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: January 9, 2012 **Released: January 9, 2012**

By the Chief, Public Safety and Homeland Security Bureau:

1. In this *Order*, the Public Safety and Homeland Security Bureau, acting in consultation with its Emergency Response Interoperability Center (ERIC), provides further guidance to 700 MHz public safety broadband waiver recipients (Petitioners)[1] on their implementation of a public land mobile network identifier (PLMN ID) and related network identification numbering scheme to support the interoperability of the network deployments.

2. We direct each Petitioner to implement, prior to its date of service availability,[2] a common PLMN ID that the Alliance for Telecommunications Industry Solutions' IMSI Oversight Council (ATIS IOC) designates for 700 MHz public safety broadband networks that are operated pursuant to waiver in the public safety broadband spectrum (763-768/793-798 MHz). We further direct Petitioners to collectively implement, with the assistance of a common competent administrator, a scheme for the assignment of International Mobile Subscriber Identities (IMSIs) and other identification numbers necessary to support all the Petitioners' operations of LTE broadband deployments on an interoperable basis and to arrange for a common competent clearinghouse to support commercial roaming by all of the Petitioners.

I. BACKGROUND

3. An IMSI is a globally unique fifteen-digit identification number programmed into a device operated on a mobile communications network. IMSIs provide for "the unique international identification of mobile terminals and mobile users" and "enable these terminals and users to roam

[1] In May 2010, the Commission granted conditional waivers to twenty-one public safety jurisdictions to pursue early deployment of the public safety broadband network in the public safety broadband spectrum. *See* Requests for Waiver of Various Petitioners to Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks, PS Docket 06-229, *Order*, 25 FCC Rcd 5145, 5147 ¶ 7 (2010) (*Waiver Order*). The Bureau granted a twenty-second waiver, in May 2011, to the State of Texas (Texas) and required Texas to adhere to the cumulative conditions imposed on the initial waiver recipients. *See* Requests for Waiver of Various Petitioners to Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks, PS Docket 06-229, *Order*, 26 FCC Rcd 6783 (PSHSB 2011) (*Texas Waiver Order*). For purposes of this item the term "Petitioners" includes the State of Texas, except as otherwise indicated.

[2] "Service availability" is defined as "[t]he use of a public safety broadband network on a day-to-day basis for operational purposes by at least fifty users." 47 C.F.R. § 90.7.

among [mobile networks]."[3] The first six digits of the IMSI constitute the PLMN ID, which identifies a device as belonging to a particular network. The remaining nine digits constitute the Mobile Subscriber Identity Number (MSIN), which uniquely identifies the user device. Networks also employ a number of other types of identification numbers that identify various network elements and that must be globally unique to ensure proper network operation. ATIS IOC is the non-governmental standards entity responsible for managing the assignment and use of PLMN IDs in mobile communications networks operating within the United States.

4. The Commission released its *Waiver Order* in May 2010, granting twenty-one jurisdictions conditional waivers to pursue early deployment of broadband networks in the 700 MHz public safety broadband spectrum.[4] The *Waiver Order* prescribed technical and operational conditions for the waiver recipients' deployments, but provided that "the scheme by which [waiver recipients'] networks would adopt the use of PLMN ID will be considered by ERIC."[5] The *Waiver Order* further provided that "ERIC will also consider the use of a common/single 3rd party clearing house as recommended by Section 6.3.1.4 of the NPSTC [Broadband Task Force] Report for the purpose of Internetwork authentication and connectivity" and that "[t]he Bureau, with ERIC's recommendation, would then select the clearinghouse."[6] Additionally, the *Waiver Order* directed Petitioners to submit to ERIC "interoperability showings" that describe their plans for achieving interoperability and provided that, once the Petitioners submitted their plans, ERIC would "thereafter recommend for Bureau approval on delegated authority, the initial set of technical requirements that will be applicable to those Petitioners submitting plans."[7]

5. The Bureau adopted ERIC's recommended requirements in the December 2010 *Interoperability Waiver Order*, which requires "each Petitioner to submit, at least ninety days prior to its date of service availability, notice to the Bureau of its need for a PLMN ID for its network."[8] The Bureau would then "work with the Petitioner to determine an appropriate course for obtaining a PLMN ID for its network."[9]

6. In its quarterly report filed August 29, 2011, the State of Texas (Texas) "provid[ed] notice to the Bureau of its need for a permanent PLMN ID" for its statewide network, explaining that "[i]t is understood this PLMN ID may not and need not be unique to Texas."[10] In a September 29, 2011,

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[3] ATIS IMSI Oversight Council, INTERNATIONAL MOBILE SUBSCRIBER IDENTITY (IMSI) ASSIGNMENT AND MANAGEMENT GUIDELINES AND PROCEDURES, VERSION 12.0 (Dec. 2010), *available at* http://www.atis.org/IOC/guidelines.asp.

[4] *See Waiver Order*. Texas is also responsible for complying with the requirements of the *Waiver Order*. *See Texas Waiver Order*. The *Waiver Order* directed the waiver recipients to enter *de facto* spectrum transfer lease agreements with the Public Safety Spectrum Trust, the public safety broadband licensee. In January 2011, the Commission stayed a number of provisions of its rules that defined core responsibilities of the public safety broadband licensee in deploying the public safety broadband network. *See* Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket No. 06-229, *Third Report and Order and Fourth Further Notice of Proposed Rulemaking*, 26 FCC Rcd 733, 739 ¶ 13 (2011).

[5] *See Waiver Order*, 25 FCC Rcd at 5161 ¶ 48.

[6] *See id*; *see also* Public Safety Spectrum Trust Ex Parte Filing, PS Docket 06-229 (dated Dec. 15, 2009) (submitting into the docket the National Public Safety Telecommunications Council Broadband Task Force Report (NPSTC BBTF Report)).

[7] *Waiver Order*, 25 FCC Rcd at 5164 ¶ 55.

[8] *See* Requests for Waiver of Various Petitioners to Allow the Establishment of 700 MHz Interoperable Public Safety Wireless Broadband Networks, PS Docket 06-229, *Order,* 25 FCC Rcd 17156, 17161 ¶ 16 (PSHSB 2010) (*Interoperability Waiver Order*).

[9] *Id*.

[10] State of Texas Amended Quarterly Report, PS Docket 06-229 (filed Aug. 29, 2011).

telephone conference with Bureau staff, the City of Seattle recommended that the Commission "issue an order or take other action which gives a more immediate and definitive answer to the question of network identifiers and PLMN-IDs" and that it specify use of "a single PLMN-ID nationwide for public safety."[11] Other waiver recipients that participated in the conference, including Texas, concurred with Seattle's recommendation.[12]

7. On October 12, 2011, the Bureau sent a letter to the State of Texas seeking further information on Texas's need for a PLMN ID and on its preference for a single PLMN ID for all waiver recipients.[13] The Bureau's letter sought input on specific technical and operational considerations, including internetworking among the waiver recipients' build outs; roaming from the waiver recipients' build outs onto commercial networks; the assignment of IMSIs and other sub-network identification numbers; and timing considerations. Texas filed its initial response on November 8, 2011, and filed a revised response on November 14, 2011.[14] The response confirms Texas's preference for a common PLMN ID shared among the waiver recipients' deployments and provides input on the various technical and operational matters raised in the Bureau's letter. Texas's response also confirms its need for "coordinated network identifiers by February 1, 2012" to meet its current deployment schedule.[15]

8. The Adams County, Colorado, Communication Center (Adams County), a waiver recipient, filed a response to Texas's filing on November 23, 2011.[16] Adams County joins Texas in supporting "a single PLMN ID, combined with a comprehensive, fairly distributed numbering scheme" but cautions that "the schedule [Texas] proposed for adopting a final numbering scheme is too aggressive."[17] Adams County expresses its hope that such a scheme "could be completed during the first half of 2012," but contends that "achieving this goal by January of 2012 is unrealistic."[18] Adams County recommends that "a temporary solution for either/or the PLMN ID and numbering schemes be implemented until the final architecture is adopted."[19]

9. In a November 15, 2011 supplement to its Sixth Quarterly Report, the City of Charlotte, North Carolina, also provided the Bureau with notice of its need for a PLMN ID by early 2012.[20] On November 17, 2011, the Bureau sent Charlotte a letter similar to the letter it sent Texas, seeking

[11] City of Seattle Ex Parte Filing, PS Docket 06-229 at 2 (filed Oct. 3, 2011) (Seattle Filing).

[12] *See id*. at 2 ("Representatives of the following jurisdictions then spoke on the telephone supporting Seattle's call for quicker and more comprehensive Commission action, and also supported a single PLMN-ID for nationwide use by public safety: Adams County; Cities of Boston, Mesa, Charlotte, Pembroke Pines, States of Hawaii, New Jersey, New York, Oregon, Texas.") The Bay Area Cities and the City of Chesapeake also expressed support for a single PLMN ID. *See id*. Not all waiver recipients participated in the conference, although all were invited.

[13] *See* Letter from James Arden Barnett, Jr., Chief, Public Safety and Homeland Security Bureau to Mike Simpson, Chief, Interoperable Communications, Texas Dep't of Public Safety (dated Oct. 12, 2011) (Bureau Letter to Texas).

[14] *See* State of Texas Ex Parte Filing, PS Docket 06-229, (filed Nov. 8, 2011) (Texas PLMN ID Response); State of Texas Ex Parte Filing, PS Docket 06-229 (filed Nov. 14, 2011) (Texas Revised PLMN ID Response).

[15] *See* Texas Revised PLMN ID Response at 3. Texas acknowledges, however, that "this target date may need to move later, if the decisions needed for network identifier management cannot be made by then." *Id*. at 24.

[16] Adams County Ex Parte Filing, PS Docket 06-229 (filed Nov. 23, 2011) (Adams Response to Texas).

[17] *Id*. at 1.

[18] *Id*. at 2.

[19] *Id*.

[20] *See* City of Charlotte Supplement to Sixth Quarterly Report, PS Docket 06-229 (filed Nov. 15, 2011) (Charlotte Quarterly Report Supplement).

additional information regarding Charlotte's request.[21] In a November 28, 2011 response, Charlotte confirms its preference for a single common PLMN ID shared among waiver recipients, stating that "Texas' depictions, strategies, discussion and suggestions are not at odds with Charlotte's needs and plans."[22]

10. On December 1, 2011, the State of Mississippi (Mississippi) submitted a request for a PLMN ID, asking that the Bureau "process [its] request as soon as possible and no later than February 15, 2012."[23] Mississippi explains that "[t]he core for [its] LTE network is currently assembled and awaits configuration with network ID information" and that it also has "approximately 200 sites of eNodeB equipment staged and also awaiting configuration with network ID information."[24]

11. On December 7, 2011, Texas, Charlotte, Adams County and Mississippi submitted a joint filing as "Early Adopters," seeking "additional guidance and action" from the Commission on "[t]he allocation of an operational [PLMN ID]," "[t]he adoption and allocation of a Network Identifier Numbering Scheme ('Numbering Scheme') in conjunction with the PLMN ID" and "[a] defined plan to achieve network interoperability as defined in the orders."[25] More specifically, the filing seeks permission to build out pursuant to the Early Adopters' respective waivers using a common ID, allocated no later than February 1, 2012,[26] and requests that a final numbering scheme be developed from the Public Safety Communications Research Program's (PSCR's) proposed numbering scheme, with certain "[s]pecific areas of flexibility" in implementation.[27] The Early Adopters further request that the Department of Homeland Security's Office of Emergency Communications (OEC) hold the "authority to distribute the initial allocations and maintain the scheme during these initial deployments."[28] Additionally, the Early Adopters ask that the Commission "work with [them]" to facilitate roaming onto commercial networks.[29] In a supplemental December 12, 2011 filing, the Early Adopters clarify their position that "the required date for the IMSI numbering allocations to be active should be March 30,

[21] *See* Letter from James Arden Barnett, Jr., Chief, Public Safety and Homeland Security Bureau to Charles Robinson, Key Business Executive, Business Support Services, City of Charlotte (dated Nov. 17, 2011) (Bureau Letter to Charlotte).

[22] City of Charlotte Filing, PS Docket 06-229 at 2 (dated Nov. 28, 2011) (Charlotte PLMN ID Response). In a December 5, 2011 filing, Charlotte clarifies that it "does not require an actual PLMN ID to be issued by mid-January" but that it "requires a commitment to a single PLMN ID for public safety and a commitment to a specific numbering scheme for all network elements." *See* City of Charlotte Filing, PS Docket 06-229 (dated Dec. 5, 2011).

[23] State of Mississippi Filing, PS Docket 06-229 (dated Dec. 1, 2011) (Mississippi Filing).

[24] *Id*.

[25] *See* Joint Comments of the Adams County Communication Center, the City of Charlotte, the State of Mississippi and the State of Texas, PS Docket 06-229 (filed Dec. 7, 2011) (Early Adopters Filing).

[26] *See id*. at 2.

[27] *See id*. at 2. Specifically, the Early Adopters request flexibility in "[o]ptimizing the allocation blocks in order to ease identifier management"; "[d]istributing the IMSI/MSIN ranges across the 9th, 8th and 7th significant digits"; and "[a]dding blocks of reserves between state allocations." *Id*. PSCR is a joint effort between the National Institute of Standards and Technology (NIST) and the National Telecommunications and Information Administration (NTIA). The PSCR Public Safety 700 MHz Demonstration Network "provide[s] manufacturers and first responders a location for early deployment of their systems in a multi-vendor, neutral, host environment." *See* PSCR, http://www.pscr.gov/projects/broadband/700mhz_demo_net/700mhz_ps_demo_net.php (last visited Dec. 21, 2011).

[28] *Id*. at 3.

[29] *Id*.. The Early Adopters further request "that the Commission endorse and allow public safety, initially represented by the current 21 waiver recipients, as a whole to contract with a competent third party to provide the interconnection, roaming, design, operation and network services required to support the functionality required to enable LTE roaming as the nationwide network expands." *Id*. at 3-4.

2012" and that the numbering scheme "should be managed by a qualified third-party vendor," with OEC's role limited to "technical, and potentially financial assistance in identifying and securing a qualified vendor."[30]

II. DISCUSSION

12. A PLMN ID is a globally unique identifier of a 3GPP mobile communications network. Members of the public safety community, including the Petitioners commenting in this proceeding, have expressed support for the designation of a common PLMN ID for all statewide or regional public safety broadband deployments operated pursuant to waiver in the public safety broadband spectrum. The Public Safety Spectrum Trust argues that "a single PLMN ID is needed to accommodate the single nationwide network approach"[31] and observes that "there is a growing consensus within the public safety community for a single [PLMN ID]."[32] The International Municipal Signal Association (IMSA) explains that this approach "would help achieve nationwide interoperability by simplifying the process by which public safety users gain access to the public safety network when traveling outside of their 'home' area(s), as such users would not be required to 'roam' on the public safety network."[33] The National Telecommunications and Information Administration (NTIA) agrees, contending that this approach "would avoid the public safety/public safety roaming complications caused by a regional networks approach."[34] Alcatel-Lucent recommends that "the Commission adopt a single PLMN ID approach for all waiver recipient networks as the most expeditious approach for those deployments."[35] Texas, the first Petitioner to provide notice to the Bureau of its need for a PLMN ID, also supports the use of a common PLMN ID for all waiver recipients.[36] The Los Angeles Regional Interoperable Communications System (LA-RICS) also supports the use of a common PLMN ID for the waiver recipients but states that "[i]n the event the public safety community cannot develop a workable solution for a single PLMN ID architecture, the FCC's rules" should be flexible enough to allow a multiple PLMN ID solution.[37]

13. IPWireless, on the other hand, argues that "despite best intentions and efforts, the probability of predicting correctly [the future architecture of the nationwide public safety broadband network] in a manner in which no change is required to information held on [Universal Subscriber Identity Modules] or network ID schema, is low."[38] IPWireless thus recommends that "prior to the establishment of a national policy, individual waiver jurisdictions could apply to ATIS for unique PLMN ID's, and then address alignment with future (and currently unknown) national policies and architectures at a later time."[39] Although supportive of a common PLMN ID, Adams County argues that practical

[30] See Joint Comments of the Adams County Communication Center, the City of Charlotte, the State of Mississippi and the State of Texas, PS Docket 06-229 (filed Dec. 12, 2011) (Early Adopters Supplemental Filing).

[31] PSST Comments at 12.

[32] *Id*. at 7.

[33] IMSA Comments at 10

[34] NTIA Comments at 13.

[35] Alcatel-Lucent Ex Parte Filing, PS Docket 06-229 (filed Nov. 18, 2011); *see also* Motorola Solutions Ex Parte Filing, PS Docket 06-229 (filed Nov. 22, 2011) (recommending "adoption of a single PLMN ID policy").

[36] *See* Texas Revised PLMN ID Response at 23.

[37] LA-RICS Ex Parte Filing, PS Docket 06-229, at 2 (filed December 22, 2011) (LA-RICS Ex Parte).

[38] IP Wireless Ex Parte Filing at 1, PS Docket 06-229 (filed Nov. 2, 2011). A Universal Subscriber Identity Module (USIM) is "an integrated circuit that securely stores the [IMSI] and the related key used to identify and authenticate subscribers on mobile telephony devices." *See* Wikipedia, http://en.wikipedia.org/wiki/Universal_Subscriber_Identity_Module#USIM.

[39] *Id*.

considerations recommend a phased implementation of this approach and that Petitioners, including Adams County, should bear the costs of their migration to the common PLMN ID scheme.[40] Motorola Solutions supports "a single PLMN ID with a process enabling public safety entities to obtain permanent independent PLMN IDs if needed."[41] Motorola Solutions explains that waiver deployments under separate PLMN IDs "may co-exist" with deployment under the common PLMN ID "via standard roaming interfaces" without impairing interoperability.[42]

14. The Bureau, acting in consultation with ERIC, finds that the designation of a common PLMN ID for waiver recipients' deployments in the public safety broadband spectrum would offer the benefits of administrative ease and simplicity. More importantly, we find the use of a common PLMN ID, including a common administrator and common roaming clearinghouse, critical to ensuring interoperability among the waiver jurisdictions and reducing transaction costs. As the Commission recognized in the *Waiver Order*, interoperability of the public safety broadband network is a paramount goal. We agree with the commenters that assert that this approach would eliminate the need for "roaming" among the build outs of waiver recipients which would decrease the costs associated with negotiating and administering individualized roaming agreements. The various deployments would operate as a single network for purposes of network identification, thereby enabling interoperability among the Petitioners' networks.[43] Adoption of this approach for waiver recipient deployments could also ease the transition to the interoperable nationwide public safety broadband network by centralizing many of the tasks involved in the transition, including the substantial costs of migration. Finally, this approach provides immediate certainty to all waiver recipients, most importantly those that are preparing to deploy in the near term, of the network identification scheme that will govern their network deployments.

15. Although we recognize that minor modifications to the network identification scheme we adopt herein may be necessary as deployment progresses, this would be true of any network identification scheme established by the Bureau. While we agree with IPWireless that it would be technically and operationally feasible for each Petitioner to apply for its own PLMN ID to support its operations in the near term, we acknowledge that the majority of Petitioners, and other commenters including NTIA and Alcatel-Lucent, would prefer that the public safety broadband network be deployed from day one using a common PLMN ID.[44] We also note that no Petitioners filed comments opposing a common PLMN ID approach. Accordingly, we direct Petitioners to proceed with deployment using a common PLMN ID.

16. Under the approach we prescribe herein, we will request that ATIS IOC designate a six-digit number as the common PLMN ID for Petitioners' deployments in the public safety broadband

[40] Adams County Response to Texas at 2.

[41] *See* Motorola Solutions Ex Parte Filing, PS Docket 06-229 at 8 (filed Nov. 22, 2011).

[42] *See id*. at 3.

[43] We clarify that the "roaming" requirements of the *Waiver Order* and *Interoperability Waiver Order* will remain in effect, *see Waiver Order*, 25 FCC Rcd at 5160 ¶ 45; *Interoperability Waiver Order*, 25 FCC Rcd at 17159 ¶¶ 9-10, although these are more properly characterized as "interworking" or "internetworking" requirements under a scheme in which waiver recipients share use of a common PLMN ID.

[44] *See* National Telecommunications and Information Administration Comments at 12-15, PS Docket 06-229 (filed June 10, 2011) (NTIA Comments); *see also* PSST Comments at 7-12; Motorola Solutions Ex Parte Filing, PS Docket 06-229 (filed Nov. 22, 2011) (recommending "adoption of a single PLMN ID policy"); Alcatel-Lucent Ex Parte Filing, PS Docket 06-229 (filed Nov. 18, 2011).

spectrum.[45] We will request that ATIS only authorize the use of this common PLMN ID by the individual Petitioners. Each waiver recipient will be individually responsible for ensuring that it properly implements the designated PLMN ID within its segment of the network. Collectively, Petitioners will be responsible for working with ATIS IOC to determine a fee structure for their PLMN ID allocation and for remitting to ATIS IOC any required fees.[46] We further direct each waiver recipient to work with ATIS IOC to implement this common PLMN ID within its network prior to deployment.[47]

17. PSCR has worked with members of the public safety community, private industry, and other federal agencies to develop a draft network identification framework, the PSCR Network Identifiers Demonstration Network Guidelines (PSCR Draft Guidelines), for the assignment of IMSIs and other necessary identification numbers for the PSCR 700 MHz Demonstration Network.[48] We direct the Petitioners to use the PSCR Draft Guidelines as the basis for their network numbering scheme and to employ a competent numbering administrator to finalize the scheme and administer it as explained below. In finalizing and administering the scheme, the administrator should enjoy the flexibilities necessary to effectuate the transition to a nationwide network.[49] In addition, the administrator may exercise, as appropriate, the flexibilities recommended by the Early Adopters to effectuate a smooth implementation of a numbering scheme for their build outs:

- "Optimizing the allocation of [numbering] blocks in order to ease [network and subscriber] identifier management.
- Distributing the IMSI/MSIN ranges across the 9th, 8th and 7th significant digits.
- Adding [reserves of numbering blocks] between state [numbering block] allocations."[50]

18. To ensure that the numbering scheme developed for the Petitioners' deployments is competently developed from the PSCR Draft Guidelines and administered in a manner consistent with standard industry practice, we direct Petitioners to retain the services of a common administrator to oversee the development and implementation of this scheme. We require that the common numbering

[45] Out of an abundance of caution, we also are planning to request that ATIS designate several additional PLMN IDs for use in the public safety broadband network. We will ask ATIS to hold these additional PLMN IDs in reserve if it is determined at a later date by the FCC or the Bureau that there use is required.

[46] We expect that ATIS IOC's fee for this service would be neither substantial nor cost-prohibitive. This expectation is based on our understanding that applicants for PLMN IDs are charged an approximately $250 application fee. *See* ATIS IMSI Oversight Council, INTERNATIONAL MOBILE SUBSCRIBER IDENTITY (IMSI) ASSIGNMENT AND MANAGEMENT GUIDELINES AND PROCEDURES, VERSION 12.0 at 39 (Dec. 2010), *available at* http://www.atis.org/IOC/guidelines.asp..

[47] We clarify that this requirement applies only to the waiver recipients' build outs in the public safety broadband spectrum, and that this Order does not prejudge the outcome of any issue under consideration in the broader rulemaking in this docket, including the determination of a final scheme for administering network identification numbers for the nationwide public safety broadband network.

[48] *See* Public Safety Communications Research Program, PSCR Network Identifiers Demonstration Guidelines, http://www.pscr.gov/projects/broadband/700mhz_demo_net/testing/PSCR_Network_Identifiers_Demonstration_Network_Guidelines.pdf (last visited Jan. 9, 2012).

[49] Early Adopters Filing at 2-3; *see also* LA-RICS Ex Parte Filing at 5.

[50] *Id*. at 2. These flexibilities are afforded only to the numbering administrator, not to the individual Petitioners.

administrator Petitioners retain be selected through either a competitive process or through the assistance of a federal agency. The administrator must meet each of the following minimum qualifications:[51]

- It cannot be an FCC licensee or any person or entity affiliated[52] with any FCC licensee.
- It cannot be or include any of the Petitioners or any person or entity affiliated with any of the Petitioners.
- It must demonstrate that is has sufficient security credentials to process, maintain and secure public safety network identifiers and numbering blocks.
- It must have at least five years of demonstrated experience in telecommunications process management, tools and development maintenance to:
    - Develop and maintain the processes to distribute network identifiers in an efficient and timely basis.
    - Develop, test and maintain the required tools, including databases, to accomplish network identification code assignment.
    - Monitor and provide regular reports to the Petitioners on usage of numbering blocks.
- It must possess at least five years of demonstrated experience in numbering schemes such as telephony, IP addressing, and 3GPP numbering, addressing and identification.

19. Petitioners must assign the administrator, at a minimum, the following responsibilities: (1) developing from the PSCR Draft Guidelines a network identification numbering scheme for Petitioner's deployments, taking into account the need to transition to a nationwide network; (2) assigning to each Petitioner network MSINs and other identification numbers, or ranges thereof, in a manner that comports with industry practice and that will allow expansion of the scheme to support the nationwide network; and (3) maintaining the scheme over time and instituting any changes necessary to ensure the long-term viability of Petitioner's deployments and to ease their integration into a nationwide network, or to accommodate the deployments of any future waiver recipients. The administrator shall also provide any Petitioner with a copy of the scheme upon its request.

20. These requirements are essential to ensuring that the numbering scheme that is utilized for the Petitioners' networks is developed in a manner that ensures interoperability and can be easily migrated to the ultimate nationwide interoperable public safety broadband network with as little disruption and cost as possible. Accordingly, we require the Petitioners, in developing the numbering scheme, to ensure that it allows for the ultimate nationwide deployment of the interoperable public safety broadband network.

21. We recognize that the development of a numbering scheme for deployments by the waiver recipients is a complex task, but we observe that certain jurisdictions are preparing to begin deployment in the near term. To ensure that the final numbering scheme accommodates these earliest deployments,[53] we direct the Petitioners to submit their choice of numbering administrator for the Bureau's approval by February 8, 2012. Provided that the Bureau approves the submission, Petitioners

[51] In order to minimize costs, we urge Petitioners to select a third party who provides a cost competitive proposal consistent with industry rates and practices.

[52] For purposes of this Order, a third party vendor is not "affiliated" with an FCC licensee merely because of the vendor-licensee relationship.

[53] We remind Petitioners that the Bureau must approve a Petitioner's interoperability showing before it commences operation of its network.

shall complete development of the scheme by March 31, 2012. Each Petitioner shall verify its compliance with this deadline in the "Deployment" section of its April 2012 quarterly report, including verifying the retention of a common numbering administrator that meets the requirements set forth above. The Petitioners are also required to provide notice in future quarterly reports of any significant modifications to the numbering scheme, and they must seek Bureau approval before assigning any numbering administration functions to another entity. Petitioners shall provide a copy of the numbering scheme to the Bureau at its request.

22. We also recognize that commercial wireless carriers use a subscriber's PLMN ID to identify the subscriber's "home" network for purposes of roaming.[54] Although the Commission has not required Petitioners to enter into commercial roaming agreements, based on the record in this proceeding, including Texas's interoperability showing, we recognize that commercial roaming is an important capability for the Petitioners to be able to increase the geographic coverage of their deployments.[55] The use of a common PLMN ID among Petitioners creates the need for a common clearinghouse available to manage the relationships with commercial roaming partners and to settle the payment issues associated with Petitioners' use of a common PLMN ID. Accordingly, as recommended in the NPSTC Broadband Task Force Report,[56] we direct the Petitioners to retain the services of a common entity to provide the clearinghouse functions associated with the use of a common PLMN ID and commercial roaming. The clearinghouse the Petitioners retain[57] must be selected either through a competitive process or through the assistance of a federal agency. The clearinghouse must meet each of the following minimum qualifications:[58]

- It cannot be an FCC licensee or any person or entity affiliated with any FCC licensee.
- It cannot be or include any of the Petitioners or any person or entity affiliated with any of the Petitioners.
- It must demonstrate that is has sufficient security credentials to process, maintain and secure all public safety network identifiers and numbering blocks.
- It must have at least five years of demonstrated experience with commercial roaming, authentication and clearinghouse functions.
- It must possess at least five years of demonstrated experience in managing complex financial settlement arrangements for telecommunications services.
- It must demonstrate that it has substantial experience in developing, testing and maintaining the required tools, including databases, to enable commercial roaming by the Petitioners.
- It must demonstrate that it has the capability to provide interconnectivity between public safety networks and commercial service provider networks using secure IPX protocol and provide diameter routing functions.

[54] *See, e.g.,* NTIA Comments at 12-13.

[55] *See* State of Texas Filing, PS Docket 06-229 at 43 (filed Nov. 4, 2011) (Texas Revised Interoperability Showing) (observing that "many PS agencies utilize public 4G and 3G carrier networks for their data needs, and this practice will be extended during the PS LTE network build out"); LA-RICS Ex Parte at 8.

[56] *See* NPSTC BBTF Report.

[57] The numbering administrator and the clearinghouse can be the same entity as long as all requirements established by the Bureau are met.

[58] To minimize costs, we urge Petitioners to select a third party that provides a cost competitive proposal consistent with industry rates and practices.

23. Because the Petitioners will be utilizing a common PLMN ID, a common clearinghouse must be put in place to support Petitioners' ability to engage in commercial roaming. The capability to engage in commercial roaming is a critical requirement for the public safety broadband network, particularly as the earliest deploying Petitioners seek to expand their geographic coverage. In order to ensure that this common clearinghouse is in place on day one of network operation,[59] we direct the Petitioners to submit their choice of clearinghouse for the Bureau's approval by May 31, 2012. We require each Petitioner to certify its compliance with this requirement in the "Deployment" section of its July 2012 quarterly report. Petitioners must also seek approval from the Bureau before assigning clearinghouse functions to another entity.

24. We acknowledge that under the approach outlined above, Petitioners will ultimately bear the costs of developing the numbering scheme for their deployments and managing commercial roaming. However, we observe that a numbering scheme is technically necessary to support their operation of LTE broadband networks and for them to be able to engage in commercial roaming. A shared cost approach, as is adopted here, is likely to be more cost effective than if each Petitioner had to perform these services alone. Moreover, we believe that the benefits associated with adoption of a common PLMN ID and network identification scheme for the Petitioners, as outlined above, exceed any added costs of developing the common numbering scheme required under this approach. In making this determination, we observe that all Petitioners that have filed comments on this issue advocate a common PLMN ID approach.

25. We remind Petitioners that their deployments are conditioned on compliance with the *Waiver Order* and with subsequent Commission and Bureau orders. Petitioners deploy at their own risk and must bear any future costs necessary to bring their operations into compliance with all Commission rules.

III. ORDERING CLAUSES

26. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 301, 303, 332 and 337 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 301, 303, 332 and 337, THIS ORDER in PS Docket No. 06-229 is ADOPTED.

27. This action is taken under delegated authority pursuant to Sections 0.191 and 0.392 of the Commission's Rules, 47 C.F.R. §§ 0.191, 0.392, and the *Waiver Order*, 25 FCC Rcd 5145, 5161 5164 ¶¶ 48, 55 (2010).

FEDERAL COMMUNICATIONS COMMISSION

James Arden Barnett, Jr., Rear Admiral (Ret.)
Chief, Public Safety and Homeland Security Bureau

[59] Charlotte has informed the Bureau that it "aims to be operational" on June 30, 2012. *See* Charlotte PLMN ID Response at 4.