

Summary of 700 MHz Broadband Waivers and Requirements for Early Public Safety Deployment

Federal Communications Commission

FCC 10-79

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
)
Requests for Waiver of Various) PS Docket No. 06-229
Petitioners to Allow the Establishment)
of 700 MHz Interoperable Public Safety)
Wireless Broadband Networks)

ORDER

Adopted: May 11, 2010

Released: May 12, 2010

This document is designed to summarize the requirements of the Commission relative to early deployers of 700 MHz broadband systems under leases from the Public Safety Spectrum Trust (“PSST”) as specified in FCC 10-79. Additionally, pursuant to the further guidance provided by the Commission, technical requirements were subsequently outlined in the FCC’s Public Notice 10-923 and summarized in Appendix C of this document.

The Commission’s requirements are organized on the basis of the processes required for early deployment as provided in FCC 10-79. As such, the format of this document is to sort the FCC Waiver requirements on a high level process by process basis and then to include relevant supplemental data in an Appendix. If a Waiver is sought by or issued to an Entity, the general process for proceeding relates to:

Eligibility
Lease from the PSST
State coordination
ERIC requirements

The appendices in this document include:

- A. Waiver applicants
- B. Waiver lease
- C. Requirements to complete the interoperability showing required in the Order

Requirements as specified in FCC 10-79

1. Eligibility – “We limit use of the 700 MHz spectrum to entities whose “sole or principal purpose” is “to protect the safety of life, health, or property” and who meet the remaining requirements of Section 337(f). Permitted use does include Federal government users, as already allowed by our rules”.¹ (Paragraph 34)
2. PSST - The Public Safety Spectrum Trust (“PSST”) is the only licensee of the 763-768 and 793-798 MHz broadband spectrum. Prior to the appointment of the PSST as licensee, this spectrum was assigned to the “public safety broadband licensee” and occasionally, that term is used in Commission writings. All deployment of public safety broadband spectrum must be facilitated through the PSST. At this time, the so-called “D Block” spectrum of 758-763 and 788-793 MHz is not part of the spectrum assigned to the public safety broadband licensee, the PSST.
3. Leasing Spectrum from the PSST
 - A. “Petitioners should be required to enter into spectrum leasing arrangements with the PSST, which holds the nationwide license for the spectrum in which Petitioners seek authority to operate”.² (Paragraph 20)
 - B. “We direct the PSST to enter into *de facto* transfer leases with each Petitioner (see Appendix A) that seeks a lease in accordance with the terms and conditions of this Order”. (Paragraph 24)
 - C. “These *de facto* transfer leases must be submitted for approval, in this case by the Public Safety and Homeland Security Bureau on delegated authority”. (Paragraph 24)
 - D. “We find that specific, standard terms are necessary to facilitate prompt deployment and the streamlined leasing process that we envision. In particular, given our establishment of ERIC, we find it appropriate to include in the Standard Lease provisions that govern: (1) interactions among the PSST, the lessee, and ERIC; and (2) the parties’ implementation of technical standards that ERIC, PSHSB and the Commission adopt. We also include in the Standard Lease additional provisions to reflect other conditions imposed by this Order. We expect that the PSST and Petitioners will not need to deviate from, or revise the terms of, the Standard Lease. However, in the event that the Standard Lease requires minor modification in individual cases to address issues specific to the lessee’s jurisdiction (*e.g.*, aspects of the jurisdiction’s contracting process or legal authority that we have not anticipated),³ the PSST and the lessee may make minor modifications to the Standard Lease with approval from the Bureau on delegated authority. More substantive changes will be entertained only upon sufficient

¹ *Second Report and Order* at fn. 822; *see also* 47 C.F.R. § 90.175(g); NTIA Comments at 2-3.

² APCO Comments at 5-6.

³ Charlotte, North Carolina NPSTC PN Reply Comments at 3-4.

demonstration of need and will be subject to full Commission approval”. (Paragraph 26)

- E. “We find that the use of a long term *de facto* transfer spectrum lease for purposes of these early deployments is appropriate.⁴ Although our standard leasing rules provide for spectrum manager leases as an alternative to *de facto* leases, we conclude that under the circumstances presented here, the *de facto* transfer lease rules provide the appropriate balance between local control and national-level oversight that both Petitioners and the PSST seek.⁵ Petitioners generally seek substantive operational rights, privileges, and responsibilities in the public safety broadband spectrum within their jurisdictions sufficient to justify investment of public funds and effort, while the PSST seeks appropriate retention of control over the spectrum commensurate with its status as the national public safety broadband licensee.⁶ A long term *de facto* lease provides this balance, by placing upon the Petitioners the primary responsibility for complying with the Communications Act and applicable Commission policies and rules, including those established in this Order, while preserving *de jure* control of the spectrum license for the PSST”. (Paragraph 28)
4. Funding - “The Standard Lease should include provision for a reasonable fee to be paid to the PSST for administrative activities associated with the leasing process, but that the fee should be strictly limited and subject to PSHSB approval as discussed below”. (Paragraph 29)
- A. We limit the fee that the PSST may charge to an administrative fee that will provide for the PSST’s legitimate expenses incurred as a result of administering these leases”.⁷ (Paragraph 32)
 - B. “We find that requiring parties to submit plans to ERIC to ensure technical consistency and interoperability, as more fully explained below, is a sufficient safeguard to ensure that Petitioners’ plans are concrete and viable. Moreover, as detailed below, we are requiring that Petitioners submit quarterly reports on their activity undertaken pursuant to this Order to ensure that progress is made, and that continued relief remains warranted”.⁸ “We will not require evidence of funding at this time. Rather, we find that the other conditions and reporting requirements specified herein will be sufficient to ensure that the requests made are in earnest, and that deployments made pursuant to these requests are undertaken promptly”. (Paragraph 35)

⁴ We believe the Long Term *de facto* transfer lease is most appropriate, in that it allows the lessee, rather than the licensee, to exercise *de facto* control over the leased spectrum. Under this standard, the lessee is primarily responsible for adhering to the Commission’s rules, although the licensee retains residual responsibility for ensuring compliance. *See Secondary Markets Report and Order* at 17566-81 ¶¶ 133-188.

⁵ Iowa State Board Reply Comments at 2-3 (supporting use of a long term spectrum lease).

⁶ Boston Comments at 3; Iowa Comments at 2; PSST Comments at 9-12.

⁷ *See, e.g.*, NENA Comments at 4-5 (suggesting that the Commission should make clear that any such fees may only be used to support activities directly related to the deployment and utilization of public safety wireless broadband networks).

⁸ *See* APCO Comments at 8-9 (endorsing submission of periodic reports).

5. Conditional Issuance and Operating at Risk - The granted waivers are “conditional” and include operating at risk. The conditions are numerous and described throughout the Order. The conditions include:
 - A. “Our decision allowing a conditioned early build, at the Petitioners’ own risk, remains subject to our later determinations and is without prejudice to our resolution of any of these issues in the broader rulemaking”. (Paragraph 12)
 - B. “We also recognize that as these early deployments move forward, the Commission will continue the rulemaking process, including additional considerations of rules governing technical interoperability among public safety networks and between public safety networks and commercial deployments, either through partnerships or in roaming relationships. We expect these early waiver-based efforts to provide us with valuable insight into this process”. (Paragraph 59)
 - C. “Any deployment or other expenditures made by the requesting jurisdictions pursuant to this Order is undertaken at their own risk and with the understanding that any deployments will be subject to the outcome of the larger proceeding, including possible integration into a nationwide network and compliance with future technical requirements adopted by ERIC or the Commission.⁹ This may include, for example, interoperability requirements for voice applications. Our action on these waiver petitions, therefore, is subject to and without prejudice to our resolution of any of these issues in the broader rulemaking”. (Paragraph 62)

6. New Responsibilities for States
 - A. “We conclude that waivers for early deployment should meet certain criteria for geographic scope of the proposed deployment. For several reasons, we believe that states provide the most appropriate geographic size for consideration of waiver relief. States offer a reasonable delineation, both geographically and politically, to ensure that deployments are undertaken with sufficient authority, planning and coordination among all state and local public safety agencies within the state.¹⁰ States can also ensure that early deployments are developed to be consistent with overall plans for intra-state interoperability, and can, consistent with existing mechanisms concerning narrowband interoperability, serve as a single interface with the PSST and ERIC to minimize the complexity that would otherwise be inherent in coordinating numerous interactions on a jurisdiction-by-jurisdiction basis. Further, we believe that state-level waiver deployments will facilitate equipment development and purchase, by ensuring that there is a critical mass of potential users even in the early deployment phase to encourage vendors to compete to provide reasonably priced equipment. (Paragraph 50)
 - B. “Petitioners should also receive waiver relief, provided that they do so in coordination with state authorities. We believe coordination is critical for a

⁹ In this respect, we decline New Mexico’s invitation to require, as part of this Order, that Petitioner be guaranteed compensation by the D Block auction winner. New Mexico Comments at 5.

¹⁰ For these purposes, we would also treat a request by a Tribal government in the same manner as a request by a state.

number of reasons, primarily to ensure that there is an opportunity for state-level participation in the planning and deployment of networks within the state. Coordination will also facilitate seamless operation of adjacent networks and development of mutually agreed-upon protocols within the state. If a Petitioner or future deployment involves an area larger than a state or that crosses state lines, coordination would be required for each state involved”. Paragraph 51

- C. “We require, prior to construction or deployment, that any non-state Petitioner submit evidence of coordination with the state to ERIC. Specifically, petitioners must certify that they have provided notice to the appropriate state official, such as a state Chief Information Officer, or other appropriate officer or entity, to advise such officer or entity of the Petitioner’s intent to deploy, including a brief description of the Petitioner’s plans and Petitioner’s affirmative commitment to work on an ongoing basis with the state, the Commission, and ERIC to ensure interoperability both technically and as a matter of governance. The petitioner must also provide evidence that the state official or entity has acknowledged receipt of the notice and has interposed no objection to the Petitioner’s intended deployment. This can be accomplished by providing either the written consent of the state official or entity or written acknowledgement by the state official or entity that notice has been received without objection to the Petitioner’s intended deployment, either of which may be evidenced by letter or other instrument from the state Chief Information Officer or other appropriate official or entity, or through any other official means permitted by the state. If, however, no consent or acknowledgement is forthcoming from the state 60 days after such contact is made, we will allow a Petitioner to nonetheless submit to ERIC a certification of its reasonable attempt to contact the state and the state’s lack of response for the Bureau’s consideration. Finally, if the state objects for any reason to the Petitioner’s proposed deployment, the Petitioner may refer the matter to the Bureau for further resolution consistent with this Order, taking the views of both parties into account”. (Paragraph 52)

7. Coordination

- A. “We also establish a common methodology for coordination in the case where adjacent jurisdictions utilizing the public safety broadband spectrum build out local networks. This coordination requirement includes both pre- and post-operation obligations for all adjacent or bordering public safety networks”. (Paragraph 41)
- B. “As a condition of waiver, we require each Petitioner, before deployment, to coordinate and address interference mitigation needs with any adjacent or bordering jurisdictions that also plan deployment. Any later jurisdictions that seek to deploy should coordinate with the prior-deployed system. Our goal is to ensure an open communications among adjacent regions. In this respect, in light of the nascent nature of these deployments, we believe it will be helpful to memorialize these agreements in writing, and require submission of these agreements to ERIC within 30 days of their completion. Similarly, we require that parties provide ERIC with notice of any changes or updates within 30 days.

Should the parties be unable to reach an agreement within 90 days after coordination begins, they may submit the dispute to the Public Safety and Homeland Security Bureau for resolution”. (Paragraph 42)

- C. “All Petitioners must offer service or access to all eligible public safety entities within their proposed geographic service area”.¹¹ (Paragraph 54)

8. Technical Requirements

- A. “We find it appropriate to require the petitioners to adhere to the technical criteria that ERIC will establish, through rules adopted by the Commission or Bureau.¹² In this respect, we also agree with commenters who suggest that: (1) we should adopt a mandatory common air interface for all early deployments;¹³ (2) in addition to the air interface, certain additional baseline interoperability criteria are timely and appropriate;¹⁴ and (3) Petitioners should be required to submit further technical details regarding their deployments in order to ensure ongoing interoperability.¹⁵ We also note that many of these obligations are a part of the 3GPP Release 8 standard, and as such will likely impose little burden to implement. (Paragraph 36)
- B. “We agree that, for these waiver deployments, the most expeditious and reasonable method of ensuring consistency and interoperability at this early stage is to require the use of LTE, and specifically the use of at least 3GPP Standard, Evolved Universal Terrestrial Radio Access (“E-UTRA”), Release 8 (“LTE”), and associated Evolved Packet Core (“EPC”).¹⁶ (Paragraph 37)
- C. “Requiring LTE as a waiver condition will align deployments in the 700 MHz band among the Petitioners, as well as between Petitioners and commercial networks in the band.¹⁷ We also find persuasive the broad support in the record for specifying LTE, and specifically Release 8, in this band”. (Paragraph 38)
- D. “We find that establishing LTE Release 8 as the initial standard to which Petitioners must build is the best and shortest path to the Commission’s goal for public safety interoperability in the specific environment presented by the 700 MHz band at this time”. (Paragraph 40)

¹¹ See PSST Comments at 17.

¹² In this respect, we require the Bureau to issue a Public Notice to seek comment on the technical parameters adopted herein and other technical issues concerning broadband network deployment for consideration by the Commission in the broader rulemaking proceeding.

¹³ See APCO Comments at 9-10; NENA Comments at 3; New York State Comments at 2; NTCH, Inc. Comments at 2.

¹⁴ See APCO Comments at 9-10; Boston Comments at 3-4; NENA Comments at 7-8.

¹⁵ See NENA Comments at 6-7; PSST Comments at 15-16.

¹⁶ We also recognize that, because the Commission has not yet adopted final technical rules for the public safety broadband spectrum (*e.g.*, maximum power levels, out-of-band emission requirements, etc.), there will not likely be certificated equipment for operation in this band prior to entities initiating system build out. Accordingly, so long as Petitioners and their manufacturers adhere to the requirement to utilize 3GPP Release 8 as specified in this Order, we also waive on our own motion, the equipment authorization rules (47 C.F.R. § 90.203 as applicable) until such time as we adopt final rules.

¹⁷ Our selection of LTE in this regard is not an endorsement of this technology. Rather, it is a recognition of the fact that at this stage, LTE has become the technology of choice in the 700 MHz band, and that mandating compatibility with this air interface is appropriate for purposes of these waiver deployments to ensure interoperability.

E. “We require Petitioners to incorporate the following system elements:

- Interfaces: All 3GPP Release 8 (LTE) interfaces that are in support of the required applications and the required roaming in this order are required to be supported. These interfaces are:
 - U_u- LTE air interface
 - S6a – Visited MME to Home HSS
 - S8 – Visited SGW to Home PGW
 - S9 – Visited PCRF to Home PCRF for dynamic policy arbitration
 - S10 – MME to MME support for Category 1 handover support
 - X2 – eNodeB to eNodeB
- Interface Interoperability Testing: The Interoperability Testing (IOT) must be performed on the following 3GPP Release 8 (LTE) interfaces:
 - S1-MME (interface between eNodeB and MME)
 - S1-u (interface between eNodeB and SGW)
 - U_u- LTE air interface

Initially, we will permit Petitioners to demonstrate interoperability of the interfaces specified above by self-certification, which may be supplemented through demonstrations to ERIC. As 3GPP standards progress, however, we will require Petitioners to meet more detailed IOT requirements consistent with those standards.

- Devices: As recommended by Section 6.3.1.5 of the NPSTC BBTF Report, band class 14 must be supported for 5 MHz public safety broadband channel (763-768 MHz, 793-798 MHz) in Frequency Division Duplex (FDD) mode as per 3GPP TS 36.101 v8.6.0.
- Standards Conformance Testing: Standards conformance testing must be based on 3GPP test suites that are developed by the PCS Type Certification Review Board (“PTCRB”).¹⁸ If PTCRB testing is not fully available within the timeframe of network deployment, the vendors and public safety network operators will have the option to perform specific testing as determined by the Bureau.
- Security: The optional security features¹⁹ as specified in 3GPP TS 33.401 must be supported as recommended by Section 6.3.3 of the NPSTC BBTF report. Additionally, the use of network layer VPN must be allowed on the deployed network.

¹⁸ PTCRB is a global organization created by mobile network operators to provide an independent evaluation process where GSM / UMTS type certification can take place. The technical evaluation is based on standards as well the needs of the operators, who determine the requirements for the type certification process. The PTCRB authorizes third party laboratories to conduct testing. See <http://www.ptcrb.com/>

¹⁹ While these optional features are technologically required to be supported, the selection of security features for operation of the network will be determined by ERIC in future.

- F. “Submission of Interoperability Plans to ERIC. There are technical and governance specifications that must be consistent in order to ensure interoperability and roaming among these early deployments, and in light of the generalized nature of the information supplied in the waiver petitions, we find it is also appropriate to require the petitioners to work with ERIC prior to deployment and operation to develop more detailed network interoperability plans. Accordingly, as a condition of waiver, we require that Petitioners submit to ERIC, during a specific filing window, their detailed plans to achieve interoperability.²⁰ Such showings must be properly detailed and reflective of the complex nature of 4G wireless broadband networks. (Paragraph 55)
- G. “We find it appropriate to require Petitioners’ technical filings with ERIC to occur within a set window of time. This window will open upon OMB approval of the information collection we are specifying for Petitioners, and close 30 days thereafter. We direct PSHSB to issue a Public Notice to this effect upon OMB approval. ERIC will consider only those technical interoperability showings that are timely submitted during this filing window”. (Paragraph 56)
- H. “We require the Bureau, in consultation with ERIC, to act on the interoperability showing submissions within 60 days of the close of the filing window”. (Paragraph 57)

9. Roaming and Applications Support

- A. “We require each Petitioner’s system to be capable of supporting roaming by all other Petitioners’ systems, and to support roaming by additional future regional, state, Tribal and local public safety broadband systems. In this respect, two categories of roaming as specified in 3GPP Release 8 (TS 23.401) and the NPSTC BBTF Report must be supported: (1) home-routed traffic, such that a “visiting” user’s traffic is routed back to the home network to enable the use of home resources, and (2) local breakout traffic, such that a visiting user can utilize the resources of the host network”. (Paragraph 45)
- B. “We require, as a condition of waiver, that Petitioners’ systems initially support the following applications: (1) Internet access; (2) VPN access to any authorized site and to home networks; (3) a status or information “homepage;” (4) access to responders under the Incident Command System;²¹ (5) and field-based server applications”.²² (Paragraph 46)

²⁰ The Bureau shall issue an informational Public Notice providing guidance on this submission.

²¹ First responders, emergency response support, and all other mutual aid responders managed under ICS structure of a requesting agency served by a public safety broadband network shall be provided access to that network to carry out incident objectives and communicate with their home networks.” NPSTC BBTF Report, Section 6.2.5.

²² “The regional systems shall support the use of field-deployed server applications. This requirement includes the need for client devices to consistently and continuously reach each server-based system from any other location on the Internet. The capability is not required for every subscriber device on the broadband network but is limited to a subset of the users that actually require such a feature.” NPSTC BBTF Report, Section 6.2.7.

10. 700 MHz Narrowband Channel Rebanding

The FCC's Order relative to rebanding legacy 700 MHz narrowband systems deployed before the Second Report and Order changed the voice and data frequency plan may be complex as relates to states with statewide frequency plans.

- A. "We recognize that in some instances, there may be existing 700 MHz narrowband operations outside of the consolidated narrowband channels in a geographic area in which a waiver has been requested or in which a public safety entity may later seek to deploy pursuant to this Order. We agree with the PSST and US Cellular, that the most appropriate resolution of this overlapping use, in light of the ongoing nature of this proceeding, is to require each Petitioner to relocate, at its own expense, any narrowband operations in its intended area of operation from the public safety broadband spectrum to the appropriate public safety narrowband spectrum.²³ Alternatively, Petitioners may protect incumbent narrowband operations, either through appropriate engineering measures or geographic exclusion of the narrowband system's footprint. If a Petitioner opts to protect incumbent narrowband operations rather than relocate them, we require that the Petitioner obtain the consent of the incumbent as to its proposed method of protection. Petitioners must also account for narrowband operations in adjacent regions that occur outside of the consolidated narrowband channels, and take all measures necessary to protect such operations from interference from broadband deployments". (Paragraph 72)
- B. "We decline to address more generally at this time the costs for such relocation and any potential reimbursement. As noted elsewhere herein, the relief we grant now is fully subject to the outcome of the pending rulemaking, and is undertaken at Petitioner's own risk. While the Commission had earlier held that the winner(s) of the D Block should be responsible for payment of relocation expenses for certified systems deployed prior to August 30, 2007, we defer our decision on reimbursement of any expenses to the larger rulemaking. To the extent, however, that the Commission ultimately provides a mechanism for funding of relocation expenses for public safety narrowband operations, we will also consider at that time the possible inclusion of reimbursement for permitted relocation expenses incurred by an entity undertaking early build out pursuant to this Order". (Paragraph 73)

11. Other miscellaneous requirements in the Order

- A. With respect to future waivers, the Order states, "we expect that the Bureau will be able to act on future waiver requests quickly and consistent with our decision here, after issuance of an appropriate Public Notice seeking comment when a new waiver is received. (Paragraph 68)
- B. "We require the Petitioners and other public safety entities seeking early deployment waivers to participate in the Demonstration Network. As part of this participation, waiver recipients must certify that their vendors are participating

²³ PSST Comments at 14-15; US Cellular Comments at 5.

actively in the Demonstration Network through submission of their equipment to be evaluated under the test plan established by NIST.²⁴ We will consider showings of such vendor participation favorably in evaluation of the interoperability showings submitted by waiver recipients. (Paragraph 61)

C. “We find that, in light of the conditions imposed herein, particularly the necessary interaction with ERIC to ensure interoperability and technical compatibility, it is in the public interest to require quarterly reporting by Petitioners addressing progress made pursuant to this Order”. (Paragraph 63)

D. “We require Petitioners to file, in consultation with the PSST, 30 days after approval by OMB and quarterly thereafter, status reports with the Public Safety and Homeland Security Bureau addressing the Petitioners’ progress in 3 areas: (1) planning; (2) funding; and (3) deployment. As with the interoperability showings detailed above, to the extent such information is confidential or proprietary, Petitioners may submit this information under request for confidential treatment.²⁵ We also require the Bureau to issue a Public Notice upon OMB approval, including any additional requirements addressing filing mechanisms for the submissions required by this Order. Substantive information in each category should include the following:

i. Planning

Expected timing for development and issuance of any RFI/RFP

ii. Funding

Status of efforts to obtain funding for planning and/or deployment, including budgeting, assessments, grants or other means

iii. Deployment

Status of equipment development and purchase, including number of devices and users

Site development, including use of existing towers

Deployments and upgrades (commencement and completion), including site information and location

Applications in development or in use” (Paragraph 64)

²⁴ See *id.*

²⁵ See *supra* note

APPENDIX A

Waivers Conditionally Granted

Petitioner	Date Filed
City of Boston	12/11/08; amended 5/28/09
City and County of San Francisco, City of Oakland, City of San Jose, CA	3/24/09; amended 5/27/09
State of New Jersey	4/3/09
City of New York	6/8/09
City of San Antonio, TX, on behalf of the San Antonio Urban Area Security Initiative Region	7/10/09
City of Chesapeake, VA	7/8/09
State of New Mexico	7/10/09
City of Charlotte, NC	8/4/09
State of New York	6/30/09
District of Columbia	6/26/09
County of Maui, County of Hawaii, County of Kauai, City and County of Honolulu, and the State of Hawaii	8/19/09
City of Seattle, WA	1/15/10
Adams County, CO Communications Center	12/10/09
City of Pembroke Pines, FL	11/18/09
Los Angeles Regional Interoperable Communications System (LA-RICS)	11/16/09
Iowa Statewide Interop. Comms. System Bd.	10/15/09
Calumet, Outagamie and Winnebago Counties, WI	3/10/10
Mississippi Wireless Communications Commission	3/23/10
City of Mesa, AZ and the TOPAZ Regional Wireless Cooperative	4/14/10
State of Oregon	4/30/10
State of Alabama	5/10/10

Appendix B – Proposed FCC Lease Agreement

Standard Lease

LONG TERM DE FACTO TRANSFER SPECTRUM LEASE AGREEMENT

This Long Term *De Facto* Spectrum Lease Agreement (“Lease” or “Agreement”) is entered into by the Public Safety Spectrum Trust Corporation (“PSST” or “Lessor”), the Federal Communications Commission (“FCC”) licensee of the public safety broadband spectrum in the 700 MHz Band (Call Sign WQHW226) (the “Leased Spectrum”), and [state or locality] (“Lessee”) (each a “Party,” and, collectively, “the Parties”). This Lease is subject to the FCC’s May 12, 2010 Order, FCC 10-79 (“FCC Order”). Further, this Lease is a long term *de facto* transfer spectrum lease pursuant to Section 1.9030 of the FCC’s rules, 47 C.F.R. § 1.9030, subject to all applicable FCC rules, regulations and policies. [If Lessee is not a state, Lessee shall comply with the requirements and procedures of the FCC Order concerning notification and coordination with the relevant state authority.]

1. Agreement.

- a. Conditioned on first obtaining the consent of the Chief of the Public Safety and Homeland Security Bureau of the FCC (the “Bureau”) to the creation of this Lease, Lessor hereby grants to Lessee the exclusive right to use the Leased Spectrum within Lessee’s jurisdiction during the term of this Agreement and in accordance with the provisions hereof. It is the intent of the Parties that this Agreement create a long term *de facto* transfer spectrum leasing arrangement within the meaning (and subject to the requirements) of 47 C.F.R. Section 1.9030.
- b. The PSST retains all rights and obligations under its FCC license and as a spectrum lessor, as specified in the Communications Laws (as defined in section 5 of this Agreement), and as subject to the terms of this Agreement. Lessee is subject to the rights and obligations under this Agreement and the Communications Laws. Consistent with FCC rules governing long term *de facto* transfer spectrum leases, Lessee is primarily responsible for complying with the FCC Order and the Communications Laws, including all FCC filing requirements related to the Leased Spectrum, and Lessor retains *de jure* control of its spectrum license.
- c. Lessee shall be responsible to relocate, at its own expense, the operations of any incumbent 700 MHz narrowband licensee in the Lessee’s area of operation, from the Leased Spectrum to the appropriate public safety narrowband spectrum. Alternatively, Lessee agrees to protect such incumbent narrowband operations, either through appropriate engineering measures or geographic exclusion of the narrowband system’s footprint, and to obtain the consent of the incumbent as to its proposed method of protection. Lessee shall also account for narrowband operations in adjacent regions that occur outside of the consolidated narrowband channels, and take all measures necessary to protect such operations from interference.
- d. Lessee’s network shall be fully interoperable with any other regional public safety deployments permitted by a waiver granted by the FCC pursuant to the FCC Order, and with any future nationwide or regional public safety broadband networks, including adherence to any

technical requirements adopted by the FCC's Emergency Response Interoperability Center ("ERIC"), the Bureau, or the FCC, and shall be consistent with other nationally coordinated technical standards and operating requirements that the ERIC, Bureau, or FCC may impose from time to time.

- i. Lessee must make its network available to all public safety entities eligible under Section 337 of the Communications Act within its jurisdiction.
 - ii. Lessee must adhere to all other technical conditions specified in the FCC Order or FCC rule or imposed by ERIC, the Bureau or the FCC.
 - iii. Lessor may not require a bond, letter of credit or other instrument by way of security in connection with the execution of this Agreement for the use of the spectrum; Lessee's sole consideration for use of the Leased Spectrum will be its remittance of the Administrative Fee to the Lessor and compliance with the terms of this Agreement, and any and all FCC, Bureau and ERIC requirements. The Administrative Fee is the fee to be remitted by Lessee to Lessor, as defined and ultimately approved by the Chief of the Bureau, in accordance with the procedures outlined in the FCC Order.
 - iv. Lessor shall maintain *de jure* control over its spectrum license, in accordance with FCC rules.
 - v. Lessor shall submit the monthly reports as required by the FCC Order providing an accounting of the Administrative Fee remitted by Lessee, based upon generally accepted accounting procedures.
 - vi. Lessor shall timely comply with any audit as may be requested at the discretion of the Chief of the Bureau with respect to its collection and expenditure of the Administrative Fee.
- e. Lessee shall be responsible for: (a) obtaining, paying for, operating and maintaining all equipment necessary to build out its network; (b) acquiring all necessary permits, authorizations or consents required for construction and operation of the network; (c) paying any and all other costs and expenses incident to use of the spectrum; and (d) paying the Administration Fee to the PSST. The Lessee has no other financial obligation to the PSST under this Agreement.
- f. Lessee agrees to file, in consultation with the PSST, the quarterly status reports required under the FCC Order on a timely basis. The Lessor and the Lessee jointly and severally agree to timely submit any other filings or information as the FCC, the Bureau, or ERIC may require.
- g. The PSST may rely upon Lessee's operations in demonstrating compliance with any construction or substantial service requirements the FCC may adopt in the future.
- h. The Parties shall maintain such records as may be necessary to comply with FCC reporting requirements and FCC rules, including the specific FCC obligations pertinent to long term *de facto* transfer spectrum leases, lessors and lessees.

2. Scope of Spectrum Usage Rights.

- a. Lessor grants to Lessee the maximum usage rights that Lessor is capable of granting as set forth in the Agreement, including, without limitation, use and operation on the Leased Spectrum in the geographic area of operation within its jurisdiction as permitted under FCC rules and ERIC requirements.
- b. The geographic area of operation within the Lessee's jurisdiction shall be [delineate geographic jurisdictional boundaries].

3. Term and Renewal.

- a. The Agreement shall have an initial term of two years, commencing on the Effective Date. The Parties have an expectation of renewal, for additional two-year terms as long as the PSST holds the nationwide license, including any renewals or extensions of the PSST's current license term, except as otherwise agreed to by the Parties or required by the FCC.

4. Termination.

- a. Lessee may terminate this Agreement at the Lessee's option, upon 30-days written notice to the PSST and the Bureau. Lessee agrees to remit any remaining or prorated Administration Fee to the PSST no later than 30 days following termination.
- b. While Lessee remains in compliance with the Agreement and the Communications Laws (as defined by section 5 of this Agreement), PSST may not terminate the Agreement or otherwise curtail Lessee's use of the spectrum for any reason.

5. Compliance with FCC Rules, Other Applicable Law and Requirements of This Agreement.

- a. The Parties agree to comply with all of the rules, regulations, policies, decisions, and Orders of the FCC, the Bureau, and the ERIC, both currently and as may be adopted in the future, as well as any other applicable laws, including the Communications Act of 1934, 47 U.S.C. Section 151 et seq. (the "Communications Act") (collectively, the Communications Laws).
- b. The PSST shall have the right to make scheduled inspections upon reasonable notice to the Lessee to ensure compliance with the Agreement.
- c. Each Party must notify the other Party and the Chief of the Bureau within five (5) business days if the Party becomes or expects to become non-compliant with the Communications Laws.
- d. If Lessee fails to comply with any of the Communications Laws, this Agreement may be terminated by the FCC, the Bureau, or by the Lessor, but by the Lessor only with the consent of the FCC or the Chief of the Bureau, and only then if such failure of compliance by Lessee is of

such a nature that (i) Lessee is causing harmful interference to other spectrum operations protected by FCC Rules, or (ii) if such failure of compliance had been committed by the Lessor in respect of its license, would be reasonably expected to result in the revocation, cancellation or termination of its license by the FCC (either (i) or (ii) constituting a Material Breach).

e. In the event the PSST believes that Lessee has committed a Material Breach, the PSST shall provide written notice to the Chief of the Bureau and the Lessee no later than five (5) days after discovering the Material Breach. The PSST may only terminate this Agreement with the consent of the Bureau or the FCC.

f. In the event the PSST believes that Lessee has committed a non-Material Breach, the PSST shall provide written notice of noncompliance to the Lessee and the Bureau within thirty (30) days after discovering such breach. The Lessee shall have 30 days to cure the breach. If Lessee has failed to cure the breach within 30 days, the PSST shall provide written notice of failure to cure to the Chief of the Bureau. The Chief of the Bureau will then render a decision or finding, which may include an order for the Lessee to cure or such other remedy as the Chief of the Bureau, in his or her discretion, considers reasonable.

7. Representations and Warranties.

Each of the Lessor and the Lessee severally represents and warrants to the other:

a. that each of them has the requisite corporate power and authority and has taken all corporate action necessary in order to execute and deliver this Agreement.

b. that each of them is a corporation or other entity duly organized, validly existing and in good standing under the laws of its respective jurisdiction of incorporation or organization.

c. that the execution and delivery of this Agreement by each of them does not and will not, and the transactions contemplated hereby and thereby will not, with respect to each of the Parties, violate or conflict with any contract or other instrument to which it or he is a party or by which it or he is bound or conflict with any law, regulation, ordinance, judgment, order, writ, injunction or decree or any other requirement of any court or governmental or regulatory body of any jurisdiction.

d. that the facts stated herein to the extent that they are within such Party's knowledge, are true, complete and accurate.

8. Indemnity.

a. The Lessor agrees to indemnify, defend, and hold harmless the Lessee from, against, for, and in respect of any and all losses asserted against, imposed upon, or incurred by such the Lessee by reason of, resulting from, based upon, or arising out of:

i. the breach of any representation or warranty of the Lessor contained in this Agreement; and

ii. the breach of any covenant or agreement of the Lessor contained in or made pursuant to this Agreement.

b. The Lessee agrees to indemnify, defend, and hold harmless the Lessor from, against, for, and in respect of any and all losses asserted against, imposed upon, or incurred by the Lessor by reason of, resulting from, based upon, or arising out of:

i. the breach of any representation or warranty of the Lessee contained in this Agreement; and

ii. the breach of any covenant or agreement of the Lessee contained in or made pursuant to this Agreement.

9. Miscellaneous.

a. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of the Lessor and Lessee. This Agreement may not be assigned without the express written consent of both the Chief of the Bureau and the other Party. Such consent will be given only upon the proposed assignee demonstrating that it will be able to meet all applicable FCC requirements and the terms of this Agreement.

b. Governing Law. This Agreement shall be governed by the law of the District of Columbia.

c. Disputes. The Parties have a duty and obligation to make all reasonable efforts to resolve any disputes that arise under this Agreement. If the Parties are unable to reach a settlement on their own, they agree to submit their dispute to the FCC, which will have sole authority to arbitrate or judge any disputes that would then be binding upon the Parties..

d. Specific Performance. The Parties shall be entitled to specific performance in the event that either Party fails to perform its obligations hereunder.

e. Counterparts. This Agreement may be executed in one or more counterparts, each of which when so executed shall be an original, but all of which together shall constitute one agreement. Facsimile signatures shall be deemed original signatures.

f. Amendments. This Agreement shall not be amended, altered or modified except in accordance with the limitations and procedures specified in the FCC Order.

10. Effective Date. The Parties shall submit for approval an executed copy of this Agreement to the Chief of the Bureau. The Effective Date of this Agreement is the date that the Chief of the Bureau consents to the creation of this Agreement (as specified in section 1).

11. Notices

Public Safety Spectrum Trust Corporation
Chairman of the Board

[Address]
[phone]
[fax]
[email address]

Lessee:

[Name of contact person]
[Name of agency]
[Address]
[phone]
[fax]
[email address]

Bureau:

Federal Communications Commission
Public Safety and Homeland Security Bureau
445 12th St. SW
Washington, DC 20554
(202) 418-1300
(202) 418-2817
[email address]

In WITNESS WHEREOF, the Parties have executed this Agreement as of the date approval is provided by the Chief of the Bureau.

PUBLIC SAFETY SPECTRUM TRUST CORPORATION

By:
Name:
Title:
Dated:

LESSEE

By:
Name:
Title:
Dated:

Appendix C
Summary of Interoperability Showing Required by the 700 MHz Waiver Order
(Please review FCC Public Notice 10-923 for complete details)

I. Interoperability Components

- A. System Architecture - A broadband LTE-based network consists of two parts, the Radio Access Network (RAN) and an Evolved Packet Core (EPC). There may be other core networks connected to the EPC that provide connectivity and packet transport for public safety services.
1. Radio Access Network (RAN) Architecture - Waiver Recipients should provide an architectural description and drawings of the RAN including functional descriptions and capabilities of each element.
 2. Core Network Architecture - Waiver Recipients should provide an architectural description and drawings of the EPC and other core networks including functional descriptions and capabilities of each element
 3. Interfaces. Waiver Recipients should provide a list of interfaces that are in compliance with 3GPP Release 8 of the LTE standard, including those specified in the *Waiver Order*.
 4. Roaming. Waiver Recipients should provide a description of their roaming capability to and from other regional public safety broadband networks based on the requirements specified in the *Waiver Order*.
 5. Priority access and QoS. Waiver Recipients should provide a description of priority access schemes and Quality of Service (QoS), if they are implementing and operating these capabilities in their networks.
 6. Security. Waiver Recipients should provide detailed specification for the security features they intend to employ for their networks.
 7. Devices. Waiver Recipients should provide specifications for their planned devices, including their type (form factor), operational specification, spectrum band coverage, future upgrades, and any additional information, if available.
- B. Applications - The Waiver Recipient should describe in sufficient details how the applications required by the *Waiver Order* will be provided. The Waiver Recipient should also provide specifics on any additional applications to be supported on the network, and provide an assessment as to how such applications impact interoperability.
- C. Reliability and Availability - Waiver Recipients should provide their plans for the reliability and availability of their network.

- D. Radio Frequency (RF) Engineering
 - 1. Radio access network planning - Waiver Recipients should provide their proposed RF design guidelines and demonstrate how these guidelines and RF system implementation would meet their coverage and capacity needs.
 - 2. Interference Coordination - Waiver Recipients should provide their proposed plan for interference mitigation techniques within the region and with adjacent regions, which will promote interoperability by minimizing radio frequency interference between them. They should describe how these techniques will be implemented within the network infrastructure and/or equipment.

- E. Testing - Waiver Recipients should provide their initial and long term plans for testing of their system, including timelines, type of testing, network elements, devices and applications that are subject to testing, and test-bed.

- F. Deployment - Waiver Recipients should provide a deployment plan that is sufficiently detailed, including milestones.

- G. Operations, Administration, and Maintenance - Waiver Recipients should provide a brief description of their planned network operations capabilities, including systems and processes related to network management, special operations and coordination or interoperability with other networks, administration/provisioning, and maintenance.