

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

In the Matter of )  
 )  
Petition for Rulemaking Regarding 700 MHz Band ) RM No. 11592  
Mobile Equipment Design and Procurement Practices )

**COMMENTS OF THE PUBLIC SAFETY SPECTRUM TRUST CORPORATION**

The Public Safety Spectrum Trust Corporation (“PSST”) hereby submits these Comments in response to the Wireless Telecommunications Bureau’s (“Bureau”) February 18, 2010 Public Notice (“*Notice*”) in the above-referenced proceeding.<sup>1</sup> In the *Notice*, the Bureau seeks comment on a Petition for Rulemaking filed by an alliance of four Lower 700 MHz Band A Block licensees (“Petitioners”),<sup>2</sup> in which the Petitioners request that the Federal Communications Commission (“Commission”) require all mobile units for the 700 MHz band to be capable of operating over all frequencies in the band.<sup>3</sup> The Petitioners also request that the Commission impose an immediate freeze on equipment authorizations for all mobile equipment that is not capable of operating on all paired commercial 700 MHz frequencies.<sup>4</sup>

As discussed below, the Commission should consider the development and deployment of 700 MHz devices that can access multiple 700 MHz band classes, including Band 14 (758-768 MHz and 788-798 MHz). Such multi-band devices could facilitate nationwide roaming by

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<sup>1</sup> *Wireless Telecommunications Bureau Seeks Comment on Petition for Rulemaking Regarding 700 MHz Band Mobile Equipment Design and Procurement Practices*, Public Notice, DA 10-278 (rel. Feb. 18, 2010) (“*Notice*”).

<sup>2</sup> 700 MHz Block A Good Faith Purchaser Alliance, *Petition for Rulemaking Regarding the Need for 700 MHz Mobile Equipment to be Capable of Operating on All Paired Commercial 700 MHz Frequency Blocks* (filed Sept. 29, 2009) (“*Petition*”). The Petitioners include Cellular South Licenses, Inc., Cavalier Wireless, LLC, Continuum 700, LLC, and King Street Wireless, L.P.

<sup>3</sup> *Id.* at iii, 12.

<sup>4</sup> *Id.* at 1-2.

public safety entities and reduce capacity constraints on public safety broadband operations.

However, the PSST notes that the technical issues involved in providing devices that cover all paired 700 MHz bands need to be well understood to make a determination whether to impose a requirement that devices include all paired 700 MHz bands. If there are significant technical challenges, then the Petitioners' recommendation to freeze equipment authorizations for devices that do not include all paired 700 MHz bands could be counterproductive and delay the availability of LTE devices to public safety.

## **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 FCC 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.

The Board of Directors of the PSST consists of representatives of the following organizations:

1. American Association of State Highway and Transportation Officials (AASHTO)
2. American Hospital Association (AHA)
3. Association of Public Safety Communications Officials (APCO)
4. Forestry Conservations Communications Association (FCCA)
5. International Association of Chiefs of Police (IACP)
6. International Association of Fire Chiefs (IAFC)
7. International City/County Management Association (ICMA)
8. International Municipal Signal Association (IMSA)
9. National Association of State EMS Officials (NASEMSO)
10. National Association of State 9-1-1 Administrators (NASNA)
11. National Emergency Management Association (NEMA)
12. National Emergency Number Association (NENA)
13. National Fraternal Order of Police (NFOP)
14. National Governor's Association (NGA)
15. National Sheriffs' Association (NSA)

## **II. THE COMMISSION SHOULD ENCOURAGE THE DEVELOPMENT AND DEPLOYMENT OF 700 MHz DEVICES THAT CAN ACCESS MULTIPLE BAND CLASSES**

### **A. The PSST Supports a Public Safety Broadband Network with Adequate Capacity and Roaming Capabilities**

The PSST continues to support the development and deployment of a nationwide, interoperable, wireless broadband network for public safety in the 700 MHz band. Among other capabilities, the wireless broadband network will need to have sufficient spectrum bandwidth and capacity to meet public safety's needs. In addition, it will need to provide for nationwide roaming to ensure that public safety entities can access broadband video and data across jurisdictions during emergencies. Any review of major crises such as 9-11 or Hurricane Katrina demonstrates how much the personal efforts and effectiveness of our nation's first responders – police, firefighters, emergency medical personnel, and other emergency response personnel – are diminished or undermined when the communications infrastructure that supports their life-saving efforts does not meet their mission-critical needs.

*Capacity.* The PSST, along with most national public safety organizations, continues to believe that the 5x5 MHz PSBL spectrum will not be sufficient to meet the broadband capacity needs of public safety entities in many areas.<sup>5</sup> In 1996, the Public Safety Wireless Advisory Committee released a report finding that public safety needed 97.5 MHz of new spectrum allocations by 2010 (including 25 MHz by 2001) to meet essential needs, including for interoperability and access to advanced broadband technologies.<sup>6</sup> With exception of spectrum at

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<sup>5</sup> See, e.g., “700 MHz Broadband Public Safety Applications and Spectrum Requirements,” *Ex Parte* filing by the City of New York, PS Docket No. 06-229 (filed Feb. 23, 2010) (“NYCWIN Requirements *Ex Parte*”); *Ex Parte* filing by the Association of Public-Safety Communications Officials-International, Inc. (“APCO”), IACP, IAFC, Major Cities Chiefs Association, Major County Sheriffs’ Association, Metropolitan Fire Chiefs Association, NEMA, NENA, and NSA, PS Docket No. 06-229 (filed Jan. 13, 2010) (“Public Safety January 2010 *Ex Parte*”); APCO Comments on Petitions for Waiver to Deploy 700 MHz Broadband Networks, PS Docket No. 06-229, 4 (filed Sept. 22, 2009).

<sup>6</sup> See Final Report of the Public Safety Wireless Advisory Committee (Sept. 11, 1996), *available at* [http://www.ntia.doc.gov/osmhome/pubsafe/pswac\\_al.pdf](http://www.ntia.doc.gov/osmhome/pubsafe/pswac_al.pdf); *see also* Letter from Harlin R. McEwen, Chairman,

4.9 GHz (not suitable for wide area mobile applications), only 24 MHz of spectrum has been reallocated to public safety since that time, with 12 MHz designated for narrowband operations, and little of this spectrum has been available until the June 2009 DTV transition.

The demand for additional spectrum has grown considerably since 1996, and public safety needs access to more broadband spectrum than just the PSBL spectrum to ensure that critical, life-saving wireless broadband services are available during a crisis. Indeed, the FCC recognized this when it previously required the D Block licensee to give public safety priority access to the D Block spectrum during emergencies as part of the proposed public/private partnership.<sup>7</sup> Bandwidth-intensive 4G applications, including robust data transmission, streaming video, mobile crime scene units, collaboration and dispatch tools, wireless video surveillance, facial recognition, and patient tracking, among other applications, require substantial bandwidth and capacity.<sup>8</sup>

As the PSST and others have previously explained, the public safety community will also need more than the 5x5 MHz of broadband spectrum available through the PSBL to meet the daily needs of public safety agencies in densely populated metropolitan areas and to meet the needs of public safety agencies in rural and other non-metropolitan areas during large-scale

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Communications & Technology Committee, International Association of Chiefs of Police, to Julius Genachowski, Chairman, Federal Communications Commission, PS Docket No. 06-229, Attachment at 2 (filed Oct. 12, 2009).

<sup>7</sup> *Service Rules for the 678-746, 747-767 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289 ¶¶ 428 (2007) (“*Second Report and Order*”) (stating that the priority access “is intended to ensure that public safety entities have sufficient bandwidth for their emergency communication needs”); *see also* Report to Congress on the Study to Assess the Short-Term and Long-Term Needs for Allocations of Additional Portions of the Electromagnetic Spectrum for Federal, State, and Local Emergency Response Providers, WT Docket No. 05-157 at 27-32 ¶¶ 78 (Dec. 16, 2005) (summarizing numerous comments favoring additional 700 MHz spectrum allocations – in addition to the current 24 MHz public safety allocation – to meet public safety’s broadband and interoperability needs).

<sup>8</sup> *See, e.g.*, NYCWIN Requirements *Ex Parte* at 13-24; Public Safety January 2010 *Ex Parte* at 5-6.

incidents like Hurricane Katrina.<sup>9</sup> The larger number of public safety users accessing the spectrum on a day-to-day basis in metropolitan areas, combined with more frequent incidents involving public safety, will require additional spectrum capacity. Large-scale incidents, regardless of whether they occur in metropolitan or rural areas, will also spark capacity surges beyond what the PSBL spectrum alone can accommodate.

Like any new service offering, the PSST expects that public safety users will gradually adopt advanced broadband services and applications after they are made available. As more public safety entities begin accessing the interoperable network, technology vendors will have greater incentives to supply new bandwidth-intensive applications customized for public safety use, further encouraging additional public safety entities to use broadband services. Absent access to sufficient amounts of spectrum, public safety will face severe bandwidth congestion and capacity constraints as additional services are deployed and adopted by more and more users.

The Commission's National Broadband Plan recognizes these anticipated capacity constraints and the need for public safety to have access to 700 MHz spectrum in addition to the PSBL. For example, it states that the administrative system for the public safety broadband wireless network "must ensure that users of the public safety broadband spectrum have the capacity and service they require for their network . . . ."<sup>10</sup> It also states that "when a public safety broadband wireless network is at capacity or unavailable, authorized public safety users should get priority access on commercial networks, including all networks using the 700 MHz band and potentially other networks as well."<sup>11</sup> Public safety's bandwidth requirements will only

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<sup>9</sup> See, e.g., Public Safety January 2010 *Ex Parte* at 3; Public Safety January 2010 *Ex Parte* at 3-4; Comments of the Public Safety Spectrum Trust Corporation, PS Docket No. 06-229, 5-6 (filed Sept. 16, 2009) ("PSST Comments on Buildout Waiver Petitions").

<sup>10</sup> "Connecting America: The National Broadband Plan," Federal Communications Commission, 314 (March 2010) ("National Broadband Plan").

<sup>11</sup> *Id.* at 316.

increase as new broadband applications and services are deployed, and the Commission should continue exploring solutions for expanding the bandwidth and capacity available for the 700 MHz public safety broadband network.

*Roaming.* The PSST and other public safety representatives support nationwide roaming capability for the public safety broadband network.<sup>12</sup> With nationwide roaming, public safety entities can access robust data and video applications across jurisdictions during emergencies without swapping out equipment, which reduces equipment costs, saves precious time during critical activities, and enhances response capabilities by facilitating public safety support from neighboring jurisdictions. Roaming capabilities can also help increase the coverage area, resiliency, capacity and redundancy of the public safety broadband network.<sup>13</sup>

The PSST previously requested that the FCC require all public safety entities operating on the PSBL spectrum (including local, state, and regional public safety entities that are seeking authority to deploy broadband networks) to ensure that their networks incorporate full roaming functionality.<sup>14</sup> The PSST also recommended that any locally built, stand-alone public safety wireless broadband systems be designed to allow local users to roam nationally when outside the local network. In addition, such systems must be designed to allow other (*i.e.*, non-local) users of the nationwide, interoperable wireless broadband network to roam onto the system when in the local network area.

Acknowledging the importance of roaming functionality, the Commission states in the National Broadband Plan that “[b]efore the D block is auctioned, it must be clear that any D

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<sup>12</sup> See, e.g., *Ex Parte* filing by the Public Safety Spectrum Trust Corporation, PS Docket No. 06-229 (filed Dec. 15, 2009) (attaching the recommendations of the National Public Safety Telecommunications Council Broadband Task Force).

<sup>13</sup> See National Broadband Plan at 315.

<sup>14</sup> PSST Comments on Buildout Waiver Petitions at 16-17.

block licensee(s) will be required to provide roaming” to public safety broadband users.<sup>15</sup> It also states that the Commission “should begin a rulemaking to require commercial mobile radio service providers to give public safety users the ability to roam on commercial networks in 700 MHz and potentially other bands,” including both in instances areas where public safety broadband wireless networks are unavailable and where an existing public safety network has insufficient capacity.<sup>16</sup> As with the capacity issues discussed above, the Commission should continue exploring solutions to ensure that public safety wireless broadband users have nationwide roaming capability on both the public safety broadband network as well as on commercial 700 MHz licensees’ networks.

**B. Encouraging the Development and Deployment of Multi-Band 700 MHz Devices Could Benefit Public Safety**

In the Petition, the Petitioners request that the Commission “initiate a rulemaking to assure that consumers will have access to all paired 700 MHz spectrum that the Commission licenses, to act so that the entire 700 MHz band will develop in a competitive fashion, and to adopt rules that prohibit restrictive equipment arrangements that are contrary to the public interest.”<sup>17</sup> The Petitioners also request that the Commission “impose an immediate freeze on the authorization of mobile equipment that is not capable of operation on all paired commercial 700 MHz frequencies.”<sup>18</sup>

The PSST supports efforts to increase the availability and affordability of mobile devices and other equipment that can access the PSBL spectrum in Band 14. To address the capacity and roaming concerns discussed above, however, most public safety entities likely will need devices

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<sup>15</sup> National Broadband Plan at 316.

<sup>16</sup> *Id.*

<sup>17</sup> Petition at 1.

<sup>18</sup> *Id.* at 2.

that not only access Band 14 with the PSBL spectrum, but also can access other 700 MHz band classes. It appears that some of the requests in the Petition could benefit public safety by facilitating the development and deployment of affordable 700 MHz devices that access Band 14 along with other commercial bands.

The Commission should consider the development and deployment of 700 MHz devices that can access multiple 700 MHz band classes, including Band 14 (758-768 MHz and 788-798 MHz), to the extent such devices are technically feasible and economically viable. Multi-band devices could help reduce the anticipated capacity constraints on public safety broadband services by facilitating partnerships between public safety entities and licensees in multiple 700 MHz bands. For example, if devices that can access Band 14 cannot access any other band, public safety entities could effectively be restricted to partnering with the D Block licensee(s) because they would otherwise have to purchase two sets of equipment. Devices that can access multiple 700 MHz bands, however, would expand the pool of potential commercial partners, potentially reducing costs and making broadband deployments – including in unserved and underserved rural areas – more economically feasible.

Multi-band devices also could provide roaming benefits to public safety, in addition to the Lower 700 MHz A Block roaming benefits discussed in the Petition.<sup>19</sup> For instance, multi-band devices that include Band 14 could facilitate nationwide roaming by public safety users because each additional frequency band beyond Band 14 provides public safety with numerous additional roaming partners. Multi-band devices could also provide cost-savings for public safety by reducing further the need to obtain multiple sets of devices and other equipment (*e.g.*, one for each band) and the need to carry more than one device across jurisdictions during

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<sup>19</sup> *See id.* at 4, 6.

emergencies.

Encouraging multi-band devices such as those proposed by the Petitioners could also spur the “device ecosystem” for public safety devices. As noted in the Commission’s National Broadband Plan, “it is critical to develop commercial devices that can operate across 3GPP Band 14 in its entirety,” (including the PSBL spectrum), and the Commission “should explore . . . ways to encourage the deployment of public safety devices that transmit across the entire broadband portion of the 700 MHz band.”<sup>20</sup> Multi-band devices could assist with this goal and potentially bring large-scale production of devices that can access Band 14.

The PSST notes that several parties have already raised concerns that imposing the specific requirements requested in the Petition could increase 700 MHz device costs (*e.g.*, by requiring devices to incorporate multiple duplexers), increase interference to 700 MHz licensees, and delay the deployment of those devices, including devices designed for use by public safety entities. The PSST encourages the FCC to review these issues in detail as it addresses the Petition.

### **III. CONCLUSION**

For the foregoing reasons, the Commission should consider the development and deployment of 700 MHz devices that can access multiple 700 MHz band classes, including Band 14 (758-768 MHz and 788-798 MHz). However, the impact of adopting the Petitioners’ recommendation to deny equipment authorization to any device that does not cover all 700 MHz

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<sup>20</sup> National Broadband Plan at 316.

paired spectrum must be better understood before a proper decision on the Petition can be made.

Respectfully submitted,



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