

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

In the Matter of)	
)	
Amendment of the Commission's Rules)	WT Docket No. 97-81
Regarding Multiple Address Systems)	

REPORT AND ORDER

Adopted: December 30, 1999

Released: January 19, 2000

By the Commission:

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I. INTRODUCTION

1. In this *Report and Order*, we adopt rules to maximize the use of spectrum designated for Multiple Address Systems (MAS) in the Fixed Microwave Services. MAS is a point-to-multipoint, multipoint-to-point radio communications service that consists of 3.2 megahertz (MHz) of electromagnetic spectrum in the 900 MHz band and is licensed under Parts 22 and 101 of our Rules. We believe that our decisions will: (1) establish a flexible regulatory framework for MAS spectrum that provides opportunities for continued development of competitive service offerings by allowing a variety of services; (2) expedite market entry through modified licensing procedures; and (3) promote technological innovation by eliminating unnecessary regulatory burdens. We further believe that the rules we adopt herein will facilitate the further development and implementation of MAS. Our decision today will ensure that MAS spectrum is utilized to its fullest potential by providing licensees with additional flexibility to support current uses and foster the development of future MAS applications. We also lift the suspension on the acceptance of applications for certain MAS frequencies, consistent with our decision herein.

II. EXECUTIVE SUMMARY

2. The following is a summary of the major actions taken with respect to MAS. In this *Report and Order*, we:

- Designate the 928/952/956 MHz bands exclusively for private internal services, licensed on a site-by-site basis.
- License the 928/959 MHz bands on a geographic area basis.
- License twenty of the forty paired channels in the 932/941 MHz bands on a geographic area basis.
- Reserve twenty of the forty channel pairs in the 932/941 MHz bands for public safety/Federal Government and private internal services, licensed on a first-come, first-served, site-by-site basis. Designate five of the twenty channels in the 932/941 MHz bands' set-aside exclusively for public safety/Federal Government services.
- Grandfather existing operations on the MAS bands and restrict expansion in the 928/959 MHz bands.
- Establish service areas based on the Federal Communications Commission's definition of Economic Areas (EAs) and on the U.S. Department of Commerce's definition of EAs.
- Establish construction/coverage requirements for EA licensees -- specifically, coverage to at least one-fifth of the population in their service areas or substantial service within five years of the license grant -- and a showing of substantial service within ten years of being licensed.
- Introduce flexibility to the MAS technical rules.
- Allow licensees to provide mobile and fixed operations on a co-primary basis for point-to-point and point-to-multipoint operations.
- Adopt a flexible approach for defining the regulatory status of MAS licensees by allowing the licensee to indicate its regulatory status.
- Lift the suspension on the acceptance of applications for the 928/952/956 MHz bands and the twenty channels in the 932/941 MHz bands designated for public safety/Federal Government and/or private internal services upon the release of this *Report and Order*.
- Adopt Part 1 competitive bidding rules for MAS spectrum.

3. While our conclusions are designed to foster MAS service, we make no representations or warranties about the use of this spectrum for particular services. Applicants should be aware that a Commission auction represents an opportunity to become an FCC licensee in this service, subject to certain conditions and regulations. An FCC auction does not constitute an endorsement by the Commission of any particular services, technologies, or products, nor does an FCC license constitute a guarantee of business success.

III. BACKGROUND

4. Historically, MAS spectrum has primarily been used by the power, petroleum, and security industries for various alarm, control, interrogation, and status reporting requirements, and by the paging industry for control of multiple paging transmitters in the same general geographic area.¹ In a *Notice of Proposed Rule Making*, released on February 27, 1997, the Commission initiated a comprehensive examination of the MAS service.² The Commission sought comment in assessing the current and potential uses to which MAS spectrum will be applied, and proposed a variety of modifications designed to streamline MAS licensing procedures to better accommodate such uses.³ Additionally, the Commission solicited comment on spectrum allotment and licensing for this service.

¹ See Amendment of the Commission's Rules Regarding Multiple Address Systems, WT Docket No. 97-81, *Further Notice of Proposed Rule Making and Order*, 14 FCC Rcd 10744, 10746 (1999) (*Further Notice*); Amendment of the Commission's Rules Regarding Multiple Address Systems, WT Docket No. 97-81, *Notice of Proposed Rule Making and Order*, 12 FCC Rcd 7973, 7976 (1997) (*Notice*). A total of 3.2 MHz of spectrum is currently designated for MAS. This spectrum is divided into three general categories: (1) the 928/952/956 MHz bands; (2) the 928/959 MHz bands; and (3) the 932/941 MHz bands.

By way of background, in 1981, the Commission initially designated spectrum for MAS by allotting twenty 25-kilohertz (kHz) channel pairs in the 928-928.85 MHz and 952-952.85 MHz bands (a total of 1 MHz). Subsequently, the Commission designated an additional fourteen 25 kHz channel pairs in these bands (a total of 700 kHz), in addition to eight unpaired 25 kHz channels in the 956.25-956.45 MHz bands (a total of 200 kHz). Thus, there now exists 1.7 MHz of paired spectrum in the 928/952 MHz bands and 200 kHz of unpaired spectrum in the 956 MHz band. This spectrum, which contains incumbent licensees, is designated for private MAS operations and may be used for common carrier operations pursuant to certain sharing criteria.

Additionally, the Commission designated six 25 kHz channel pairs in the 928.85-929 MHz and 959.85-960 MHz bands (928/959 MHz bands), for a total of 300 kHz. These channels are designated for, and used primarily by, common carrier operations under Part 22 of our Rules and are authorized for private radio use on a co-primary basis, pursuant to certain sharing criteria. Later, at the request of the MAS community, the Commission further modified the rules governing MAS operations by establishing a minimum mileage separation between co-channel master stations and by reducing the channel spacing from 25 kHz to 12.5 kHz, thereby, increasing spectrum efficiency and reducing regulatory burdens for MAS users. These bands also contain incumbent licensees.

In 1989, the Commission designated one MHz of paired spectrum--forty 12.5 kHz channels pairs--in the 932.0-932.5 MHz and 941.0-941.5 MHz bands (932/941 MHz bands) for both Federal Government and non-Government point-to-multipoint use. The Interdepartment Radio Advisory Committee (IRAC) and the National Telecommunications and Information Administration (NTIA) coordinate Government and non-Government use. See Amendment of Parts 1, 21, 22, 74, and 94 of the Commission's Rules to Establish Service and Technical Rules for Government and Non-Government Fixed Service Usage of the Frequency Bands 932-935 MHz and 941-944 MHz, GN Docket No. 82-243, *Second Report and Order*, 4 FCC Rcd 2012 (1989) (*932/941 MHz Second Report and Order*). These channels can be used by common carrier and private radio licensees on a co-primary basis.

² See *Notice*, 12 FCC Rcd 7973.

³ *Id.*

It also sought comment on proposals that would increase the technical and operational flexibility of MAS licensees.⁴

5. In the *Notice*, the Commission proposed to designate most of the spectrum in the 932/941 MHz bands and all of the spectrum in the 928/959 MHz bands for subscriber-based services, and to use auctions to choose among mutually exclusive applications for licenses in these bands.⁵ The Commission also proposed to designate the 928/952/956 MHz bands exclusively for private internal use, and not to use auctions to select among mutually exclusive applications in these bands.⁶ Additionally, the Commission temporarily suspended the acceptance and processing of MAS applications for new licenses, amendments, or modifications for the 932/941 MHz bands, the 928/959 MHz bands, and applications to provide subscriber-based service in the 928/952/956 MHz bands pending the resolution of the issues in the proceeding.⁷

6. On August 5, 1997, the President signed the Balanced Budget Act, which, *inter alia*, eliminated the Commission's authority to issue licenses by lottery after July 1, 1997, with the exception of licenses or permits for noncommercial educational radio and television stations.⁸ In addition to eliminating the Commission's lottery authority, Congress, in the Balanced Budget Act, amended Section 309(j) of the Communications Act, as amended (the Communications Act) to require the Commission, with limited exceptions, to award mutually exclusive licenses using competitive bidding procedures.⁹ Congress highlighted the Commission's responsibility in the public interest to utilize among other things, engineering solutions, negotiations, threshold qualifications and service regulations to avoid mutual exclusivity among applicants.¹⁰

7. On July 1, 1999, we released a *Further Notice of Proposed Rule Making*¹¹ and sought comment on the impact of the provisions of the Balanced Budget Act of 1997 on spectrum allocation and the licensing proposals initially introduced in the *Notice*.¹² Among other things, the *Further*

⁴ *Id.*

⁵ *Id.* at 7997.

⁶ *Id.* at 7980.

⁷ *Id.* at 8003-04.

⁸ Pub. L. No. 105-33, Title III Stat. 251 (1997) (Balanced Budget Act).

⁹ Balanced Budget Act § 3002(a)(1)(A)(1)-(2); 47 U.S.C. § 309(j). In the Conference Report that accompanies this legislation, these changes are characterized as providing for "expanded" auction authority. H.R. Conf. Rep. No. 105-217, 105th Cong., 1st Sess., at 572 (Conference Report).

¹⁰ 47 U.S.C. § 309(j)(6)(E).

¹¹ *Further Notice*, 14 FCC Rcd 10744.

¹² We have initiated a proceeding to assess the impact of the Balanced Budget Act on the (footnote continued on next page)

Notice examined the effect of the Balanced Budget Act on the proposals in the *Notice* to allocate the 932/941 MHz and 928/959 MHz bands for subscriber-based services and to award initial licenses for these bands through competitive bidding;¹³ to reserve five channel pairs in the 932/941 MHz MAS bands for Federal Government/public safety use;¹⁴ and to reserve the 928/952/956 MHz bands exclusively for private, internal use and to continue to issue licenses for these bands on a site-by-site basis.¹⁵ The *Further Notice* also immediately suspended the acceptance and processing of applications in the 928/952/956 MHz bands, regardless of the type of service proposed by the applicant, with certain exceptions, during the pendency of this rule making proceeding.¹⁶ By providing the public an opportunity to comment on the changes to the regulatory framework for awarding licenses in this service, we were able to develop a complete record in order to resolve all of the outstanding issues affecting this service.

IV. DISCUSSION

A. Commission's Authority to Employ Competitive Bidding Procedures

8. Background. When the Commission issued the *Notice*, it was authorized under Section 309(j) of the Communications Act to use either lotteries or auctions to resolve mutually exclusive applications. As a result, the Commission received several responses commenting on the issue of whether the Commission should award licenses for MAS spectrum by auction or lotteries. However, as a result of the Balanced Budget Act, any arguments that support the utilization of lotteries to award mutually exclusive license applications are now moot.¹⁷

9. Additionally, the Balanced Budget Act amended our auction authority by altering the criteria for determining whether or not applications for a particular service or class of frequencies are subject to competitive bidding. Our prior auction authority was limited to services that were subscriber-based. The current language of Section 309(j)(1) of the Communications Act provides:

(1) General Authority.--If, consistent with the obligations described in paragraph (6)(E), mutually exclusive applications are accepted for any initial

Commission's determinations of which services are now auctionable. Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz, WT Docket 99-87, *Notice of Proposed Rule Making*, 14 FCC Rcd 5206 (1999) (*BBA NPRM*).

¹³ *Further Notice*, 14 FCC Rcd at 10746.

¹⁴ *Id.* Currently, the Commission's licensing database indicates that these bands support two Federal Government licensees and one non-Federal Government licensee.

¹⁵ *Id.*

¹⁶ *Id.* at 10761.

¹⁷ *See* 47 U.S.C. § 309(i)(5).

license . . . then, except as provided in paragraph (2), the Commission shall grant the license . . . to a qualified applicant through a system of competitive bidding.¹⁸

Paragraph (2) exempts from competitive bidding certain classes of licenses, including licenses for “public safety radio services.”¹⁹

10. In the *BBA NPRM*, we noted our obligation to resolve mutually exclusive applications to provide non-exempt services via competitive bidding.²⁰ However, we also recognized our obligation under Section 309(j)(6)(E) of the Communications Act to use various licensing methods, when consistent with the public interest, to avoid mutual exclusivity.²¹ Section 309(j)(6)(E) of the Communications Act provides that the competitive bidding language of Section 309(j)(1) should not “be construed to relieve the Commission of the obligation in the public interest to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings.”²²

11. Discussion. Because of these significant changes in our auction authority, we revisited issues relating to using competitive bidding procedures for MAS spectrum in the *Further Notice*. Consequently, we examined how the Balanced Budget Act affects our obligation under Section 309(j)(6)(E). Specifically, we sought comment on whether the new reference to this section in the general auction authority provision affects the Commission’s tentative conclusion in the *Notice* that using competitive bidding to resolve mutually exclusive applications for initial MAS licenses is in the public interest.

12. In general, the commenters assert that the Commission has an obligation to use methods that would mitigate or eliminate the possibility of mutual exclusivity among applicants before implementing competitive bidding procedures.²³ Section 309(j)(6)(E) has been construed to give the Commission broad authority to create or avoid mutual exclusivity in licensing, based on the

¹⁸ 47 U.S.C. § 309(j)(1).

¹⁹ 47 U.S.C. § 309(j)(2). “Public Safety Radio Services” includes private internal radio services used by State or local governments and non-government entities and including emergency road services provided by not-for-profit organizations, that – (i) are used to protect the safety of life, health, or property; and (ii) are not made commercially available to the public.

²⁰ *BBA NPRM*, 14 FCC Rcd at 5220.

²¹ *See id.*

²² 47 U.S.C. § 309(j)(6)(E).

²³ *See, e.g.*, CellNet Comments at 7-8; Commonwealth Edison Comments at 4-6; Consolidated Edison Comments at 4-6; Northern States Power Comments at 4-6; Radscon Comments at 4; South Carolina E&G Comments at 4-6; Southern Operating Companies Comments at 4-6; CellNet Reply Comments at 2; GTECH Reply Comments at 5-7; PCIA Reply Comments at 4-6; UTC Reply Comments at 2.

Commission's assessment of the public interest. In *DirectTV*, the D.C. Circuit stated that “[there is] nothing in 309(j)(6)(E) that requires the FCC to adhere to a policy it deems outmoded in order to avoid mutual exclusivity in . . . licensing proceedings.”²⁴ Thus, we believe that Section 309(j)(6)(E) allows us to determine the licensing approach that is most appropriate for the services being offered, taking into account the dominant use of the spectrum, administrative efficiency and other related licensing issues.

13. Although Radscan and API add that removing or altering measures that currently exist to avoid mutual exclusivity to ultimately create mutual exclusivity would be an egregious violation of Section 309(j),²⁵ we have the discretion to balance the equities involved when determining licensing approaches for the various MAS bands. Therefore, we continue to believe that our approach in the *Further Notice*, where we examine the current dominant use of the bands to make a determination of how to best accommodate future licensees and current licensees with minimum disruption to their current operations, is in the public interest. Accordingly, we will utilize this approach as we analyze the treatment of MAS spectrum.

14. We recognize that some commenters criticize our approach to devising a licensing scheme for the MAS bands. For instance, Adaptive specifically opposes the use of auctions and geographic area licensing and states that our efforts to examine and characterize the various MAS bands according to the “current dominant use” of the bands is misguided.²⁶ However, in our experience, we have found that examining the current dominant and/or historical use of the MAS bands to be in the public interest because it is a practical approach to licensing these bands and enables us to designate channels to accommodate specific purposes and/or service demands.²⁷ In this connection, if we find that a licensing approach based on geographic area licensing serves the public interest, we have the authority to adopt such licensing approach even though it could generally result in the filing of mutually exclusive applications. This approach to licensing is consistent with other Commission decisions made since the enactment of the Balanced Budget Act.²⁸ Conversely, we may find, in some instances, that a different licensing and application processing approach that tends to avoid mutual exclusivity – e.g., site-based, first-come, first-served licensing – best serves the public interest.

²⁴ *DIRECTV, Inc. v. FCC*, 110 F.3d 816, 828 (D.C. Cir. 1997).

²⁵ Radscan Comments at 5; API Reply Comments at 3.

²⁶ Adaptive Comments at 2-3; Adaptive Reply Comments at 2.

²⁷ It is important to note that MAS spectrum is unique because both private internal and operations that are for-profit are licensed in the same frequency bands.

²⁸ See, e.g., Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands and Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz Bands, PP Docket No. 93-253, 14 FCC Rcd 12428, 12441-12445 (1999) (*39 GHz MO&O*). In the *39 GHz MO&O*, we determined that the public interest would be better served by using competitive bidding procedures to license mutually exclusive applications in the 39 GHz band. *Id.*

15. As a result, the public interest is furthered by licensing MAS spectrum as outlined herein. We note, however, that we are not addressing the issue of which services are auctionable or contained within the “public safety radio services” exemption and will defer this discussion to the *BBA NPRM* proceeding.²⁹

B. Spectrum Allotment

16. Since the initial allocation of MAS spectrum, the Commission has recognized that various industry sectors use the spectrum to meet their communications needs. For instance, licensees use MAS systems to satisfy alarm, control, interrogation and status reporting requirements for various industries. In addition, the paging industry uses these systems to control multiple paging transmitters in the same general area. The Commission’s tentative conclusions in the *Notice* attempted to continue to accommodate the varied uses of MAS spectrum. In the context of this proceeding, we have considered the past, current and future demands for MAS spectrum in determining the most efficient and effective licensing approach for the spectrum.

17. Based on the record in this proceeding, we conclude that the public interest would be furthered by a licensing approach that both accommodates past and present uses of MAS spectrum and promotes innovative future uses. We believe that our decisions herein reflect the appropriate balance in realizing both of these goals. In striking this balance, we considered the dominant use of the spectrum in the MAS bands that have already been licensed. With respect to the 932/941 MHz Band, which is currently unlicensed,³⁰ we believe that the public interest would be furthered by apportioning the spectrum between the uses that have developed in the other two MAS bands.

1. Treatment of the 928/952/956 MHz Bands

18. Background. In the *Notice*, the Commission indicated that the 928/952/956 MHz bands are used overwhelmingly for private systems to satisfy internal communications needs.³¹ At that time, the Commission estimated that about seventy percent of the approximately 7,700 licenses granted use of this spectrum had been awarded to public safety, business, or industrial entities to satisfy internal communications needs.³² Hence, the Commission tentatively concluded that these bands should be designated exclusively for private internal use.³³ The Commission indicated that under this approach, further subscriber-based use of these channels by future licensees would be prohibited.³⁴

²⁹ *BBA NPRM*, 14 FCC Rcd 5206.

³⁰ *See supra* at note 14.

³¹ *Notice*, 12 FCC Rcd at 7980.

³² *Id.*

³³ *Id.*

³⁴ *Id.*

19. Because the current use in these bands may have shifted since our last assessment, and because of a change in the law,³⁵ we sought additional comment in the *Further Notice* on the level of representation of “public safety radio services” as defined by the Balanced Budget Act in the 928/952/956 MHz bands. We also sought comment on whether to allocate these bands exclusively for “public safety radio services.”³⁶

20. Discussion. We find that private internal use and public safety constitute the dominant use of the 928/952/956 MHz bands.³⁷ Because of the historical use for these bands and the apparent need for some site-based licensing in these bands, we will reserve portions of the MAS spectrum for particular uses that will allow the immediate licensing of spectrum. Specifically, we will reserve the 928/952/956 MHz bands for private internal services. We define private internal service³⁸ as a service where licensees use their authorized frequencies purely for internal business purposes or public safety communications and not on a for-hire or for-profit basis.³⁹

21. Several commenters indicate that the majority of users in the 928/952/956 MHz bands are private internal users⁴⁰ and therefore request that we reserve a substantial amount of spectrum for private internal use. However, other commenters, such as Commonwealth Edison, Comsearch, Consolidated Edison, Corn Belt Power, Northern States Power, South Carolina E&G and the Southern Operating Companies, state that we should allocate the entire 928/952/956 MHz Band for licensing by public safety radio services, and exempt these services from auction as a result of the high growth rate of MAS.⁴¹ Although some commenters argue that we should restrict the 928/952/956 MHz bands to

³⁵ Balanced Budget Act § 3002(a).

³⁶ *Further Notice*, 14 FCC Rcd at 10756.

³⁷ See, e.g., API Comments at 7-8; Comsearch Comments at 2; Corn Belt Power Comments at 3-4; UTC Comments at 7; APPA Reply Comments at 4.

³⁸ In other rule making proceedings, the Commission defined “private internal” in a manner that may be instructive for our purposes. See, e.g., Biennial Regulatory Review – Amendment of Parts 0, 1, 13, 22, 24, 26, 27, 80, 87, 90, 95, 97, and 101 of the Commission’s Rules to Facilitate the Development and Use of the Universal Licensing System in the Wireless Telecommunications Services, Amendment of the Amateur Service Rules to Authorize Visiting Foreign Amateur Operators to Operate Stations in the United States, WT Docket Nos. 98-20, *Report and Order*, 13 FCC Rcd 21027, Appendix C (1998) (*Biennial Regulatory Review Report and Order*).

³⁹ Each application for authorization in the bands designated for private internal use must include a certification stating why the application satisfies the definition of private internal use.

⁴⁰ See, e.g., API Comments at 7-8; Comsearch Comments at 2; Corn Belt Power Comments at 3-4; UTC Comments at 7; APPA Reply Comments at 4.

⁴¹ Commonwealth Edison Comments at 18; Comsearch Comments at 2; Consolidated Edison Comments at 18-19; Corn Belt Power Cooperative Comments at 3-4; Northern States Power Comments at 18-19; South Carolina E&G Comments at 18-19; Southern Operating Companies Comments at 18-19.

public safety, other commenters believe that such a restriction may create a significant burden on incumbent⁴² licensees that will from now on not be public safety users.⁴³ Because we intend to grandfather all existing operations in the 928/952/956 MHz bands, we do not believe that our actions would burden incumbents that are not eligible for future licensing in these bands.

22. We agree that the demand for MAS spectrum has evolved over the past decade and it is apparent that these bands, particularly the 928/952 MHz bands, have become increasingly congested.⁴⁴ We recognize that in the 39 GHz and Paging proceedings,⁴⁵ we implemented geographic area licensing schemes for this spectrum. We note that these services are different from MAS. In the 39 GHz context, we explicitly defined geographic service areas instead of continuing to allow the licensee to define its geographic area. In the Paging arena, we implemented geographic area licensing for a mobile service. In addition to MAS being a fixed service, all licensees do not require wide area coverage. Accordingly, we designate the 928/952/956 MHz bands for private internal services. In this connection, all non-private internal use applications of future licensees will be prohibited.⁴⁶ Additionally, we will not permit licensees in these bands to provide service to others on a non-profit, cost-shared basis.

23. The primary current channel size for the 928/952/956 MHz bands is 12.5 kHz. In light of our decision to designate the 928/952/956 MHz bands for private internal services, and the fact that this band is highly encumbered, we will retain our current channeling plan, awarding licenses on a first-come, first-served, site-by-site licensing approach. We believe that this channel licensing plan is particularly well suited for the types of services currently offered here, as well as for new applicants.

2. Treatment of the 928/959 MHz Bands

⁴² Stations that were licensed in the MAS bands by the Commission prior to July 1, 1999, including any transfers and assignments of these stations as of this *Report and Order* release date, shall be deemed “incumbent” operations. *See Further Notice*, 14 FCC Rcd at 10761-62.

⁴³ *See, e.g.*, CellNet Reply Comments at 11; Radscan Comments at 3-7; Radscan Reply Comments at 1-2.

⁴⁴ Commonwealth Edison Comments at 18; Comsearch Comments at 2; Consolidated Edison Comments at 18-19; Corn Belt Power Cooperative Comments at 3-4; Northern States Power Comments at 18-19; South Carolina E&G Comments at 18-19; Southern Operating Companies Comments at 18-19.

⁴⁵ Amendment of the Commission’s Rules Regarding the 37.0 – 38.6 GHz and 38.6 – 40.0 GHz Bands, ET Docket No. 95-183, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0 – 38.6 GHz and 38.6 – 40.0 GHz Bands, PP Docket No. 93-253, *Memorandum Opinion and Order*, 14 FCC Rcd 12428 (1999) (*39 GHz Order*); 47 C.F.R. Part 22.

⁴⁶ Incumbent operations in these bands will be grandfathered. *See infra* at paras. 55-62 for a detailed discussion.

24. Background. In the *Notice*, we tentatively concluded that the 928/959 MHz bands should be designated for subscriber-based services.⁴⁷ The Part 22 commercial mobile radio service (CMRS) licensees are the principal users of the 928/959 MHz bands to control their wide-area paging networks.⁴⁸

25. Discussion. Currently, the primary use of these bands appears to be for-profit uses that have wide-area applications. Moreover, we are confident that the rules in this *Report and Order*, introducing increased technical and operational flexibility in the MAS bands, would further heighten interest, including fostering the resale of spectrum to subscribers.

26. We agree that we should not prohibit licensees from using this spectrum where they were previously allowed to do so.⁴⁹ Additionally, we are concerned that limiting these bands to a particular type of service could unnecessarily disrupt incumbent operations. Therefore, we will not restrict the permissible uses or eligibility for the twelve 12.5 kHz channels in the 928/959 MHz bands.⁵⁰ However, all future applicants for these bands will be subject to the licensing scheme⁵¹ implemented for these bands.

27. The primary current channel size for the 928/959 MHz bands also is 12.5 kHz, although a small number of channels are 25 kHz. We will award licenses on the basis of 12.5 kHz channels for the 928/959 MHz bands. Such an approach follows our traditional MAS channeling plans, will cause the least disruption to incumbents, and will allow for protection of new geographic area licensees.

3. Treatment of the 932/941 MHz Bands

28. Background. Previously, we noted that a substantial majority of the dismissed applications proposed to use the 932/941 MHz bands for subscriber-based services.⁵² We indicated that the Commission has never allocated these 932/941 MHz bands specifically for any one particular type of service,⁵³ and tentatively concluded that the Commission would use competitive bidding procedures to award licenses in these bands.⁵⁴

⁴⁷ *Notice*, 12 FCC Rcd at 7979.

⁴⁸ *Further Notice*, 14 FCC Rcd at 10755-56; *Notice*, 12 FCC Rcd at 7979.

⁴⁹ See Commonwealth Edison Comments at 13-16; Consolidated Edison Comments at 13-16; Northern States Power Comments at 13-16; South Carolina E&G Comments at 13-16; Southern Operating Companies Comments at 13-16.

⁵⁰ We note that all incumbent operations will be grandfathered upon the release of this *Report and Order*. See *infra* at paras. 55-62.

⁵¹ See *infra* at paras. 47-48.

⁵² *Further Notice*, 14 FCC Rcd at 10755-56; *Notice*, 12 FCC Rcd at 7979-80.

⁵³ We discuss our proposal to set aside five channel pairs in the 932/941 MHz bands for public (footnote continued on next page)

29. Discussion. Upon reviewing the record to this proceeding, we believe that the scope of the MAS service is evolving. Although many commenters criticize our approach for determining the most probable future use to which these bands will be placed,⁵⁵ we cannot ignore the fact that a substantial number of the previously filed applications for the 932/941 MHz bands proposed to provide subscriber-based services.⁵⁶ API, Adaptive, and AWWA assert that our premise, in this instance, is misplaced because many of the 1992 applicants were speculators and the applications did not reflect the intentions of applicants that had a genuine need for this additional spectrum.⁵⁷

30. Additionally, some commenters express a general concern about the congestion in the other MAS bands as a result of the growth in private internal use, particularly in the 928/952 MHz bands, and emphasize the original intended use for the 932/941 MHz bands.⁵⁸ Other commenters, such as Commonwealth Edison, Consolidated Edison, Northern States Power, South Carolina E&G, and the Southern Operating Companies, support a set-aside for public safety radio services, averring that we should reserve portions of these bands for public safety radio services, including utilities because these services are exempt from auctions.⁵⁹

31. We realize that relieving the congestion present in the other MAS bands was part of our objective when we originally designated the 932/941 MHz bands for MAS. Given the substantial interest in the MAS bands from current and potential operators that provide services on a for-profit basis, it appears that as licensees, these providers intend to make efficient and innovative use of this spectrum. In this connection, we find that the record also supports a separate allotment for private internal operations in these bands. Allowing licensees to develop this available spectrum for

safety/Federal Government use, *infra* at paras. 33-38.

⁵⁴ *Further Notice*, 14 FCC Rcd at 10755-56.

⁵⁵ *See, e.g.*, Adaptive Comments at 2, 4; API Comments at 14-16; AWWA Comments at 4; Coalition Comments at 4 n.10; Data Address Systems Comments at 4-8; GPM Comments at 6; GTECH Comments at 4; PNM Comments at 2; WSSC Comments at 5; Adaptive Reply Comments at 3; Metrocall Reply Comments at 10; Southern Company Reply Comments at 3-4.

⁵⁶ *See Notice*, 12 FCC Rcd at 7996.

⁵⁷ Adaptive Comments at 2, 4; API Comments at 14-16; AWWA Comments at 4; Adaptive Reply Comments at 3.

⁵⁸ *See, e.g.*, AWWA Comments at 8; Corn Belt Power Comments at 4-7; Itron Comments at 5; WSSC Comments at 5 (commenters stating that the Commission allocated the channels in the 932/941 MHz bands to MAS because of the increased demand for private spectrum in the congested 928/952 MHz channels). *See also 932/941 MHz Second Report and Order*, 4 FCC Rcd at 2013 (MAS frequencies are “becoming saturated”).

⁵⁹ Commonwealth Edison Comments at 13-16; Consolidated Edison Comments at 13-16; Northern States Power Comments at 13-16; South Carolina E&G Comments at 13-16; Southern Operating Companies Comments at 13-16.

whichever purpose meets their needs is likely to result in its efficient use. In our efforts to balance the interests of all MAS users, we designate twenty of the forty 12.5 kHz channel pairs specifically for public safety/Federal Government and private internal use. Consequently, we will not restrict the permissible uses or eligibility for the remaining twenty channels; however, such users will be subject to the licensing approach implemented for these channels. We believe that this segmentation approach is the best method to accommodate all users of MAS spectrum and is, therefore, in the public interest.

A. Frequency Set-Aside in the 932/941 MHz Bands for Government and Public Safety Entities

32. Background. In the *Notice*, the Commission proposed to set aside five of the forty channel pairs in the 932/941 MHz bands for public safety and Federal Government uses to help alleviate congestion in other bands for these services.⁶⁰ We received general support for this proposal.⁶¹ In the *Further Notice*, we sought further comment on this proposal and on how to determine eligibility for such a set-aside.⁶² Specifically, we sought comment on whether we should, for instance, use the traditional public safety service categories outlined in our Rules to determine eligibility or the expanded definition provided by the Balanced Budget Act.⁶³ It is generally understood that public safety services are services in which the sole or principal purpose is to protect the safety of life, health, or property, provided by State or local government entities or eligible non-governmental organizations, that are not made commercially available to the public by the provider.⁶⁴ The Balanced Budget Act expands the definition to include private internal radio services used by State and local governments, non-government entities, and emergency road services provided by not-for-profit organizations that must meet certain criteria. The services must be used to protect the safety of life, health, or property, and cannot be “commercially” available to the public.⁶⁵

33. Discussion. Most commenters to the *Further Notice* generally support setting aside additional channel pairs in the 932/941 MHz bands for public safety radio service use, as defined by the Balanced Budget Act.⁶⁶ However, some commenters believe that we should allocate more than

⁶⁰ *Notice*, 12 FCC Rcd at 8002-03.

⁶¹ *See, e.g.*, APCO Comments at 1-2; AWWA Comments at 23; MDS Comments at 15; WSSC Comments at 13.

⁶² *Further Notice*, 14 FCC Rcd at 10757.

⁶³ *Id.*

⁶⁴ *See, e.g.*, The Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, WT Docket 96-86, *First Report and Order and Third Notice of Proposed Rule Making*, 14 FCC Rcd 152, 177-188 (1998).

⁶⁵ *See* Conference Report at 572.

⁶⁶ *See, e.g.*, Adaptive Comments at 6; API Comments at 13-17; AWWA Comments at 1, 6; Blue (footnote continued on next page)

five channel pairs in the 932/941 MHz bands for public safety radio service use as defined by the Balanced Budget Act.⁶⁷

34. As discussed previously, we believe that designating twenty of the forty channel pairs in the 932/941 MHz bands for traditional public safety/Federal Government and private internal services is in the public interest.⁶⁸ However, we also agree with the commenters⁶⁹ who express concern about the adequacy of spectral resources available for public safety use.

35. We have long recognized that the public safety community has certain unique characteristics that distinguish it from other users of the radio spectrum.⁷⁰ Similarly, the Final Report of the Public Safety Wireless Advisory Committee (PSWAC) stated that "wireless communications systems are critical to Public Safety agencies' ability to protect lives and property and the welfare of Public Safety officials [and that] unless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, Public Safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost effective manner."⁷¹ PSWAC's

Ridge Electric Comments at 1-2; Commonwealth Edison Comments at 19; Comsearch Comments at 3; Consolidated Edison Comments at 19; Corn Belt Power Comments at 4-7; East Bay Municipal Comments at 11-12; Roger Gembala Comments at 1; Gila Electronics Comments at 1; Hornfeck Engineering Comments at 1; Idaho Power Comments at 1; Jackson Electric Comments at 1; JEA Comments at 1; Johnson City Power Comments at 1; Little Ocmulgee Electric Comments at 1; Mark Norman Comments at 1; MMWD Comments at 1; Despina Metakos Comments at 1; Northern States Power Comments at 19; Pacific Gas & Electric Comments at 2; Salt River Project Comments at 1; South Carolina E&G Comments at 19; Southern Operating Companies Comments at 19; UTC Comments at 8-9; Williams Energy Comments at 1; Adaptive Reply Comments at 3-4; API Reply Comments at 8-9; APPA Reply Comments at 9; UTC Reply Comments at 6.

⁶⁷ See, e.g., Adaptive Comments at 6; API Comments at 16; Commonwealth Edison Comments at 19; Consolidated Edison Comments at 19; East Bay Municipal Comments at 11-12; Northern States Power Comments at 19; Pacific G&E Comments at 2; South Carolina E&G Comments at 19; Southern Operating Companies Comments at 19; UTC Comments at 8-9; Adaptive Reply Comments at 3-4; API Reply Comments at 8-9.

⁶⁸ See *supra* at para. 31.

⁶⁹ See, e.g., East Bay Municipal Comments at 11-12. East Bay Municipal suggests that we develop a procedure for granting preference/priority to public safety licensees that are considered traditional public safety eligibles under the Commission's past proceedings.

⁷⁰ See, e.g., Report and Plan for Meeting State and Local Government Public Safety Agency Needs Through the Year 2010, FCC 95-55, *Report and Plan*, 10 FCC Rcd 5207 (1995). See also Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, WT Docket No. 96-86, *Notice of Proposed Rule Making*, 11 FCC Rcd 12460 (1996), *Second Notice of Proposed Rule Making*, 12 FCC Rcd 17706 (1997), *First Report and Order and Third Notice of Proposed Rule Making*, 14 FCC Rcd 152 (1998).

⁷¹ In 1995, at the direction of Congress, the Commission and the NTIA created PSWAC, directing it to evaluate the wireless communications needs of Federal, State, and local public safety agencies through the year 2010, and to make recommendations regarding those needs. See Final Report of the Public Safety Wireless (footnote continued on next page)

Steering Committee indicated that more flexible licensing policies are desirable as part of its recommendations and observations with regard to fulfilling the public safety community's immediate and future needs.⁷²

36. Although the *PSWAC Final Report* did not specify MAS spectrum for a potential new public safety allocation, we believe that it is possible to use this spectrum to satisfy the public safety community's growing demand for narrowband data and paging applications.⁷³ We also consider this public safety and Federal Government set aside proposal to be a first step towards establishing a policy of streamlining cooperative use of Federal and non-Federal spectrum.

37. In an effort to alleviate the concern about spectrum availability for public safety use, we designate five of the twenty channel pairs in the 932/941 MHz bands for public safety/Federal Government and private internal use, specifically for public safety services as defined by Part 90 of the Commission's Rules.⁷⁴ In this connection, we will designate fifteen of the twenty channels for both private internal and traditional public safety services. We have recognized that both public safety and private internal users would provide important services.⁷⁵ Further segmentation between public safety/Federal Government and other private internal use would alleviate concerns about spectrum availability for any particular use.

38. In this *Report and Order*, consistent with our statutory obligations and the public interest, we have licensed this spectrum in order to avoid mutual exclusivity. Thus we need not address the auction-related issue of which licensees are exempt from auctions as public safety radio service licensees. We note that in March 1999, the Commission initiated a proceeding to assess the impact of the Balanced Budget Act on the Commission's determinations of which services are now auctionable.⁷⁶ As stated earlier, we will defer resolution of which services are auctionable or contained within the "public safety radio services" exemption to the *BBA NPRM* proceeding.

B. Channeling Plan—932/941 MHz Bands

Advisory Committee to the Federal Communications Commission and The National Telecommunications and Information Administration, Vol. 1, at 1-2 (Sept. 11, 1996) (*PSWAC Final Report*).

⁷² *PSWAC Final Report* at 3.

⁷³ *Id.* at 42-43, 56.

⁷⁴ *See* 47 C.F.R. Part 90, Subpart B.

⁷⁵ *See, e.g.*, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Second Report and Order*, 12 FCC Rcd 14307 (1997). The Commission maintained exclusive coordinator jurisdiction for the Railroad, Power, and Petroleum Radio Services because the nature of the day-to-day operations of licensees in these services "can take on an almost quasi-public safety function."

⁷⁶ *See BBA NPRM*, 14 FCC Rcd at 5206.

39. Background. The current basic channelization in the MAS bands is 12.5 kHz. However, entities may be licensed for 25 kHz and 50 kHz operations upon a showing of need.⁷⁷ In the *Notice*, the Commission sought comment as to whether the channel bandwidth should be increased by combining two or more MAS channel pairs to assign larger frequency blocks.⁷⁸ While commenters did not specifically address this approach, they generally support the greater flexibility that results from our proposal to allow contiguous channel aggregation up to 50 kHz.⁷⁹

40. Discussion. Although we proposed to award all MAS licenses in 12.5 kHz blocks, we have decided that awarding a single 50 kHz license in each geographic area is consistent with our proposal to increase operational flexibility. Thus, of the twenty channel pairs where user restrictions are not imposed, we will combine four of the channel pairs and award a single paired 50 kHz license by competitive bidding. The sixteen remaining channel pairs will be awarded as paired 12.5 kHz blocks. We believe that offering a 50 kHz channel pair will provide successful applicants with more flexibility in developing, implementing, and expanding business plans and operations, and will facilitate non-traditional MAS services like, for example, Narrowband Personal Communications Service (narrowband PCS).⁸⁰

41. We believe that MAS licensees should be given the opportunity to compete with the service offerings of licensees in comparable bands. By distributing a 50 kHz license for each geographic service area, we are confident that this spectrum can be put to efficient use and that service offerings will be competitive with other narrowband services, such as narrowband paging and SMR. We believe that affording licensees the flexibility associated with larger spectrum blocks should help to promote technical innovation by providing them with additional flexibility to take advantage of new technology.

42. Nonetheless, we are aware that some traditional MAS systems and other systems that may be established do not need 50 kHz channel blocks. For this reason, we will award sixteen paired 12.5 kHz licenses for each geographic service area. By doing so, we seek to fulfill our duty of encouraging the dissemination of MAS licenses to a diverse pool of applicants. Licensees are in the best position to determine whether their needs require a 50 kHz channel block or a 12.5 kHz block and what size service area is appropriate. By creating this channeling plan, and by allowing licensees to

⁷⁷ See 47 C.F.R. §§ 101.109, 101.147(b).

⁷⁸ *Notice*, 12 FCC Rcd at 7992.

⁷⁹ See, e.g., CellNet Comments at 31-32.

⁸⁰ In fact, narrowband PCS licenses are also based on paired 50 kHz blocks. See 47 C.F.R. § 24.129. See also Amendment of the Commission's Rules to Establish New Narrowband Personal Communications Services, GEN Docket No. 90-314, *First Report and Order*, 8 FCC Rcd 7162, 7165 ¶ 20 (1993) (*Narrowband PCS Report and Order*).

aggregate contiguous channels,⁸¹ we believe that we have afforded these applicants appropriate flexibility to facilitate their business plans and decisions.

43. As stated earlier, we leave unchanged our proposal to allocate five paired 12.5 kHz channels for public safety/Federal Government use. We also designate fifteen paired 12.5 kHz channels for public safety⁸² and private internal services.

C. MAS Licensing Approach

1. The 928/952/956 MHz Bands

44. Background. As noted earlier, in the *Further Notice* we sought comment on our licensing approach for the 928/952/956 MHz bands. We tentatively concluded that we should retain site-by-site licensing if we reserve these bands exclusively for public safety radio services.⁸³

45. Discussion. We believe that a site-by-site licensing scheme with frequency coordination is the best approach to licensing the 928/952/956 MHz bands because we are reserving these bands for private internal use.⁸⁴ Generally, when spectrum is used for private internal services, it is not necessary to develop geographic area licensing to ensure that service is widely available to the general public. The majority of the commenters support a site-by-site licensing scheme in order to avoid mutually exclusive applications.⁸⁵ We agree that retaining first-come, first-served, site-by-site licensing in these spectrum bands is in the public interest.⁸⁶ Site-by-site licensing will be the least disruptive licensing mechanism to current MAS operations, and will allow immediate licensing of this spectrum to private internal users, as well as public safety operations, thereby alleviating concerns of regulatory delay.⁸⁷ We note that an urgent need for this spectrum has been demonstrated,⁸⁸ and in this

⁸¹ See *infra* at para. 99.

⁸² See 47 C.F.R. Part 90, Subpart B.

⁸³ *Further Notice*, 14 FCC Rcd at 10756.

⁸⁴ See *supra* at paras. 18-23.

⁸⁵ See, e.g., AAR Comments at 3; API Comments at 9-11; AWWA Comments at 1 and 6; CellNet Comments at 2 and 8; Commonwealth Edison Comments at 9; Comsearch Comments at 2; Consolidated Edison Comments at 9; Corn Belt Power Comments at 7; Itron Comments at 4; Northern States Power Comments at 9; PSSC Comments at 5; Radscan Comments at 3-7; South Carolina E&G Comments at 9; Southern Operating Companies Comments at 9; UTC Comments at 10; Western Resources Comments at 4; API Reply Comments at 2-3; CellNet Data Reply Comments at 2; East Bay Municipal Reply Comments at 5; GTECH Reply Comments at 9-10; PCIA Reply Comments at 2, 6-7; Radscan Reply Comments at 1; UTC Reply Comments at 2.

⁸⁶ UTC Comments at 10.

⁸⁷ We note that similar public interest benefits were not apparent for 39 GHz, 900 MHz SMR, 800 MHz SMR, 218-219 MHz Service, Paging, and LMDS.

instance, site-based licensing is not only less disruptive, but also more expeditious. We should also note, however, that if the public interest warrants it, we may employ other licensing approaches in other bands designated for private internal services. For example, some private internal uses may warrant wide area systems and therefore demand geographic area licensing. We have the discretion to alter our approach, consistent with the public interest, in future licensing decisions.

2. The 928/959 MHz Bands

46. Background. In the *Notice* and *Further Notice*, we also tentatively concluded that the 928/959 MHz bands are primarily being used to provide subscriber-based services.⁸⁹ Additionally, in the *Further Notice*, we tentatively concluded that the Balanced Budget Act now requires us to resolve mutually exclusive applications for this spectrum through competitive bidding.⁹⁰ We also requested comments concerning whether the private point-to-multipoint rules in Part 22 should be contained in Part 101.⁹¹

47. Discussion. Commenters express general concern about the availability of spectrum for private radio use.⁹² After carefully reviewing the record, we conclude that entities seeking to provide for-profit services have a strong interest in obtaining MAS channels within the 928/959 MHz bands. Because we have found that the dominant use of these bands is not private internal as defined herein,⁹³ we believe that it is appropriate to license these bands by geographic area and through a system of competitive bidding. In this connection, we note that with respect to for-profit services, licensees tend to desire and need the capability to provide coverage over a wide geographic area, which bears upon the licensees' ability to provide service to a wide range of the public. Thus, for these types of services, we believe that there is a public interest need for wide area licenses. Moreover, we believe that

⁸⁸ See, e.g., CII Petitioners' Emergency Request for Limited Exception to the Application Freeze for the 928/952/956 MHz Multiple Address Systems Bands (Corrected Public Notice DA 99-2002, rel. Sept. 28, 1999); CellNet Data Systems, Inc.'s Request for Limited Exception to the Application Freeze for the 928/952 MHz Multiple Address Systems Bands (Corrected Public Notice DA 99-2003, rel. Sept. 28, 1999); Itron, Inc.'s Request for Emergency Relief from the Multiple Address Systems Application Freeze (Corrected Public Notice DA 99-2004, rel. Sept. 28, 1999); Kansas Electric Power Cooperative's Request for Waiver from the Application Freeze for the 928/952/956 MHz Multiple Address Systems Bands; City of Middleton, Wisconsin's Request for Waiver of Freeze on MAS Applications for the 928/952/956 MHz Bands; and City of Maryville, Tennessee's Request for Waiver of Freeze on MAS Applications for the 928/952/956 MHz Bands.

⁸⁹ *Further Notice*, 14 FCC Rcd at 10755-56; *Notice*, 12 FCC Rcd at 7979.

⁹⁰ *Further Notice*, 14 FCC Rcd at 10755-56.

⁹¹ *Notice*, 12 FCC Rcd at 7979.

⁹² See, e.g., Commonwealth Edison Comments at 13-16; Consolidated Edison Comments at 13-16; Northern States Power Comments at 13-16; South Carolina E&G Comments at 13-16; the Southern Operating Companies Comments at 13-16.

⁹³ See *Notice*, 12 FCC Rcd at 7997.

geographic area licensing for MAS spectrum designated primarily for such services would encourage efficient spectrum use, expeditious licensing, and the rapid delivery of new technologies to the public.

48. With regard to whether private point-to-multipoint rules in Part 22 should be located in Part 101, MDS supports this proposal.⁹⁴ We note that we are consolidating some of the MAS Service rules within Part 101, as well as referencing other parts of the Commission's Rules that are pertinent to MAS applicants and licensees. In addition, we require applications for new MAS licenses to comply with the Part 101 Rules. Incumbents under Part 22 are now subject to the restrictions of Part 101, Subpart O, but may make permissible modifications, transfers, assignments, or renew their licenses using procedures, forms, fees, and filing requirements of Part 22. We believe this action to be in the public interest because it will simplify and reduce efforts to locate rules pertaining to MAS.

3. The 932/941 MHz Bands

49. Background. In the *Notice*, the Commission proposed to use competitive bidding procedures to award licenses in the 932/941 MHz bands because of the Commission's belief that these bands would be used for subscriber-based services.⁹⁵ In the *Further Notice*, we tentatively concluded that the Balanced Budget Act now requires the use of competitive bidding procedures to resolve mutually exclusive applications for licenses in these bands.

50. Discussion. Generally, the commenters do not support geographic area licensing for these bands and prefer that we retain first-come, first-served, site-by-site licensing.⁹⁶ In addition, Corn Belt Power asks that we confine auctions to "major urban markets" or auction urban licenses first if we decide to employ competitive bidding in the 932/941 MHz bands.⁹⁷ In contrast, Commonwealth Edison, Consolidated Edison, Northern States Power, South Carolina E&G, and the Southern Operating Companies stress that we should not close the 932/941 MHz bands to utilities by making these bands subject to auction for all users.⁹⁸

51. We believe that geographic area licensing for the twenty channels, that are not reserved for public safety and private internal use in the 932/941 MHz bands, is in the public interest because this licensing scheme poses significant advantages over site-based licensing for entities providing wide area services. In our experience, we have found that, with respect to bands that are likely to be used to support services offered on a wide-area basis, licensing bands based on pre-defined service areas, such

⁹⁴ MDS Comments at 9-10.

⁹⁵ *Further Notice*, 14 FCC Rcd at 10755-56; *Notice*, 12 FCC Rcd at 7979.

⁹⁶ *See, e.g.*, Jackson Electric Comments at 1; Radscan Reply Comments at 3.

⁹⁷ Corn Belt Power Comments at 4-7.

⁹⁸ Commonwealth Edison Comments at 13-16; Consolidated Edison Comments at 13-16; Northern States Power Comments at 13-16; South Carolina E&G Comments at 13-16; Southern Operating Companies Comments at 13-16.

as geographic areas, promotes greater operational flexibility.⁹⁹ Hence, MAS operators seeking to construct wide-area systems would be able to effectively compete with other similar services, such as narrowband PCS or Specialized Mobile Radio Service (SMR). Under the Commission's current rules, these MAS applicants must obtain authorizations on a station-by-station basis and must apply to the Commission for permission to make even relatively minor modifications to their systems, thereby having to overcome many more regulatory obstacles than narrowband PCS and SMR providers. Adopting a flexible licensing scheme for MAS will not only improve the ability of current and future MAS licensees to compete with comparable services, but it would also further the goal of ensuring analogous regulation for substantially similar services.¹⁰⁰

52. In addition, we believe that licenses based on geographic areas would provide licensees and the public with greater certainty about what area is covered by each authorization, thereby making it easier to resolve conflicts between applicants seeking to provide service to a common area. In this connection, a reduction of the various administrative burdens placed on the Commission and licensees would result, partly because MAS licensees would no longer have to seek Commission approval before minor system modifications. Accordingly, we conclude that licensing by geographic area and employing a system of competitive bidding to award licenses for those channels in the 932/941 MHz bands that are not designated for private internal use in this *Report and Order* would best serve the public interest.

53. After taking note of PSWAC's request for flexible licensing policies in the public safety context and our desire to foster flexibility in the MAS Service, we have decided to license the twenty channels set aside for public safety/Federal Government and private internal services, on a first-come, first-served, site-by-site basis with frequency coordination. We also conclude that coordination of operations on these frequencies will be accomplished through the IRAC of the NTIA, using the mileage separation criteria in Part 101 of our Rules.

D. Treatment of Incumbent Licensees

54. Background. In the *Notice* and the *Further Notice*, we sought comment on whether to grandfather all existing services in the 928/959 MHz and the 928/952/956 MHz bands that do not meet the eligibility criteria for these bands.¹⁰¹ Specifically, in the *Notice*, the Commission proposed that geographic area licensees would be required to provide protection¹⁰² to all co-channel systems¹⁰³ that

⁹⁹ See, e.g., Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, Amendment of Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and 935-940 MHz Band Allotted to the Specialized Radio Pool, GN Docket No. 93-252, *Third Report and Order*, 9 FCC Rcd 7988, 8044 (1994) (*CMRS Third Report and Order*).

¹⁰⁰ See *id.*

¹⁰¹ *Further Notice*, 14 FCC Rcd at 10756; *Notice*, 12 FCC Rcd at 7983.

¹⁰² Protection would be accomplished by satisfying the MAS mileage separation requirements or the (footnote continued on next page)

are constructed and operating within their geographic service area.¹⁰⁴ It was further proposed that incumbents would have to seek consent from the geographic area licensee before expanding their systems beyond this contour.¹⁰⁵ The Commission also stated that providing incumbents with the flexibility to modify or augment their systems would be in the public interest to the extent that they do not encroach on co-channel operations of the geographic area licensee.¹⁰⁶ Hence, the Commission proposed to define a service area for the protection of incumbents' operations.¹⁰⁷

55. Discussion. We believe that allowing incumbent MAS operators on the 928/959 MHz and the 928/952/956 MHz bands to continue operations on these bands is in the public interest. Many commenters support this proposal.¹⁰⁸ Commenters also suggest alternative approaches to the grandfathering issue. For example, AWWA believes that our logic for grandfathering existing subscriber-based users in the 928/952/956 MHz bands is unclear and inappropriate because we plan to make most of the 932/941 MHz bands available for auction.¹⁰⁹ AWWA adds that for subscriber-based service licensees with existing investments in facilities in the 928/952/956 MHz bands, grandfathering provisions with a sunset provision, such as five years from final *Report and Order* promulgation, would be more appropriate.¹¹⁰

56. In this instance, we do not believe that AWWA's proposal for grandfathering with a sunset provision is in the public interest. This action would neither preserve current operations nor minimize the amount of disruption that existing operations would experience. We conclude that the public interest would be best served by allowing these incumbent licensees to continue existing operations under their current authorizations.¹¹¹ Additionally, many users in these bands may not have

short spacing criteria. *See* 47 C.F.R. §§ 22.625, 101.105(c)(3). In addition, an EA licensee could negotiate alternative operational arrangements with the incumbent licensee.

¹⁰³ Because we permit 12.5 kHz, 25 kHz and 50 kHz operation in MAS bands, we consider a channel to be co-channel if it falls within the bandwidth of the channel.

¹⁰⁴ *Notice*, 12 FCC Rcd at 7983.

¹⁰⁵ *Id.* at 7984.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *See, e.g.*, API Comments at 18; CellNet Comments at 17; East Bay Municipal Comments at 14; UTC Comments at 11-12; PCIA Reply Comments at 7.

¹⁰⁹ AWWA Comments at 5.

¹¹⁰ *Id.*

¹¹¹ *See, e.g.*, Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, WT Docket No. 96-18, *Second Report and Order and Further Notice of Proposed Rule Making*, 12 FCC Rcd 2732, 2769 (1997) (*Paging Systems Second Report and Order*); (footnote continued on next page)

the resources to relocate their operations to other spectrum, which would compromise the important functions that they provide.

57. With regard to the 928/959 MHz bands, we realize that some of these licensed service areas will be occupied by incumbent MAS licensees. While we recognize the importance of protecting future geographic area MAS licensees from co-channel interference from those licensees that are already constructed and operating, and of affording them the opportunity to build-out their systems within the geographic area for which they will pay, we decline to force these incumbents to relocate. We believe that interference will likely be minimal given the current operational rules and the additional proposals designed to protect incumbents that are set forth herein. Therefore, we agree with UTC, that existing MAS entities should be grandfathered indefinitely regardless of eligibility restrictions that may preclude the licensees from applying for additional MAS licenses in the bands.¹¹² Grandfathering current operations is the best approach to minimizing any disruption that may result from the new assignments.

58. Commenters, however, provide mixed responses to the issue of expansion with respect to incumbent operations.¹¹³ We believe that the public interest will be best served by permitting MAS incumbents in the 928/959 MHz and the 928/952/956 MHz bands to continue operations on these bands. However, we do not believe that all incumbents should inherit unfettered expansion privileges. Specifically, entities on the 928/959 MHz bands will not be allowed to obtain new licenses or expand beyond their current contours except through participation in the competitive bidding licensing process. We will conduct an auction overlay in these bands, and all available areas will be licensed to the geographic area licensee. Therefore, incumbents on the 928/959 MHz bands will not be permitted to expand beyond a defined service area based on their current contours, unless the incumbents and the geographic licensee reach an alternative agreement regarding such modification.¹¹⁴ We will permit incumbents on the 928/952/956 MHz bands to expand their systems because these bands will be

Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory treatment of Mobile Services, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, PR Docket No. 89-552, GN Docket No. 93-252, PP Docket No. 93-253, *Third Report and Order and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 10943 (1997) (*220-222 MHz Third Report and Order*).

¹¹² UTC Comments at 5.

¹¹³ See CellNet Comments at 17 (incumbents should be allowed to expand existing operations if not mutually exclusive); Radscan Reply Comments at 4-5 (grandfathering should be allowed only if grandfathered licensees are allowed to expand and fill in existing systems). See also GTECH Reply Comments at 9; PCIA Reply Comments at 7; UTC Comments at 11.

¹¹⁴ See, e.g., Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 Megahertz Frequency Band, PR Docket No. 93-144, *First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rulemaking*, 11 FCC Rcd 1463 (1995) (*800 MHz First Report and Order*); *Paging Systems Second Report and Order*, 12 FCC Rcd at 2764; *220-222 MHz Third Report and Order*, 12 FCC Rcd at 11026.

licensed on a site-by-site basis, and incumbents will remain subject to the Commission's current rules on interference protection and co-channel spacing.

59. We also adopt our proposal to define a protected service area for incumbents. Currently, incumbents must abide by a co-channel¹¹⁵ mileage separation based on an assumed 25-mile service area.¹¹⁶ Some commenters stated that a 25-mile protection area against interference would not be sufficient¹¹⁷ and suggested alternative approaches for defining a protected service area.¹¹⁸

60. We are not convinced that any of the alternatives proposed by commenters strikes a sound balance between protecting incumbents and protecting future licensees. Therefore, we will use a designation, based on twenty-five miles from the radius of each master station transmitter site and the resulting composite contour, as a basis for defining an incumbent's protected service area. When the Commission decided on the assumed 25-mile service area and the specific mileage separation between master stations, we considered both communications quality and spectrum efficiency.¹¹⁹ As always, it is our goal to allow for the maintenance of a high quality signal through the service area, while still maximizing spectrum re-use.

61. Some commenters claim that efficient use of their spectrum allows them to transmit in excess of twenty-five miles from their master stations. Nonetheless, we decline to adopt a protected service area greater than twenty-five miles. It is unnecessary to extend the protected service area to the most remote locations that could theoretically receive service, especially because ideal propagation conditions do not always exist and the highest quality reception equipment is not always used. Besides the fact that the rules require incumbent operations to abide by a co-channel mileage separation based on an assumed 25-mile service area, this service area designation seems to be consistent with the technical parameters of typical MAS operations.¹²⁰ We conclude that geographic

¹¹⁵ See *supra* at note 103. Because 12.5 kHz, 25 kHz, and 50 kHz operation is permitted, we consider a channel to be co-channel if it falls within the bandwidth of the channel.

¹¹⁶ 47 C.F.R. § 101.105(c)(3).

¹¹⁷ See, e.g., AAR Comments at 6; PCIA Comments at 3-4; ProNet Comments at 8. Because some railroad MAS systems provide coverage to train operation locations as far as 40 miles away from the MAS transmitter, AAR recommended a 40-mile protection area. AAR Comments at 6.

¹¹⁸ See ProNet Comments at 9-10 (allow incumbents to make any modifications to existing MAS facilities that do not increase the signal level at the outer perimeter of the incumbent's protected area, i.e., 90 miles with respect to co-channel fixed stations, and 70 miles with respect to mobile systems); GTECH Comments at 7 (define the protected service area either in terms of the current mileage separation criteria set forth in our existing rules or in terms of a specific field strength measured from the most distant remote site).

¹¹⁹ See Amendment of Part 94 of the Rules to Permit Intrasystem Communications Among Multiple Address System Master Stations, PR Docket No. 87-5, *Report and Order*, 3 FCC Rcd 1564, 1569 (1988) (*MAS Intrasystem Communications Report and Order*).

¹²⁰ The Commission historically has determined that 25-mile service areas are typical for MAS. See, (footnote continued on next page)

area licensees must protect incumbents to a signal strength of 40 dB μ V/m or less at the incumbent's service area boundaries, unless a higher signal strength is agreed to by all affected co-channel, adjacent area licensees.¹²¹

62. Incumbents may make modifications to existing systems and add new transmitters (e.g., fill in "dead spots") as long as the signal level is not increased beyond the incumbent's 25-mile service area.¹²² These licensees will be able to make these modifications without filing site specific applications.¹²³ As we proposed, however, incumbent licensees may not further expand their systems unless the incumbents and the geographic licensee have reached an alternative agreement regarding such modification. This approach is consistent with our rules for 800 and 900 MHz SMRs¹²⁴ and for paging systems.¹²⁵ While we are confident that incumbent operations will be adequately protected by the rules adopted in this *Report and Order*, we are equally as confident that the ability of geographic area licensees to construct stations throughout their authorized service areas will not be hindered.

E. Service Area

e.g., Amendment of Parts 1, 21, 22, 74 and 94 of the Commission's Rules to Establish Service and Technical Rules for Government and Non-Government Fixed Service Usage of the Frequency Bands 932-935 MHz and 941-944 MHz, GN Docket No. 82-243, *Third Report and Order and Memorandum Opinion and Order (Proceeding Terminated)*, 6 FCC Rcd 4320 (1991) ("The technical parameters associated with the multiple address system design are expected to provide licensees with a 25-mile radius service area centered on the master station.").

¹²¹ For example, 47 C.F.R. § 101.105(c)(3) provides that MAS applicants must make a showing that protection criteria have been met over the entire service area of existing systems. Such showings may be made by the applicant or may be satisfied by a statement from the frequency coordinator. *See also* 47 C.F.R. § 22.625(a) (stating that the required minimum distance separation between co-channel fixed transmitters is 113 kilometers (70 miles). However, the requirement may be waived with an engineering analysis showing that no interference would be caused to either system).

¹²² The public interest is not served in allowing incumbents to expand their systems without restrictions. *See, e.g., 800 MHz First Report and Order*, 11 FCC Rcd at 1513-14.

¹²³ In general, licensees may add or modify sites without filing site specific applications under this *Report and Order* and Commission rules and policies; however, licensees must file applications with the Commission if such filing is necessary for coordination with Mexico or Canada, or is required by 47 C.F.R. §§ 1.923, 1.924, or 1.1301 *et seq.*

¹²⁴ *See 800 MHz First Report and Order*, 11 FCC Rcd at 1514; Amendment of Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, PR Docket No. 89-553, *Second Report and Order and Second Further Notice of Proposed Rulemaking*, 10 FCC Rcd 6884, 6901 (1995) (*900 MHz Second Report and Order*).

¹²⁵ *Paging Systems Second Report and Order*, 12 FCC Rcd at 2764.

63. Background. In the *Notice*, the Commission noted the growing demand for regional and nationwide licenses, as evidenced by the success of the narrowband PCS auction, and accordingly, sought comment on whether to set aside a certain number of channel pairs in the 932/941 MHz bands for regional or nationwide use.¹²⁶ In addition, the Commission sought comment on the use of smaller geographic licensing areas, all of which have been implemented in the context of other services.¹²⁷ Specifically, the Commission proposed to use EAs as the service area for MAS geographic area licenses.¹²⁸

64. Discussion. Most commenters do not believe that we should establish a regional or national set-aside of selected 932/941 MHz channels. Some commenters believe that designating channels exclusively for regional or nationwide use is inappropriate and contrary to the intended uses for MAS spectrum.¹²⁹ MDS argues that having regional or nationwide channels will result in areas remaining unused and unlicensable to others.¹³⁰ Finally, Black & Associates suggests that although nationwide and regional frequency pairs would be an advantage to paging licensees that simulcast and for mobile service, there has been a trend in the paging industry to use satellite control frequencies instead of frequencies in the 928/959 MHz bands for economy and flexibility.¹³¹

65. While many commenters support retention of site-by-site licensing for MAS spectrum, several commenters support the use of EAs, particularly for subscriber-based operations in the 932/941 MHz and the 928/952/956 MHz bands, should we adopt a geographic licensing approach.¹³² Other commenters argue that the typical geographic area served by MAS licensees is smaller than the EAs tentatively selected by the Commission.¹³³ Thus, they recommend the adoption of service areas the size of MSAs and RSAs because service areas of this size would permit viable MAS service without a significant increase over EAs in terms of the Commission's administrative burden.

¹²⁶ *Notice*, 12 FCC Rcd at 7982.

¹²⁷ For example, the service areas for Cellular Radiotelephone Service and 218-219 MHz Service are based on Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs). In addition, we have used EAs developed by the Bureau of Economic Analysis of the U.S. Department of Commerce for the 220-222 MHz Service, the General Wireless Communications Service (GWCS), and for 800 MHz SMR Service licensing.

¹²⁸ *Notice*, 12 FCC Rcd at 7982-83.

¹²⁹ AWWA Comments at 14; WSSC Comments at 8.

¹³⁰ MDS Comments at 10.

¹³¹ Black & Associates Comments at 5.

¹³² AWWA Comments at 14; CellNet Comments at 24; Radscan Comments at 18; WSSC Comments at 8.

¹³³ *See, e.g.*, AWWA Comments at 6; CellNet Comments at 24; GTECH Comments at 6; WSSC Comments at 8.

66. While commenters generally agree that geographic area licensing based on EAs is appropriate for subscriber-based licensees, the majority of commenters argue that EAs are not appropriate for incumbents in the MAS bands. For example, some commenters argue that EAs are not a suitable alternative for existing private MAS systems because private systems have a size and shape tailored to the particular internal business objectives of the licensee.¹³⁴ Another argument is that EAs do not provide an appropriate licensing mechanism in those MAS bands in which there are incumbent systems because most MAS systems are limited in area (primarily by the ninety-mile co-channel protection distance) to a service area much smaller than the EAs delineated by the Department of Commerce.¹³⁵ Therefore, CellNet argues that smaller license areas, such as Component Economic Areas (CEAs), should be used to license any MAS bands in which there are incumbent licensees.¹³⁶

67. We agree with most commenters that a channel set-aside in the 932/941 MHz bands for regional or nationwide use would not be appropriate for this service. We believe that other spectrum, such as narrowband PCS, is available and can accommodate those operations that would potentially benefit from such a licensing approach.

68. Furthermore, we conclude that EAs constitute the most appropriate geographic area licensing boundaries for those portions of the MAS bands that we have designated for geographic area licensing in this *Report and Order*. As the Commission stated in the *Notice*, MSAs and RSAs are too small to create a viable wide-area service and these geographic definitions would result in an administrative burden for the Commission.¹³⁷ We believe that EAs are service areas large enough to permit viable wide-area service and would reduce our administrative burden. Further, EAs appear to mirror the size and development of existing MAS systems and are small enough to provide an opportunity for small businesses to obtain a license.¹³⁸ We believe that licensing the MAS bands by EAs will provide ample population coverage and allow licensees the flexibility to provide many different types of services, which will promote an equitable distribution of licenses and services among geographic areas, encourage economic opportunities among a variety of applicants, and foster investment in the rapid deployment of new technologies and services. As in other services where we have used EA-based licenses, we propose to use a total of 175 service areas – the 172 EAs specified by the Department of Commerce and three EA-like areas for Guam and the Northern Marianas Islands, Puerto Rico and the United States Virgin Islands, and American Samoa. Finally, for entities

¹³⁴ AWWA Comments at 14; WSSC Comments at 8.

¹³⁵ CellNet Comments at 24.

¹³⁶ *Id.* at 24-25.

¹³⁷ *Notice*, 12 FCC Rcd at 7982-83.

¹³⁸ The Commission must seek to promote the dissemination of licenses to small businesses, rural telephone companies, and minority- and women-owned businesses, as well as identify and eliminate market entry barriers for entrepreneurs and other small businesses seeking to enter the communications field. See 47 U.S.C. §§ 257 and 309(j).

desiring service areas smaller than EAs, we note that in this *Report and Order* we are permitting partitioning and disaggregation in the MAS bands.¹³⁹ We believe that the availability of these options, as well as allowing licensees to aggregate contiguous channels,¹⁴⁰ will enhance MAS licensees' flexibility regarding system design and service offerings, which will promote the efficient and diverse use of the MAS bands.

F. Geographic Area Licensing

69. Background. In the *Notice*, the Commission proposed to allow EA licensees to construct master stations at any available site within the licensed area and on any channel for which they are licensed, provided the operation does not require individual Commission review.¹⁴¹ The Commission also stated that all remote stations would be blanket licensed under the EA license. Under this proposal, EA licensees would still be required to individually license any master station that: (1) requires the submission of an Environmental Assessment under 47 C.F.R. § 1.1307; (2) requires international coordination; or (3) would affect the radio frequency quiet zones described in 47 C.F.R. §§ 22.369 and 101.123.¹⁴² In addition, any MAS antenna structure that requires notification to the Federal Aviation Administration (FAA) has to be registered with the Commission prior to construction.¹⁴³ The Commission indicated that it would be the EA licensee's responsibility to decide whether to apply for an individual license for any given master station. The *Notice* also proposed to allow EA licensees to make system modifications within their service areas, without prior Commission consent, provided that individual Commission review is not required.¹⁴⁴

70. In addition, in order to assist EA licensees in consolidating MAS spectrum, the *Notice* proposed that: (1) if an incumbent has its license terminated by the Commission or cancels its license, the spectrum covered by the incumbent's authorization will automatically revert to the relevant EA licensee, and (2) if an EA licensee negotiates to acquire an incumbent system by assignment or transfer, the assignment or transfer will presumptively be considered in the public interest.¹⁴⁵

71. Discussion. We note, as an initial matter, that only a few commenters addressed issues regarding geographic area licensing. Although those parties offered a mixed reaction to our

¹³⁹ See *infra* at paras. 78-88.

¹⁴⁰ See *infra* at para. 99.

¹⁴¹ *Notice*, 12 FCC Rcd at 7984-85.

¹⁴² *Id.*

¹⁴³ See 47 C.F.R. Part 17.

¹⁴⁴ *Notice*, 12 FCC Rcd at 7984-85.

¹⁴⁵ *Id.* at 7985-86.

proposals, we believe that our simplified approach toward the initial licensing and subsequent system modifications will increase operational flexibility, thereby resulting in faster, more responsive service to the public, and it will substantially reduce administrative burdens on both MAS licensees and the Commission.¹⁴⁶ As a result, we will allow EA licensees to construct master stations at any available site within their licensed area and on any channel for which they are licensed, provided the operation does not require individual Commission review.¹⁴⁷ In this regard, we disagree with MDS's comments that we should retain the current requirement that all master station sites be coordinated and licensed.¹⁴⁸ We adopt our proposal that all remote stations will be blanket licensed under their respective EA licenses. EA licensees also will be able to make system modifications within their service areas (*i.e.*, to add, subtract, move and otherwise modify their master station facilities), without Commission consent provided that individual Commission review is not required. As previously noted, this approach is consistent with how we license systems in other services on a geographic area basis.¹⁴⁹ Finally, as we have in other services, we are implementing a policy that if we terminate or cancel an incumbent's license, the spectrum covered by the incumbent's authorization will automatically revert to the applicable EA licensee.¹⁵⁰

G. Spectrum Cap and Aggregation

¹⁴⁶ We want to clarify that all licenses granted after the release of this *Report and Order* will be subject to ten-year terms. A ten-year license term is consistent with the license terms in other Part 101 services and will provide licensees additional flexibility in promoting more efficient uses of spectrum. It also serves our goal of providing licensees with flexibility to develop this spectrum as the market demands and to employ innovative technologies that may not be available immediately upon initial licensing.

¹⁴⁷ It is the EA licensee's responsibility to decide whether to apply for an individual license for any given master station. For example, as noted earlier, licensees are still required to individually license certain master stations. *See supra* at para. 71. Additionally, we reiterate that any MAS antenna structure that requires notification to the FAA must be registered with the Commission prior to construction. *See* 47 C.F.R. Part 17. Antenna structures more than 200 feet above ground or located near or on specified airports must be notified to the FAA and registered with the Commission prior to construction. This requirement applies to all non-government antenna structures, regardless of the radio service licensees involved.

¹⁴⁸ MDS Comments at 11-12. On the other hand, MDS supports our view that remote sites should not require a license.

¹⁴⁹ *See, e.g., 800 MHz First Report and Order*, 11 FCC Rcd at 1498; 47 C.F.R. § 27.11 (Wireless Communications Service); 47 C.F.R. § 24.11 (PCS).

¹⁵⁰ *See 800 MHz First Report and Order*, 11 FCC Rcd at 1501; Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, *Report and Order and Second Notice of Proposed Rulemaking*, 12 FCC Rcd 18600, 18636 ¶ 74 (1997) (*39 GHz Report and Order and Second NPRM*); *800 MHz First Report and Order*, 11 FCC Rcd at 1501 ¶ 59. *See infra* at para. 93 for the treatment of recovered channels in a site-by-site licensing scheme.

72. Background. In the *Notice*, the Commission proposed to assign geographic area licenses on a channel-by-channel basis for non-subscriber based operations.¹⁵¹ The Commission tentatively concluded that allowing licensees to aggregate MAS spectrum would not pose a risk of competitive harm and that, therefore, a spectrum aggregation limit was unnecessary.¹⁵² In making that determination, the Commission noted that where licenses are subject to competitive bidding, the risk of channel warehousing appears limited because the licensees are unlikely to bid for more channels than they actually need or can use.¹⁵³ The Commission also sought comment on whether it may be appropriate to establish a spectrum aggregation limit if it ultimately decided to allow mobile operations on a primary basis.¹⁵⁴

73. Discussion. Earlier in this *Report and Order*, we adopted our proposal to award licenses on a channel-by-channel basis in the bands designated for private internal use.¹⁵⁵ CellNet proposes that we impose a 100 kHz spectrum cap for the 932/941 MHz bands.¹⁵⁶ CellNet states that for the encumbered bands, we should retain our *de facto* limit of fifty kHz.¹⁵⁷ According to CellNet, allowing any entity to obtain more than fifty kHz in these bands may encourage spectrum warehousing.¹⁵⁸

74. After considering the record in this proceeding, we have decided not to adopt a limit on the amount of MAS spectrum that a single entity may obtain. In this connection, entities providing or proposing to provide service under a geographic area license may aggregate unlimited spectrum in their designated bands, and site-based licensees may aggregate unlimited spectrum in any MAS band. We continue to believe, as indicated in the *Notice*, that allowing licensees to aggregate MAS spectrum will not present a risk of competitive harm.¹⁵⁹ In services where we have imposed a spectrum cap, the risk of anticompetitive behavior and warehousing existed due to a limited number of available channels.¹⁶⁰ Given the number of MAS licenses that we are making available and the fact that

¹⁵¹ *Notice*, 12 FCC Rcd at 7986.

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *See supra* at Section IV(B), (C) (discussing spectrum allotment and licensing approach).

¹⁵⁶ CellNet Comments at 29.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 29, n.30.

¹⁵⁹ *Notice*, 12 FCC Rcd at 7986.

¹⁶⁰ *See Narrowband PCS Report and Order*, 8 FCC Rcd at 7168; 47 C.F.R. § 20.6 (“CMRS spectrum aggregation limit”).

numerous licensees are operating currently, we conclude that not adopting a spectrum cap is unlikely to result in a risk of competitive harm. Similarly, we believe that loading requirements are unnecessary.

75. In addition, we are not persuaded by those commenters that suggest that an aggregation limit is necessary to ensure efficient and effective utilization of MAS spectrum reserved for non-subscriber based services.¹⁶¹ CellNet believes that in order to ensure the efficient use of MAS spectrum, reasonable limits should be imposed.¹⁶² AWWA maintains that the reliability of service and accountability needed to ensure uninterrupted service to the public (i.e., water, gas, electricity, etc.) mean little to subscriber-based service providers because the return on investment typically is much higher when their systems are designed and operated for “non-critical” user populations.¹⁶³ We find that our decision to set aside certain channels and bands--devoted to private internal use--adequately addresses the commenters’ concerns. Within the channels allocated for private internal use, licensees (such as those that employ SCADA MAS systems) will have the option of aggregating spectrum when necessary to protect their “critical” systems.

76. Anticompetitive channel warehousing is also unlikely. Because the twenty channels in the 932/941 MHz bands, as well as the channels in 928/959 MHz bands, will be assigned initially through competitive bidding, they will be assigned efficiently to firms that have shown by their willingness to pay market value, their intention to put the licenses to the highest valued uses.

77. We further conclude that MAS holdings will not be subject to the CMRS spectrum cap of forty-five MHz.¹⁶⁴ The record indicates that there will be an adequate number of licenses available to meet the needs of the MAS licensees and other competitors in the marketplace, and we find it unlikely that one entity will wield undue market power by aggregating MAS spectrum. Moreover, we do not find that an aggregation limit is necessary to foster competition. Indeed, an MAS spectrum aggregation limit that was applicable to MAS licensees might limit the ability of such licensees to bring efficient competition to the marketplace.¹⁶⁵ Additionally, we conclude that there may be benefits

¹⁶¹ See, e.g., AWWA Comments at 16; CellNet Comments at 29; WSSC Comments at 9.

¹⁶² CellNet Comments at 29. See also AWWA Comments at 17.

¹⁶³ AWWA Comments at 16-17. AWWA claims that its members essentially are in the same critical environment as public safety agencies. To illustrate, AWWA states that few, if any, public safety agencies in the nation rely on commercial radio services for their primary wireless communications needs. Public utilities cannot rely on spectrum re-sellers either and must have reliable systems to meet their public service obligations. *Id.*

¹⁶⁴ 47 C.F.R. § 20.6 (“CMRS spectrum aggregation limit”). See *Biennial Regulatory Review Report and Order*, 13 FCC Rcd 21027.

¹⁶⁵ See *39 GHz Report and Order and Second NPRM*, 12 FCC Rcd at 18626-27.

to the public in terms of efficiencies and types of services provided if we permit unlimited aggregation of MAS spectrum.¹⁶⁶

H. Partitioning and Disaggregation

1. Partitioning and Disaggregation Framework

78. **Background.** In the *Notice*, the Commission proposed a framework for geographic partitioning and spectrum disaggregation based upon the model developed for broadband PCS.¹⁶⁷ The Commission proposed to allow all MAS licensees to partition at any time to any entity eligible for an MAS license.¹⁶⁸ The Commission also proposed to permit partitioning of MAS licenses based on any geographic area defined by the parties to a partitioning arrangement.¹⁶⁹ With respect to construction requirements, the Commission sought comment regarding which party should be held responsible for satisfying outstanding construction requirements.¹⁷⁰ In the *Notice*, the Commission suggested two construction options that would afford the parties the flexibility to choose how to apportion the responsibility to build out the partitioned license areas.¹⁷¹ The Commission also proposed to require that the parties to such partitioning arrangements file supporting documentation showing compliance with the applicable construction requirements.¹⁷²

79. Furthermore, in the *Notice* the Commission proposed to permit disaggregation of MAS spectrum.¹⁷³ Under this approach, an MAS licensee would be allowed to transfer a portion of its spectrum in its EA to another entity. The Commission invited comment on whether minimum disaggregation standards are necessary if we permit disaggregation of MAS spectrum.¹⁷⁴ With respect to construction requirements, the Commission proposed to retain the underlying five- and ten-year

¹⁶⁶ *See id.*

¹⁶⁷ *Notice*, 12 FCC Rcd at 7987; *see* Geographic Partitioning and Spectrum Disaggregation by Commercial Mobile Radio Services Licensees, WT Docket No. 96-148, *Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 21831 (1996) (*PCS Order*). “Partitioning” is the assignment of geographic portions of a license along geopolitical or other boundaries. “Disaggregation” is the assignment of discrete portions or “blocks” of spectrum licensed to a geographic licensee or qualifying entity. *Id.* at 21833.

¹⁶⁸ *Notice*, 12 FCC Rcd at 7987.

¹⁶⁹ *Id.* at 7988.

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ *Id.* at 7987.

¹⁷⁴ *Id.*

construction requirements for the MAS license as a whole, but suggested allowing either party to the disaggregation agreement to meet the construction requirements with respect to the disaggregated portion of the license.¹⁷⁵ The Commission also proposed mandating that the parties seeking Commission approval of the disaggregation agreement certify which party will assume responsibility for complying with the applicable construction requirements, including the option of sharing responsibility for meeting such requirements.¹⁷⁶ In the context of both partitioning and disaggregation, the Commission proposed that the party obtaining the partitioned licenses or disaggregated spectrum should hold its license for the remainder of the original licensee's license term.¹⁷⁷

80. Discussion. Consistent with our approach in other services,¹⁷⁸ we conclude that MAS EA licensees should be permitted to partition any portion of their EAs, and to disaggregate any amount of spectrum at any time to any entity eligible for an MAS license.¹⁷⁹ In this connection, we note that several commenters support this approach.¹⁸⁰

¹⁷⁵ *Id.* at 7988-89.

¹⁷⁶ *Id.* at 7989.

¹⁷⁷ *Id.* at 7988.

¹⁷⁸ See *PCS Order*, 11 FCC Rcd at 21839-66; *218-219 MHz Report and Order*, 64 Fed. Reg. 59656 at ¶¶ 92-94; Amendment of the Commission's Rules Regarding the 37.0 – 38.6 GHz and 38.6 – 40.0 GHz Bands, ET Docket No. 95-183, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0 – 38.6 GHz and 38.6 – 40.0 GHz Bands, PP Docket No. 93-253, *Memorandum Opinion and Order*, 14 FCC Rcd 12428 (1999) (*39 GHz Order*); Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, PR Docket No. 93-253, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, 14 FCC Rcd 10030, 10101 (1999) (*Paging Systems Third Report and Order*); Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, PR Docket No. 89-552, *Fifth Report and Order*, 13 FCC Rcd 24615 (1998) (*220 MHz Fifth Report and Order*); Rule Making to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, To Reallocate the 29.5 - 30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket No. 92-297, *Fourth Report and Order*, 13 FCC Rcd 11655 (1998) (*LMDS Fourth Report and Order*); Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10785, 10836 (1997) (*WCS Report and Order*).

¹⁷⁹ Nonetheless, as discussed *supra* in Section IV(G), there are limited restrictions based upon band designations. Geographic area licensees may aggregate unlimited spectrum in their designated bands, yet they may not be licensed as partitionees or disaggregatees in those portions of the MAS spectrum allocated for public safety and private internal use. However, entities using or proposing to use MAS spectrum for public safety or private internal use may be licensed as partitionees or disaggregatees in any MAS bands.

¹⁸⁰ See, e.g., API Comments at 32, AWWA Comments at 17; MDS Comments at 13; Radscan Comments at 13-14.

81. While AWWA and MDS question our reliance on our approach in broadband PCS as a model for MAS,¹⁸¹ we note that such approach also has been used in other contexts, such as 39 GHz, VHF public coast, 220 MHz, and paging, and we believe it is appropriate for the MAS context as well. Further, we concur with Radscan's suggestion that partitioning and disaggregation would possibly provide an additional mechanism by which small businesses or entities with specialized communications needs (either due to limited and/or geography spectrum requirements) would gain access to spectrum.¹⁸²

82. Furthermore, we conclude that the parties to a partitioning agreement should be given two options to apportion the responsibility for meeting minimum construction requirements.¹⁸³ Under the first option, each party to the partitioning agreement would be subject to the same construction requirements for its respective areas regardless of when the partitionee acquired its license.¹⁸⁴ If a licensee fails to meet its construction requirements during the relevant license term, the non-performing licensee's authorization would be subject to cancellation at the end of the license term.¹⁸⁵ Under the second option, the original licensee (partitionor) would certify that it has already met or will meet its five-year construction requirement and that it will meet its ten-year construction requirement for the entire market.¹⁸⁶ If the original licensee, for example, fails to meet its requirements during the relevant license term, however, only its license would be subject to cancellation at the end of the license term. The partitionee's license would not be affected by that failure, and the partitionee would be permitted to satisfy the substantial service requirement for its partitioned license area at the end of the ten-year license term.¹⁸⁷ A licensee whose license was cancelled for failure to meet its construction requirement must return the license to the Commission pursuant to Section 101.63 of our Rules.¹⁸⁸

83. We concur with AWWA's suggestion that permitting disaggregation for EA licensees may promote efficient utilization of the MAS spectrum.¹⁸⁹ AWWA adds that the parties to a

¹⁸¹ AWWA Comments at 17; MDS Comments at 12-13.

¹⁸² Radscan Comments at 13-14.

¹⁸³ See *PCS Order*, 11 FCC Rcd at 21857; *LMDS Fourth Report and Order*, 13 FCC Rcd at 11664-65; Amendment of the Commission's Rules Concerning Maritime Communications, PR Docket No. 92-257, *Third Report and Order and Memorandum Opinion and Order*, 13 FCC Rcd 19853, 19873 (1998) (*Maritime Third Report and Order*).

¹⁸⁴ See *PCS Order*, 11 FCC Rcd at 21855.

¹⁸⁵ See *LMDS Fourth Report and Order*, 13 FCC Rcd at 11664-65.

¹⁸⁶ See *PCS Order*, 11 FCC Rcd at 21857.

¹⁸⁷ See *LMDS Fourth Report and Order*, 13 FCC Rcd at 11664-65.

¹⁸⁸ See *infra* at para. 93.

¹⁸⁹ AWWA Comments at 18.

disaggregation agreement should be jointly and separately responsible for meeting construction requirements, substantial service requirements, and the other terms of the original authorization.¹⁹⁰ We find that once an initial geographic area MAS license is assigned, the licensee ordinarily should be free to disaggregate its spectrum in order to operate in a manner that it determines to be efficient, so long as such plans provide the necessary out-of-band emission protections to third party licensees as required by our Rules.¹⁹¹ The parties to a disaggregation agreement—just as the parties to a partitioning agreement—must file an application for assignment of authorization.

84. Similar to the model developed for broadband PCS, we decline to restrict the amount of MAS spectrum that can be disaggregated.¹⁹² Additionally, we will not require the disaggregator to retain a minimum amount of spectrum.¹⁹³ Market forces and available technology, rather than regulation, should determine how much spectrum parties decide to disaggregate.¹⁹⁴

85. With respect to construction requirements, we find no sufficient reason to depart from the proposal in the *Notice* regarding the obligations of each party to a disaggregation agreement.¹⁹⁵ Therefore, we will retain the underlying five- and ten-year construction requirements for the MAS license as a whole, but allow either party to the disaggregation agreement to meet the construction requirements with respect to the disaggregated portion of the license. Parties seeking our approval of a disaggregation agreement must certify which party will assume responsibility for complying with the applicable construction requirements, including the option of sharing responsibility for meeting such requirements. We no longer need to establish a separate unjust enrichment requirement for approving partitioning and disaggregation in the MAS service, because we have adopted a uniform requirement in Part 1 of our Rules for all services.¹⁹⁶ The unjust enrichment provisions adopted therein will also apply to MAS licensees that are afforded bidding credits and later elect to partition or disaggregate their licenses.¹⁹⁷

86. We will allow partitionees and disaggregatees to hold their licenses for the remainder of the original licensee's ten-year license term and be able to qualify for a renewal expectancy, provided

¹⁹⁰ *Id.*

¹⁹¹ See 47 C.F.R. §§ 101.105, 101.107, 101.145.

¹⁹² See *LMDS Fourth Report and Order*, 13 FCC Rcd at 11611; *WCS Report and Order*, 12 FCC Rcd at 10837; *PCS Order*, 11 FCC Rcd at 21860.

¹⁹³ See *PCS Order*, 11 FCC Rcd at 21860.

¹⁹⁴ See *id.*

¹⁹⁵ *Notice*, 12 FCC Rcd at 7988.

¹⁹⁶ See 47 C.F.R. § 1.2111(e); *Part 1 Third Report and Order*, 13 FCC Rcd at 405.

¹⁹⁷ See *infra* at para. 127.

that they provide substantial service and comply with our Rules and policies and the Communications Act.¹⁹⁸ This approach is relatively simple to administer, it prevents an MAS licensee from obtaining greater license rights than were originally granted under the terms of the original license, and it allows existing MAS licensees flexibility to manage their spectrum rights.¹⁹⁹

2. Combined Partitioning and Disaggregation

87. Background. In the *Notice*, the Commission tentatively concluded that it should permit “combined” partitioning and disaggregation²⁰⁰ arrangements in order to provide parties with the optimal flexibility to respond to market forces and demands for services relevant to their particular locations and service offerings.²⁰¹ In the context of both partitioning and disaggregation, the Commission proposed that the party obtaining the partitioned licenses or disaggregated spectrum should hold its license for the remainder of the original licensee’s license term.²⁰² The Commission tentatively concluded that permitting partitioning and disaggregation in the manner described above would allow the MAS spectrum to be used most efficiently, speed service to unserved or underserved areas, and facilitate competition.²⁰³

88. Discussion. After reviewing the comments, we will permit EA licensees to employ combined partitioning and disaggregation. We note that this decision is consistent with our approach in other services.²⁰⁴ We believe that affording EA licensees this option may promote spectral efficiency.²⁰⁵ We also believe that the option of combined partitioning and disaggregation will enhance competition and encourage new market entrants.

¹⁹⁸ See *PCS Order*, 11 FCC Rcd at 21870; *220 MHz Fifth Report and Order*, 13 FCC Rcd at 24634-35; *LMDS Fourth Report and Order*, 13 FCC Rcd at 11667-68.

¹⁹⁹ See *PCS Order*, 11 FCC Rcd at 21870.

²⁰⁰ By combined partitioning and disaggregation, we refer to circumstances in which an entity would receive authorization for a portion of an MAS licensee’s service area on a portion of the spectrum authorized to that licensee.

²⁰¹ *Notice*, 12 FCC Rcd at 7989.

²⁰² *Id.* at 7988.

²⁰³ *Id.*

²⁰⁴ See, e.g., *218-219 MHz Report and Order* ¶ 93; *39 GHz Order*, 14 FCC Rcd at 2460; *WCS Report and Order*, 12 FCC Rcd at 10839; *Paging Systems Third Report and Order*, 14 FCC Rcd at 10110; *220 MHz Fifth Report and Order*, 13 FCC Rcd at 24628; *800 MHz SMR Second Report and Order*, 12 FCC Rcd at 19150; *PCS Order*, 11 FCC Rcd at 21866.

²⁰⁵ See, e.g., *218-219 MHz Report and Order* ¶ 93; *39 GHz Order*, 14 FCC Rcd at 2460; *WCS Report and Order*, 12 FCC Rcd at 10839; *Paging Systems Third Report and Order*, 14 FCC Rcd at 10110; *220 MHz Fifth Report and Order*, 13 FCC Rcd at 24628; *800 MHz SMR Second Report and Order*, 12 FCC Rcd at 19150; *PCS Order*, 11 FCC Rcd at 21866.

I. Mexican and Canadian Border Areas

89. Background. In the Mexican and Canadian border areas, MAS channel availability may be restricted by existing agreements between the United States and Mexico or Canada, and limitations may be imposed on Effective Radiated Power (ERP) and antenna height.²⁰⁶ In other services where we have converted to geographic area licensing, we have decided not to distinguish between border areas and non-border areas for licensing purposes.²⁰⁷ In the *Notice*, the Commission proposed to allow geographic area licensees to use any available border-area channels without regard to whether all or part of the EA is in a border area, subject only to the relevant rules regarding international assignment and coordination of such channels.²⁰⁸

90. Discussion. We will license all EAs on a uniform basis without regard to whether all or part of the EA is in a border area or a channel is restricted in some fashion. Although AWWA believes that not distinguishing between border and non-border areas for EA licensing in MAS will promote confusion, interference, and ineffective spectrum use,²⁰⁹ we find that altering the size of particular market areas because they are located near international borders is likely to be unworkable administratively. Furthermore, our approach here is consistent with that in other services.²¹⁰ We agree with MDS that we should retain our current rules and sharing agreements in existence and that new licensees in the 932/941 MHz bands must comply with the requirements as they are written for the current band.²¹¹ Consequently, EA licensees will be entitled to use any authorized channels subject to the relevant existing or future agreements regarding international assignments and coordination of such channels. We believe that applicants are in the best position to assess the effects of any limitations on the use of channels when evaluating those geographic areas for competitive bidding purposes. Our decision does not preclude EA licensees from obtaining the rights to additional MAS spectrum in the border areas through private negotiation and agreement with other licensees. We note

²⁰⁶ See 47 C.F.R. §§ 1.955, 22.169, 90.175(e); see also Arrangement Between the Department of Communications of Canada and the Federal Communications Commission of the United States of America Concerning the Use of the Bands 928 to 929 MHz and 952 to 953 MHz Along the United States - Canada Border, *Public Notice*, DA 91-999 (rel. Aug. 13, 1991); Arrangement between the Federal Communications Commission and the National Telecommunications and Information Administration of the United States of America, and Industry Canada Concerning the Use of the Bands 932 to 935 MHz and 941 to 944 MHz Along the United States-Canada Border (1994); Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Allocation and Use of Frequency Bands by Terrestrial Non-Broadcasting Radiocommunication Services Along the Common Border, Protocol #6 Concerning the Allotment and Use of Channels in the 932-932.5 and 941-941.5 MHz Bands for Fixed Point-to-Multipoint Services Along the Common Border (June 16, 1994).

²⁰⁷ See, e.g., *900 MHz Second Report and Order*, 10 FCC Rcd at 6908.

²⁰⁸ *Notice*, 12 FCC Rcd at 7990.

²⁰⁹ AWWA Comments at 18.

²¹⁰ See *800 MHz First Report and Order*, 11 FCC Rcd at 1496 ¶ 48.

²¹¹ MDS Comments at 13.

that the geographic area licensees will be responsible for advising the Commission of any transmitter site changes or additions if site-by-site coordination is required by agreements with Canada or Mexico and in certain circumstances may be required to file appropriate applications to ensure proper coordination with other administrations, especially in circumstances where the frequencies are shared and on a first-in-time basis.

J. Construction and Coverage Requirements

91. Background. Currently, each MAS master station licensed under Part 101 of our Rules must be placed in operation within eighteen months from the initial date of grant.²¹² In order to be considered in operation, MAS stations must be serving at least four separate active remote stations.²¹³ In the *Notice*, the Commission concluded that we should retain this requirement for incumbent licensees.²¹⁴ However, the Commission proposed requiring geographic area MAS licensees to provide coverage to at least one-fifth of the population in their service areas or substantial service within five years of the license grant.²¹⁵ In addition, the Commission proposed to require geographic area MAS licensees to make a showing of substantial service within ten years of being licensed.²¹⁶ The Commission also proposed that failure to meet these coverage requirements would result in automatic termination of the geographic MAS license.²¹⁷ The Commission sought comment on these proposals.

92. Discussion. Most commenters generally support the proposal to maintain a strict construction requirement for incumbents and to adopt a flexible approach with respect to geographic area MAS licensees. However, some of the commenters disagree with respect to the implementation of the proposed rules. GTECH, for example, believes that we should reduce the construction period for MAS systems from eighteen to twelve months in order to assure that vital MAS spectrum does not lie fallow.²¹⁸ CellNet believes that construction requirements for geographic area licensees should reflect consumer demand, rather than an artificially quick deadline.²¹⁹ In addition, CellNet states that in lieu of relying solely on a subjective substantial service test at the ten-year benchmark, licensees should be able to satisfy the standard if they have constructed a system that provides coverage to at

²¹² See 47 C.F.R. § 101.63(a).

²¹³ See 47 C.F.R. § 101.147(b).

²¹⁴ *Notice*, 12 FCC Rcd at 7990.

²¹⁵ *Id.* at 7991.

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ GTECH Comments at 10.

²¹⁹ CellNet Comments at 31.

least three-fifths of the population of the licensed service area.²²⁰ Other commenters note that, unlike cellular and PCS, universal demand for MAS service does not exist and, therefore, determining substantial service to the public may not necessarily be meaningful.²²¹

93. We agree that we should keep a strict construction requirement with respect to incumbent and new site-by-site licensees. This requirement will provide some assurance that site-by-site licensees are using spectrum effectively and are implementing service in a prompt manner. Therefore, we will retain our current rules with regards to construction requirements for incumbent and new site-by-site licensees, as set forth in Section 101.63 of our Rules.²²² Specifically, the failure of a licensee to timely begin operation means the authorization cancels automatically.²²³ Additionally, frequencies associated with all point-to-multipoint authorizations which have cancelled automatically or otherwise been recovered by the Commission will again be made available for reassignment on a date and under terms set forth by Public Notice.²²⁴ As previously stated, however, the cancellation or expiration of incumbent authorizations in a geographic area that has been licensed will revert to the geographic area licensee.²²⁵

94. We find, however, that different treatment is appropriate for MAS spectrum licensed under a geographic area licensing approach. Section 309(j)(3) of the Communications Act mandates that for each class of licenses that we grant through the use of a competitive bidding system, we must include safeguards to protect the public interest in the use of the spectrum.²²⁶ Therefore, as proposed in the *Notice*, we will require geographic area MAS licensees to provide coverage to at least one-fifth of the population in their service areas or substantial service within five years of the license grant. We note that in the past we have defined substantial service as “service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal.”²²⁷ In addition, geographic area MAS licensees must make a showing of continued substantial service within ten years of being licensed. We find that these coverage requirements are not only consistent with our rules for other services,²²⁸ but will also effectively hinder warehousing, promote the rapid development of new technologies and services, and promote service to rural areas.

²²⁰ *Id.*

²²¹ AWWA Comments at 19; WSSC Comments at 10.

²²² 47 C.F.R. § 101.63.

²²³ 47 C.F.R. § 101.63(b).

²²⁴ 47 C.F.R. § 101.63(c). *See* Appendix D for a current list of recovered channels.

²²⁵ *See supra* at para. 71.

²²⁶ 47 U.S.C. § 309(j)(3).

²²⁷ *See* 47 C.F.R. § 22.940(a)(1)(i).

²²⁸ *See, e.g.,* Amendment of the Commission’s Rules to Establish New Personal Communications (footnote continued on next page)

95. Finally, we establish a renewal expectancy as a comparative factor for consideration by the Commission in MAS license renewals.²²⁹ It is our view that this renewal expectancy, coupled with the ten-year license term, will contribute toward the establishment of a stable regulatory environment that will serve to attract investment capital that, in turn, will promote the development and deployment of services utilizing the MAS spectrum bands. Under the rules we adopt today, an MAS licensee seeking renewal of its license is entitled to a renewal expectancy at the end of the license period as long as the applicant: (1) demonstrates that it has provided “substantial service”²³⁰ during its past license term; (2) demonstrates that it has substantially complied with applicable Commission rules, policies, and the Communications Act of 1934, as amended; (3) provides an explanation of the licensee’s record of expansion, including a timetable of the construction of new facilities to meet changes in demand for services provided by the licensee; and (4) provides a description of investments made by the licensee in its system.

96. In determining whether a renewal applicant has complied with the “substantial service” requirement by the end of the ten-year initial license term, we may consider factors such as (i) whether the licensee is offering a specialized or technologically sophisticated service that does not require a high level of coverage to be of benefit to customers,²³¹ and (ii) whether the licensee’s operations

Service, GEN Docket No. 90-314, *Second Report and Order*, 8 FCC Rcd 7700, 7755 ¶ 134 (1993); *Competitive Bidding Second Report and Order*, 10 FCC Rcd at 6899 ¶ 43; Amendment of Parts 21 and 74 of the Commission’s Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service, MM Docket No. 94-131, *Report and Order*, 10 FCC Rcd 9589, 9613 ¶ 43 (1995).

²²⁹ Our renewal expectancy for MAS is consistent with the renewal expectancy rules we have adopted for other services, including cellular, SMR and LMDS. *See, e.g.*, 47 C.F.R. § 22.940.

²³⁰ Once again, the Commission has consistently defined substantial service as “service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal.” 47 C.F.R. § 22.940(a)(1)(i). *See also LMDS Second Report and Order*, 12 FCC Rcd at 12660; *WCS Report and Order*, 12 FCC Rcd at 10843-44; Revision of Part 22 and Part 90 of the Commission’s Rules to Facilitate Future Development of Paging Systems, WT Docket No. 96-18, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, WT Docket No. 96-18 (1999); *39 GHz Report and Order and Second NPRM*, 12 FCC Rcd at 18621-25; Amendment of Part 90 of the Commission’s Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, *Third Report and Order and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 10943, 11015-21 (1997); *SMR Third Order on Reconsideration*, 11 FCC Rcd at 1171.

²³¹ We have taken this approach with respect to other services. *See, e.g.*, Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission’s Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket No. 92-297, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 12545 (1997) (*LMDS Second Report and Order*); Amendment of Parts 2 and 90 of the Commission’s Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool – Implementation of Section 309(j) of the Communications Act – Competitive Bidding and Implementation of Sections 3(n) and 322 of the Communications Act, PR Docket No. 89-553, *Second Report* (footnote continued on next page)

service niche markets or focus on serving populations outside of areas served by other licensees.²³² These safe-harbor examples are intended to provide MAS licensees a degree of certainty as to how to comply with the substantial service requirement by the end of the ten-year initial license term. This requirement can be met in other ways, and we will review each licensee's showing on a case-by-case basis. However, failure to meet these coverage requirements will result in automatic termination of the geographic MAS license.²³³

K. Technical Flexibility

97. Background. Although the normal channel bandwidth assigned to the MAS frequencies is 12.5 kHz, our current Rules allow the authorization, upon adequate justification, of channels with bandwidths up to 50 kHz.²³⁴ Thus, any MAS licensee requesting spectrum in excess of 12.5 kHz is required to justify its need for greater bandwidth. While there are no specific criteria for such requests,²³⁵ the Commission's analysis considers all characteristics set forth in each justification on a case-by-case basis.²³⁶ The burden is on the applicant to provide a sufficient showing of need supporting the additional bandwidth.²³⁷ MAS licensees who successfully justify their need for additional bandwidth would receive licenses at that requested bandwidth.

98. In the *Notice*, the Commission proposed to allow geographic area licensees to combine contiguous channels resulting in bandwidths up to 50 kHz without a showing of need.²³⁸ The

and Order and Second Further Notice of Proposed Rulemaking, 10 FCC Rcd 6884, 6887 ¶ 4 (1995) (*Competitive Bidding Second Report and Order*).

²³² See Amendment of Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool – Implementation of Sections 3(n) and 332 of the Communications Act, GN Docket No. 93-252, *Third Order on Reconsideration*, 11 FCC Rcd 1170 ¶ 2 (1995) (*SMR Third Order on Reconsideration*).

²³³ Licensees must return terminated authorizations to the Commission in accordance with 47 C.F.R. § 101.63.

²³⁴ 47 C.F.R. § 101.147(b).

²³⁵ See Amendment of Rules to Eliminate Grandfathering Provisions Applicable to Licensees on MAS Frequencies, PR Docket No. 90-260, *Report and Order*, 6 FCC Rcd 3721, 3723 (1991). Relevant information for justifying additional bandwidth could include the required data rate, the minimum polling interval for remotes, the anticipated number of remotes, the polling cycle for the master station, a description of the types of data to be transmitted, a breakdown of overhead time and actual transmission time, and any other information (including terrain) that justifies the request. *Id.*

²³⁶ *MAS Intrasystem Communications Report and Order*, 3 FCC Rcd at 1566.

²³⁷ *Id.*

²³⁸ *Notice*, 12 FCC Rcd at 7991-92.

Commission also sought comment as to whether it would be in the public interest to increase the maximum authorized bandwidth beyond the current maximums.²³⁹ Geographic licensees would also be able to subdivide their 12.5 kHz channels.²⁴⁰ With regard to the issue of co-channel interference protection obligations of geographic area licensees with respect to other geographic area licensees, the *Notice* proposed to establish interference protection criteria between different service areas at service area borders so that the out-of-band emission rules would apply only to the extent necessary to protect operations outside of the EA licensee's service area and to spectrum inside only if used by incumbents.²⁴¹ Specifically, the Commission proposed to prohibit EA licensees from exceeding a signal level of 40 dB μ V/m²⁴² at their service area boundaries, unless the bordering EA licensee agrees to a higher field strength (EA licensees would be free to negotiate with adjacent EA licensees concerning interference rights).²⁴³ The *Notice* also proposed to require coordination of frequency use between co-channel adjacent geographic area licensees and all other affected parties, and the Commission tentatively concluded that it is appropriate to extend the same technical flexibility adopted for EA licensees to incumbent licensees.²⁴⁴

99. Discussion. We will allow EA licensees to combine contiguous channels without a showing of need. This policy will apply to all the EA licensees in the 932/941 MHz and the 928/959 MHz bands, and there will be no limit on how many contiguous channels licensees or applicants may combine. After careful consideration, we do not believe, as asserted by AWWA and WSSC, that the failure to require a showing of need encourages warehousing and resale of spectrum in these bands, and is not necessarily in the public interest.²⁴⁵ We believe that this proposal has been made even more appropriate in light of our decision to award a single paired 50 kHz license in the 932/941 MHz bands. Permitting licensees to combine channels without a showing of need will enable them to employ the widest variety of technologies to best meet the communications requirements of consumers and reduce regulatory burdens. Also, MAS licensees will be able to subdivide their channels. On the other hand, licensees in the private internal portion of the 932/941 MHz bands and the 928/952/956 MHz bands will be required to offer adequate justification if they want to increase their channel bandwidth beyond 50 kHz. That is, these licensees may combine contiguous channels without adequate justification, up to 50 kHz. If wider bandwidth is desired, they must make a showing of need.²⁴⁶ We believe that in

²³⁹ *Id.*

²⁴⁰ *See* 47 C.F.R. § 101.147(b).

²⁴¹ *Notice*, 12 FCC Rcd at 7985; *see 900 MHz Second Report and Order*, 10 FCC Rcd at 6907-08 ¶ 61.

²⁴² The Commission noted that this signal strength level is the same signal strength level used for 800 MHz SMR operations at EA borders. *See 800 MHz First Report and Order*, 11 FCC Rcd at 1518.

²⁴³ *Notice*, 12 FCC Rcd at 7991-92.

²⁴⁴ *Id.*

²⁴⁵ AWWA Comments at 19; WSSC Comments at 10.

²⁴⁶ *See* 47 C.F.R. § 101.147(b).

light of the shortage of available spectrum on these bands and our continued use of site-by-site licensing, a showing of need is necessary to reduce the risk of channel warehousing, speculative licensing, and spectrum resale, and will insure that entities can provide the benefits that impact the safety of the public.

100. As for the issue of co-channel interference protection obligations of geographic area licensees with respect to other geographic area licensees, CellNet supports the Commission's proposal to apply out-of-band emission limits only at the band edge of the licensee's service area and at the edge of the service area of any incumbent licensees.²⁴⁷ Within the service area, however, CellNet states that there should be no limit on emissions unless such emissions would cause co-channel or adjacent channel interference.²⁴⁸ We agree with CellNet, and as proposed in the *Notice*, we will establish interference protection criteria between different service areas at the service area borders. More specifically, we will prohibit such licensees from exceeding a signal strength of 40 dB μ V/m at their service area boundaries, unless the affected bordering geographic area licensee(s) agree(s) to a higher signal strength area,²⁴⁹ and we are requiring the equivalent signal strength protection of any incumbent licensees at the edge of their service area.²⁵⁰ EA licensees will be free to negotiate with adjacent licensees concerning interference rights. This approach provides licensees with a signal strength sufficient to operate their systems up to the borders of their geographic service areas, while also providing protection to adjacent operations. In addition, this restriction will further the Commission's goal of avoiding harmful interference without imposing an overly burdensome requirement.²⁵¹ Comsearch agrees with the Commission that prior coordination and a detailed interference analysis are the only means of ensuring operational compatibility between adjacent area co-channel systems.²⁵² We will, therefore, require coordination of frequency use between co-channel adjacent EA licensees and all other effected parties. As an exception to this requirement, to the extent that a single entity obtains

²⁴⁷ CellNet Comments at n.33.

²⁴⁸ *Id.*

²⁴⁹ We emphasize that this rule applies only to resolving interference issues between geographic area licensees. Thus, an EA licensee who complies with this rule may nevertheless be required to limit its operations further in order to comply with the rules governing protection of incumbents. *See supra* at paras. 59-62.

²⁵⁰ Requiring new geographic area licensees to protect incumbents is consistent with Commission action in various proceedings. *See, e.g., 800 MHz First Report and Order*, 11 FCC Rcd at 1513-15; *Paging Systems Second Report and Order*, 12 FCC Rcd at 2769.

²⁵¹ Instead of specifying a minimum distance a geographic licensee's transmission site must be from the geographic border, which could result in unserved areas, we think it is appropriate to allow geographic area licensees to negotiate mutually acceptable agreements with all adjacent geographic area licensees if the interfering contour of one geographic area licensee will extend into the adjacent geographic area or areas. Adjacent licensees have a duty to negotiate with each other in good faith regarding co-channel interference protection. Informal negotiations between parties in determining mutually agreeable arrangements between adjacent EAs will achieve the most expeditious and effective resolution of co-channel interference.

²⁵² Comsearch Comments at 7.

licenses for adjacent geographic area licenses on the same channel block, it will not be required to coordinate its operations in this manner. We note that this approach is consistent with the Commission's decisions in the 800 MHz SMR²⁵³ and 900 MHz SMR contexts.²⁵⁴

L. Operational Flexibility

101. Background. Our current rules governing MAS allow licensees to use certain MAS channels for other types of operations besides point-to-multipoint transmissions. The rules, for instance, allow mobile operations on certain paired channels on a secondary basis.²⁵⁵ Certain point-to-point operations are also permitted on a secondary basis.²⁵⁶ Likewise, MAS licensees may transmit ancillary one-way communications on certain paired channels on a case-by-case basis.²⁵⁷ The Commission's original purpose in adopting limitations on these uses was to ensure that the spectrum would be used primarily to satisfy bona fide point-to-multipoint requirements.

102. In the *Notice*, the Commission proposed to allow MAS geographic area licensees to utilize both point-to-point and point-to-multipoint operations and to provide fixed²⁵⁸ and mobile service on a co-primary basis.²⁵⁹ The Commission also tentatively concluded that it is appropriate to extend the same operational flexibility proposed for EA licensees to incumbent licensees.²⁶⁰

103. Discussion. We will allow MAS licensees to establish both point-to-point and point-to-multipoint operations and to provide fixed and mobile service on a co-primary basis. While the comments received regarding this issue were varied, we believe that affording MAS licensees additional operational flexibility will offer a number of benefits. We also believe that to compete effectively in today's changing communications marketplace, licensees should be able to provide consumers a wide array of services and to have the ability to respond quickly to changing consumer demands.

104. We recognize that permitting point-to-point operations will be a departure from our previous decisions, where we stated that MAS spectrum should be reserved for point-to-multipoint

²⁵³ See *800 MHz Second Report and Order* 12 FCC Rcd at 19108 ¶ 78 (for the lower 230 channels); *800 MHz First Report and Order*, 11 FCC Rcd at 1518 ¶ 96 (for the upper 200 channels).

²⁵⁴ *800 MHz First Report and Order*, 11 FCC Rcd at 1518 ¶ 96.

²⁵⁵ 47 C.F.R. § 101.105(c)(3).

²⁵⁶ 47 C.F.R. § 101.147(b).

²⁵⁷ *Id.*

²⁵⁸ Fixed service includes both point-to-point and one-way communications.

²⁵⁹ *Notice*, 12 FCC Rcd at 7993-94.

²⁶⁰ *Id.*

operations. We believe, however, that permitting this additional flexibility, along with the flexibility afforded by the option to provide mobile service, is in the public interest. Our approach is consistent with current proposals as well as the Communications Act.²⁶¹

105. We respectfully disagree with commenters who have expressed concern that the rules we are adopting today, granting MAS licensees greater operational flexibility, will lead to greater intra-service interference. For example, AWWA and WSSC predict that the result of this excessive flexibility will be interference and universal chaos at the expense of all licensees, including those responsible for maintenance, protection, and operation of the nation's critical infrastructure.²⁶² Our decisions in this *Report and Order*, however, are in accordance with established co-channel separation requirements set forth in the Commission's Rules. In addition, there is no evidence in the record that point-to-point and point-to-multipoint operations are inherently incompatible in the same band or licensing area. In fact, such operations are permitted and coexist in other fixed microwave bands.²⁶³ In the absence of evidence to the contrary, we conclude that affording MAS licensees flexibility in designing their systems to respond readily to consumer demand for their services would further the public interest by allowing the marketplace to dictate the best uses for these bands.

M. Regulatory Status

106. Background. As stated previously, the Commission proposed to allow MAS geographic area licensees to provide both fixed and mobile service.²⁶⁴ The Commission acknowledged, however, that while this proposal would increase operational flexibility, it would also make it difficult to determine the regulatory status of each licensee.²⁶⁵ Therefore, the Commission proposed an approach for determining regulatory status similar to that adopted for the General Wireless Communications Service.²⁶⁶ Under this approach, the Commission relies on the applicants to specifically identify the type of service or services they intend to provide.²⁶⁷ The applicants must include sufficient detail to enable the Commission to determine whether the service will be offered as a commercial mobile radio service (CMRS),²⁶⁸ a private land mobile radio service (PLMRS), a

²⁶¹ 47 U.S.C § 332(a).

²⁶² AWWA Comments at 20; WSSC Comments at 11.

²⁶³ See, e.g., Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz And 38.6-40.0 GHz Bands, ET Docket No. 95-183, *Report and Order and Second Notice of Proposed Rule Making*, 12 FCC Rcd 18600, 18613 (1997).

²⁶⁴ Notice, 12 FCC Rcd at 7994; see also *supra* at para. 103.

²⁶⁵ Notice, 12 FCC Rcd at 7994.

²⁶⁶ *Id.*

²⁶⁷ *Id.*

²⁶⁸ A commercial mobile service is any mobile service that is provided for profit and makes
(footnote continued on next page)

common carrier fixed service, or a private fixed service.²⁶⁹ To simplify this process, the Commission proposed to establish a presumption that MAS geographic area licensees be telecommunications carriers regulated as common carriers.²⁷⁰ The Commission also proposed that, depending upon the final decision in regard to the 928/952/956 MHz bands, the Commission may establish a presumption that those bands are private.²⁷¹ Under the Commission's proposal, any interested party would be able to challenge the regulatory status granted an MAS geographic area licensee.²⁷²

107. Discussion. Some commenters argue that the determination of regulatory status should be defined by the presence or absence of a fee-for-service relationship between the licensee and any subscribers of the licensee's services.²⁷³ These commenters state that licensees who provide a service to subscribers using the radio spectrum, even though the communications service itself may not constitute the end product, should be subject to telecommunications carrier regulations.²⁷⁴ Typical of such a relationship would be central alarm and vending monitoring services that use MAS radio to provide the subscriber alarm or status information. In addition, these commenters state that the Commission's proposal to establish a presumption that all MAS geographic area licensees are telecommunications carriers is inaccurate and will particularly be flawed if private systems are mandated to become geographic area licensees.²⁷⁵ However, these two commenters believe that the Commission's determination that the 928/952/956 MHz bands are private and the ability for interested parties to challenge the regulatory status of any MAS licensee would stimulate operation of bona fide applicants and reduce speculation.²⁷⁶

108. We reject the proposal that the determination of regulatory status should be defined by the presence or absence of a fee-for-service relationship between the licensee and its subscribers. We believe that the presence or absence of a fee-for-service relationship may not always accurately reflect the regulatory status of an FCC licensee. Instead, we adopt the more flexible approach proposed in the *Notice*. Under this approach, we will rely on applicants to identify the type of service

interconnected service available to the public or to such classes of eligible users as to be effectively available to a substantial portion of the public. 47 U.S.C. § 332(d)(1).

²⁶⁹ *Notice*, 12 FCC Rcd at 7994.

²⁷⁰ *Id.*

²⁷¹ *Id.*

²⁷² *Id.*

²⁷³ AWWA Comments at 20; WSSC Comments at 11.

²⁷⁴ AWWA Comments at 20; WSSC Comments at 11.

²⁷⁵ AWWA Comments at 20; WSSC Comments at 11.

²⁷⁶ AWWA Comments at 20-21; WSSC Comments at 11.

or services they intend to provide.²⁷⁷ Applicants will be required to include sufficient detail to enable us to determine whether the particular service will be offered as CMRS, PMRS, a common carrier fixed service, or a private fixed service. Any interested party will be able to challenge the regulatory status granted an MAS licensee.²⁷⁸ We believe that this approach will provide licensees with an incentive to provide accurate and complete information regarding their proposed operations.²⁷⁹ Therefore, we believe that adopting this approach will enable us to carry out our regulatory responsibilities without imposing undue hardship upon licensees.

N. Suspension of Acceptance and Processing of Applications

109. **Background.** In the *Further Notice*, we maintained the existing suspension of the acceptance (freeze) of MAS applications for new licenses, amendments, or modifications for the 932/941 and 928/959 MHz bands.²⁸⁰ Notwithstanding the freeze, we continued to accept and process all MAS applications for minor modifications or for license assignment or transfer of control under existing procedures.²⁸¹ This exception also applied to amendments to applications for minor modifications.²⁸² We stated that the exception would permit modifications that could improve the efficiency of incumbent MAS operations without affecting the effective and orderly resolution of the issues in this proceeding.²⁸³ Additionally, the exception extended to certain applications that were pending at the time of the imposition of the freeze.²⁸⁴ We also extended the same freeze to the 928/952/956 MHz bands. We concluded that the extension of the freeze was in the public interest because of the uncertainty regarding whether we would employ geographic area licensing and competitive bidding for these bands.²⁸⁵ Further, we noted that this action was consistent with the

²⁷⁷ We have taken this approach with respect to other services. See Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, WT Docket No. 98-169, *Report and Order and Memorandum Opinion and Order*, ¶ 91 (rel. Sept. 10, 1999).

²⁷⁸ We recognize that there is no formal petition to deny process for parties to challenge the regulatory status of entities engaged in private internal operations. However, formal challenges to regulatory status may be made at the reconsideration stage.

²⁷⁹ MAS geographic-area licensees will be able to provide this information by electronic filing through the Commission's Universal Licensing System. See *Biennial Regulatory Review Report and Order, supra*, at note 164.

²⁸⁰ *Further Notice*, 14 FCC Rcd at 10761.

²⁸¹ *Id.*

²⁸² *Id.*

²⁸³ *Id.*

²⁸⁴ *Id.* at 10761-62.

²⁸⁵ *Id.*

approach taken in other contexts where we proposed to adopt geographic area licensing and auction rules.²⁸⁶

110. During the pendency of these proceedings, we received emergency petitions requesting that we immediately lift the freeze in the 928/952/956 MHz bands in addition to specific requests to waive the freeze in these bands. These petitions and requests were filed by various organizations, including: (1) the United Telecom Council, the American Petroleum Institute, and the Association of American Railroads (collectively referred to as “CII Petitioners”);²⁸⁷ (2) Itron, Inc.,²⁸⁸ and (3) CellNet Data Systems, Inc.²⁸⁹ We received numerous comments and reply comments in response to these petitions and requests.²⁹⁰

111. Discussion. Commenters are unanimous in their requests that we immediately lift the application freeze. Most commenters specifically request that we remove the freeze for the 928/952/956 MHz bands.²⁹¹ Commenters argue that, at the very least, we should remove the freeze for public safety licensees, including constituencies represented by the CII petitioners.²⁹² Other commenters urge us to lift the suspension of applications in the 932/941 MHz bands.²⁹³

²⁸⁶ *Id.* at 10761 n.95, citing Revision of Part 22 and Part 90 of the Commission’s Rules to Facilitate Future Development of Paging Systems, Implementation of Section 309(j) of the Communications Act—Competitive Bidding, WT Docket No. 96-18, *Notice of Proposed Rule Making*, 11 FCC Rcd 3108, 3136 & n.270 (1996).

²⁸⁷ *See* Wireless Telecommunications Bureau Seeks Comment on Emergency Request for Limited Exception to the Application Freeze for the 928/952/956 MHz Multiple Address Systems Bands, *Corrected Public Notice*, DA 99-2002 (rel. Sept. 28, 1999) (petition filed on July 23, 1999).

²⁸⁸ *See* Wireless Telecommunications Bureau Seeks Comment on Itron, Inc. Request for Emergency Relief from the Multiple Address Systems Application Freeze, *Corrected Public Notice*, DA 99-2004 (rel. Sept. 28, 1999) (petition filed on Aug. 13, 1999).

²⁸⁹ *See* Wireless Telecommunications Bureau Seeks Comment on CellNet Data Systems, Inc. Request for Limited Exception to the Application Freeze for the 928/952/956 MHz Multiple Address Systems Bands, *Corrected Public Notice*, DA 99-2003 (rel. Sept. 28, 1999) (petition filed on August 17, 1999). CellNet’s petition was accompanied by five applications for authorization.

²⁹⁰ Appendix A contains a list of commenters.

²⁹¹ *See, e.g.*, API Comments at 12; AAR Comments at 4; AWWA Comments at 8; CellNet Comments at 20; Commonwealth Edison Comments at 19; Roger Gembala Comments at 1; Gila Electronics Comments at 1; Hornfeck Engineering Comments at 1; Idaho Power Comments at 1; Itron Comments at 2; Jackson Electric Comments at 1; JEA Comments at 1; Johnson City Comments at 1; LOEMC Comments at 1; Despina Metakos Comments at 1; Mark Norman Comments at 1; MMWD Comments at 1; MTI Comments at 1; Pacific G&E Comments at 2-3; PSSC Comments at 4; Salt River Comments at 1; South Carolina E&G Comments at 19-21; Southwest Gas Comments at 14; Chris J. Wanner Comments at 1; Williams Energy Comments at 1; CellNet Reply Comments at 14.

²⁹² *See, e.g.*, Adaptive Comments at 2; API Comments at iii, 11-12; APPA Comments at 6; Blue Ridge (footnote continued on next page)

112. Many commenters fear that the short-term freeze will turn into a much longer freeze and that the freeze serves no purpose for public safety radio service licensees, which will not be subject to auctions once we remove the freeze.²⁹⁴ Similarly, East Bay Municipal alleges several harmful effects of the freeze.²⁹⁵

113. Some commenters contend that the freeze's effects are felt by certain industry sectors with potentially devastating consequences to public safety.²⁹⁶ For example, API states that one oil company had to postpone the filing of an application for a proposed MAS system that would be used to prevent spills and leaks and to improve its ability to detect and respond to emergencies.²⁹⁷ Similarly, APPA contends that the freeze has impeded the ability of state and local government utilities to provide service, implement critical systems, and to continue with planned construction efforts.²⁹⁸ APPA asserts that because of the specialized nature of MAS systems, there are very few commercially available substitutes (especially in rural areas).²⁹⁹ Similarly, AAR argues that the freeze is particularly harmful to the railroad industry, which has suspended ongoing projects to upgrade switching and signaling systems that control long segments of railways.³⁰⁰ Several commenters allege that they have been prevented from fulfilling contractual obligations on several pending contracts with customers to expand or modify existing MAS systems.³⁰¹ Itron comments that the freeze should be lifted for entities that operate automatic meter reading (AMR) systems used by utility companies.³⁰²

114. Earlier in this *Report and Order*, we set forth our conclusions resolving issues of spectrum allocation, licensing, treatment of incumbent licensees, competitive bidding provisions, and

Comments at 1-2; Commonwealth Edison Comments at 20; Consolidated Edison Comments at 19-21; MTI Comments at 1; PSCC Comments at 2, 4; Southern Operating Companies Comments at 20-23; UTC Comments at 12; East Bay Municipal Reply Comments at 3; UTC Reply Comments at 7.

²⁹³ See, e.g., Roger Gembala Comments at 1; MTI Comments at 2; Salt River Comments at 1; Williams Energy Comments at 1.

²⁹⁴ Consolidated Edison Comments at 19-21; South Carolina E&G Comments at 19-21; Southern Operating Companies Comments at 20-23; East Bay Municipal Reply Comments at 4.

²⁹⁵ East Bay Municipal Reply Comments at 3-4.

²⁹⁶ See, e.g., API Comments at 12; AWWA Comments at 8.

²⁹⁷ API Comments at 12-13.

²⁹⁸ APPA Reply Comments at 7.

²⁹⁹ *Id.* at 8.

³⁰⁰ AAR Comments at 5.

³⁰¹ CellNet Comments at 20; Hornfeck Engineering Comments at 1.

³⁰² Itron Comments at 2; Itron Reply Comments at 3.

other issues necessary for us to proceed with MAS licensing generally. In light of these actions, and in consideration of the comments described above, we will lift the current freeze imposed on the 928/952/956 MHz bands and the portions of the 932/941 MHz bands designated for public safety and private internal use. The freeze will be lifted for these entities as of the date of the release of this *Report and Order*.³⁰³ We acknowledge the possibility that mutual exclusivity among applicants may occur in the 928/952/956 MHz and portions of the 932/941 MHz bands due to the repressed demand for MAS spectrum as a result of the application freeze. If an instance of mutual exclusivity should occur, we will proceed in accordance with the Balanced Budget Act. We defer to the ongoing *BBA NPRM* proceeding a decision on the treatment of mutually exclusive applications filed for frequencies in those bands allocated solely for public safety and private internal use.³⁰⁴

115. The freeze on the acceptance of applications to provide service in the 928/959 MHz bands, and the twenty channels in the 932/941 MHz bands not allocated for public safety or private internal use, shall remain in effect until such time as the Bureau begins to accept applications for MAS auctions in accordance with Part 1 of our Rules.³⁰⁵ We maintain this portion of the freeze to allow for the orderly and effective implementation of the decisions made in this proceeding and for the opportunity for the Bureau to implement MAS auction procedures. This approach is also consistent with our approach in other services where we have transitioned to geographic area licensing and competitive bidding procedures.³⁰⁶

O. Competitive Bidding Provisions

116. Background. In the *Notice*, the Commission stated that it anticipated conducting the auction for MAS frequencies in conformity with the general competitive bidding rules in Part 1, Subpart Q of the Commission's Rules, and substantially consistent with the auctions that have been

³⁰³ In light of our decision to remove the freeze (as of the release date of this *Report and Order*) on the acceptance of applications for new licenses, amendments, or modifications for authorization in the 928/952/956 MHz bands, we dismiss as moot any petitions to lift the application freeze in the 928/952/956 MHz bands listed in Appendix F of this *Report and Order*, filed between July 1, 1999 and the release date of this *Report and Order*. Additionally, any waiver requests listed in Appendix F of this *Report and Order*, filed in conjunction with applications for the 928/952/956 MHz bands between July 1, 1999 and the release date of this *Report and Order*, are dismissed as moot, and any associated applications are dismissed without prejudice.

³⁰⁴ See *supra* at note 12.

³⁰⁵ See 47 C.F.R. §§ 1.2105 ("Bidding application and certification procedures; prohibition of collusion"), 1.2107 ("Submission of down payment and filing of long-form applications"), 1.2109 ("License grant, denial, default, and disqualification").

³⁰⁶ See, e.g., *Maritime Third Report and Order*, 13 FCC Rcd at 19889; *800 MHz Second Report and Order*, 12 FCC Rcd at 19096; Amendment of the Commission's Rules Regarding the 37.0 – 38.6 GHz and 38.6 – 40.0 GHz Bands, ET Docket No. 95-183, *Notice of Proposed Rulemaking and Order*, 11 FCC Rcd 4930, 4988-89 (1995).

employed in other wireless services.³⁰⁷ The Commission sought comment on its proposal to employ a simultaneous multiple round competitive bidding design.³⁰⁸

117. Additionally, in the *Notice* the Commission sought comment regarding the establishment of a “small business” definition for MAS.³⁰⁹ The Commission invited commenters to discuss the level of capital commitment that is likely to be required to purchase an MAS license at auction and to create a viable business.³¹⁰ The Commission also invited comments on the issue of using installment payments, bidding credits, or other provisions that could be employed to enable the participation of small businesses in the auction and the provision of service.³¹¹ Finally, the Commission sought comments on whether small business provisions are sufficient to promote participation by businesses owned by minorities, women, or rural telephone companies and how any such provisions would meet the standards of judicial review.³¹²

118. The Commission also expressed its interest in receiving comments regarding what type of unjust enrichment requirements should be placed on an application for a partial transfer (either by partitioning or disaggregation) of a license from, for example, a qualified small business to a non-small business.³¹³ The Commission then set forth a number of specific tentative proposals regarding unjust enrichment and invited comment thereon.³¹⁴

119. In the *Further Notice*, we sought comment on the specific size standards that we should apply to any small business definition adopted for the MAS service.³¹⁵ We recognized that in

³⁰⁷ *Notice*, 12 FCC Rcd at 7999-8000. We reiterate that we make no representations or warranties about the use of this spectrum for particular services. Applicants should be aware that a Commission auction represents an opportunity to become an FCC licensee in this service, subject to certain conditions and regulations. A Commission auction does not constitute an endorsement by the Commission of any particular services, technologies or products, nor does an FCC license constitute a guarantee of business success. See *supra* at para. 3.

³⁰⁸ *Notice*, 12 FCC Rcd at 8000.

³⁰⁹ *Id.*

³¹⁰ *Id.*

³¹¹ *Id.*

³¹² *Id.*

³¹³ *Id.* at 8000-01. Unjust enrichment requirements are those mechanisms designed to prevent a licensee from benefiting from special bidding provisions and becoming unjustly enriched by immediately selling its license to a party that does not qualify for such benefits. These requirements are set forth at 47 C.F.R. § 1.2111. See *PCS Order*, 11 FCC Rcd at 21849, n.88.

³¹⁴ *Notice*, 12 FCC Rcd at 8001.

³¹⁵ *Further Notice*, 14 FCC Rcd at 10758-59.

the *Part 1 Third Report and Order*, we amended our general competitive bidding rules to establish a uniform set of provisions for all auctionable services, which allows us to conduct auctions in a consistent, efficient, and effective manner.³¹⁶ We also decided in that proceeding to continue our practice of defining small business size standards on a service-specific basis.³¹⁷ We invited comments on our proposed definitions of “small business” and “very small business,” as well as our proposal to establish two levels of bidding credits.³¹⁸

120. Discussion. We note, as an initial matter, that we received very few comments regarding the proposed bidding procedures.³¹⁹ While MTI suggests that the use of competitive bidding procedures to resolve mutually exclusive applications is the least desirable licensing method,³²⁰ it nonetheless supports adoption of the definitions of “small business” and “very small business” set forth in the *Further Notice* should we use competitive bidding for MAS spectrum.³²¹ East Bay Municipal offers no criticism of our proposal to use “tiered” bidding credits for “small” and “very small” businesses, nor does it find fault in the definition of these businesses.³²²

121. In the *Part 1 Third Report and Order*, we amended our uniform set of competitive bidding rules for all auctionable services, which applied generally to the MAS service, incorporating our experience to date and allowing us to conduct future auctions in a more consistent, efficient, and effective manner.³²³ These amended procedures, set forth in Part 1, Subpart Q of the Commission’s

³¹⁶ *Id.*, citing Amendment of Part 1 of the Commission’s Rules—Competitive Bidding Procedures, WT Docket No. 97-82, *Third Report and Order and Second Further Notice of Proposed Rule Making*, 13 FCC Rcd 374 (1997), modified by *Erratum*, DA 98-419 (rel. Mar. 2, 1998) (*Part 1 Third Report and Order*).

³¹⁷ *Further Notice*, 14 FCC Rcd at 10758-59, citing *Part 1 Third Report and Order*, 13 FCC Rcd at 388.

³¹⁸ *Further Notice*, 14 FCC Rcd at 10759-60.

³¹⁹ The commenters that submitted comments in 1997 were virtually unanimous in their opposition to the Commission’s proposal to conduct an auction for MAS spectrum instead of using our lottery authority. As noted above, since the time that the comments were due in response to the *Notice*, on August 5, 1997, the President signed the Balanced Budget Act, which eliminated our authority to use lotteries and, with certain exceptions, mandated the use of auctions. We decline to adopt this proposal because we do not have the authority to conduct lotteries for MAS spectrum and will not address the comments received in this regard.

³²⁰ MTI Comments at 3.

³²¹ *Id.*

³²² East Bay Municipal Reply Comments at 6.

³²³ *Part 1 Third Report and Order*, 13 FCC Rcd at 374; see *218-219 MHz Report and Order* ¶ 116.

Rules, superseded previously adopted service-specific rules, unless the Commission determines that with regard to particular matters, the retention or adoption of service-specific rules is warranted.³²⁴

122. We believe that application of the Part 1, Subpart Q procedures will allow MAS auction participants to realize the benefits enjoyed by participants in other spectrum auctions of a streamlined, efficient licensing process.³²⁵ Therefore, we will follow the competitive bidding rules set out in Part 1, Subpart Q of the Commission's Rules, to conduct all future auctions for MAS licenses. Specifically, we conclude that the Part 1 Rules will govern competitive bidding issues for MAS licenses, including issues concerning designated entities, application issues, payment issues, competitive bidding design, procedure and timing issues, and anti-collusion.

123. We will adopt our proposal to define a small business as an entity that, together with its affiliates and persons or entities that hold interests in such entity and their affiliates, has average gross revenues for the preceding three years not to exceed \$15 million. We will define a very small business as an entity that, together with its affiliates and persons or entities that hold interests in such entity and their affiliates, has average gross revenues for the preceding three years not to exceed \$3 million. These tiers are consistent with those set forth in Part 1, Subpart Q.³²⁶ Moreover, the Small Business Administration approved the proposed definitions in the *Further Notice*.³²⁷ Our goal in adopting these definitions and associated special provisions for small businesses is to promote the participation of small businesses in the auction and provision of MAS services.

124. In the *Notice*, the Commission tentatively concluded that for the MAS service the Commission would attribute the gross revenues of all controlling principals in the small business applicant as well as its affiliates.³²⁸ We conclude that for purposes of determining whether an entity meets the definitions of small or very small business, we shall consider the gross revenues of the entity, its affiliates, and its controlling interests on a cumulative basis and aggregated.³²⁹

125. We also will establish two levels of bidding credits, consistent with the levels adopted in the Part 1 proceeding.³³⁰ Small businesses will receive a twenty-five percent bidding credit,

³²⁴ *Part 1 Third Report and Order*, 13 FCC Rcd at 374.

³²⁵ *See 218-219 MHz Report and Order*, 64 Fed. Reg. 59656 at ¶ 118.

³²⁶ 47 C.F.R. § 1.2110(e)(2).

³²⁷ Letter from Aida Alvarez, Administrator, Small Business Administration to Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission (June 4, 1999).

³²⁸ *Notice*, 12 FCC Rcd at 8000.

³²⁹ *See* 47 C.F.R. § 80.1252 (making the same provision for designated entities in the maritime communications services). *See generally Part 1 Third Report and Order*, 13 FCC Rcd at 476-78.

³³⁰ *See Part 1 Third Report and Order*, 13 FCC Rcd at 403-04; *see also* 47 C.F.R. § 1.2110(e). We reject GTECH's proposal that if we place private and commercial applicants in the same bidding pool, we (footnote continued on next page)

and very small businesses will receive a thirty-five percent bidding credit. Bidding credits for small and very small businesses are not cumulative.³³¹ We believe that bidding credits help achieve our statutory objective under Section 309(j)(3)(B) of the Communications Act by providing varying sizes of small businesses with the opportunity to participate in the auction of MAS spectrum.³³²

126. We received no substantive comments on whether the proposed small business provisions are sufficient to ensure the opportunity for businesses owned by minorities and women and rural telephone companies to participate in the provision of spectrum-based services. We remain committed to meeting the statutory objectives of promoting economic opportunity and competition, avoiding excessive concentration of licenses, and ensuring access to new and innovative technologies by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups.³³³ Commenters submitted no evidence or data to support race- or gender-based auction provisions. We therefore conclude that we have an insufficient record to support such special provisions at this time under the current standard of judicial review.³³⁴ We believe that the standardization through the *Part 1 Third Report and Order*, of our Rules regarding eligible entities, unjust enrichment, and bidding credits, will assist small, minority- and women-owned businesses because the resulting predictability will facilitate the business planning and capital fundraising process.³³⁵

127. We furthermore believe that effective unjust enrichment rules are necessary to ensure that meaningful small business participation in spectrum-based services is not thwarted by transfers of licenses to non-designated entities.³³⁶ We will adopt for MAS spectrum the uniform procedures set forth in Sections 1.2111(d) and (e)³³⁷ of our Rules.³³⁸ As a result, we will calculate unjust enrichment payments using population to determine the relative value of the partitioned area and the amount of

should afford bidding credits and payment terms to applicants proposing to use the spectrum for private, internal use, regardless of the applicant's business size. GTECH Reply Comments at 4, 10.

³³¹ See *218-219 MHz Report and Order*, 64 Fed. Reg. 59656 at ¶ 121.

³³² See *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04. East Bay Municipal "commends" our efforts to meet our statutory obligations and to develop mechanisms permitting a full range of small businesses to potentially provide service in the MAS spectrum. East Bay Municipal Reply Comments at 7.

³³³ Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, PR Docket No. 93-61, *Second Report and Order*, 13 FCC Rcd 15182, 15198 (1998) (*LMS Second Report and Order*).

³³⁴ See *LMS Second Report and Order*, 13 FCC Rcd at 15198.

³³⁵ See *id.* at 15198-99.

³³⁶ See *Part 1 Third Report and Order*, 13 FCC Rcd at 406.

³³⁷ 47 C.F.R. § 1.2111(d), (e).

³³⁸ See *39 GHz Order*, 14 FCC Rcd at 12461-62 (discussing 47 C.F.R. § 1.2111(d), (e)).

spectrum disaggregated to determine the relative value of the disaggregated spectrum.³³⁹ Population will be calculated based upon the latest available census data, which is the approach adopted in the 39 GHz service.³⁴⁰ For purposes of applying our unjust enrichment payments when combined partitioning and disaggregation is proposed, we will use a combination of both the population of the partitioned area and amount of spectrum disaggregated to make these *pro rata* calculations.³⁴¹

V. PROCEDURAL MATTERS

A. Final Regulatory Flexibility Act

128. A Final Regulatory Flexibility analysis, pursuant to the Regulatory Flexibility Act, 5 U.S.C. § 604, is contained in Appendix C.

B. Final Paperwork Reduction Act of 1995 Analysis

129. This *Report and Order* contains either a new or modified information collection. As part of our continuing effort to reduce paperwork burdens, we invite the public and other government agencies to take this opportunity to comment on the information collection contained in this *Report and Order*, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due sixty days from publication of this *Report and Order* in the Federal Register. Comments should address the following: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. A copy of any comments on the information collections contained herein should be submitted to: Judy Boley, Federal Communications Commission, Room 1-C804, 445 12th Street, S.W., Washington, D.C. 20554 and Virginia Huth, OMB Desk Officer, 10236 NEOB, 725 17th Street, N.W., Washington, D.C. 20503.

C. Further Information

130. For further information concerning this *Report and Order*, contact Shellie Blakeney, Michael Sozan, Guy Benson, or Edgar Class of the Policy and Rules Branch, Public Safety and Private Wireless Division, Wireless Telecommunications Bureau at (202) 418-0680 (voice), (202) 418-7233 (TTY).

³³⁹ As provided in our Rules, the unjust enrichment payment will be reduced over time. 47 C.F.R. § 1.2111(d)(2).

³⁴⁰ See *39 GHz Order*, 14 FCC Rcd at 12461-62.

³⁴¹ See *id.* For example, if an MAS licensee that availed itself of a bidding credit and a non-qualifying partitionee/disaggregatee were to agree on a 20% disaggregation of spectrum over 30% of the population of the licensed service area, an unjust enrichment payment of six percent (.20 x .30) of the bidding credit would be required. *LMS Second Report and Order*, 13 FCC Rcd at 15203 n.99.

VI. ORDERING CLAUSES

131. IT IS ORDERED that the actions of the Commission herein ARE TAKEN pursuant to Sections 4(i), 257, 303, 309(j), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(I), 257, 303, 309(j), 332.

132. Accordingly, IT IS ORDERED that Parts 22 and 101 of the Commission's Rules ARE AMENDED as set forth in Appendix B, effective sixty days after their publication in the Federal Register, following OMB approval. If OMB approval is not issued within sixty days after publication of a summary of this *Report and Order* in the Federal Register, a notice shall be published in the Federal Register specifying a revised effective date.

133. IT IS FURTHER ORDERED that the Commission's Consumer Information Bureau, the Reference Information Center, SHALL SEND a copy of this *Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

134. IT IS FURTHER ORDERED that, pursuant to Section 5(c)(1) of the Communications Act of 1934 as amended, 47 U.S.C. § 155(c), the Chief of the Wireless Telecommunications Bureau IS GRANTED DELEGATED AUTHORITY to prescribe and set forth procedures for the implementation of the provisions adopted herein.

135. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), that the application freeze in the *Notice of Proposed Rule Making* and the *Further Notice of Proposed Rule Making* in this docket, is modified as set forth herein.

136. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), effective upon the release date of this *Report and Order*, APPLICATIONS to use MAS frequencies in the 928-928.85/952-952.85 MHz bands and 956.25-956.45 MHz bands WILL BE ACCEPTED FOR FILING provided that these applications are for private internal services as set forth herein.

137. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), effective upon the release date of this *Report and Order*, APPLICATIONS to use MAS frequencies in the twenty channels in the 932.25625-932.49375/941.25625-941.49375 MHz bands designated for public safety and private internal services by this *Report and Order* WILL BE ACCEPTED FOR FILING provided that these applications are for public safety and/or private internal services as set forth herein.

138. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), any petitions to lift the application freeze in the 928/952/956 MHz MAS bands listed in Appendix F of this *Report and Order*, filed between July 1, 1999 and the release date of this *Report and Order*, are DISMISSED AS MOOT.

139. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and Section 1.925 of the Commission's Rules, 47 C.F.R. § 1.925, that any WAIVER REQUESTS listed in Appendix F of this *Report and Order*, filed in conjunction with applications for the 928/952/956 MHz MAS bands between July 1, 1999 and the release date of this *Report and Order*, are DISMISSED AS MOOT and any associated applications ARE DISMISSED without prejudice.

140. IT IS FURTHER ORDERED that, as of the adopted date of this *Report and Order*, pursuant to Sections 4(i) of the Communications Act of 1934, 47 U.S.C. §§ 154(i), as amended by the Balanced Budget Act of 1997, the fifty-eight pending applications for use of the MAS bands as set forth in Appendix E of this *Report and Order* ARE DISMISSED without prejudice.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas
Secretary

APPENDIX A--COMMENTERS AND REPLY COMMENTERS**I. Notice of Proposed Rule Making**Parties Filing Formal Comments:

AirTouch Paging and Arch Communications Group, Joint Comments (AirTouch & Arch)
Alarm Industry Communications Committee (AICC)
Alligator Communications, Inc. (Alligator Communications)
American Petroleum Institute (API)
American Water Works Association (AWWA)
Association of Public-Safety Communications Officials International, Inc. (APCO)
Baltimore Gas and Electric Company (BG&E)
Black & Associates
Bristol Babcock, Inc. (Bristol Babcock)
Burlington Northern & Santa Fe Railway Co. and Norfolk Southern Co. (BNSF & NS)
CellNet Data Systems, Inc. (CellNet)
Coalition for Equitable MAS Licensing (Coalition)
Stanley I. Cohn
Colorado Interstate Gas Co. (Colorado Interstate)
Compu-Dawn, Inc. (Compu-Dawn)
Comsearch
Cooperative Power Association (Cooperative Power)
Data Address Systems Partnership (Data Address Systems)
Delmarva Power & Light Co. (Delmarva)
East Bay Municipal Utility District (East Bay Municipal)
Fisher, Wayland, Cooper, Leader & Zaragoza, L.L.P. (Fisher, Wayland)
GPM Gas Corp. (GPM Gas)
GTECH Corp. (GTECH)
Itron, Inc. (Itron)
JMP Telecom Systems, Inc. (JMP)
Kupelian, Ormand & Magy, P.C.
Microwave Data Systems (MDS)
Mind Communications
Personal Communications Industry Association (PCIA)
ProNet, Inc. (ProNet)
Public Service Company of New Mexico (PNM)
Puget Sound Energy, Inc. (Puget Sound)
Radscan, Inc. (Radscan)
Rural Telecommunications Group (RTG)
S and K Enterprises (S&K)
Sensus Technologies, Inc. (Sensus)
Southern California Edison Co. (SCE)
UTC, The Telecommunications Association (UTC)
The Richard L. Vega Group (Vega Group)
Washington Suburban Sanitary Commission (WSSC)

Wells Rural Electric Co. (Wells)

Parties Filing Informal Comments/Letters:³⁴²

James Arch
Norman M. Brady
William Braun
Capp Systems, Inc.
Geoffrey D. Commons
Jack DeBruin
Arthur Dittman
Fair Winds, Inc. (Fair Winds)
Joseph W. Fordham
Harold D. Garter
Casimir C. Gawron
Allan C. Gordon
Mark A. Gordon
Matthew G. Gordon
Charles and Lisa Hooper
Helga S. James
Joint Supplemental Commenters
Edna A. Keene
James W. Majerik
Fred G. McKee, III
Mind Communications
George Nagrodsky, Sr.
Robert H. Ohlwiler
Sunny Pedigo
Radio Data One Partnership (Radio Data)
Cletus E. Reitz
Helen H. Renner
Carolyn Richards Special Enterprises (Carolyn Richards)
Jay R. Schmeider
Christopher M. Shaw
Colleen T. Sheahan
Daniel M. Slane
Jeffrey Steffens
Tim Swaim
Gladys M. Thomas
Judith A. Van Etten
W. Thomas Veal, Jr.

³⁴² We include in this category: (a) informal comments, (b) letters, and (c) submissions that failed to meet the Reply Comments deadline of May 16, 1997.

Wiley Communications Partnership (Wiley Communications)
Raymond W. Witt
Leon and Charlene Wittman
Jerry D. Wolf
Youngstown MAS, Inc.
Kenneth E. Zelt Co.

Parties Filing Reply Comments:³⁴³

Affiliated American Railroads (AAR)
American Petroleum Institute (API)
Arch Communications
Burlington Northern & Santa Fe Railway Co. and Norfolk Southern Co. (BNSF & NS)
Quentin L. Breen
CellNet Data Systems, Inc. (CellNet)
DDI Radio Data Transmissions (DDI)
Thomas Domencich, Paula Malone, George Schrenk, and Dennis Sheahan
GTECH Corp. (GTECH)
Lincoln Square
Microwave Data Systems (MDS)
Metrocall, Inc. (Metrocall)
Motorola
Paging Network, Inc. (PageNet)
Personal Communications Industry Association (PCIA)
ProNet, Inc. (ProNet)
Radscan, Inc. (Radscan)
Karl Sanders
Sensus Technologies, Inc. (Sensus)
Southern Company
Susan Tarwater
UTC, The Telecommunications Association (UTC)
Jerry D. Wolf

II. Further Notice of Proposed Rule Making

Parties Filing Formal Comments:

Adaptive Broadband Corporation (Adaptive)
American Petroleum Institute (API)
American Water Works Association (AWWA)
Association of American Railroads (AAR)

³⁴³ We include in this category: (a) formal Reply Comments and (b) formal, late-filed Comments that failed to meet the Comments deadline of May 6, 1997.

Blue Ridge Electric Cooperative (Blue Ridge Electric)
CellNet Data Systems, Inc. (CellNet)
Commonwealth Edison
Comsearch
Consolidated Edison Company of New York, Inc. (Consolidated Edison)
Corn Belt Power Cooperative (Corn Belt)
East Bay Municipal Utility District (East Bay Municipal)
Georgia Power, Alabama Power, Mississippi Power, Gulf Power,
Savannah Electric and Power Company (Southern Operating Companies)
Idaho Power Company (Idaho Power)
Itron, Inc. (Itron)
Jackson Electric Membership Corporation (Jackson Electric)
Microwave Telecommunications, Inc. (MTI)
Northern States Power Company (Northern States Power)
Pacific Gas and Electric (Pacific G&E)
Radscan, Inc. (Radscan)
South Carolina Electric and Gas Company (South Carolina E&G)
Southwest Gas Corporation (Southwest Gas)
United Telecom Council (UTC)
Western Resources
Williams Energy Services (Williams Energy)

Parties Filing Informal Comments/Letters:³⁴⁴

Adaptive Broadband Corporation (Adaptive)
American Petroleum Institute (API)
Senator John Ashcroft
Senator Sam Brownback
Senator Conrad Burns
East Bay Municipal Utility District (East Bay Municipal)
Senator Russell Feingold
Roger Gembala
Gila Electronics
Senator Slade Gorton
Senator Rod Grams
Senator Charles E. Grassley
Hornfeck Engineering, Inc. (Hornfeck Engineering)
JEA
Johnson City Power Board (Johnson City)
Senator John F. Kerry
Senator Herb Kohl

³⁴⁴ We include in this category: (a) informal comments, (b) letters, and (c) submissions that failed to meet the Reply Comments deadline of October 19, 1999.

Little Ocmulgee Electric Membership Corporation (LOEMC)
Senator Trent Lott
Marin Municipal Water District (MMWD)
Mark Norman
Despina Metakos
Midwest Energy, Inc. (Midwest Energy)
Minnesota High Tech Association (MHTA)
Senator Patty Murray
Northern Iowa Power Cooperative (Northern Iowa Power)
NSTAR
Public Service Company of Colorado (PSCC)
Public Service Company of New Mexico (PNM)
Congressman Jim Ramstad
Senator Pat Roberts
Salt River Agricultural Improvement and Power District (Salt River)
Senator Olympia J. Snowe
Senator Ted Stevens
United States Environmental Protection Agency
United Telecom Council (UTC)
Chris J. Wanner
Water, Gas & Light Commission of Albany, Georgia (Albany)
Senator Paul D. Wellstone

Parties Filing Reply Comments:³⁴⁵

Adaptive Broadband, Corp. (Adaptive)
American Petroleum Institute (API)
American Public Power Association (APPA)
CellNet Data Systems, Inc. (CellNet)
Comsearch
GTECH Corp. (GTECH)
Itron, Inc. (Itron)
Personal Communications Industry Association (PCIA)
Radscan, Inc. (Radscan)
United Telecom Council (UTC)

III. Petitions Filed in Response to the MAS Application Freeze

Comments Regarding Petition Filed by CII Petitioners:

American Public Power Association (APPA)

³⁴⁵ We include in this category: (a) formal Reply Comments and (b) formal, late-filed comments that failed to meet the Comments deadline of September 17, 1999.

American Petroleum Institute (API)
Association of American Railroads (AAR)
Commonwealth Edison
Consolidated Edison of New York, Inc. (Consolidated Edison)
Georgia Power, Alabama Power, Mississippi Power, Gulf Power, Savannah Electric and Power
(Southern Operating Companies)
GTECH Corp. (GTECH)
LaFollette Utilities Board (LaFollette)
Midwest Energy, Inc. (Midwest Energy)
South Carolina Electric and Gas (South Carolina E&G)
United Telecom Council (UTC)

Reply Comments Regarding Petition Filed by CII Petitioners:

American Petroleum Institute (API)
American Public Power Association (APPA)
El Paso Energy (El Paso)
GTECH Corp. (GTECH)

Comments Regarding Petition Filed by CellNet Data Systems, Inc.:

Black and Associates
GTECH Corp. (GTECH)
United Telecom Council (UTC)
Congresswoman Anna G. Eshoo

Reply Comments Regarding Petition Filed by CellNet Data Systems, Inc.:

CellNet Data Systems, Inc. (CellNet)
GTECH Corp. (GTECH)

Comments Regarding Petition Filed by Itron, Inc.:

Badger Meter, Inc. (Badger Meter)
GTECH Corp. (GTECH)
Sensus Technologies, Inc. (Sensus)
United Telecom Council (UTC)

Reply Comments Regarding Petition Filed by Itron, Inc.:

GTECH Corp. (GTECH)

General Comments Regarding Petitions:

Adaptive Broadband Corp. (Adaptive)
El Paso Energy (El Paso)

Gila Electronics
Hornfeck Engineering, Inc. (Hornfeck Engineering)
Itron, Inc. (Itron)
Jeff Davis Electric Cooperative (Jeff Davis)
Johnson City Power Board (Johnson City)
Little Ocmulgee Electric Membership Corp. (LOEMC)
Marin Municipal Water District (MMWD)
Mark Norman
Despina Metakos
Midwest Energy, Inc. (Midwest Energy)
Montana Power
Salt River Agricultural Improvement and Power District (Salt River)
USi-Power
Chris J. Wanner

General Comments Regarding Freeze:

Anadarko Petroleum Corp. (Anadarko Petroleum)
ARCO Pipeline Co. (ARCO)
Arkansas Oklahoma Gas Corp. (AOGC)
Automatic Meter Reading Association (AMRA)
Berkeley Electric Cooperative, Inc. (Berkeley Electric)
Blue Ridge Electric Membership Corp. (Blue Ridge)
Board of Public Utilities (Public Utilities)
Broomfield, City of (Broomfield)
CAC
CH2MHill
Cobb EMC
Du Page Water Commission (Du Page Water)
Electric Laboratories and Sales Corp. (Electric Labs)
Environmental Systems Corp. (ESC)
Fort Smith, City of, Utility Department (Fort Smith)
KNS Communications, Ltd. (KNS)
LaFollette Utilities Board (LaFollette)
Lodi, City of, Electric Utility Department (Lodi)
Lord and Company, Inc. (Lord)
NITECH, Inc. (NITECH)
Reliant Energy-Arkla (Reliant Energy)
Snapping Shoals Electric Membership Corp. (Snapping Shoals)
Sola Communications, Inc. (Sola Communications)
South Mississippi Electric Power Association (SMEPA)
Talley Communications
Tampa Electric Company (TECO)
TECO Telecommunications
Joe Wheeler EMC (Joe Wheeler)

APPENDIX B – FINAL RULES

Part 22 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

A. PART 22 – PUBLIC MOBILE SERVICES

1. The authority citation for Part 22 is amended to read as follows:

AUTHORITY: Secs. 4, 303, 309, and 332, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, 309, and 332, unless otherwise noted.

2. Section 22.621 is amended by changing the first paragraph to read as follows and by deleting subparagraphs (a) and (b):

Subpart E – Paging and Radiotelephone Service

* * * * *

POINT TO MULTIPOINT OPERATION

§ 22.621 Channels for point-to-multipoint operation.

The following channels are allocated for assignment to transmitters utilized within point-to-multipoint systems that support transmitters that provide public mobile service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz. No new licenses will be issued for any 900 MHz frequencies in this section. See Part 101, Subpart O of this chapter for treatment of incumbents and for new licensing procedures. Incumbents under Part 22 are subject to the restrictions of Part 101, Subpart O, but may make permissible modifications, transfers, assignments, or renew their licenses using procedures, forms, fees, and filing requirements of Part 22. * * *

(a) [removed]

(b) [removed]

Part 101 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

B. PART 101 – FIXED MICROWAVE SERVICES

1. The authority citation for Part 101 is amended to read as follows:

AUTHORITY: Secs. 4, 303, 48 Stat. 1066, as amended; 47 U.S.C. 154, 303, unless otherwise noted.

2. Section 101.3 is amended by adding the definitions of “928/952/956 MHz Service”, “932/941 MHz Service”, and “928/959 MHz Service” to read as follows:

§ 101.3 Definitions

* * * * *

928/952/956 MHz Service. A flexible radio service using frequencies in the 928.0 - 928.85 MHz band paired with frequencies in the 952.0 - 952.85 MHz band or using unpaired frequencies in the 956.25 - 956.45 MHz band licensed on a site-by-site basis and used for terrestrial point-to-point and point-to-multipoint fixed and mobile operations.

932/941 MHz Service. A flexible radio service using frequencies in the 932.0 - 932.5 MHz band paired with frequencies in the 941.0 - 941.5 MHz band used for terrestrial point-to-point and point-to-multipoint fixed and mobile operations. The frequencies from 932.00625/941.00625 MHz to 932.24375/941.24375 MHz are licensed by Economic Area. The frequencies from 932.25625/941.25625 MHz to 932.49375/941.49375 MHz are licensed on a site-by-site basis.

928/959 MHz Service. A flexible radio service using frequencies in the 928.85 - 929.0 MHz band paired with frequencies in the 959.85 - 960.0 MHz band licensed by Economic Area and used for terrestrial point-to-point and point-to-multipoint fixed and mobile operations.

* * * * *

3. Paragraph (c) of Section 101.63 is amended by adding the following to the end of the paragraph:

Subpart B – Applications and Licenses

* * * * *

§ 101.63 Period of construction; certification of completion of construction.

* * * * *

(c) * * * See § 101.1331(d) of this part for treatment of MAS incumbent site-by-site licenses recovered in EAs.

* * * * *

4. The first six rows below the heading of the table in Section 101.101 are replaced with the following seven rows:

Subpart C - Technical Standards**§ 101.101 Frequency availability.**

FREQUENCY BAND (MHz)	RADIO SERVICE				
	COMMON CARRIER (Part 101)	PRIVATE RADIO (Part 101)	BROADCAST AUXILIARY (Part 74)	OTHER (Parts 15, 21, 24, 25, 74, 78, & 100)	NOTES
928 – 929	D. MAS	MAS			
932.0 - 932.5	MAS	MAS			
932.5 - 935.0	CC	OFS			(1)
941.0 - 941.5	MAS	MAS			
941.5 - 944.0	CC	OFS	Aural BAS		(1)
952 – 958		E. OFS/MA S			
958 – 960	MAS	OFS			

5. Section 101.105(c)(3) is amended to add the words “site-based” after “Applicants for” in the first paragraph, to add the words “site-based” between “for” and “multiple” in subsection (c)(3)(i), to delete subsection (c)(3)(ii), to renumber subsection (c)(3)(iii) as (c)(3)(ii), to delete “and (c)(3)(ii)” from the new subsection (c)(3)(ii) and to replace “are” with “is”, and to add subsection (c)(3)(iii), to read as follows:

§ 101.105 Interference protection criteria.

* * * * *

(c)(3) Applicants for site-based frequencies listed in * * * .

(c)(3)(i) For site-based multiple address stations in * * * .

(c)(3)(ii) In cases where the geographic separation standard in paragraphs (c)(3)(i) is not followed, * * * .

(c)(3)(iii) MAS EA licensees shall provide protection in accordance with § 101.1333 of this Part.

* * * * *

6. Section 101.147 is amended by changing the frequency listing in paragraph (a), changing footnote 27, adding footnote 28, changing the first paragraphs of (b)(1-3) by deleting footnote 1 in Table 1 and Table 2 in subsection (b)(1), and by changing the titles of Tables 5 and 6, to read as follows:

§ 101.147 Frequency assignments.

(a) * * * * *

928.0 - 929.0 MHz /28/
 932.0 - 932.5 MHz /27/
 932.5 - 935 MHz /17/
 941.0 - 941.5 MHz /27/
 941.5 - 944 MHz /27/
 952.0 - 960.0 MHz /28/

* * * * *

Notes

* * * * *

/27/ Frequencies in the 932 to 932.5 MHz and 941 to 941.5 MHz bands are shared with Government fixed point-to-multipoint stations and point-to-multipoint stations in the Public Land Mobile Service. Frequencies in these bands are paired with one another and are available for flexible use for transmission of the licensee's products and information services, excluding video entertainment material. 932.00625/941.00625 MHz to 932.24375/941.24375 MHz is licensed by Economic Area. 932.25625/941.25625 MHz to 932.49375/941.49375 MHz is licensed on a site-by-site basis.

/28/ Subsequent to July 1, 1999, incumbent MAS operations, as defined in § 101.1331(a), in the 928/952/956 MHz bands are reserved for private internal use. The 928.85 - 929.0 MHz and 959.85 - 960.0 MHz bands are licensed on a geographic area basis with no eligibility restrictions. The 928.0 - 928.85 MHz band paired with the 952.0 - 952.85 MHz band, in addition to unpaired frequencies in the 956.25 - 956.45 MHz band, are licensed on a site-by-site basis and used for terrestrial point-to-point and point-to-multipoint fixed and mobile operations. The 928.85 - 929.0 MHz band paired with the 959.85 - 960.0 MHz band is licensed by Economic Area and used for terrestrial point-to-point and point-to-multipoint fixed and mobile operations.

(b) Frequencies normally available for assignment in this service are set forth with applicable limitations in the following tables: 928-960 MHz Multiple address system (MAS) frequencies are available for the point-to-multipoint and point-to-point transmission of a licensee's products or

services, excluding video entertainment material, to a licensee's customer or for its own internal communications. The paired frequencies listed in this section are used for two-way interrogate/response communications between a master station and remote stations. Each master station operating on these frequencies is required to serve a minimum of four separate active remote stations. Ancillary one-way communications on paired frequencies are permitted on a case-by-case basis. Ancillary communications between interrelated master stations are permitted on a secondary basis. The normal channel bandwidth assigned will be 12.5 kHz. EA licensees, however, may combine contiguous channels without limit or justification. Site-based licensees may combine contiguous channels up to 50 kHz, and more than 50 kHz only upon a showing of adequate justification. When licensed for a larger bandwidth, the system still is required to use equipment that meets the ± 0.00015 percent tolerance requirement. (See § 101.107). Any bandwidth (12.5 kHz, 25 kHz or greater) authorized in accordance with this section may be subdivided into narrower bandwidths to create additional (or sub) frequencies without the need to specify each discrete frequency within the specific bandwidth. Equipment that is used to create additional frequencies by narrowing bandwidth (whether authorized for a 12.5 kHz, 25 kHz or greater bandwidth) will be required to meet, at a minimum, the ± 0.00015 percent tolerance requirement so that all subfrequencies will be within the emission mask. When using subfrequencies, licensees are subject to the construction requirement of one master and four remotes per authorized bandwidth (12.5 kHz, 25 kHz or greater). Systems licensed for frequencies in these MAS bands prior to August 1, 1975, may continue to operate as authorized until June 11, 1996, at which time they must comply with current MAS operations based on the 12.5 kHz channelization set forth in this paragraph. Systems licensed between August 1, 1975, and January 1, 1981, inclusive, are required to comply with the grandfathered 25 kHz standard bandwidth and channelization requirements set forth in this paragraph. Systems originally licensed after January 1, 1981, and on or before May 11, 1988, with bandwidths of 25 kHz and above, will be grandfathered indefinitely.

(1) Frequencies listed in this paragraph are designated for private internal use and are subject to site-based licensing.

Table 1.--Paired Frequencies (MHz) * * *

Table 2.--Paired Frequencies (MHz) * * *

(2) Frequencies listed in this paragraph are designated for private internal use and are subject to site-based licensing.

Table 3.--Paired Frequencies (MHz) * * *

Table 4.--Paired Frequencies (MHz) * * *

(3) Frequencies listed in this paragraph are not restricted to private internal use and are licensed by geographic area. Incumbent facilities must be protected. * * *

Table 5.--Paired Frequencies (MHz) * * *

Table 6.--Paired Frequencies (MHz) * * *

(4) * * *

Table 7.--Paired Frequencies

Remote transmit	Master transmit
Licensed by Economic Area	
(12.5 kHz bandwidth)	
932.00625	941.00625
932.01875	941.01875
932.03125	941.03125
932.04375	941.04375
932.05625	941.05625
932.06875	941.06875
932.08125	941.08125
932.09375	941.09375
(50 kHz bandwidth)	
932.12500	941.12500
(12.5 kHz bandwidth)	
932.15625	941.15625
932.16875	941.16875
932.18125	941.18125
932.19375	941.19375
932.20625	941.20625
932.21875	941.21875
932.23125	941.23125
932.24375	941.24375
Reserved for public safety and private internal use. Licensed on site-by-site basis.	
(12.5 kHz bandwidth)	
932.25625	941.25625
932.26875	941.26875
932.28125	941.28125
932.29375	941.29375
932.30625	941.30625

932.31875	941.31875
932.33125	941.33125
932.34375	941.34375
932.35625	941.35625
932.36875	941.36875
932.38125	941.38125
932.39375	941.39375
932.40625	941.40625
932.41875	941.41875
932.43125	941.43125

Reserved for Public Safety and Federal Government Use. Licensed on site-by-site basis.

(12.5 kHz bandwidth)

932.44375	941.44375
932.45625	941.45625
932.46875	941.46875
932.48125	941.48125
932.49375	941.49375

(5) * * *

(6) * * *

* * * * *

7. Subpart O is added to read as follows:

Subpart O – Multiple Address Systems

GENERAL PROVISIONS

§ 101.1301 Scope.

This subpart sets out the regulations governing the licensing and operation of Multiple Address Systems (MAS). The Rules in this subpart are to be used in conjunction with applicable requirements contained elsewhere in the Commission’s Rules, such as those requirements contained in Parts 1 and 22 of this chapter.

§ 101.1303 Eligibility.

Authorizations for stations in this service will be granted in cases where it is shown that:

- (a) The applicant is legally, financially, technically and otherwise qualified to render the proposed service;
- (b) There are frequencies available to enable the applicant to render a satisfactory service; and

(c) The public interest, convenience or necessity would be served by a grant thereof.

§ 101.1305 Private internal.

A private internal service is a service where entities utilize telecommunications services purely for internal business purposes or public safety communications and not on a for hire or for profit basis.

§ 101.1307 Permissible communications.

MAS users may engage in terrestrial point-to-point and point-to-multi-point fixed and mobile operations.

§ 101.1309 Regulatory status.

(a) The Commission will rely on each applicant to specify on FCC Form 601 the type of service or services it intends to provide. Each application for authorization in the bands designated for private internal use must include a certification stating why the application satisfies the definition of private internal use.

(b) Any interested party may challenge the regulatory status granted an MAS licensee.

SYSTEM LICENSE REQUIREMENTS

§ 101.1311 Initial EA license authorization.

(a) Winning bidders must file an application (FCC Form 601) for an initial authorization in each market and frequency block.

(b) Blanket licenses are granted for each market and frequency block. Applications for individual sites are not required and will not be accepted, except as specified in § 101.1329.

§ 101.1313 License term.

The license term for stations authorized under this subpart is ten years from the date of original issuance or renewal.

§ 101.1315 Service areas.

In the frequency bands not licensed on a site-by-site basis, the geographic service areas for MAS are Economic Areas (EAs). EAs are 175 areas, including U.S. territories and possessions, defined by the Department of Commerce's Bureau of Economic Analysis, as modified by the Commission.

§ 101.1317 Competitive bidding procedures for mutually exclusive MAS EA applications.

Mutually exclusive initial applications for licenses in the portions of the MAS bands licensed on a geographic area basis are subject to competitive bidding procedures. The procedures set forth in Part 1, Subpart Q of this chapter will apply unless otherwise provided in this part.

§ 101.1319 Competitive bidding provisions.

(a) For the purpose of establishing eligibility requirements and bidding credits for competitive bidding for MAS licenses, pursuant to § 1.2110 of this chapter, the following definitions apply:

(1) Eligibility for small business provisions.

(a) A small business is an entity that, together with its affiliates and persons or entities that hold interests in such entity and their affiliates, has average gross revenues for the preceding three years not to exceed \$15 million, as determined pursuant to § 1.2110 of this chapter.

(b) A very small business is an entity that, together with its affiliates and persons or entities that hold interests in such entity and their affiliates, has average gross revenues for the preceding three years not to exceed \$3 million, as determined pursuant to § 1.2110 of this chapter.

(2) *Bidding Credits.* A winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses, may use the bidding credit specified in § 1.2110(e)(2)(ii) of this chapter. A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses, may use the bidding credit specified in § 1.2110(e)(2)(i) of this chapter.

(3) *Unjust enrichment.* See § 1.2111 of this chapter.

§ 101.1321 License transfers.

(a) An MAS system license acquired through competitive bidding procedures (including licenses obtained in cases of no mutual exclusivity), together with all appurtenances may be transferred, assigned, sold, or given away only in accordance with the provisions and procedures set forth in § 1.2111 of this chapter.

(b) An MAS system license obtained through site-based licensing procedures, together with all appurtenances may be transferred, assigned, sold, or given away, to any other entity in accordance with the provisions and procedures set forth in § 1.948 of this chapter.

§ 101.1323 Spectrum aggregation, disaggregation, and partitioning.

(a) *Eligibility.*

(1) Parties seeking approval for partitioning and disaggregation shall request from the Commission an authorization for partial assignment of license. Geographic area licensees may participate in aggregation, disaggregation, and partitioning within the bands licensed on a geographic area basis. Site-based licensees may aggregate spectrum in any MAS bands, but may not disaggregate their licensed spectrum or partition their licensed sites.

(2) Eligible MAS licensees may apply to the Commission to partition their licensed geographic service areas to eligible entities and are free to determine the portion of their service areas to be partitioned. Eligible MAS licensees may aggregate or disaggregate their licensed spectrum at any time following the grant of a license.

(b) *Technical Standards.*

(1) *Aggregation.*

(a) There is no limitation on the amount of spectrum that an MAS licensee may aggregate.

(b) Spectrum licensed to MAS licensees does not count toward the CMRS spectrum cap discussed in § 20.6 of this chapter.

(2) *Disaggregation.* Spectrum may be disaggregated in any amount. A licensee need not retain a minimum amount of spectrum.

(3) *Partitioning.* In the case of partitioning, applicants and licensees must file FCC Form 603 pursuant to § 1.948 of this chapter and list the partitioned service area on a schedule to the application. The geographic coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude, and must be based upon the 1983 North American Datum (NAD83).

(4) *Combined Partitioning and Disaggregation.* The Commission will consider requests from geographic area licensees for partial assignment of licenses that propose combinations of partitioning and disaggregation.

(c) *Unjust enrichment.* See § 1.2111(e) of this chapter.

(d) *Construction requirements.*

(1) *Disaggregation.* Partial assignors and assignees for license disaggregation have two options to meet construction requirements. Under the first option, the disaggregator and disaggregatee would certify that they each will share responsibility for meeting the applicable construction requirements set forth in § 101.1325 of this subpart for the geographic service area. If parties choose this option and either party fails to meet the applicable construction requirements, both licenses would be subject to forfeiture at renewal. The second option allows the parties to agree that either the disaggregator or disaggregatee would be responsible for meeting the requirements in § 101.1325 of this subpart for the geographic service area. If parties choose this option, and the party responsible for meeting the construction requirement fails to do so, only the license of the non-performing party would be subject to forfeiture at renewal.

(2) *Partitioning.* Partial assignors and assignees for license partitioning have two options to meet construction requirements. Under the first option, the partitionor and partitionee would each certify that they will independently satisfy the applicable construction requirements set forth in § 101.1325 of this subpart for their respective partitioned areas. If either licensee fails to meet its requirement in § 101.1325 of this subpart, only the non-performing licensee's renewal application would be subject to dismissal. Under the second option, the partitionor certifies that it has met or will meet the requirement in §

101.1325 of this subpart for the entire market. If the partitionor fails to meet the requirement in § 101.1325 of this subpart, however, only its license would be subject to forfeiture at renewal.

(3) All applications requesting partial assignments of license for partitioning or disaggregation must certify in the appropriate portion of the application which construction option is selected.

(4) Responsible parties must submit supporting documents showing compliance with the respective construction requirements within the appropriate construction benchmarks set forth in § 101.1325 of this subpart.

(e) *License Term.* The license term for a partitioned license area and for disaggregated spectrum shall be the remainder of the original licensee's license term as provided for in § 101.1313 of this subpart.

SYSTEM REQUIREMENTS

§ 101.1325 Construction requirements.

- (a) Incumbent site-based licensees are subject to the construction requirements set forth in § 101.63 of subpart B (Applications and Licenses).
- (b) Each MAS EA licensee must provide service to at least one-fifth of the population in its service area or "substantial service" within five years of the license grant. In addition, MAS EA licensees must make a showing of continued "substantial service" within ten years of the license grant. Licensees must file maps and other supporting documents showing compliance with the respective construction requirements within the appropriate five- and ten-year benchmarks of the date of their initial licenses.
- (c) Failure by any licensee to meet these requirements will result in forfeiture or non-renewal of the initial license, and the licensee will be ineligible to regain it.

§ 101.1327 Renewal expectancy for EA licensees.

- (a) A renewal applicant shall receive a renewal expectancy at the end of the license period as long as the applicant:
 - (1) Demonstrates that the licensee has provided continued "substantial service," i.e., service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal, during its past license term;
 - (2) Demonstrates that the licensee has substantially complied with applicable Commission Rules, policies, and the Communications Act of 1934, as amended;
 - (3) Provides an explanation of the licensee's record of expansion, including a timetable of the construction of new facilities to meet changes in demand for services provided by the licensee; and
 - (4) Provides a description of investments made by the licensee in its system.

- (b) In determining whether a renewal applicant has complied with the “substantial service” requirement by the end of the ten-year initial license term, the Commission may consider factors such as (i) whether the licensee is offering a specialized or technologically sophisticated service that does not require a high level of coverage to be of benefit to customers, and (ii) whether the licensee’s operations service niche markets or focus on serving populations outside of areas served by other licensees. The “substantial service” requirement can, however, be met in other ways, and the Commission will review each licensee’s showing on a case-by-case basis.
- (c) A “substantial service” assessment will be made at renewal pursuant to the procedures contained in § 1.949 of this chapter.

§ 101.1329 EA Station license, location, modifications.

- (a) EA licensees may construct master and remote stations anywhere inside the area authorized in their licenses, without prior approval, so long as the Commission’s technical and other Rules are complied with, except that individual licenses are required for any master station that:
 - (1) Requires the submission of an Environmental Assessment under § 1.1307 of this chapter;
 - (2) Requires international coordination; or
 - (3) Would affect the radio frequency quiet zones described in § 1.924 of this chapter.

§ 101.1331 Treatment of incumbents.

- (a) Any station licensed by the Commission prior to July 1, 1999, as well as any assignments or transfers of such station as of January 19, 2000, shall be considered incumbent.
- (b) Incumbent operators in the 928.0-928.85/952.0-952.85/956.25-956.45 MHz bands are grandfathered as of January 19, 2000, and may continue to operate and expand their systems pursuant to the interference protection and co-channel spacing criteria contained in § 101.105 of this part.
- (c) Incumbent operators in the 928.85-929.0/959.85-960.0 MHz bands are grandfathered as of January 19, 2000, and may expand their systems provided that the signal level of the additional transmitter(s) does not increase the composite contour that occurs at a 40.2 kilometer (25-mile) radius from the center of each master station transmitter site. Incumbent operators and geographic area licensees may negotiate alternative criteria.
- (d) The frequencies associated with incumbent authorizations in the 928/959 MHz bands that have cancelled automatically or otherwise been recovered by the Commission will automatically revert to the applicable EA licensee.
- (e) The frequencies associated with incumbent authorizations in the 928/952/956 MHz bands that have cancelled automatically will revert to the Commission.

§ 101.1333 Interference protection criteria.

- (a) *Frequency coordination.* All EA licensees are required to coordinate their frequency usage with co-channel adjacent area licensees and all other affected parties.
- (b) EA licensees are prohibited from exceeding a signal strength of 40 dBμV/m at their service area boundaries, unless a higher signal strength is agreed to by all affected co-channel, adjacent area licensees.
- (c) EA licensees are prohibited from exceeding a signal strength of 40 dBμV/m at incumbent licensees' 40.2 kilometer (25-mile) radius composite contour specified in § 101.1329(b) of this subpart.
- (d) In general, licensees shall comply with the appropriate coordination agreements between the United States and Canada and the United States and Mexico concerning cross-border sharing and use of the applicable MAS frequencies.

(1) Canada - 932.0-932.25 MHz and 941.0-941.25 MHz:

Within Lines A, B, C, and D along the U.S./Canada border, U.S. stations operating in the 932.0-932.25 MHz and 941.0-941.25 MHz bands are on a secondary basis and may operate provided that they shall not transmit a power flux density (PFD) at the border greater than -100 dBW/m² nor -94 dBW/m², respectively. The U.S. has full use of the frequencies in these regions up to the border in the bands 932.25-932.50 MHz and 941.25-941.50 MHz, and Canadian stations may operate on a secondary basis provided they do not exceed the respective PFDs shown above. PFD can be determined using the following formula: $PFD (dBW/m^2) = 10 \log [EIRP/4\pi D^2]$, where EIRP is in watts, D is in meters, and the power is relative to an isotropic radiator. The technical parameters are also limited by the following tables:

Table 1. Maximum radiated power

Class of Station	Band	Maximum EIRP		Maximum ERP	
	MHz	watts	dBW	watts	dBW
Master	941.0-941.5	1000	30	600	27.8
Fixed Remote and Master	932.0-932.5	50	17	30	14.8

Where $ERP = EIRP/1.64$

Table 2. Maximum antenna height above average terrain for master stations operating at a maximum power shall not exceed 150 meters. Above 150 meters, the power of master stations shall be in accordance with following:

Antenna Height Above Average Terrain (meters)	EIRP	ERP