

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Public Safety and Homeland Security Bureau)	
Seeks Comment on the Technical and Operational)	PS Docket No. 06-229
Feasibility of Enabling Flexible Use of the)	
700 MHz Public Safety Narrowband Allocation)	
and Guard Band for Broadband Services)	

COMMENTS OF THE PUBLIC SAFETY SPECTRUM TRUST CORPORATION

Introduction and Summary

The Public Safety Spectrum Trust Corporation (“PSST”) hereby submits these Comments in response to the September 28, 2010 Public Notice of the Public Safety and Homeland Security Bureau (“PSHSB”) in the above-referenced proceeding.¹ In the *Notice*, the PSHSB seeks comment on the feasibility of allowing flexible use in the 700 MHz public safety narrowband and guard band spectrum. The PSHSB specifically seeks comment on the operational feasibility and technical compatibility of flexible use with existing and future public safety narrowband operations, and on potential conditions or restrictions on flexible use that might be required to prevent harmful interference to narrowband operations or the impairment of narrowband interoperability.

As discussed below, such flexible use would create “islands of incompatibility” that could significantly impair interoperability for both narrowband and broadband public safety

¹ *Public Safety and Homeland Security Bureau Seeks Comment on the Technical and Operational Feasibility of Enabling Flexible Use of the 700 MHz Public Safety Narrowband Allocation and Guard Band for Broadband Services*, PS Docket No. 06-229, Public Notice, DA 10-1877 (released Sept. 28, 2010) (“*Notice*”).

operations. Such “flexibility” would also introduce additional complexity and cost for broadband public safety equipment, undermining the economies of scale that public safety, industry and the Federal Communications Commission (“Commission”) hope to achieve. Furthermore, public safety’s need for additional broadband spectrum capacity does not diminish its requirement for sufficient narrowband spectrum for the foreseeable future. Accordingly, the Commission should maintain the nationwide approach to public safety spectrum in the 700 MHz band, with defined narrowband, broadband and guard band allocations.

I. ABOUT THE PSST

The PSST is a non-profit 501(c)(3) entity organized under the laws of the District of Columbia. The PSST has been selected by the Commission as the Public Safety Broadband Licensee (“PSBL”) for the 700 MHz public safety nationwide broadband spectrum. The PSST’s mission is to provide an organizational structure through which leaders and representatives of national public safety organizations can guide the construction and operation of a nationwide, interoperable, public safety-grade wireless broadband network.² The PSST also serves as the lessor for 20 long-term *de facto* transfer spectrum leases with state, local, and regional public safety entities planning early deployment operations on the 700 MHz public safety broadband spectrum.

² The Board of Directors of the PSST consists of representatives of the following organizations: American Association of State Highway and Transportation Officials (AASHTO), American Hospital Association (AHA), Association of Public-Safety Communications Officials – International (APCO), Forestry Conservation Communications Association (FCCA), International Association of Chiefs of Police (IACP), International Association of Fire Chiefs (IAFC), International City/County Management Association (ICMA), International Municipal Signal Association (IMSA), National Association of State EMS Officials (NASEMSO), National Association of State 9-1-1 Administrators (NASNA), National Emergency Management Association (NEMA), National Emergency Number Association (NENA), National Fraternal Order of Police (NFOP), National Governors Association (NGA), and the National Sheriffs’ Association (NSA).

II. THE COMMISSION SHOULD MAINTAIN THE NATIONWIDE APPROACH FOR THE PUBLIC SAFETY BROADBAND, NARROWBAND AND GUARD BAND SPECTRUM ALLOCATIONS IN THE 700 MHZ BAND

Fracturing the public safety narrowband and broadband spectrum allocations at 700 MHz would hinder the nationwide interoperability goal that the public safety community, industry, the Commission, the Department of Homeland Security (“DHS”), the President’s Administration and Congress all want to achieve as part of the proposed 700 MHz public safety wireless broadband network. Absent nationwide consistency in the 700 MHz public safety band, there would be substantial operational and technical problems for both broadband and narrowband uses. Such flexibility, especially changes to the guard band, could also hinder planned early deployment operations in the 700 MHz public safety broadband spectrum licensed to the PSST.

Under a “flexible” approach, even if spectrum from the former narrowband-only block becomes available in one jurisdiction for broadband use, it may not be available for broadband use when that jurisdiction’s law enforcement, fire and EMS personnel roam into a neighboring jurisdiction. Similarly, a jurisdiction using the spectrum for narrowband use could be impacted by an adjacent jurisdiction deploying the spectrum for broadband use, including by potentially suffering harmful interference from new broadband operations. For example, consider the results when public safety personnel from “Jurisdiction A” that is using the former narrowband-only block for broadband operations roam to another city, county or state to assist at the scene of a disaster or major incident. If the same former narrowband-only spectrum is not available for broadband use in the visited jurisdiction, the roaming users would likely face much slower data transfers and much lower quality video than they experience in their home jurisdiction (assuming that compatible equipment is even available). In fact, public safety personnel from Jurisdiction A may be unable to communicate at all on the narrowband frequencies unless they have

appropriate narrowband equipment. Likewise, if public safety personnel from “Jurisdiction B,” which uses the former narrowband-only block for narrowband operations on a day-to-day basis, roam to assist Jurisdiction A (which uses the former narrowband-only spectrum for broadband operations), Jurisdiction B’s radios would be useless for “talkaround” at the scene because of co-channel interference from the Jurisdiction A broadband signal.

Furthermore, fracturing the 700 MHz public safety spectrum allocation with flexibility creates areas in which neither broadband nor narrowband systems can deploy the spectrum effectively. As the Commission knows from experience, co-channel narrowband facilities must be separated by a “buffer” between the respective coverage areas of adjacent jurisdictions in which neither can operate on the same spectrum without interference. Under the current 700 MHz public safety narrowband framework, that issue is handled through frequency coordination to prevent interference. Adjacent jurisdictions can avoid co-channel interference and ensure complete coverage over their respective areas by using different narrowband channels than those used in adjacent areas and by ensuring adequate co-channel separation. A 5 MHz broadband LTE signal, however, would be co-channel to four hundred 12.5 kHz narrowband channels – over 80 % of a narrowband block. Thus, under a more “flexible” approach, two neighboring public safety jurisdictions deploying different systems (one narrowband, one broadband) would likely be unable to build out coverage over their entire service area without interference. A geographic buffer zone in which neither has coverage would be needed to avoid interference between their adjacent broadband and narrowband systems.

Because the narrowband spectrum should remain for narrowband operations nationwide, the guard band spectrum should also not be opened to broadband use. When it revised the 700 MHz bandplan to create a public safety broadband spectrum block, the Commission

obtained a high degree of consensus among multiple technical experts that 1 MHz of guard band spectrum is needed between the 700 MHz public safety broadband and narrowband blocks, and this conclusion remains equally valid today.³

The PSST is particularly concerned that any new “flexibility” could cause interference to the early deployment operations planned for the 700 MHz public safety broadband spectrum, including the broadband systems in development by the 20 state, local, and regional public safety entities that have entered into long-term *de facto* transfer spectrum leases with the PSST.⁴ The Commission should avoid taking any action that could negatively impact these early broadband deployments (*e.g.*, modifying the guard bands), as the lessons learned from such deployments will be critical to developing the future nationwide interoperable public safety wireless broadband network.

In summary, introducing “flexibility” to deploy broadband operations on the 700 MHz public safety narrowband channels creates interoperability, coverage and potential interference problems for public safety. The PSST recommends that the broadband, narrowband and guard band spectrum allocations remain consistent nationwide, not fractured through “flexibility.”

III. FRACTURED SPECTRUM ALLOCATIONS NEGATIVELY IMPACT EQUIPMENT ECONOMIES OF SCALE

A second hallmark goal envisioned for the 700 MHz public safety broadband network is to leverage commercial equipment economies of scale to help reduce the costs of public safety broadband devices. Providing flexibility to deploy broadband systems on the 700 MHz public safety narrowband spectrum would fracture the public safety equipment market because some

³ See *Service Rules for the 678-746, 747-767 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289 ¶¶ 347-48 (2007).

⁴ See, *e.g.*, *Requests for Waiver of Various Petitioners to Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks*, Order, 25 FCC Rcd 5145 (2010).

public safety users would need broadband capabilities in the 769-775/799-805 MHz narrowband spectrum and others would not. For this reason alone, the Commission should not authorize broadband “flexibility” in the 700 MHz narrowband spectrum.

It is the PSST’s understanding that LTE chipsets can accommodate a limited number of combined 4G and 3G “paths” overall with some additional restrictions on where those paths are located in the spectrum.⁵ These paths include the combination of relevant 700 MHz band classes, together with requirements for other technologies and bands to provide 3G roaming into areas where 700 MHz LTE broadband is not yet built out. Allowing public safety to deploy broadband on the narrowband spectrum could create yet another “path” that needs to be accommodated in devices and would reduce the economies of scale that could otherwise be obtained under a nationwide approach.⁶ This added capability would be needed only by those jurisdictions that choose to deploy broadband on the narrowband spectrum, while the added cost and complexity of the devices would be faced by all 700 MHz public safety users.

IV. PUBLIC SAFETY STILL HAS A SUBSTANTIAL NEED FOR NARROWBAND SPECTRUM

As public safety has already advised the Commission, it is premature to assume that broadband is a viable replacement for narrowband voice operations.⁷ There is minimal public safety broadband deployment so far, and the LTE standard does not include direct unit-to-unit “talkaround” capabilities. Furthermore, it has not yet been shown that voice-over-broadband will provide equivalent or better reliability and features across the variety of public safety operational environments encountered by law enforcement, fire and EMS personnel.

⁵ See Comments of Qualcomm Incorporated, RM-11592 (filed Mar. 31, 2010) at 5.

⁶ Furthermore, the 700 MHz narrowband spectrum is not even part of a band class defined in the current 3GPP LTE standards.

⁷ See, e.g., Letter from Harlin McEwen, Chairman of the IACP Communications and Technology Committee, to FCC Chairman Julius Genachowski, PS Docket No. 06-229 (filed Oct. 12, 2009).

While the PSST is fully supportive of deploying a nationwide public safety broadband network as soon as possible, there is no evidence or data to support an assertion by some that broadband is a viable replacement for current mission-critical voice systems.

Chris Essid, Director of the DHS Office of Emergency Communications, advised:

[Broadband] is overall unproven for mission-critical voice communication, and a lot of work needs to be done to see if broadband is a viable strategy for public safety...One day maybe there will be convergence, but [broadband] is not ready today and won't be tomorrow.”⁸

In the meantime, public safety agencies must continue to have the best communications technologies possible to protect first responders and the public they serve. Accordingly, DHS has recommended a dual-path strategy that continues reliance on current narrowband land mobile radio communications while simultaneously moving forward with the development of the nationwide public safety broadband network. The PSST agrees that it is very premature to presume that the need for the narrowband public safety spectrum has diminished or will diminish in the near future.

V. CONCLUSION

For the foregoing reasons, the PSST opposes opening the narrowband or guard band 700 MHz public safety spectrum to broadband operations. Providing such “flexibility” will merely compromise interoperability for both broadband and narrowband systems and will result in areas where the spectrum is not usable for either technology as a result of co-channel conflicts. It could also thwart the early deployment of broadband systems by the 20 state, local, and regional public safety entities that have entered into long-term *de facto* transfer spectrum leases with the PSST. In addition, failure to maintain a nationwide approach to public safety spectrum

⁸ *DHS advises first responders not to get rid of their old gear just yet*, Homeland Security Newswire (Mar. 19, 2010), available at <http://homelandsecuritynewswire.com/dhs-advises-first-responders-not-get-rid-their-old-gear-just-yet>.

use will negatively impact equipment economies of scale, increasing the cost and complexity of public safety devices. The PSST continues to believe that the spectrum capacity needed for the broadband network is best provided through a combination of dedicated nationwide spectrum (including the public safety broadband block already licensed to the PSST), together with reallocation of the 700 MHz D Block spectrum to public safety.

Respectfully submitted,



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