

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

In the Matter of)
)
Implementing a Nationwide, Broadband,) PS Docket No. 06-229
Interoperable Public Safety Network in)
the 700 MHz Band)

COMMENTS OF MOTOROLA, INC.

Motorola, Inc. (“Motorola”) hereby responds to the public notice issued by the Federal Communications Commission (“Commission”) that seeks comment on several petitions for waiver filed by multiple regional and state governmental entities to deploy public safety mobile broadband systems on a local or regional basis on 700 MHz frequencies.¹ Motorola supports providing public safety first responders with the tools necessary to execute their jobs in the most efficient manner possible and therefore urges the Commission to approve waiver requests to use the public safety broadband spectrum subject to conditions discussed herein.

I. Introduction and Summary.

Encouraging the development of mobile broadband wireless networks that are suitable for mission critical public safety use is one of the most important, and difficult, challenges facing the Commission. While Motorola remains a supporter of Public/Private Partnership solutions implemented with the participation of the Public Safety Broadband

¹ Public Safety and Homeland Security Bureau Seeks Comment on Petitions for Waiver to Deploy 700 MHz Public Safety Broadband Networks, PS Docket No. 06-229, Public Notice, DA 09-1819, released August 14, 2009 (“Public Notice”).

Licensee (“PSBL”),² the continuing questions on funding and potentially conflicting operational requirements between commercial and public safety users will likely impede progress for some time on the ultimate goal of providing nationwide wireless broadband access for all first responders.³

So while the Commission, Congress and the wireless industry wrestle with the complicated questions on how best to build a shared wireless broadband network (“SWBN”) that accommodates both public safety and commercial applications, at least twelve jurisdictions have filed waiver requests to build regional broadband networks on 700 MHz spectrum already allocated for public safety broadband service.⁴ As noted in the Public Notice, the pending waiver requests are similar in the following ways:⁵

² The PSBL holds a nationwide license for the 10 MHz block of spectrum allocated for public safety broadband use and has been assigned the following responsibilities: (1) act as chief promoter of the broadband spectrum needs of public safety entities; (2) negotiate the network sharing agreement with the Upper 700 MHz D Block auction winner; (3) administer access to the 700 MHz public safety broadband network; (4) assess usage fees; (5) approve equipment and applications used by public safety entities; (6) oversee the relocation of 700 MHz public safety narrowband operations; (7) review requests for early local build-outs and wideband waiver requests; (8) manage the internal guard band between public safety broadband and narrowband operations; and (9) manage priority access to commercial broadband spectrum in the D Block during emergencies. *See* Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, Order, PS Docket No. 06-229, 22 FCC Rcd 20453 (2007) at ¶ 6. After a thorough review of its governance and representation, the Commission selected the Public Safety Spectrum Trust Corporation (“PSST”) as the PSBL. *Id.*

³ *See e.g.*, Comments of Motorola, WT Docket No. 06-150, at 7-11, submitted June 20, 2008.

⁴ The Public Notice considers waiver requests filed by: (1) the City of Boston; (2) the City and County of San Francisco, the City of Oakland, and the City of San Jose; (3) the State of New Jersey; (4) the City of New York; (5) the District of Columbia; (6) the State of New York; (7) the City of Chesapeake, Virginia; (8) the City of San Antonio, Bexar County, and Comal County, Texas; (9) the State of New Mexico; (10) the State of North Dakota; (11) the City of Charlotte, North Carolina; and (12) several counties and the City of Cedar Rapids, Iowa. Public Notice at 2. At least one additional waiver has been filed since the Public Notice was released. *See*, Request by the County of Maui, County of

- All waiver requests suggest that the regional/local jurisdiction has sufficient funding in place, or plans for funding to be secured, to deploy a public safety broadband network over the requested service area.
- The waiver requests indicate that the petitioners are able to deploy a broadband network in advance of a resolution of the Commission's on-going proceedings related to the use of 700 MHz spectrum for public safety broadband use.
- The waiver requests generally claim that the regional systems will be interoperable, based on the use of Long Term Evolution ("LTE") technology and will be able to be integrated into any nationwide network developing out of the Commission's further proceedings.
- Most of the waiver requests indicate that the petitioners have been in discussions with the Public Safety Broadband Licensee ("PSBL") and expect to obtain consent to deploy the proposed regional network on the 700 MHz public safety broadband spectrum under terms of a "sublicense" or lease arrangement with the PSBL.

The regional broadband networks that the waiver applicants seek to build would be used primarily to promote the safety of life and property. Thus, Commission approval of these requests would be consistent with its statutory obligations and, therefore, serve the public interest.⁶ Consistent with the conditions discussed below, Motorola urges the Commission to approve these and any similarly situated requests so that the work of constructing advanced broadband networks for public safety can commence in areas that include the country's largest, and most vulnerable, population centers.

Hawaii, County of Kauai, City & County of Honolulu, and State of Hawaii for Waiver of the Commission's Rules Regarding a 700 MHz Public Safety Interoperable Broadband Network, Request for Waiver, PS Docket No. 06-229, submitted August 19, 2009. Motorola urges the Commission to process that request, and any future request, in a manner consistent with the recommendations made herein. The Commission need not seek further public comment unless new or novel issues are raised.

⁵ *Id.* at 2, 3.

⁶ 47 U.S.C. § 151.

II. The FCC Should Grant the Requests for Waiver With Conditions.

In considering whether to grant the pending waiver requests, the main issue is to determine whether the regional broadband networks specified in the waiver requests will be compatible with future public safety broadband network deployment nationwide. Motorola believes that there is ample opportunity for the Commission to ensure that regional networks deployed before the terms of the national SWBN are finalized do not become, in the words of APCO, “isolated islands in the public safety broadband network of the future.”⁷

First, there is near unanimity among public safety agencies and associations that Long Term Evolution (“LTE”) should serve as the broadband interoperability Radio Access Network (RAN) technology for use at 700 MHz. Four major public safety associations – APCO, the National Emergency Numbering Association (“NENA”),⁸ PSST,⁹ and the National Public Safety Telecommunications Council (“NPSTC”)¹⁰ – have endorsed LTE as the 700 MHz broadband interoperability technology. Further, NPSTC represents fifteen public safety organizations, so its endorsement means that support of

⁷ Comments of APCO on Petitions for Waiver to Deploy 700 MHz Broadband Networks, PS Docket No. 06-229, at 4 (submitted September 22, 2009) (“APCO Comments”).

⁸ See “APCO & NENA Endorse LTE as Technology Standard for the Development of Nationwide Broadband Network,” APCO Press Release (June 9, 2009), available at http://www.apco911.org/new/news/ena_endorse_lte.php

⁹ “PSST Endorses LTE for Nationwide 700 MHz Band Network,” TR Daily (July 24, 2009).

¹⁰ “NPSTC Endorses LTE as Air Interface for Nationwide 700 MHz Band Network,” TR Daily (June 10, 2009) and “PSST Endorses LTE for Nationwide 700 MHz Band Network,” TR Daily (July 24, 2009).

LTE is widespread across public safety leadership.¹¹ In addition, several of the pending waiver requests affirmatively state that the applicant intends to use LTE for its regional network.¹² Motorola therefore recommends that any waiver granted to allow the construction of a 700 MHz broadband network on public safety frequencies should require the system be based on LTE technology. While this condition would not eliminate the possibility of future modifications to these early deployed systems, it will ensure at least some level of operability and broadband access to public safety broadband users that roam into these regions in the future.

Second, the public safety community, with the substantial assistance of equipment manufacturers and commercial wireless broadband carriers, has devoted significant resources for defining broadband interoperability.¹³ NPSTC's Broadband Task Force which included broad representation across the public safety, manufacturer and operator community, has developed a sound set of recommendations that does well to balance the need for ensuring roaming and interoperability while providing the regional systems flexibility to design and specify the technical parameters of their systems to meet local needs.

¹¹ NPSTC's governing board consists of fifteen voting and two non-voting organizations. The list of participating organizations can be found at <http://www.npstc.org/npstcintro.jsp>.

¹² See Public Notice at 2.

¹³ At the request of the PSST, NPSTC formed a 700 MHz Broadband Task Force ("Broadband Task Force") in June of 2009 to develop the minimum recommendations necessary to ensure roaming and interoperability among localities and regions that have submitted waivers to build out 700 MHz broadband networks ahead of a nationwide network. Completed in September of 2009, the recommendations of the Broadband Task Force are now available on NPSTC's web site. See NPSTC 700 MHz Broadband Task Force Report and Recommendations, September 4, 2009, available at http://www.npstc.org/documents/700_MHz_BBTF_Final_Report_0090904_v1_1.pdf ("Broadband Task Force Report").

Notwithstanding the exceptional work done by the Task Force, Motorola does not believe that the Commission should impose an expanded set of specific conditions at this time on public safety broadband waiver grantees requiring strict adherence to all the recommendations of the Broadband Task Force. At this nascent stage of public safety broadband system development, the description of specific network elements and applications needed to ensure interoperability and roaming access is an evolving process that will likely need to be refined based on actual deployment experiences.

Motorola strongly supports a key recommendation of the Broadband Task Force that an Advisory Group made up of representatives of the regional system operators and the PSBL be established to continue follow-on work and to provide advice to the PSST Board.¹⁴ This advisory group will help ensure that future network development will benefit from the best practices learned by the early adopters.

The third reason why the Commission should be confident that these early deployed networks will not frustrate future deployment plans is that it has already established a strong oversight mechanism when it assigned to the PSBL the responsibility to be the nationwide advocate and, in essence, manager of public safety broadband spectrum use. The PSST is already obligated to approve equipment and applications used by public safety entities in the 700 MHz broadband spectrum and to review requests for early local build-outs. In this capacity, the PSST can ensure that the proposed regional networks do not implement network or technical solutions that are wildly inconsistent with likely future national standards. Motorola therefore recommends that any waivers to construct regional broadband networks be conditioned on the applicant receiving the

¹⁴ Broadband Task Force Report at 5.

approval of the PSST. More specifically, Motorola recommends that the authority to operate regional systems on the public safety broadband frequencies flow directly from the nationwide license issued to the PSST in the form of an appropriate sub-license or appropriate lease agreement. In Motorola's view, these conditions preserve the opportunity for ultimately achieving a nationwide network of networks to provide near-ubiquitous public safety broadband access.

In granting waivers and in further adjustments to its rules, the Commission must address existing rules that are counter to the effective deployment of regional broadband systems by public safety agencies. For example, the current rules require that any broadband system deployed early by a public safety agency ultimately be controlled by the commercial D block operator with restricted compensation rights to the agency constructing the network.¹⁵ Application of this rule will discourage early deployment.

The Commission should limit any waiver grants to deploy the public safety broadband systems to entities that are eligible to use the spectrum under Section 337 of the Communications Act.¹⁶ While Motorola supports the establishment of Private/Public Partnerships on a regional basis to assist public safety agencies in the construction and day-to-day management of the broadband network, those relationships should be established by contracts that do not cede ultimate control of the spectrum from public safety authority.

Motorola recommends that the grant of any waivers be limited to the frequencies designated for public safety broadband use. The Commission should not issue waivers to

¹⁵ See e.g., 47 C. F. R. § 90.1430(b) of the Commission's Rules.

¹⁶ 47 U.S.C. 337 (f).

use either the 700 MHz narrowband voice channels or the adjacent guard band spectrum for broadband applications as this would eliminate the ability to use the narrowband segments for its primary intended use of mission critical voice systems within portions of the same or adjacent regions as defined in the waiver requests.

Without minimizing the importance of broadband services for public safety users, Motorola believes that the most critical application needed by first responders is voice communications, including group talk and direct unit-to-unit communications. Today, there are no effective solutions for providing mission critical voice services over the LTE technology platform. While voice over IP is scheduled to be included in future revisions of the LTE standard, that technology does not provide group talk communications and direct unit-to-unit communications required for public safety operations. Currently, there is no ongoing standards activity to add these capabilities to the LTE platform. Adding direct unit-to-unit capabilities would not be a priority for a commercial technology standard as it is not needed by the general public. The requirements of the general public drive the economies of scale and features for all commercial technology platforms, including LTE.¹⁷ The Commission should not contaminate the narrowband voice channels that are needed to provide public safety with high quality, low latency specialized group and direct unit-to-unit voice communications that public safety requires.

¹⁷ The issues were recently addressed by the IACP. *See* Letter from Harlin R. McEwen, Chairman, IACP Communications and Technology Committee to the Honorable Julius Genachowski, Chairman, Federal Communications Commission, PS Docket No. 06-229, submitted Oct. 12, 2009.

Motorola supports efforts for legislative action to reallocate the Upper 700 MHz D Block spectrum from commercial to public safety use.¹⁸ With 20 MHz of spectrum suitable for broadband solutions, public safety will be able to design networks capable of meeting its broadband data needs for some time and, also, improve its position to negotiate effective Private/Public Partnerships with commercial carriers in less populated areas that exchange spectrum rights for construction assistance. Reallocating the D Block to public safety would not eliminate the need for additional funding assistance from the general Treasury to complete the construction of a near-nationwide broadband network for public safety, but Motorola does believe that it would reduce the amount of assistance that would be needed. The FCC should consider allowing the regional applicants to add the D Block spectrum to any waiver grant that they may receive without need for further application.

Finally, the Public Notice requested comment about how the Commission should address any existing narrowband operations that have yet to be relocated in the areas where the petitioners propose to deploy regional networks.¹⁹ Motorola agrees with the comments of APCO that incumbent narrowband systems operating in the regions being considered in the waiver requests should not be forced to relocate without compensation.²⁰ Therefore, any waiver grants should protect incumbent public safety narrowband operations. Broadband operations in those areas should be precluded unless an agreement between the incumbent and the broadband proponent (or a potential commercial partner) is reached

¹⁸ See e.g., Letter from Steve B. Sharkey to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 06-150, PS Docket No. 06-229, submitted August 6, 2009 at Attachment, page 1.

¹⁹ Public Notice at 7.

²⁰ Comments of APCO at 7.

regarding the relocation of existing narrowband systems to comply with the current 700 MHz band plan.

In summary, Motorola supports the granting of the waivers requesting authority to build regional broadband networks on the public safety broadband spectrum in the 700 MHz band with the following conditions and caveats:

- The applicant must indicate that it has funding in place, or a plan to acquire such funding, to commence and complete construction of the regional broadband network within a defined time frame.
- The applicant must obtain the approval of the PSST to deploy the regional network and a sub-license or lease agreement with the PSST.
- The applicant must agree to deploy LTE technology and comply with any other technical obligations specified by the PSST.
- The waiver should be limited to use of the public safety broadband frequencies.
- The operator of the regional broadband networks must relocate any incumbent narrowband facilities that would be impacted by deployment of a broadband system to comply with the current 700 MHz band plan.

With these conditions, grant of the instant waiver requests and any similar requests will advance the public interest. Such waiver grants would allow for the construction of broadband networks for public safety use that meet both local/regional needs and provide interoperability and roaming capabilities without undermining the worthwhile goal of promoting broadband access across the country.

Respectfully Submitted,

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