

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

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

**COMMENTS OF THE  
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

The Telecommunications Industry Association (“TIA”) hereby submits comments in response to the Ninth Notice of Proposed Rule Making in the above-captioned proceeding.<sup>1</sup>

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<sup>1</sup> *Ninth Notice of Proposed Rule Making*, FCC 06-181 (released December 20, 2006) (“NPRM”).

## I. INTRODUCTION

TIA is the leading trade association for the information and communications technology (“ICT”) industry, with 600 member companies that manufacture or supply the products and services used in global communications across all technology platforms.

TIA represents its members on the full range of public policy issues affecting the ICT industry, co-owns NXTcomm - the new industry venue that will feature the business and technology of communications, information and entertainment - and is fully accredited by the American National Standards Institute (“ANSI”) to produce industry consensus standards. Among their numerous lines of business, TIA member companies design, produce, deploy, and integrate the interoperable public safety communications systems used by our nation’s first-responders, including the systems that use the bands that are subject to the issues addressed in this NPRM. As a result, TIA has a substantial interest in current and future Federal Communications Commission (“FCC” or “Commission”) decisions on the outcome of the issues addressed in this NPRM and activities related to the development of service rules in the subject bands. TIA requests that the Commission take into consideration the views expressed below.

In this Notice of Proposed Rulemaking the FCC proposes to (1) allocate 12 megahertz of the 700 MHz public safety spectrum from wideband to broadband use; (2) assign this spectrum nationwide to a single national public safety broadband licensee; (3) permit the national public safety broadband licensee also to operate on a secondary basis on all other public safety spectrum in the 700 MHz band; (4) permit the licensee to use its assigned spectrum to provide public safety entities with public safety broadband service

on a fee for service basis; (5) permit the licensee to provide unconditionally preemptible access to its assigned spectrum to commercial service providers on a secondary basis; (6) facilitate the shared use of commercial mobile radio service infrastructure for the efficient provision of public safety broadband service; and (7) establish performance requirements for interoperability, build out, preemptibility of commercial access, and system robustness.

TIA's comments will focus primarily on two areas: 1) secondary broadband use of the narrowband spectrum; and 2) reconfiguration of the public safety band, regardless of the licensing governance structure ultimately chosen. TIA believes these areas both involve technical considerations in which TIA and its members have considerable expertise.

For reasons detailed below, TIA respectfully urges the Commission to 1) avoid secondary broadband use of the narrowband spectrum as proposed in the NPRM and 2) reconfigure the bandplan to create a contiguous narrowband block and make more efficient use of the spectrum overall, regardless of the licensing and governance structure adopted.

## **II. DISCUSSION**

The NPRM follows two previous NPRMs that also relate to the public safety 700 MHz band spectrum. The Commission released an NPRM on March 21, 2006, which proposed to add the option for broadband in the 700 MHz band which is currently limited to wideband. Subsequently, on September 8, 2006, the Commission released an NPRM

which addressed the potential reconfiguration of the 700 MHz bandplan, among other changes. No decisions on either of these previous NPRMs have yet been reached.

**A. Secondary Broadband Use of the Narrowband Spectrum Could Cause Harmful Interference to Public Safety Voice Communications.**

The Commission has proposed to allow secondary use of the 700 MHz Public Safety narrowband spectrum by the broadband licensee. Based on technical information previously submitted by multiple TIA member companies and public safety leaders, as well as a knowledge of how narrowband channels are assigned, TIA opposes this part of the Commission's proposal. While TIA appreciates that the proposal for such use would be on a secondary (non-interference) basis, TIA believes that the technical characteristics of broadband channels would generally preclude such use, making the benefits of such a proposal difficult to realize in practice.

The Commission's Eighth NPRM in WT Docket No. 96-86 proposed to open the 6 MHz paired, currently designated for wideband use, for broadband operations as well. The public safety community and several TIA member companies supported opening this spectrum for broadband use. Many commenters, however, noted that guardband spectrum would be required to help minimize interference that could otherwise be caused by broadband out-of-band emissions into narrowband receivers. While there were slight differences in the exact numbers recommended by various past commenters, they all generally recommended that approximately 1 MHz of guardband is needed between broadband transmissions and narrowband receivers to minimize interference. Therefore, under the Commission's current proposal to deploy broadband on a secondary basis in

the narrowband spectrum, a block of at least 2.25 MHz and most likely 3.25 MHz would need to be open just to deploy even one broadband channel. For example, if a broadband channel were to be placed just inside and at the lower edge of the narrowband spectrum, 2.25 MHz of narrowband spectrum would be used in that area—1.25 MHz for the broadband channel plus 1 MHz of spectrum adjacent to the broadband channel to help protect narrowband from interference. This translates to an overlap with 180 narrowband channels configured as 12.5 kHz channels. If the broadband channel instead were placed near the middle of the narrowband spectrum, a guardband would be needed on both sides of the broadband channel, so 3.25 MHz of narrowband spectrum, equivalent to 260 narrowband 12.5 kHz channels could be affected.

The attached diagrams in Appendix A depict four of the many possible scenarios that could occur if broadband channels were allowed in the narrowband public safety mission-critical voice spectrum on a secondary basis. In addition, these scenario diagrams only addresses one broadband channel with appropriate guardbands to help minimize out-of-band emissions. If a broadband channel mixed with narrowband channels, the potential intermodulation products created could impact the entire public safety narrowband spectrum.

Narrowband channels for a given system are generally not assigned in a contiguous block. Instead, channels for a given multi-channel land mobile system today are normally spaced apart so that multiple signals can be readily combined into one antenna with combiners of reasonable insertion loss, cost and size. Therefore, any broadband channel that did occupy the narrowband spectrum even on a secondary basis has the potential to overlap many public safety mission critical voice systems. Given the breadth of interference that could result from this proposal (notwithstanding the

broadband licensee's secondary status), and in view of the technical issues involved, TIA believes that the proposal to allow broadband use of narrowband spectrum on a secondary basis carries a high risk to public safety voice systems and a low potential benefit for additional broadband. Accordingly, TIA generally opposes this element of the Commission's proposal in the NPRM. However, if there are areas of the country in which there is no plan to utilize the narrowband 700 MHz channels, the Commission may want a mechanism to provide the applicable Regional Planning Committee(s) and State Interoperability Executive Committee(s) some flexibility in putting the spectrum to use for broadband operations.

**B. The Spectrum Should be Reconfigured, Regardless of the Licensing Structure Adopted**

The Commission's proposal for one nationwide broadband public safety license in this NPRM was framed in the context of the current bandplan without reconfiguration. However, the NPRM indicated that the Commission does not intend this proposal to preclude consideration of alternative band plans, including rearrangement of the channels within the public safety spectrum allocation.<sup>2</sup>

In the current bandplan configuration, the public safety wideband/broadband spectrum separates the narrowband spectrum. As a result, 3 MHz of the narrowband spectrum rests adjacent to one side of the 6 MHz wideband/broadband block and another 3 MHz of narrowband spectrum rests adjacent to the other end of the 6 MHz

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<sup>2</sup> *Ninth NPRM* at para. 31.

wideband/broadband block. This of course represents one side of the paired spectrum; a mirror image of 12 additional MHz of spectrum represents the other pairs for these narrowband and wideband/broadband blocks.

In the current configuration, approximately 1 MHz of guardband would be taken from each end of the wideband/broadband spectrum to protect narrowband operations. That means that one-third of the wideband/broadband spectrum must be dedicated to a guardband internal to the public safety spectrum to protect critical narrowband operations. However, if the narrowband blocks are reconfigured to be adjacent to one another, less of the spectrum is used for an internal guardband.

Accordingly, TIA recommends that the Commission reconfigure the band to provide a contiguous 6 MHz paired block of spectrum for narrowband. TIA believes that doing so will help minimize interference to narrowband spectrum and will actually provide slightly more usable spectrum for broadband as well, making the bandplan more spectrally efficient.

### III. CONCLUSION

TIA applauds the Commission's desire to promote more efficient use of spectrum and to create opportunities for new and additional uses of wireless communications in the public safety 700 MHz band.

TIA urges the Commission to avoid routinely placing broadband operations in public safety narrowband spectrum. Even on a secondary basis, TIA believes the risk of interference far outweighs any minimal benefits likely to be realized. In addition, TIA recommends the Commission reconfigure the 700 MHz band to result in a contiguous block of public safety narrowband spectrum which helps minimize internal guardbands required and results in more usable spectrum for public safety broadband operations.

Respectfully submitted,

**Telecommunications Industry Association**



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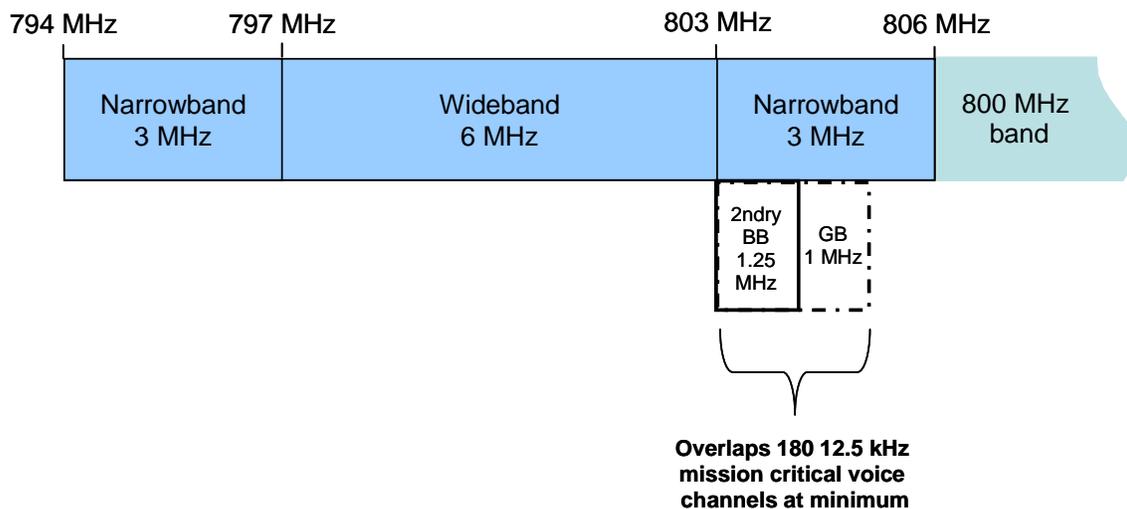
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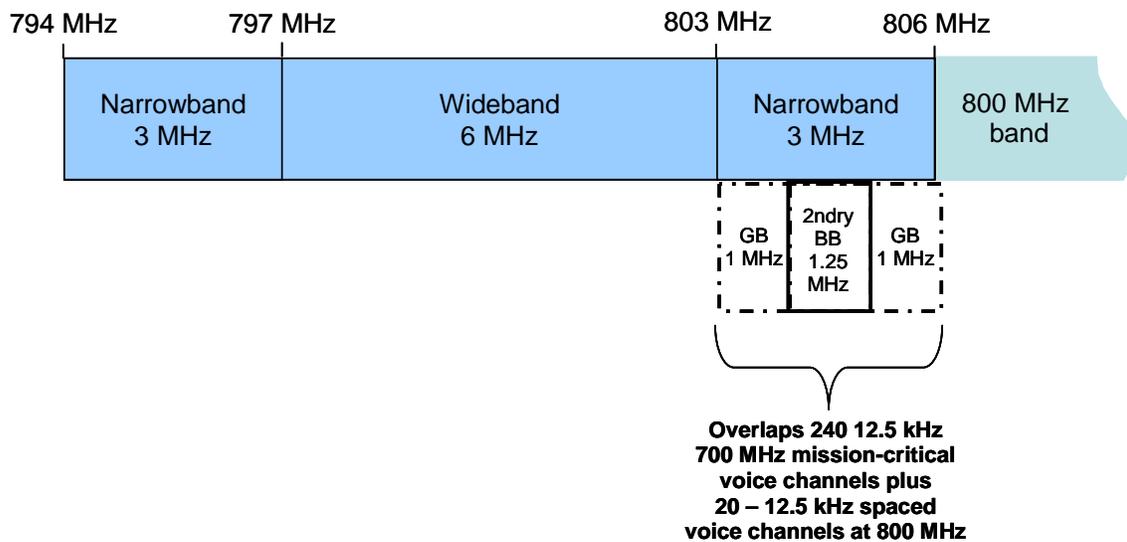
February 26, 2007

## Appendix A

### Scenario 1: Current Bandplan with BB secondary placed at edge of NB channels

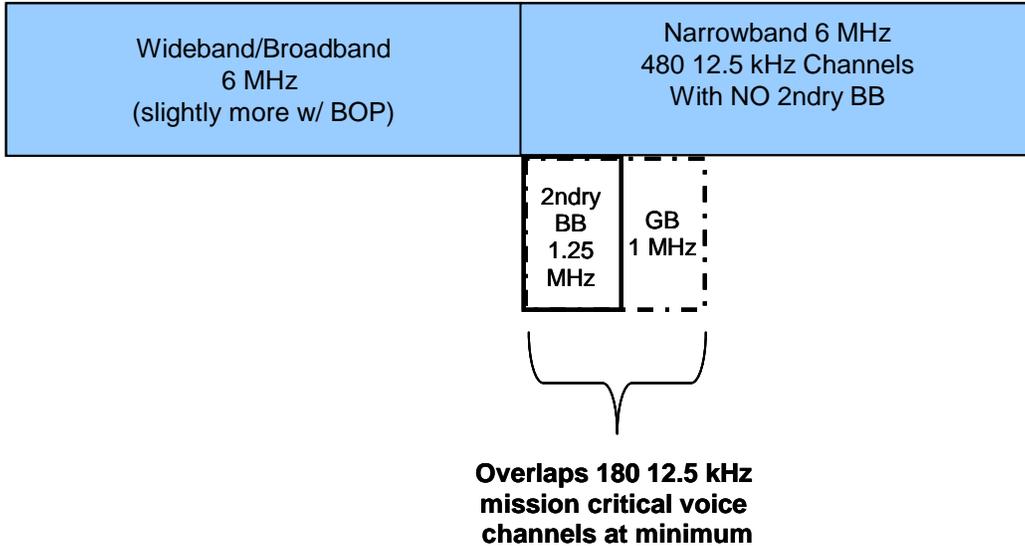


### Scenario 2: Current Bandplan with BB secondary placed in middle of NB channels



### Scenario 3 - Reconfigured Bandplan

With BB secondary placed at edge of NB channels



### Scenario 4 - Reconfigured Bandplan

With BB secondary placed in middle of NB channels

