 800 MHz, and 4.9 GHz bands are fully deployed and initiatives to make more efficient use of existing spectrum are completed.¹⁸

Nevertheless, given the public safety community’s demand for broadband spectrum, the Commission committed to evaluate whether the existing 700 MHz public safety allocation could be reconfigured to accommodate broadband.¹⁹

DISCUSSION

I. A NEW APPROACH TO PUBLIC SAFETY SPECTRUM ALLOCATIONS IS NECESSARY

According to the Commission, the time has come “for a significant departure from the typical public safety allocation model . . . used in the past.”²⁰ AT&T agrees. The current allocation model inhibits interoperability and promotes fragmentation.²¹ Until recently, public safety has been viewed primarily as a local issue. Consistent with this view, licenses for public safety communications systems traditionally have been awarded on a jurisdiction-by-jurisdiction

¹⁷ *Report to Congress*, 14 F.C.C.R. 7772, ¶ 26.

¹⁸ *Id.* at ¶ 98. The Commission further noted that, without adequate funding, any additional allocation may lay fallow. *Id.* at ¶ 99.

¹⁹ *Id.* at ¶ 100.

²⁰ *Ninth NPRM* at ¶ 11.

²¹ *See id.* at ¶ 13.

basis with no binding, uniform standards for the construction and operation of the communications networks. This resulted in licenses being awarded to a wide variety of public safety applicants that tended to design and construct systems with little regard for the plans and needs of other public safety entities. As GAO has noted, of all the barriers to interoperability, “perhaps the most fundamental has been limited and fragmented planning and cooperation.”²²

Although states and regional organizations are playing a larger role, interoperability remains elusive. As Professor Jon M. Peha, Electrical Engineering and Public Policy, Carnegie Mellon University, has noted, the current spectrum allocation approach produces “an infrastructure that is more expensive than necessary, requires more spectrum than necessary, and is more prone to interoperability problems than necessary.”²³ The best approach for achieving public safety interoperability is to eliminate fragmentation by establishing a national, public safety spectrum allocation for the creation of an interoperable network.

AT&T also agrees with the Commission that public safety spectrum allocation decisions must take into account the efficiency of existing public safety networks.²⁴ Under this approach, additional spectrum should be allocated for public safety only if a determination is made that (i) existing public safety networks are spectrally efficient, and (ii) the existing public safety spectrum cannot accommodate demand either by implementing new technology or by reallocation into a more efficient band plan. In making these determinations, the “high spectrum

²² First Responder GAO Report at 28 (citing General Accounting Office, *Homeland Security: Challenges in Achieving Interoperable Communications for First Responders*, GAO-04-231T (Washington, D.C., Nov. 6, 2003)).

²³ Jon M. Peha, Professor of Electrical Engineering and Public Policy, Associate Director of the Center for Wireless and Broadband Networking, Carnegie Mellon University, *How America's Fragmented Approach to Public Safety Wastes Money and Spectrum*, Abstract presented at 33rd Telecommunications Policy Research Conference, at 13-14 (Sept. 2005) (“Peha Abstract”).

²⁴ See *Ninth NPRM* at ¶ 16.

efficiency observed in the production of CMRS” should be used as the “benchmark for public safety.”²⁵

Approximately 100 MHz of spectrum has already been allocated for use by state and local public safety agencies to serve approximately 3 million first responders nationwide. Recent studies demonstrate that this allocation should be more than sufficient to satisfy all public safety communications needs. Professor Peha analyzed both public safety spectrum and the current approach of awarding public safety licenses on a jurisdiction-by-jurisdiction basis and concluded that the current approach “wastes money and spectrum.”²⁶ Among his findings:

- Far more communications towers are constructed than are necessary to serve the public safety community;²⁷
- Most stand-alone public safety networks are constructed to serve less than 100 users;²⁸
- Public safety has more than enough spectrum to satisfy demand through 2010.²⁹

Criterion Economics, L.L.C. (“Criterion”) also analyzed public safety spectrum usage/needs and agreed with Professor Peha that additional spectrum was not necessary. Criterion noted that providers of commercial wireless radio services (“CMRS”) are able to provide voice and broadband service to consumers at a rate of “over one million customers per 1

²⁵ *Id.*

²⁶ *See* Peha Abstract at 3-6, 12.

²⁷ *Id.* For example, Professor Peha noted that the public safety entities in Allegheny County, Pennsylvania currently utilize 439 towers and that this number can be reduced by 80-90% by deploying a single system designed to serve all public safety users in the county. *Id.* at 12.

²⁸ *Id.* at 8.

²⁹ *Id.* at 13.

MHz of spectrum” on a nationwide basis.³⁰ Thus, utilizing current technology, it is possible to design a public safety network with similar efficiencies — a network capable of serving all 3 million first responders with a relatively small amount of spectrum. Although public safety entities have special requirements that may prevent them from achieving the same level of spectrum efficiency as CMRS networks (*i.e.*, serving all 3 million first responders over 3 MHz), there is no evidence that the existing public safety allocation (nearly 100 MHz of spectrum) is insufficient to satisfy demand for a nationwide, broadband, interoperable wireless network. The problem is that the existing allocation is not used in an efficient, integrated manner.

In sum, spectrum is a limited resource and should not be allocated to address a perceived public safety need if the utilization of new, more efficient technologies would be sufficient to satisfy the need and spectrum is already available to meet this need.

II. THE PUBLIC INTEREST WOULD BE SERVED BY REALLOCATING A PORTION OF THE 700 MHz PUBLIC SAFETY BAND FOR NATIONWIDE, BROADBAND, INTEROPERABLE COMMUNICATIONS

Congress has determined that the 700 MHz spectrum currently allocated to public safety “would be ideal to provide first responders with interoperable communications channels,”³¹ and the public safety community has urged the Commission to permit broadband use of this spectrum allocation.³² Moreover, the Commission has determined that: (i) a nationwide, broadband, interoperable public safety network would serve the public interest; and (ii) an additional spectrum allocation should not be made to public safety until they have fully deployed over their

³⁰ Peter Cramton, Thomas S. Dombrowsky, Jr., Jeffrey A. Eisenach, Allan Ingraham, and Hal J. Singer, “Improving Public Safety Communications: An Analysis of Alternative Approaches,” Criterion Economics, L.L.C. at 29 (Feb. 6, 2007).

³¹ *See* Intelligence Reform Act, 118 Stat. at 3855.

³² *See Report to Congress* at ¶ 100.

existing spectrum allocations and improved spectrum efficiency.³³ Given these findings, the public interest would be served by reallocating a portion of the 700 MHz public safety band for broadband use and assigning this spectrum to a single public safety broadband licensee to provide broadband, interoperable services to public safety on a nationwide basis and lease excess capacity, if any, to commercial users on a secondary basis.³⁴

The FCC's proposal "is a departure from prior public safety allocations, and is designed to speed deployment, decrease costs of roll-out, promote nationwide interoperability and provide a source of funding for constructing a broadband public safety communications network."³⁵ This new approach eliminates fragmentation by assigning a single, national licensee. As the Commission correctly notes, a "national public safety licensee may be in the best position to solve the interoperability and broadband capability problems that have been the topic of increased concern."³⁶ Other approaches have been tried over the last 25 years to no avail. The Commission's broad new approach eliminates most of the problems associated with earlier attempts to facilitate interoperability and would result in the expeditious establishment of a nationwide, interoperable broadband public safety network.

A. A 10 MHz Allocation Will Provide Sufficient Spectrum to Provide Broadband Services to First Responders

The Commission has recognized that spectral efficiency is a critical factor in determining the spectrum needs of public safety.³⁷ Unlike older, existing public safety networks which

³³ *Id.* at ¶ 98.

³⁴ *Ninth NPRM* at ¶ 4.

³⁵ *Id.*

³⁶ *Id.* at ¶ 21.

³⁷ *See Report to Congress* at ¶ 98; *Ninth NPRM* at ¶ 16.

generally utilize less efficient technologies, a new broadband network can be built utilizing state-of-the-art, spectrally efficient technology. These new technologies make it possible to satisfy public safety needs for broadband services with 10 MHz of spectrum. Some present-day technologies require as little as 1.25 MHz to provide broadband service. Ten megahertz is sufficient to meet consumer demands for a comprehensive array of high speed, broadband voice and data applications.³⁸ For example, a single UMTS channel, which utilizes just two 5 MHz channels, or 10 MHz total, can provide 2 Mbps of sustained bandwidth to be shared among simultaneous users near a given cell site. With the High Speed Downlink Packet Access (“HSDPA”) enhancement, the shareable bandwidth speed increases over time to 10 Mbps.³⁹ According to a white paper developed by Peter Rysavy for 3G Americas, UMTS WCDMA can theoretically support peak downlink network speeds of 2.048 Mbps and HSDPA can theoretically support downlink peak network speeds of 14.4 Mbps. Peak achievable downlink user rates will vary from 350 kbps in UMTS WCDMA and >1 Mbps to 3 Mbps in HSDPA devices.⁴⁰

Recent public safety efforts to establish broadband networks demonstrate that 10 MHz should be more than sufficient to create a national broadband network. Northrop Grumman was awarded a contract to build a broadband wireless public safety network for New York City over

³⁸ See Affidavit of William Hogg and Mark Austin (“Hogg-Austin”) at 21, filed as Exhibit 1, Attachment 2 to Application for consent to transfer of control of AT&T Wireless Services, Inc. to Cingular Wireless Corporation, WT Docket No. 04-70, ULS File No. 0001810683 (filed July 21, 2004).

³⁹ See *id.* at 10-11.

⁴⁰ See Peter Rysavy, “Mobile Broadband – EDGE, HSPA, & LTE,” White Paper Prepared for 3G Americas, at 54-55 (Sept. 2006).

10 MHz of spectrum utilizing UMTS technology.⁴¹ Similarly, the National Capital Region was recently granted a waiver to build a similar network to serve the Washington, D.C. area by utilizing two 1.25 MHz channels, a total of only 2.5 MHz of spectrum.⁴² Professor Peha has analyzed public safety spectrum usage and determined that, given current technologies, these needs could be *satisfied through 2010 with an allocation of only 8.3 MHz.*⁴³

B. The Establishment of a Single, Nationwide Licensee Will Promote Interoperability and Reduce Costs for Public Safety

The Commission's proposal will facilitate interoperability simply by moving away from the traditional balkanized model of awarding separate individual licenses to numerous state and local jurisdictions. By awarding a single national license for the construction of a nationwide, broadband network, the Commission will ensure the availability of an integrated, efficient, and interoperable network. Any public safety entity that utilizes this network will be able to use its equipment on a national, regional, or local basis and will be able to communicate with every other public safety entity that also utilizes the network.

By licensing a single nationwide licensee, the Commission also will reduce the costs associated with public safety communications. First, as the Commission has recognized, nationwide licensees achieve economies of scale.⁴⁴ The volume of equipment needed by such a

⁴¹ See Press Release, Northrop Grumman Information Technology, "Northrop Grumman Wins \$500 Million New York City Broadband Mobile Wireless Contract," (Sept. 12, 2006); Donny Jackson, "New York City awards \$500 million wireless contract to Northrop Grumman," MOBILE RADIO TECHNOLOGY (Sept. 15, 2006).

⁴² See *Request of National Capital Region for Waiver of the Commission's Rules to Allow Establishment of a 700 MHz Interoperable Broadband Data Network*, WT Docket No. 96-86, Order, DA 07-454 (rel. Jan. 31, 2007).

⁴³ See Peha Abstract at 13.

⁴⁴ See *Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services*, WT Docket No. 06-17, *Eleventh Report*, 21 F.C.C.R. 10947, 10968 (2006) ("*Eleventh CMRS Report*"); *Ninth NPRM* at ¶ 22.

licensee will produce bargaining power, which will result in volume discounts not available to public safety entities designing systems to serve small geographic areas. This bargaining power will assist the licensee in persuading manufacturers to respond more rapidly in developing and upgrading equipment, introducing technological improvements, and providing new capabilities and features.

Second, the efficiencies associated with a nationwide license will reduce costs.⁴⁵ For example, the number of sites required by a single licensee to serve the United States is exponentially fewer than the number of sites required to serve the same area if it were served by multiple licenses serving much smaller geographic areas using spectrum split among many entities. A single entity will be more readily able to use a unified infrastructure, collocate facilities at fewer towers, and achieve trunking efficiencies. Professor Peha demonstrated these efficiencies by analyzing Allegheny County, Pennsylvania. His analysis demonstrated that 439 towers are currently used to serve this area, but the number of sites would be reduced by 80-90% if a single system were utilized to serve all public safety users in the county.⁴⁶

Costs will be reduced further if the national public safety licensee is able to forge relationships with commercial wireless licensees, as envisioned by the Commission.⁴⁷ By permitting the national public licensee to make its spectrum available to commercial licensees on a secondary basis, commercial licensees will be incented to develop applications and equipment capable of utilizing this band. This in turn will benefit the public safety community by extending the availability of commercial equipment and applications to the 700 MHz public safety band. The availability of the spectrum for commercial use also will increase demand for equipment

⁴⁵ See, e.g., *Eleventh CMRS Report*, 21 F.C.C.R. at 10968.

⁴⁶ See Peha Abstract at 12.

⁴⁷ See *Ninth NPRM* at ¶ 23.

capable of operating in this band and drive down its cost. In addition, the Commission envisioned infrastructure sharing between commercial and public safety licensees which would significantly reduce construction and operating costs.⁴⁸

C. The Commission's Proposal Provides a Mechanism for Funding the Public Safety Network

One of the key problems associated with building interoperable communications networks for public safety is funding. The Commission's proposal would help alleviate this problem by permitting the public safety licensee to make spectrum available on a secondary basis for use by commercial licensees. The revenue generated from these spectrum sharing arrangements would subsidize the costs of building and operating the new public safety network.

Most importantly, the Commission's proposal creates this potential revenue stream without jeopardizing funding for critical public safety programs. Congress committed nearly \$11 billion for several priority programs, including \$1 billion for public safety interoperability grants.⁴⁹ These funds were to be offset from auction revenues generated from the auction of 700 MHz spectrum dedicated to commercial use. Unlike other proposals, the Commission's proposal does not reduce the amount of spectrum available for this auction and, therefore, the revenue available from the auction.

III. STANDARDS SHOULD BE ADOPTED FOR THE DESIGN AND OPERATION OF THE PROPOSED NETWORK

AT&T supports adoption of clear and binding national standards for the proposed public safety network.⁵⁰ National standards that are clear, competitive, and technically sound will

⁴⁸ *Id.*

⁴⁹ *See* Deficit Reduction Act of 2005, Pub. L. No. 109-171, §§ 3004-3012 (2006).

⁵⁰ *See Ninth NPRM* at ¶¶ 32-33.

accelerate the development of the necessary economies of scale. Standards also will drive down the cost of deployment and speed interoperability.

The linchpin of any standards should be a requirement that the new public safety network should be based on a standardized IP-based approach such as that specified in IMS.⁵¹ Networks based on IP eliminate many of the barriers to interoperability associated with proprietary technologies designed by vendors for very narrow uses. Commercial licensees are migrating toward this IP-based model, which would potentially allow the new public safety licensee to leverage developments in the commercial sector for public safety use. Moreover, such an approach would facilitate connectivity with commercial networks, which could add redundancy to public safety networks. Adoption of this requirement also would encourage infrastructure sharing between public and commercial entities — they are more likely to share infrastructure if they are using it in the same or a very similar manner.

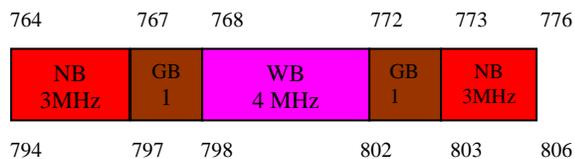
The adoption of national standards also could be incorporated into grant programs that are designed to disburse money to public safety organizations that seek to improve interoperability. For example, a prerequisite for participation in the grant programs could be a binding commitment from the participants to deploy or upgrade networks to an IP-based protocol. This would increase the potential for interoperability between the national network and networks at the state and local level.

IV. THE 700 MHZ PUBLIC SAFETY BAND PLAN SHOULD BE REVISED TO MAKE MORE EFFICIENT USE OF THE SPECTRUM

The Commission proposes to reallocate 12 MHz of the public safety band for broadband use, but does not specifically discuss how this reallocation impacts the band plan. The Commission has divided this spectrum equally between narrowband and wideband operations.

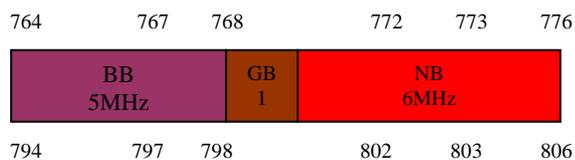
⁵¹ See note 2, *supra*.

The *Ninth NPRM* depicts these operations as existing in adjacent spectrum when, in reality, a guard band is necessary between narrowband and wideband operations.⁵² Thus, if the guard band is factored into the analysis, the current band plan should be depicted as follows:



Given the guard band, there is not 12 MHz of wideband spectrum available for reallocation to broadband use. Under the current band plan, the most available is 8 MHz.

The spectrum available for broadband use can be increased, however, by optimizing the public safety band by combining the entire narrowband spectrum into the upper portion of the band:



This proposal would preserve the amount of narrowband spectrum available, yet would increase the amount of spectrum available for broadband to 10 MHz — two 5 MHz channels. As discussed above, this is enough spectrum to deploy commercial technologies for the provision of broadband services. This proposal also improves spectrum efficiency by eliminating one of the guard bands under the current band plan.

Moreover, by moving the narrowband allocation higher in the band, the Commission will increase the separation between narrowband public safety spectrum and commercial spectrum. This approach therefore has the potential to reduce the amount of intermodulation interference into the narrowband public safety receivers.

⁵² See Comments of Motorola, Inc., WT Docket No. 96-86, at 12-13 (filed June 6, 2006).

CONCLUSION

For the foregoing reasons, adoption of the Commission's proposal with the minor modifications proposed above would serve the public interest.

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