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

In the Matter of	)	
	)	
Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band	)	PR Docket No. 93-144 RM-8117, RM-8030 RM-8029
	)	
Implementation of Sections 3(n) and 322 of the Communications Act Regulatory Treatment of Mobile Services	)	GN Docket No. 93-252
	)	
Implementation of Section 309(j) of the Communications Act -- Competitive Bidding	)	PP Docket No. 93-253

FIRST REPORT AND ORDER, EIGHTH REPORT AND ORDER, AND SECOND FURTHER NOTICE OF PROPOSED RULE MAKING

Adopted: December 15, 1995 Released: December 15, 1995

Comment Date: January 16, 1996
Reply Comment Date: January 25, 1996

By the Commission: Commissioner Barrett issuing a statement.

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I. INTRODUCTION

1. In this *First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rule Making*, we adopt final service and competitive bidding rules for the "upper 10 MHz block"[1] of 800 MHz Specialized Mobile Radio (SMR) spectrum. We also adopt final service rules and request comment on additional service and competitive bidding

[1]The "upper 10 MHz block" consists of Channel Nos. 401-600 in the 800 MHz band, a total of 200 paired channels at 816-821/861-866 MHz. The upper 10 MHz block also will be referred to herein as the "upper 200 channels."

rules for the remaining 800 MHz SMR spectrum and the General Category channels.[2] The rules that we adopt here will enable us to implement a new framework for licensing of 800 MHz SMR systems. The *First Report and Order* establishes technical and operational rules for new licensees in the upper 10 MHz block with service areas defined by the U.S. Department of Commerce Bureau of Economic Analysis Economic Areas (EAs)[3], and defines the rights of incumbent SMR licensees already operating or authorized to operate on these channels. The *Eighth Report and Order* establishes competitive bidding rules for the upper 10 MHz block. In the *Second Further Notice of Proposed Rule Making* we set forth proposals for new licensing rules and auction procedures for the "lower 80"[4] SMR and General Category channels.

2. We believe that the rules adopted and proposed herein strike a fair and equitable balance between the competing interests of 800 MHz SMR licensees seeking to provide local service and those desiring to provide geographic area service. We further believe that these rules and policies will promote competition, while providing opportunities for incumbents to continue to pursue their business plans. In this connection, we believe that as a result of the rules we adopt today, SMR licensees will have the opportunity to deploy a multiplicity of technologies; thus, our rules also will promote technical innovation. We also believe that our new rules not only will eliminate a cumbersome regulatory scheme and result in expeditious licensing of the 800 MHz SMR service, but will further the congressionally mandated goal of regulatory symmetry between 800 MHz SMR licensees and other competing providers of Commercial Mobile Radio Services (CMRS).

II. EXECUTIVE SUMMARY

3. This Executive Summary summarizes the principal decisions and proposals made regarding service and competitive bidding rules for the 800 MHz SMR service in this *First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rule Making*.

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[2]The General Category channels consist of Channel Nos. 1-150, corresponding to frequencies 806-809.750/851-854.750, in the 800 MHz band. As discussed in the *Second Further Notice of Proposed Rule Making*, we have tentatively concluded that the General Category channels will be auctionable as a result of our decision in ¶ 137 *infra* to redesignate them as exclusively SMR.

[3]The Department of Commerce Bureau of Economic Analysis has established 172 EAs which cover the continental United States. *See* "Final Redefinition of the BEA Economic Areas," 60 Fed. Reg. 31,114 (Mar. 10, 1995). As discussed in ¶ 25 *infra*, we are establishing three additional licensing regions for the five U.S. possessions.

[4]The "lower 80" channels consists of the non-contiguous SMR Category Channels in the 806-809.750/851-859.750 MHz bands. The "lower 80" channels are: 201-208, 221-228, 241-248, 261-268, 281-288, 301-308, 321-328, 341-348, 361-368, and 381-388. These channels also will be referred to as the "lower 4 MHz" of 800 MHz SMR spectrum.

A. *First Report and Order*: Service Rules for the Upper 10 MHz Block

- Designates the upper 10 MHz block of 800 MHz SMR spectrum for geographic area licensing in three spectrum blocks, consisting of a 120-channel block, a 60-channel block, and a 20-channel block, in each EA.

- Establishes EA licenses that provide licensees with:

  (1) the right to construct at any available site within the EA, and to add, remove, or relocate site locations within the EA during the license term, on a "self-coordinated" basis;

  (2) the right to use any available spectrum within the EA licensee's designated spectrum block on a self-coordinated basis, including full discretion over channelization of available spectrum within the block (on condition that emission mask requirements are met, and co-channel interference protection is afforded to incumbent licensees and co-channel EA licensees in neighboring EAs);

  (3) the right to use any spectrum within the EA block that is recovered by the Commission from an incumbent SMR licensee in the event of termination of the incumbent's license; and

  (4) the presumption that assignments from incumbents operating in the EA spectrum block to the EA licensee generally are in the public interest.

- Adopts a ten-year license term and a five-year construction period for EA licenses from the date the EA license is granted, with EA licensees required to demonstrate (1) coverage of one-third of the population within their EA and use of 50 percent of the channels included in its spectrum block within three years after initial grant of the EA license, and (2) coverage of two-thirds of the EA population by the end of the five-year period. The EA license will be subject to automatic cancellation for failure to meet these interim coverage and channel use requirements.

- Discontinues acceptance of applications for extended implementation for the 800 MHz SMR service under Section 90.629 of the Commission's rules; and requires that 800 MHz SMR licensees with extended implementation periods demonstrate that such additional time to construct continues to further the public interest.

- Grants operational flexibility to incumbent SMR licensees to add, remove, or relocate site locations within their current 22 dBu contours, on a "self-

coordinated" basis if the incumbent is not relocated.

- Grants EA licensees the right to relocate incumbents within their spectrum blocks. Requires that within ninety days from the date of license grant, EA licensees provide written notification to all incumbents they intend to relocate.

- Creates a two-phase mandatory relocation mechanism under which there is a fixed one-year period for voluntary negotiations between EA licensees and incumbents and a two-year period for mandatory negotiations. Under this mechanism, if an EA licensee and an incumbent licensee fail to reach an agreement by the conclusion of the mandatory negotiation period, then the EA licensee may request involuntary relocation of the incumbent's system provided that it: (1) guarantees payment of all costs of relocating the incumbent to comparable facilities; (2) completes all activities necessary for placing the new facilities into operation, including engineering and frequency coordination, if necessary; and (3) builds and tests the incumbent's new system.

- Reallocates the General Category channels, consisting of 150 contiguous 25 KHz channels, to the 800 MHz SMR service.

- Partially lifts the freeze on acceptance of new applications for the SMR Category and General Category channels to permit potential EA applicants to relocate incumbents out of the upper 10 MHz block of 800 MHz SMR spectrum, provided that: (1) the potential EA applicant and relocating incumbent are unaffiliated; (2) the incumbent relocates without changing its original 22 dBu service contour; (3) both the incumbent and the potential EA applicant certify that they are unaffiliated and that the application is for the sole purpose of relocating an incumbent to other channels in the 800 MHz band (for SMR licensees, this would mean the lower 80 or General Category channels, but for non-SMRs this would mean channels available in their respective service categories); and (4) the application is accepted for filing prior to release of the Public Notice announcing the auction for the upper 10 MHz block and establishing a date for filing of FCC Form 175 ("short-form") applications.

B. *Eighth Report and Order*: Competitive Bidding Rules for the Upper 10 MHz Block

- Provides for award of 525 EA licenses[5] in the upper 10 MHz block by a single simultaneous multiple round auction. Both incumbents and new entrants are eligible to bid for all EA licenses, subject only to the CMRS spectrum

[5]We are establishing three spectrum blocks for each of the 175 EAs. Thus, the total number of EA licenses is calculated by multiplying 175 by 3.

aggregation limit provided in Section 20.6 of the Commission's rules.[6]

- Treats all applicants for EA licenses as initial applicants for public notice, application processing, and competitive bidding purposes.

- The Wireless Telecommunications Bureau ("Bureau") will announce the time and place of the upper 10 MHz block auction in the 800 MHz SMR service and provide additional information to bidders by future Public Notice and a Bidder Information Package.

- Applicants will apply for the upper 10 MHz block auction by filing a short-form application, indicating the markets and spectrum blocks for which they seek to apply, and paying an upfront payment. We adopt the standard upfront payment formula of $0.02 per activity unit[7], based on the particular spectrum blocks in each EA identified in the applicant's short-form application and the total EA population. The Bureau will announce, by Public Notice, the population calculation of each spectrum block in the EA, using a formula that takes into account incumbents within the EA.

- Adopts the Milgrom-Wilson activity rule by which bidders are required to declare their maximum eligibility in terms of activity units and are limited to bidding on licenses encompassing no more than the activity units covered by their upfront payments, and uses a simultaneous stopping rule.

- Adopts bid withdrawal and default rules for this auction similar to those used in prior auctions.

- Applies the same regulatory safeguards as in prior auctions to prevent applicants from colluding during the auction.

- Adopts a "tiered" approach to installment payments for small businesses in the upper 10 MHz block.

- Allows partitioning for rural telephone companies.

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[6]Broadband PCS, cellular, and SMR licensees may have attributable interests in no more than 45 MHz of licensed broadband PCS, cellular and SMR spectrum regulated as CMRS with significant overlap in any geographic area. *See* 47 CFR § 20.6.

[7]An "activity unit" is defined as the number of megahertz of spectrum multiplied by the population of the relevant license area, or "pops." The activity units/MHz-pops measurement is used to describe the activity rules, stage transition rules, bid increment rules, etc.

C. *Second Further Notice of Proposed Rule Making*: Additional Service Rules for the Upper 200 Channels and Service and Competitive Bidding Rules for the Lower 80 and General Category Channels

1. Disaggregation of Spectrum Blocks in the Upper 200 Channels

- Tentatively concludes that EA licensees should be permitted to disaggregate their spectrum blocks.

2. Partitioning in the Upper 200 Channels

- Tentatively concludes that the partitioning option should be extended to SMR licensees generally rather than limited to rural telephone companies.

3. Mandatory Relocation from the Upper 200 channels

- Proposes that incumbents who are notified by several EA licensees of an intention to relocate may require that negotiations to relocate the incumbent include all EA licensees who have notified the incumbent.

- Tentatively concludes that, for purposes of the mandatory negotiation period, an offer by an EA licensee to replace an incumbent's system with comparable facilities constitutes a good faith offer. Similarly, tentatively concludes that an incumbent that accepts such an offer presumably would be acting in good faith.

- Proposes that "comparable facilities" be defined as a relocated incumbent (1) receiving the same number of channels with the same bandwidth; (2) having its entire system relocated, not just those channels desired by a particular EA licensee; and, (3) once relocated, having a 40 dBu service contour that encompasses all of the territory covered by the 40 dBu contour of its original system.

4. Licensing of Other 800 MHz SMR Channels[8]

- Tentatively concludes that these 800 MHz SMR channels should be licensed on a geographic basis with EA service areas. Proposes to license the lower 80 channels in five-channel blocks. Proposes to license the General Category channel blocks per geographic licensing area.

- Proposes not to limit the number of lower 80 and General Category frequencies

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[8]In light of our decision in the *First Report and Order* to redesignate the General Category channels as exclusively for SMR use, licensing of other 800 MHz SMR channels refers to both the lower 4 MHz of 800 MHz SMR spectrum and the General Category channels.

that a single applicant can request at one time. Aggregation would be limited only by the 45 MHz CMRS spectrum aggregation limit provided in Section 20.6 of the Commission's rules.

- Tentatively concludes that there should be no mandatory relocation plan for these frequencies and that incumbents should be allowed to continue to operate under their existing site-specific authorizations, with geographic area licensees required to provide co-channel interference protection to all constructed and operating systems within their license area. Proposes to provide incumbent licensees operational flexibility within their currently authorized 22 dBu interference contour.

5. Competitive Bidding Rules for Other 800 MHz SMR Channels

- Proposes to award geographic area licenses for the lower 80 channels through a simultaneous multiple round auction with 16 five-channel blocks in each EA and regional EA groupings for competitive bidding purposes. Proposes to employ market-by-market stopping rules for these licenses.

- Proposes to award EA licenses for the General Category channels through a simultaneous multiple round auction for a 120-channel block, a 20-channel block, and a 10-channel block in each EA. We propose to employ simultaneous stopping rules for these licenses.

- Proposes to use bid withdrawal and default rules for this auction similar to those used in prior auctions.

- Proposes to apply the same regulatory safeguards as prior auctions to prevent applicants from colluding during the auction or obtaining unjust enrichment from subsequent transfer of the license.

- Proposes to adopt a "tiered" approach to bidding credits whereby small businesses with gross revenues of not more than $3 million are eligible for a 15 percent bidding credit on geographic area licenses, and those with gross revenues of more than $3 million but not more than $15 million are eligible for a 10 percent bidding credit.

- Proposes to adopt a "tiered" approach for installment payments and reduced down payments for small businesses.

- Proposes to adopt size restrictions for entities applying for geographic area licenses for the remaining SMR channels (including the General Category) by designating them as an "entrepreneurs' block," with eligibility limitations based on gross revenues and total assets.

III. BACKGROUND

4. The Commission's current rules for the 800 MHz SMR service were designed primarily to license dispatch radio systems on a transmitter-by-transmitter basis in local markets. In recent years, however, many SMR licensees have been authorized, through waivers and grants of extended implementation authority, to expand the geographic scope of their services and aggregate large numbers of channels to provide service more directly comparable to that provided by cellular operators and that envisioned for Personal Communications Services (PCS).[9] While the 800 MHz SMR rules have proven sufficiently flexible to permit such expansion, the licensing process remains cumbersome because of the need to license each SMR transmitter site individually. By its very nature, site-by-site licensing deprives licensees of flexibility to move transmitter sites throughout a defined service area without seeking our prior approval. As a result, an SMR licensee's ability to respond quickly to changing market conditions and consumer demand is impaired because its operational responses cannot be fully implemented until the completion of the Commission's application processing. In addition, experience has shown that establishing a regulatory framework for wide-area 800 MHz SMR licensing through waivers and grants of extended implementation authority is an inefficient licensing mechanism because substantial administrative resources are utilized by individual review of each waiver and extended implementation request. Also, this is an unwieldy approach, because each request pertains to particular circumstances for the entity requesting the waiver or extended implementation authority, without benefit of an established uniform wide-area licensing regime.

5. In May 1993, the Commission adopted a *Notice of Proposed Rule Making*[10] proposing wide-area licensing of the 800 MHz SMR service. In August 1993, Congress amended the Communications Act of 1934 ("Communications Act") to modify the regulatory treatment of all mobile services, including SMR.[11] In the *CMRS Second Report and Order*,[12] the Commission reclassified all mobile services into two statutorily-defined categories:

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[9]*See, e.g.*, Fleet Call, Inc., *Memorandum Opinion and Order*, 6 FCC Rcd 1533, *recon. dismissed*, 6 FCC Rcd 6989 (1991); Letter from Ralph A. Haller, Chief, Private Radio Bureau to David Weisman, DA 92-1734, 8 FCC Rcd 143 (1993). *See also* Amendment of Part 90 of the Commission's Rules Governing Extended Implementation Periods, PR Docket No. 92-210, *Report and Order*, 8 FCC Rcd 3975 (1993).

[10]Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *Notice of Proposed Rule Making*, 8 FCC Rcd 3950 (1993) (*Notice*).

[11]*See* Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, Title VI, § 6002(b), 107 Stat. 312, 392 (1993) (Budget Act), *codified at* 47 U.S.C. § 332.

[12]Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, GN Docket No. 93-252, *Second Report and Order*, 9 FCC Rcd 1411 (1994) (*CMRS Second Report and Order*).

CMRS and private mobile radio services (PMRS). The Commission concluded that all SMR systems either providing or authorized to provide interconnected service would be reclassified as CMRS.[13]

6. In the *CMRS Third Report and Order*, the Commission concluded that 800 MHz SMR licensees either compete or have the potential to compete with other CMRS providers.[14] As a result, the Commission determined that the technical and operational requirements for the 800 MHz SMR service should be made comparable, to the extent feasible, to those applicable to other CMRS providers. In this connection, the Commission concluded that licensing of the 800 MHz SMR spectrum should be accomplished through competitive bidding procedures. The Commission also elected to seek further comment before adopting specific service and auction rules.[15] In addition, the Commission froze acceptance of new 800 MHz SMR applications pending completion of the rule making pertaining to the 800 MHz SMR service.[16]

7. On October 20, 1994, the Commission adopted a *Further Notice of Proposed Rule Making*[17] seeking comment on a new framework for licensing of 800 MHz SMR systems. Specifically, the Commission proposed to assign the upper 10 MHz of 800 MHz SMR spectrum in geographically-defined service areas to facilitate the development of wide-area, multi-channel SMR systems.[18] We further proposed that the remaining lower 4 MHz of 800 MHz SMR spectrum would accommodate the needs of smaller SMR systems primarily seeking to provide local, more dispatch-oriented service.[19] This proposal would allow incumbent licensees to continue operating under their existing authorizations with full protection from co-channel interference, but would not allow them to expand into the wide-

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[13]*Id.* at 1450-51, ¶¶ 90, 91. It should be noted, however, that in the *CMRS Second Report and Order*, we also concluded that licensees in the private land mobile services other than paging who were licensed as of August 10, 1993, would be treated as PMRS until August 10, 1996. *Id.* at 1513, ¶ 281.

[14]Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, GN Docket No. 93-252, *Third Report and Order*, 9 FCC Rcd 7988, 8042, ¶ 94 (1994) (*CMRS Third Report and Order*).

[15]*Id.* at 8042, 8045, ¶¶ 94, 100.

[16]*Id.* at 8167, ¶ 415.

[17]Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *Further Notice of Proposed Rule Making*, 10 FCC Rcd 7970 (1995) (*Further Notice*).

[18]*Further Notice*, 10 FCC Rcd at 7983, ¶ 17.

[19]*Id.*, ¶ 18.

area licensee's service area.[20] The *Further Notice* also sought comment on: (1) whether geographic area licensees should be able to require incumbents to relocate to comparable alternative frequencies at the geographic area licensee's expense,[21] (2) the status of waivers and grants of extended implementation authority,[22] (3) future regulatory treatment of the General Category Channels,[23] and (4) the type of competitive bidding rules most appropriate for the 800 MHz SMR service.[24]

8. Over 80 parties filed initial comments and over 60 parties filed reply comments in response to the *Further Notice*.[25] Numerous written *ex parte* presentations also have supplemented the record.[26]

IV. FIRST REPORT AND ORDER

A. Geographic Area SMR Licensing in the 800 MHz Band

1. Spectrum Designated for Geographic Area Licensing

9. Background. In the *CMRS Third Report and Order*, we determined that assigning contiguous spectrum, where feasible, is likely to enhance the competitive potential of geographic area SMR providers.[27] We indicated our belief that contiguous spectrum is essential to the competitive viability of a wide-area SMR system, because it permits use of spread spectrum and other broadband technologies that are available to other CMRS providers but unavailable to systems operating on non-contiguous spectrum.[28] In the *Further Notice*, we proposed to designate the upper 10 MHz block of 800 MHz SMR spectrum for geographic

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[20] *Id.* at 7992, 7993, ¶¶ 37, 39.

[21] *See id.* at 7991-7992, ¶ 36.

[22] *See id.* at 7995-7996, 7997, ¶¶ 44, 47.

[23] *See id.* at 7973, 8000, ¶¶ 1, 54.

[24] *See id.* at 8006-8020, ¶¶ 71-106.

[25] The comment and reply comment dates in the *Further Notice* were extended to January 5, 1995, and March 1, 1995, respectively. *See* Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, *Order*, 9 FCC Rcd 7217 (1994); *Order*, 60 Fed. Reg. 8341 (February 14, 1995).

[26] *See* Appendix D for a comprehensive list of commenting parties.

[27] *CMRS Third Report and Order*, 9 FCC Rcd at 8046, ¶ 103.

[28] *Id.* at 8046, ¶ 102.

area SMR licensing.[29]

10. Comments. Numerous commenters support allocation of a portion of 800 MHz SMR spectrum for geographic area licensing.[30] Dial Call, Nextel, OneComm, and Telecellular agree that such reallocation of 800 MHz SMR spectrum would further the Commission's goal of creating regulatory parity with other CMRS providers.[31] Motorola and OneComm believe that a 10 MHz allocation would allow wide-area SMR operators to take advantage of innovative new technologies and succeed in the CMRS marketplace.[32] In this regard, Motorola notes that currently available broadband technologies, such as Advanced Mobile Phone Service (AMPS), Code Division Multiple Access (CDMA), Groupe Special Mobile protocol (GSM), and Motorola Integrated Radio System (MIRS),[33] require contiguous spectrum.[34] OneComm also believes that licensing contiguous spectrum will allow SMR operators to take advantage of economies of scale with respect to equipment and would increase competition in the equipment manufacturing market.[35] Nextel believes that the proposed 10 MHz wide-area licensing allocation is the most practical mechanism for achieving regulatory symmetry for the 800 MHz SMR service vis-a-vis other CMRS providers, with respect to spectrum allocation.[36]

11. Other commenters, however, oppose the Commission's wide-area licensing proposal for the 800 MHz SMR service.[37] These commenters argue that a wide-area licensing

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[29]*Further Notice*, 10 FCC Rcd at 7983, ¶ 17.

[30]AMI Comments at 2; AMTA Comments at 10-11; CellCall Comments at 7; CTIA Comments at 1-2; CICS Comments at 5; Cumulous Comments at 3; Dial Call Comments at 3; IC&E Reply Comments at 4-5; Motorola Comments at 4; Nextel Comments at 2; OneComm Comments at 8-9; Palmer Comments at 3; Pittencrief Comments at 5-6; Telecellular Comments at 2; TotalCom Comments at 4; *See* Appendix D for a list of the acronyms used to cite commenters and reply commenters responding to the *Further Notice* in PR Docket No. 93-144.

[31]Dial Comments at 3; Nextel Comments at 40; OneComm Comments at 11; Telecellular Comments at 3.

[32]Motorola Comments at 4; OneComm Comments at 8.

[33]Subsequent to the filing of its comments, Motorola modified the technology it employs and this new technology is known as Motorola Integrated Dispatch Enhanced Network (IDEN).

[34]Motorola Comments at 5.

[35]OneComm Comments at 12.

[36]Nextel Comments at 40.

[37]Applied Comments at 5; Bradley & Hulford Comments at 1; Carver Comments at 1-2; CCI Comments at 1; CUI Comments at 3-4; E.F. Johnson Comments at 4-5; Ericsson Comments at 2; Fetterman Comments at 1-2; Fisher Comments at 2; Fresno Comments at 5-6; Joriga Comments at 1-2; Kay Comments at 1-2; Lausman Comments at 3; Luczak Comments at 3; Madera Comments at 1-2; PCIA Comments at 2; Polar Reply

approach: (a) would have a negative impact on the already established SMR industry, particularly operators of small SMR systems and licensees operating in rural areas; (b) would benefit only one entity, Nextel; (c) is impractical and unworkable;[38] (d) is unnecessary because the existing regulatory system for the 800 MHz service adequately addresses the current licensee demand for implementing wide-area systems;[39] and, (e) would embroil the Commission in numerous controversies between licensees (both incumbents and wide-area licensees).[40] Spectrum Communications argues that if the Commission wants to open a channel block for geographic area systems, it should do so in virgin spectrum, such as the 380-400 MHz bands that have been reserved for federal government use.[41]

12. With respect to the particular portion of the 800 MHz band to be designated for wide-area SMR licensing, many commenters support the Commission's proposal to use the upper 10 MHz block of 800 MHz SMR spectrum.[42] CTIA believes that contiguous spectrum is necessary for wide-area SMR operators to establish service comparable to that of other CMRS providers and would encourage wide-area SMR licensees to utilize more spectrum-efficient technologies.[43] Southern, on the other hand, contends that the digital design of wide-area SMR equipment does not require contiguous spectrum.[44] Similarly, DCL Associates, the Joint Commenters, and Racom, Inc., *et al.* believe that contiguous spectrum is not required for operation of competitive wide-area SMR systems.[45] AMTA notes that the upper 10 MHz block is most suitable for those seeking to establish wide-area SMR services because it is the largest amount of contiguous spectrum now allocated for the 800 MHz SMR service, and it is

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Comments at 6-7; Sobel Comments at 1-2; Southern Comments at 5-6; Spruill Comments at 1-2; Stalvey Comments at 1-2; Supreme Radio Comments at 1-2, 6-7; Triangle Comments at 1-2; SBA Comments at 7.

[38]Carver Comments at 1-2; Eden Comments at 1-2; Fetterman Comments at 1-2; Joriga Comments at 1-2; Kay Comments at 1-2; Madera Comments at 1-2; Sobel Comments at 1-2; Spruill Comments at 1-2; Stalvey Comments at 1-2; Triangle Comments at 1-2; Clark *Ex Parte* Comments at 2; Peacock *Ex Parte* Comments at 1-3.

[39]Ericsson Comments at 2; Cumulous Comments at 5; SBA Comments at 7-8; Fresno Comments at 5; Fisher Comments at 2; Southern Comments at 6; Lausman Comments at 3.

[40]Applied Comments at 5-6.

[41]Spectrum Communications *Ex Parte* Comments at 2.

[42]AMTA Comments at 10-11; CellCall Comments at 7; CICS Comments at 5; IC&E Reply Comments at 5; Nextel Comments at 40; OneComm Comments at 8; Palmer Comments at 3; Telecellular Comments at 2; Total Com Comments at 4.

[43]CTIA Comments at 3.

[44]Southern Comments at 6.

[45]DCL Associates Reply Comments at 3-4; Joint Commenters Reply Comments at 9; Racom Inc., *et al.* Reply Comments at 10.

at least as large as the smallest amount of spectrum authorized for other CMRS providers.[46] Palmer suggests, however, that the Commission designate only 7 MHz of the upper 10 MHz block for wide-area use to balance more fairly the interests of those licensees desiring to provide wide-area service and those seeking to provide more localized or niche services.[47]

13. Discussion. We conclude that a portion of 800 MHz SMR spectrum should be designated for wide-area licensing. Notably, the commenters in the CMRS proceeding contended that wide-area SMR systems need contiguous spectrum to obtain flexibility to implement advanced technologies and thereby compete effectively with other CMRS providers, such as cellular and broadband PCS systems.[48] In the *Further Notice*, we stated our belief that contiguous spectrum offers greater flexibility to wide-area service providers who must tailor their spectrum use to afford protection to incumbent licensees within the 800 MHz band.[49] The comment record established in PR Docket No. 93-144 and GN Docket No. 93-252 evidences that the availability of contiguous spectrum for those licensees seeking to provide wide-area SMR service would further the Commission's regulatory symmetry goals.

14. We disagree with the commenters that suggest the need for wide-area licensing has not been demonstrated. Moreover, the current licensing scheme would not allow expeditious implementation of wide-area systems utilizing contiguous spectrum, because 800 MHz channels presently are not distributed on a contiguous basis. Thus, a licensee's attempts to acquire contiguous spectrum, especially on a large scale, in the absence of regulatory changes generally would entail significant transactional costs, as well as a substantial amount of time and preparation devoted to the filing of numerous applications. We also believe, as discussed *infra*, that the specific wide-area licensing scheme we adopt today adequately protects existing SMR operations in the 800 MHz band. This new scheme is not designed to benefit any particular entity, but to provide opportunities for a variety of licensees of different sizes to participate in the provision of wide-area service. We further conclude that the 800 MHz SMR spectrum most suitable to be designated primarily for wide-area use is the upper 10 MHz block, as it is the largest block of contiguous SMR Category spectrum in the 800 MHz band. As discussed *supra*, we believe that contiguous spectrum is an essential component of the wide-area licensing proposal we adopt today because it will give licensees the flexibility to use technologies that can operate on either contiguous or non-contiguous spectrum. Significantly, licensees' technological options are considerably more limited under a predefined channelization plan. We conclude that the entire 10 MHz block should be used, rather than a portion thereof, because it is equivalent in size to the smallest amount of spectrum presently authorized for broadband PCS. We agree with the commenters who

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[46]AMTA Comments at 10-11.

[47]Palmer Comments at 3.

[48]*See Further Notice*, 10 FCC Rcd at 7982, ¶ 17.

[49]*Id.* at 7983, ¶ 17.

suggest that designating this amount of spectrum would further the regulatory symmetry goals for operational and technical rules we set forth in the *CMRS Third Report and Order*. As discussed *infra*, we believe that our decision regarding the size of the wide-area spectrum blocks strikes an appropriate balance between the competing interests of licensees with varying spectrum needs.

2. Service Areas

15. Background. In the *CMRS Third Report and Order*, we concluded that the use of service areas based on Rand McNally Major Trading Areas (MTAs), identical to those adopted for broadband PCS, would be preferable for wide-area licensing of the 800 MHz SMR service.[50] We indicated that allowing licensees to operate over MTAs as opposed to smaller areas, such as Rand McNally Basic Trading Areas (BTAs), would enhance their ability to invest in technology and to re-use channels more effectively.[51] We further noted that many of the authorizations already granted to SMR licensees for wide-area systems are for MTA-sized areas, or for regions larger than a single MTA.[52] As a result, we tentatively concluded that MTAs appear to be the most suitable "building blocks" for SMR licensees who seek to construct wide-area systems.[53]

16. Comments. Several commenters support the Commission's proposal of MTAs in their initial comments.[54] In support of using MTAs, these commenters contend that: (1) successful implementation of advanced broadband technologies and effective competition with other CMRS providers necessitate operation over substantial geographic areas, such as MTAs;[55] (2) establishing wide-area systems is economically feasible only when they serve a large area with a high volume of potential customers;[56] and, (3) MTA-sized service areas would provide geographic area licensees with optimum operational flexibility.[57]

17. Although AMTA does not oppose MTA-based wide-area licensing, it indicates that it is not convinced that MTAs would be the most effective geographic divisions for wide-

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[50]*CMRS Third Report and Order*, 9 FCC Rcd at 8044, ¶ 99.

[51]*Id.* at 8045.

[52]*Id.*

[53]*Id.*

[54]CellCall Comments at 7; Dial Call Comments at 3; Motorola Comments at 9; Nextel Comments at 32; OneComm Comments at 8; Telecellular Comments at 2.

[55]CellCall Comments at 7; Nextel *Ex Parte* Comments at 4-5.

[56]Motorola Comments at 9-12; Nextel *Ex Parte* Comments at 4-5.

[57]Telecellular Comments at 2.

area licensing purposes.[58] On the other hand, several commenters expressly oppose using MTAs as the geographic basis for wide-area 800 MHz SMR licensing.[59] They oppose MTA-based licensing arguing that: (1) service areas of that size would not result in diverse entities participating in the provision of 800 MHz wide-area service or 800 MHz SMR spectrum auctions;[60] (2) the large geographic area encompassed in an MTA would not adequately protect against spectrum warehousing, which could result in rural areas remaining unserved or underserved;[61] (3) MTAs are too large for reasonable build-out by smaller licensees that would be forced to compete against larger system operators located a significant distance away;[62] (4) Rand-McNally would not permit use of MTAs unless licensees were willing to negotiate an agreement to pay a fee for use of the copyrighted term;[63] (5) MTAs do not conform to natural SMR market divisions;[64] and, (6) there is an insufficient amount of vacant 800 MHz SMR spectrum to justify MTA-based licensing.[65]

18. Given their opposition to an MTA-based licensing approach, several commenters suggest using other geographic areas as the service area bases for the new wide-area 800 MHz SMR licenses. Some commenters, for example, propose using EAs as the geographic basis for these licenses, arguing that: (1) they are designed around urban, suburban and rural traffic patterns and therefore more accurately would reflect natural SMR market boundaries;[66] (2) they would provide more service options and flexibility, given that licensees will have the option of acquiring only the capacity needed in smaller markets;[67] (3) they could increase both the number and diversity of entities interested in vying for spectrum designated for wide-area licensing;[68] and, (4) Rand-McNally would not permit use of MTAs unless licensees were

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[58]AMTA Comments at 14.

[59]AMI Comments at 3-4; CCI Comments at 1; Cumulous Comments at 2; Genesee Comments at 2; Joint Commenters Comments at 6-7; Kay Comments at 1-2; PCIA Comments at 19-20; Southern Comments at 11; Total Com Comments at 4.

[60]AMI Comments at 3-4; Total Com Comments at 9.

[61]CCI Comments at 1; Total Com Comments at 4.

[62]PCIA Comments at 19-20; Joint Commenters Reply Comments at 14.

[63]AMI Comments at 3-4; SMR WON Comments at 84.

[64]AMI Comments at 3; Cumulous Comments at 2; Genesee Comments at 3; SMR WON Comments at 53; Lagorio Comments at 10.

[65]Southern Comments at 11.

[66]AMI Comments at 3; DCL Associates Comments at 7; SMR WON Comments at 53-54.

[67]AMI Comments at 4.

[68]*Id.*

willing to negotiate an agreement to pay a fee for use of the copyrighted term.[69]

19. Other commenters suggest that we award licenses on a BTA basis because, given their smaller size, BTAs, unlike MTAs, would increase competition and the efficiency of 800 MHz SMR spectrum use.[70] Motorola, on the other hand, contends that BTA-based licensing will result in licensees being unable to compete economically with other CMRS providers.[71] PCIA and SMR WON oppose use of BTAs on the basis that they are too small for a reasonable build-out, especially in the larger metropolitan areas.[72]

20. PCIA proposes Metropolitan Service Areas (MSAs) as another geographic alternative for wide-area licensing.[73] PCIA contends that MSAs represent more "natural" wireless service areas. PCIA notes, however, that in larger urban areas, even MSAs may prove to be too small for natural operational areas; therefore, it suggests using consolidated MSAs in those areas.[74]

21. Significantly, the majority of reply commenters (representing small, medium, and large SMR operators) indicate that they either support or do not oppose the use of EAs as the geographic basis for the newly created wide-area 800 MHz SMR licenses.[75] Supporters of EA-based licensing contend that EAs: (1) are sufficiently large so that operators can take advantage of economies of scale;[76] (2) offer the opportunity for greater participation by a larger number of diverse entities, particularly local SMR operators, in the provision of wide-area service because they are smaller than MTAs;[77] (3) more accurately reflect the natural scope of SMR operations;[78] and, (4) are sufficiently few in number that the auction process

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[69]SMR WON Comments at 54.

[70]Cumulous Comments at 3, 4; Genesee Comments at 2 .

[71]Motorola Comments at 9-12.

[72]PCIA Comments at 20; SMR WON Comments at 53.

[73]PCIA Comments at 21.

[74]*Id.*

[75]*See, e.g.,* AMI Reply Comments at 3; AMTA Reply Comments at 17-18; DCL Associates Reply Comments at 6; E.F. Johnson Reply Comments at 5; Ericsson Reply Comments at 3; Fisher Reply Comments at 3; Genesee Reply Comments at 2; Motorola Reply Comments at 7; OneComm Reply Comments at 9; Pittencrief Reply Comments at 4; Russ Miller Reply Comments at 7; SMR WON Reply Comments at 9; Telecellular Reply Comments at 3; AMI *Ex Parte* Comments at 3.

[76]Motorola Reply Comments at 7.

[77]E.F. Johnson Reply Comments at 5; Motorola Reply Comments at 7; Pittencrief Reply Comments at 4-5.

[78]Ericsson Reply Comments at 3; Fisher Reply Comments at 3; AMTA Reply Comments at 17-18.

will remain manageable.[79] AMTA supports the use of EAs, stating that due to their number, size and configuration, they will meet most effectively the needs of both wide-area and traditional SMR licensees.[80] Some reply commenters, on the other hand, indicate a preference for "Cluster EAs" (which are created by sequential groupings of four EAs) if EA-based licensing is used.[81] These reply commenters contend that Cluster EAs: (1) may represent a viable alternative, since they are similar in size to MTAs;[82] (2) provide a readily-partitionable geographic area;[83] and, (3) provide an administratively-manageable number of wide-area SMR license auctions.[84]

22. A few commenters expressly oppose EA-based licensing.[85] Dial Call believes that EAs are unworkable because they are smaller than MTAs, and thus would place wide-area SMR operators at a competitive disadvantage *vis-a-vis* other CMRS providers.[86] In fact, some reply commenters continue to favor an MTA-based licensing approach.[87]

23. Discussion. Despite our previous conclusion in the CMRS proceeding that MTAs appear to be the most suitable building blocks for 800 MHz SMR licensees seeking to construct wide-area systems, a broad range of commenters express support for EAs rather than MTAs. We believe that use of these smaller geographic areas ultimately will result in a more diverse group of prospective bidders, because small and medium-sized operatives will have incentives to seek EA licenses in those markets where they are the largest incumbents. We conclude that such an outcome not only is desirable, but furthers the public interest because it would result in the dissemination of EA licenses among a variety of applicants as anticipated by Section 309(j) of the Communications Act.[88] We are persuaded by these commenters that EAs reflect the actual coverage provided by 800 MHz SMR systems more accurately than MTAs because they are based on urban, suburban, and rural traffic patterns. We also reject

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[79]Motorola Reply Comments at 7.

[80]AMTA Reply Comments at 17-18.

[81]Dial Call Reply Comments at 4-5, n.2; Nextel Reply Comments at 8-9; Onecomm Reply Comments at 9.

[82]Dial Call Reply Comments at 4-5, n.2.

[83]Nextel Reply Comments at 9.

[84]*Id.*

[85]Dial Call Reply Comments at 4-5, n.2; IC&E Reply Comments at 5.

[86]Dial Call Comments at 4-5.

[87]CellCall Reply Comments at 8, n.20; Dial Call Reply Comments at 4-5, n.2; IC&E Reply Comments at 5; Nextel Reply Comments at 8; OneComm Reply Comments at 8-9.

[88]*See* 47 U.S.C. § 309(j)(3)(B).

commenters' proposal that we use Cluster EAs. We believe that these areas are inappropriate, because they do not reflect natural SMR markets and, due to their size, effectively may not meet the needs of traditional SMR licensees. Moreover, we believe that Cluster EAs, which are similar in size to MTAs, would not facilitate the participation of diverse entities in the provision of SMR services.

24. We also conclude that licensing based on EAs is preferable to using smaller service areas. We reject PCIA's suggestion that MSAs would be suitable for SMR licensing. Although we selected MSAs as the service areas for the original deployment of the cellular service, we expressly chose MTAs rather than MSAs as the appropriate geographic area for broadband PCS.[89] We determined that the ten-year history of cellular service evidenced that MSA/RSA boundaries generally have been too small for the efficient provision of regional or nationwide mobile service.[90] In this connection, we noted that cellular operators have experienced large transactional costs in their efforts to aggregate MSAs and RSAs to provide wider service areas for consumers and to lower costs of providing service.[91] Because we anticipate that EA licensees will be interested in using geographic aggregation as a tool to accomplish similar results, we conclude that MSAs are inappropriate. Similarly, with respect to BTAs, we agree with those commenters who express concern that these geographic areas may not be sufficiently large to create a viable wide-area service.

25. Accordingly, we conclude that the 800 MHz SMR wide-area licenses will be based on EAs. There are 172 EAs covering the continental United States. Because EAs have not been established for the five U.S. possessions, that is, Guam, Northern Mariana Islands, Puerto Rico, U.S. Virgin Islands, and American Samoa, we will create additional licensing regions for systems operating in these territories. Specifically, we hereby designate the following additional three licensing regions: (1) Guam and the Northern Mariana Islands will be licensed as a single area; (2) Puerto Rico and the U.S. Virgin Islands, as a single area; and, (3) American Samoa as a single area. Telecellular recommends creating a single EA for Puerto Rico based on its assumption that EAs are based, in part, on commuter patterns of citizens in particular areas.[92] As Telecellular correctly notes, in other CMRS services, we have combined Puerto Rico and the U.S. Virgin Islands as a single license area.[93] Because Telecellular has not provided a justification specific to the 800 MHz SMR service for changing our approach for defining the license area for Puerto Rico, we decline to adopt Telecellular's recommendation. The EA Listings and the EA map are available for public

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[89]*See* Amendment of the Commission's Rules to Establish New Personal Communications Services, GEN Docket No. 90-314, *Memorandum Opinion and Order*, 9 FCC Rcd 4957, 4987, ¶ 76 (1994).

[90]*Id.*

[91]*Id.*

[92]Telecellular Reply Comments at 4.

[93]*See* 47 C.F.R. § 24.202(a) (broadband PCS); 47 C.F.R. § 90.7 (900 MHz SMR).

inspection at the Wireless Telecommunications Bureau's Public Reference Room, Room 5608, 2025 M Street, N.W., Washington, D.C. 20554, and its Office of Operations - Gettysburg Reference Room, 1270 Fairfield Road, Gettysburg, Pennsylvania 17325-7245.

3. EA Spectrum Blocks

26. Background. In the *CMRS Third Report and Order*, we observed that most commenters agreed that wide-area SMR systems must have the ability to use (and re-use) a large number of channels, preferably on contiguous frequencies, to compete successfully with cellular and broadband PCS.[94] In addition, we observed that we previously have proposed to allow geographic area licensees to acquire up to 42 channels at a time (equivalent to 2.1 MHz of spectrum) in an MTA.[95] Our rationale for this initial proposal was that it reflected the minimum number of channels needed to construct a system, based on the technology then in most common use by SMR systems to implement frequency reuse.[96]

27. Based on the record established earlier in this proceeding and the comments submitted in the CMRS proceeding, the *Further Notice* proposed to divide the upper 10 MHz block of 800 MHz SMR spectrum into four blocks of 2.5 MHz, corresponding to 50 channels per block, under our existing frequency allocation rules.[97] These blocks approximate the 42-channel threshold for frequency re-use previously identified in the *Notice* and would allow for the possibility of licensing more than one wide-area provider in a market.[98] We further proposed to allow applicants to bid for multiple blocks within a given MTA, so that the marketplace could determine whether these blocks are most valuable separate or aggregated together.[99]

28. In the *Further Notice*, we expressly elected not to propose to issue a single license covering the entire 10 MHz upper block of 800 MHz SMR spectrum.[100] We determined that a single 10 MHz license would preclude licensing of multiple geographic area licensees in each market.[101] We also noted that some commenters in the CMRS proceeding disagreed with

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[94] *CMRS Third Report and Order*, 9 FCC Rcd at 8045, ¶ 101.

[95] *Id.*

[96] *Id.*

[97] *Further Notice*, 10 FCC Rcd at 7984, ¶ 22.

[98] *Id.* at 7984-7985, ¶ 22.

[99] *Id.* at 7985, ¶ 22.

[100] *Id.* at 7984, ¶ 20.

[101] *Id.*

the contention that 10 MHz is the minimum amount of spectrum needed to create a viable competitor to cellular and PCS services.[102] These commenters contended that viable, competitive wide-area SMR systems could be based on fewer channels, even though such systems might not be capable of providing the full array of services offered by a cellular or 30 MHz PCS licensee.[103]

29. Comments. Several commenters support the Commission's proposal of four 50-channel blocks,[104] because: (1) it appears to strike an appropriate balance between economies of scale and protection of competition within a geographic area;[105] (2) it approximates the 42-channel threshold for frequency reuse previously identified by the Commission;[106] and (3) it furthers competition by creating the opportunity to license more than one wide-area provider in each market.[107] Although Genesee supports the concept of 50-channel blocks, it believes that only two such blocks should be auctioned, while the remaining 100 channels should be made available to incumbents for expansion and growth potential.[108]

30. Several commenters oppose the Commission's spectrum block proposal.[109] The opponents argue that: (1) 50-channel blocks are too small to offer licensees a meaningful opportunity to implement a viable wide-area system;[110] (2) licensing of separate blocks will not facilitate wide-area licensing due to the time and expense that will be required to aggregate all spectrum blocks in a single market;[111] (3) the Commission's proposal is based on

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[102] *Id.*

[103] *See id.*

[104] AMI Comments at 2; AMTA Comments at 11; ABC Comments at 2; B&C Comments at 2; Bis-Man Comments at 2; Bolin Comments at 2; Dakota Comments at 2; Deck Comments at 2; Diamond "L" Comments at 2; Dru Jenkinson, *et al.* Comments at 4; E.F. Johnson Comments at 6-7; E.T. Communications Co. Comments at 2; Genesee Comments at 2; Gulf Coast Comments at 1; Keller Comments at 2; Morris Comments at 2; Nielson Comments at 2; Nodak Comments at 2; RCC Comments at 2; Raserco Comments at 2; Rayfield Comments at 2; SMCI Comments at 2; Total Com Comments at 5.

[105] AMTA Comments at 11.

[106] Dru Jenkinson, *et al.* Comments at 4.

[107] Dru Jenkinson, *et al.* Comments at 4; E.F. Johnson Comments at 6-7.

[108] Genesee Comments at 2.

[109] CellCall Comments at 12; Dial Call Comments at 5; Fisher Comments at 2; Nextel Comments at 41; OneComm Comments at 14; PCIA Comments at 12; SMR WON Comments at 55; Southern Comments at 9; Telecellular Comments at 3-4.

[110] CellCall Comments at 12; Nextel Comments at 41; IC&E Reply Comments at 5.

[111] Dial Call Comments at 3; Nextel Comments at 43; OneComm Comments at 15.

a calculation of the minimum number of channels necessary to implement existing wide-area systems using technology specially adapted to fragmented SMR spectrum;[112] (4) use of 50-channel blocks could preclude implementation of certain technologies;[113] (5) the relatively small size of the proposed spectrum blocks may not deter speculators from participating in the 800 MHz SMR auctions solely for extracting settlements or for anti-competitive purposes:[114] (6) the size of the proposed spectrum blocks would render any large-scale relocation scheme unworkable;[115] and, (7) the proposal is at odds with the Commission's regulatory symmetry objectives, because a wide-area licensee could obtain considerably less spectrum than the competing CMRS providers in the market.[116]

31. Other commenters believe that spectrum blocks of other sizes would be more appropriate. For example, Dial Call, Nextel, OneComm, and Telecellular support awarding a single 10 MHz wide-area license.[117] Nextel, OneComm, Dial Call, and Motorola argue that such a license would better fulfill the Commission's stated regulatory symmetry goals.[118] Nextel contends that wide-area SMR systems must have at least 10 MHz of contiguous spectrum to utilize future advanced technologies such as CDMA and GSM.[119] E.F. Johnson and Gulf Coast argue that the entire 10 MHz block is not required by a single licensee in order to offer service.[120] CellCall and IC&E oppose awarding a single 200-channel license on the basis that it could diminish competition.[121] Instead, CellCall, supported by IC&E, contends that authorizing two 100-channel block licensees in each market is a better approach, because licensing larger blocks will reduce burdens on geographic area licensees with respect to relocation.[122] Pittencrief indicates its acceptance of two wide-area licenses in a geographic

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[112]OneComm Comments at 15.

[113]Motorola Reply Comments at 8; OneComm Reply Comments at 10; Nextel Comments at 42.

[114]Nextel Comments at 43; Dial Call Reply Comments at 5-6; Nextel *Ex Parte* Comments at 5-7.

[115]OneComm Comments at 13; Joint Commenters Reply Comments at 14-15.

[116]OneComm Comments at 15; Southern Comments at 9; Telecellular Comments at 3-4; Nextel *Ex Parte* Comments at 5-7.

[117]Dial Call Comments at 3; Nextel Comments at 42; OneComm Comments at 14; Telecellular Comments at 3-4; Nextel *Ex Parte* Comments at 5-7.

[118]Nextel Comments at 40-43; OneComm Comments at 15; Dial Call Reply Comments at 4; Motorola Reply Comments at 9; Nextel Reply Comments at 29; Nextel *Ex Parte* Comments at 5-7.

[119]Nextel Reply Comments at 42.

[120]E.F. Johnson Comments at 6-7; Gulf Coast Comments at 1.

[121]CellCall Comments at 12; IC&E Reply Comments at 5-6.

[122]CellCall Comments at 13; CellCall Reply Comments at 10; IC&E Reply Comments at 5.