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

In the Matter of	)	
	)	
Service Rules for the 746-764 and	)	
776-794 MHz Bands, and	)	WT Docket No. 99-168
Revisions to Part 27 of the	)	
Commission's Rules	)	
	)	
	)	
	)	

FIRST REPORT AND ORDER

Adopted: January 6, 2000 **Released:** January 7, 2000

By the Commission: Commissioner Ness issuing a separate statement; Commissioner Furchtgott-Roth approving in part and dissenting in part and issuing a separate statement.

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I. INTRODUCTION AND EXECUTIVE SUMMARY

1. By this Report and Order we adopt service rules for licensing the commercial use of the 746-764 MHz and 776-794 MHz bands—bands that have been reallocated, by Congressional direction, from their previous use solely for the broadcasting service.[1] The service rules adopted today govern the predominant portion of these bands—thirty of the thirty-six megahertz reallocated for commercial use. A subsequent Report and Order will adopt service rules, including licensing, technical, and operational rules, for the remaining six megahertz.[2] We believe that, under these rules, these bands can be used to provide a wide range of advanced wireless services. The revised spectrum allocation, which enabled the provision of Fixed, Mobile, and Broadcasting services on these bands, subject to the particular requirements of the service rules, was adopted in our *Reallocation Report and Order*.[3] The rules we adopt today are aimed at enabling the broadest possible use of this spectrum, consistent with sound spectrum management and the Congressional mandate that the receipts from auctioning this spectrum be deposited into the Treasury by September 30, 2000.[4]

2. This Report and Order is our first decision guided by the principles enunciated in our recent

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[1] *See* Section 337(a) of the Communications Act, 47 U.S.C. § 337(a), as added by § 3004 of the Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997).

[2] *See* Public Comment Sought on Issues Related to Guard Bands in the 746-764 MHz and 776-794 MHz Spectrum Block (WT Docket No. 99-168), *Public Notice*, January 7, 2000.

[3] *See* Reallocation of Television Channels 60-69, the 746-806 MHz Band, ET Docket No. 97-157, Report and Order, 12 FCC Rcd 22953 (1998) *(Reallocation Report and Order)*, *recon.*, 13 FCC Rcd 21578 (1998) (*Reallocation Reconsideration*).

[4] *See* Pub. Law 106-113, 113 Stat. 1501, Appendix E, Section 213. *See also* 145 Cong. Rec. at H12494-94, H12501 (Nov. 17, 1999), "Making consolidated appropriations for the fiscal year ending September 30, 2000, and for other purposes." (*Consolidated Appropriations*).

Spectrum Reallocation Policy Statement.[5] Based on those principles, the record developed in this proceeding, and our own review of technical issues, we find that a flexible, market-based approach is the most appropriate method for determining service rules in this band. We also conclude that, in the circumstances of these spectrum bands, the establishment of sub-bands will best ensure that a variety of spectrum management priorities are realized, including protection of public safety operations from interference. In this Report and Order we adopt service, licensing and auction rules for the thirty megahertz of spectrum that are separated from public safety spectrum by Guard Bands totaling six megahertz. Rapidly expanding demand for wireless voice and data services, as well as projections of international demand and the increased spectrum necessary to support wideband applications to be implemented with next generation technologies,[6] confirm that these bands should be structured to enable their efficient and intensive use for wireless services and technologies. New broadcast-type services that can be provided within the technical parameters adopted here are also permissible in these bands. To comport with the range of potential service applications on these bands, and our intended use of Part 27 as a basic regulatory framework for service rules governing other bands, we have also recast the structure of the Part 27 rules to reflect their revised scope.

3. More specifically, we are today making the following determinations for licensing and operations in this spectrum:

- We are providing for two license bands - one of 20 megahertz and one of 10 megahertz - that address the increasing demand for broadband wireless access capacity, including both fixed and mobile next generation applications. The 20 megahertz segment, consisting of paired 10 megahertz blocks, offers bidders a significantly large block of spectrum that should be desirable for providers of advanced wireless services. The 10 megahertz segment, consisting of paired 5 megahertz blocks, should prove of interest to parties in the record who desire spectrum to deploy innovative wireless technologies, including high-speed Internet access, that do not require as much spectrum. New broadcasting operations that are consistent with our technical rules could also utilize some or all of these blocks. Finally, we are permitting parties interested in acquiring both licenses in an area to win both in the auction.

- We also are providing for two paired Guard Bands – one of 4 megahertz and one of 2 megahertz – located immediately adjacent to public safety spectrum. These bands are necessary to protect public safety users from interference. Consistent with the Congress's intent, we have provided protection to public safety users by establishing "Guard Bands" immediately adjacent to public safety bands, and in our subsequent Report and Order will adopt technical standards and service rules for the Guard Bands. To ensure that public safety licensees in adjacent bands can operate free of interference, we intend to adopt more stringent interference protection standards for these Guard Bands than we adopt in this Report and Order for the larger segments that do not directly abut public safety spectrum.

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[5] Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, *Policy Statement*, FCC 99-354, November 22, 1999, (*Spectrum Reallocation Policy Statement*), 1999 WL 1054886 (1999).

[6] Recent growth trends in voice and data wireless applications are described in the *Fourth CMRS Competition Report*. Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Fourth Report*, 14 FCC Rcd 10145 (1999).

- We will auction licenses for the larger spectrum blocks on the basis of six Economic Area Groupings (EAGs) throughout the country. These relatively large regions should allow for significant economies of scale to help reduce costs and increase efficiencies. We also will allow bidders to aggregate these regional licenses into nationwide licenses. To further our overall policy goals of implementing innovative auction techniques to increase bidder flexibility, we also are directing the Wireless Telecommunications Bureau to implement, if operationally feasible, a new optional bidding procedure. This procedure would cap bid withdrawal payments on a nationwide aggregation of licenses for a bidder who commits at the outset to bid solely on that nationwide aggregation. Finally, to increase options for the provision of service to otherwise unserved geographic areas, we also will allow licensees to partition and disaggregate their licenses in the post-auction market.

- The service rules also provide for application licensing, technical and operational requirements, and competitive bidding. We also have determined how best to maximize the scope of practicable flexibility afforded licensees in this spectrum, consistent with our review of flexible use allocations required by Section 303(y) of the Act,[7] and with the technical and other service rules that govern the range of services enabled.

- Finally, we adopt standards to assure protection of the approximately 100 existing conventional television stations that will continue to operate on these bands during the transition to digital television (DTV), and to safeguard public safety operations on adjacent bands.

4. We expect these service rules will enable a significant number of existing and potential wireless service providers to pursue these bands, potentially to deploy new methods of providing high speed Internet access in competition with digital subscriber loop (DSL) and cable modem operators. These bands are also suitable for new fixed wireless service in underserved areas, as well as next generation, high-speed mobile services. Because the record indicates a wide range of possible technical approaches to serving the expanding demand for wireless services, we have sought to establish an open regulatory framework with the potential to accommodate both existing and future technologies. This framework permits new broadcast-type services that are consistent with the technical rules essential to fostering efficient development of wireless services in this band, and sound spectrum management. By setting the scope of our flexible service rules to enable the most efficient and intensive use of this spectrum, we believe we have fully satisfied our statutory spectrum management responsibilities.

II. BACKGROUND

5. The 746-806 MHz band at issue here has historically been used exclusively by television stations (Channels 60-69). Incumbent conventional television broadcasters are permitted by statute to continue operations in this band until their markets are converted to digital television.[8] The Balanced Budget Act of 1997 directed the Commission to reallocate this spectrum for public safety and commercial use by December 31, 1997,[9] and to commence competitive bidding for the commercial

[7] 47 U.S.C. § 303(y). *See* paras. 20-25.

[8] *See* 47 U.S.C. § 337(e). See Advanced Television Systems and Their Impact Upon Existing Television Broadcast Service, MM Docket No. 87-268, *Reconsideration of Fifth Report and Order*, 13 FCC Rcd 6860, 6887 (1998).

[9] *See* Section 337(a) of the Communications Act, 47 U.S.C. § 337(a).

licenses on the reallocated spectrum after January 1, 2001.[10] In November 1999, Congress enacted a consolidated appropriations statute that revises the latter instruction.[11] This legislation accelerates the schedule for auction of the commercial spectrum bands, and requires that the proceeds from the auction of these bands be deposited in the U.S. Treasury by September 30, 2000.

6. In the *Reallocation Report and Order*, adopted December 31, 1997, we implemented the specific spectrum management decisions enacted by Section 3004 of the Balanced Budget Act of 1997[12] by adding Fixed and Mobile services to the Broadcasting allocation in the 746-806 MHz band. We designated Channels 60-62 and 65-67 for commercial use, and designated Channels 63, 64, 68, and 69 for the exclusive use of public safety. We also declined to adopt additional protections for low-power TV and TV translator stations beyond those adopted in the DTV Proceeding.[13] We stated that no new applications would be considered for the provision of analog TV service in Channels 60-69, but that current applicants, at a later date, would be afforded an opportunity to amend their applications to seek channels below Channel 60. We subsequently denied petitions that sought reconsideration of these decisions to grant no new licenses for TV service on these channels, and the decision to provide no additional protection to low-power TV and TV translator stations.[14]

7. In the *NPRM* in this proceeding, we sought comment on various service rule issues necessary to conduct an auction, including licensing, operational, technical, and competitive bidding rules.[15] The Report and Order we adopt here addresses these issues and will enable the auctions process to commence expeditiously, consistent with the statutory deadline set by Congress.

III. SERVICE RULES

A. In General

8. The *NPRM* sought comment both on broad spectrum management issues[16] and on the unique technical issues raised by the reallocation of this band. In this Report and Order, we initially address the broad question of whether our service rules for these bands should implement flexible use at the inter-service level by providing for sharing of these bands between incumbent conventional, full-power television broadcasting licensees and the range of possible broadcasting and wireless services.[17] After

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[10] *See* Section 337(b)(2) of the Communications Act, 47 U.S.C. § 337(b)(2)(a).

[11] *See Consolidated Appropriations*, Appendix E, § 213. *See also* 145 Cong. Rec. H12493-94 (Nov. 17, 1999).

[12] Balanced Budget Act of 1997, § 3004 (adding new §§ 337(a) and 337(b) of the Communications Act).

[13] *See* Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service (*DTV Proceeding*), MM Docket No. 87-268, *Fifth Report and Order*, 12 FCC Rcd 12809 (1997), *recon.*, 13 FCC Rcd 6860 (1998); *Sixth Report and Order*, 12 FCC Rcd 14588 (1997), *recon.*, 13 FCC Rcd 7418 (1998).

[14] *Reallocation Reconsideration*, 13 FCC Rcd at 21582-83 paras. 12-14.

[15] Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168, *Notice of Proposed Rule Making*, FCC 99-97, June 3, 1999 (*NPRM*), 1999 WL 350460.

[16] *NPRM* at paras. 6-15.

[17] As explained more fully at paras. 10 and 23-25, we use the term "inter-service" to refer to issues involving the relation between broad categories of services, such as "broadcast" or "fixed wireless," that are treated as distinct

this discussion, we turn to the specific service rule decisions required by this proceeding.

1. Spectrum Management Considerations

9. **Background.** In the *NPRM*, we emphasized our continued interest in the broader aspects of spectrum management, noting the potential for new technologies to blur technical and regulatory distinctions and affect the balance between licensee discretion and regulatory requirements.[18] We also sought comment on the extent to which flexible use allocations that juxtapose such technically dissimilar services as wireless and conventional broadcasting might raise new issues. Such additional issues might include whether and how to apply service-specific statutory requirements in this context, how to consistently apply service rules for this spectrum band and other Parts of our Rules, and, more broadly, how these service rules should provide for implementation of next generation wireless technology.[19] We recognized that proposals involving a broad range of services make our review of flexible use allocations under Section 303(y) especially important,[20] and sought comment on the extent to which the spectrum could and should be made available for private mobile and fixed radio service.[21] We noted the statutory provisions that potentially bear on our spectrum management decisions for these bands, including Sections 303(y), 309, 337, broadcast-specific statutory provisions such as Sections 312(a)(7) and 315,[22] and Section 713 (captioning regulations), and Section 255 (accessibility of telecommunications equipment and services).[23]

10. Section 303(y) reflects Congressional concern that proposals for the flexible use of spectrum have the potential, if not thoroughly considered, to create interference between services and discourage investment and technical innovation.[24] That section requires the Commission to make a positive determination that such issues have been considered, and that these potential problems will not be realized, before it approves such flexible use of spectrum allocations—*i.e.*, allocation or service rules

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"services" for purposes of the Table of Allocations. In the discussion generally, we use the term "wireless services" to refer to terrestrial fixed and mobile wireless services other than conventional television and radio broadcasting.

18 *NPRM* at para. 6.

19 *NPRM* at paras. 7-10.

20 *NPRM* at paras. 11-13.

21 *NPRM* at para. 15.

22 *NPRM* at para. 10.

23 *NPRM* at paras. 10, 8.

24 Section 303(y) authorizes the Commission "to allocate electromagnetic spectrum so as to provide flexibility of use" if consistent with international agreements and:

> (2) the Commission finds, after notice and an opportunity for public comment, that—
> (A) such an allocation would be in the public interest;
> (B) such use would not deter investment in communications services and systems, or technology development; and
> (C) such use would not result in harmful interference among users.

47 U.S.C. § 303(y)(2).

that enable the licensing of multiple services, as the term "service" is used in the Table of Allocations, on the same frequency band. We make the determinations required by Section 303(y) below, at paras. 20-25.

11. Many commenters assert that renewed conventional television operations on these bands would create such a wide range of interference difficulties as to effectively preclude other, non-broadcast wireless applications. Motorola states that it is not possible to "craft service rules that will permit efficient operation of advanced mobile systems and traditional wide area broadcast systems in the same geographic area," and warns of "unrealizable" business plans.[25] Motorola and AirTouch contend that this view is supported by experience with sharing in the Channel 14-20 television band,[26] and Motorola also refers to the rule changes we adopted for the 2.5 GHz MMDS spectrum to allow licensees the flexibility to provide broadcasting and wireless applications.[27] US WEST cautions against renewed broadcast use of the band, stating that the interference caused by full-power broadcast services would deter necessary investment in new services and systems.[28]

12. Interference from conventional television broadcast services concerns parties who seek additional spectrum to provide next generation wireless services, whether fixed or mobile. AirTouch states that sharing between mobile and new broadcast uses "would necessitate further segmentation of the band, thus limiting the Commission's ability to designate spectrum blocks of sufficient size to facilitate reliable mobile services."[29] Bell Atlantic Mobile asserts the 700 MHz band is uniquely suited for 3G mobile services, and asks us to reserve these bands for 3G terrestrial mobile service, citing demand projections prepared by the WRC-2000 advisory committee.[30] Metricom, which provides wireless Internet access, opposes conventional broadcast television service, as does RTG, which contemplates both fixed and mobile services.[31]

13. A few commenters advocate inter-service, wideband "flexible use," and seek service rules sufficiently flexible to enable conventional full-service television broadcast operations, or "hybrid" services with comparable technical characteristics. Advocates of enabling such full-service conventional television service include MSTV and TWDC, which assert that there are few locations in the crowded radio spectrum with sufficient bandwidth for terrestrial broadband services, especially a "hybrid

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25 Motorola Comments at 9.

26 Motorola Comments at 9; AirTouch Comments at 15-16. *See also* Resolution of Interference Between UHF Channels 14 and 69 and Adjacent-channel Land Mobile Operations, MM Docket No. 87-465, *Notice of Proposed Rule Making and Notice of Inquiry*, 2 FCC Rcd 7328 (1987).

27 Motorola Comments at 9.

28 US WEST Comments at 7.

29 AirTouch Comments at 14; *see also* US WEST Comments at 6-9.

30 Bell Atlantic Mobile Reply at 3-6, *citing* Public Notice, "The FCC's Advisory Committee For the 2000 World Radio Communications Conference Offers Additional Draft Proposals On WRC 2000 Issues," DA 99-1364 (released July 14, 1999).

31 Metricom Reply at 4-6; RTG Comments at ii-iii, 1.

broadband and mobile service."[32] NTA contends that the objective of these service rules should be to have 10 to 12 analog channels in translator-dependent areas, to reflect new program sources as well as to extend DTV signals.[33]

14. Commenters also specifically address the "flexible use" findings that the Commission is required to make under Section 303(y). Several commenters ascribe the WCS auction results, and the subsequent slow pace of WCS service activation, to excessively flexible service rules.[34] To avoid a recurrence, they argue that we should limit flexibility in both the inter-service and intra-service aspects. With regard to inter-service flexibility, they contend we should exclude conventional television broadcast from these bands, *i.e.*, prohibit "flexible use" between distinct services in the sense that "service" is used in the Table of Allocations. With regard to intra-service flexibility, they assert that we should not permit unbounded flexibility even within the context of wireless service, but should instead create a stable regulatory framework—a band plan and related rules—that encourages investment and service innovation.[35] Metricom, while not opposing those views, raises a more specifically focussed concern, urging us not to retreat from the existing scope of operational flexibility contained in the Part 27 service rules. Metricom asserts that flexibility with regard to bandwidth, channelization, and other technical variables affecting the structure of its Ricochet™ service was essential to its expeditious activation.[36]

15. **Discussion.** After careful consideration, we will not adopt service rules that would permit the sharing of this band by conventional television and wireless services. The inherent interference difficulties presented by sharing between these dissimilar services require that we orient our service rules to one service or the other, if efficient and intensive use of this spectrum is to be realized. Based on the predominant interest in fixed and mobile wireless services expressed in the record, we will adopt service rules primarily oriented toward fulfilling the need for a variety of wireless services on these bands. The rules are not structured to establish particular service configurations. Rather, the service rules allow licensees to make determinations respecting the services provided and technologies to be used, including provision of new broadcast-type services so long as those services comply with our technical rules.[37]

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[32] Quote from MSTV Comments at 3; *see also* TWDC Comments at 2-4.

[33] NTA Comments at 1-2. The NAB supports service rules that ensure protection from interference to existing broadcasters, but does not advocate service rules configured to encourage additional conventional television licenses. NAB Comments at 2-3.

[34] *See* ArrayComm Comments at 3-4; AMTA Comments at 2 n3; and Motorola Comments at 3-4. AirTouch asserts that the *Conference Report* states "unlimited flexibility can introduce a level of entrepreneurial uncertainty that could ultimately retard the development of new services and technology." AirTouch Comments at 5, *citing* H. Conf. Rep. No. 105-217, at 581 (1997), *reprinted at* 1997 USCCAN 201.

[35] *See, e.g.*, AMTA Comments at 1-2; Motorola Comments at 1-2, 16-17, and Motorola *Ex Parte* Filing of October 18, 1999; PCIA Comments at 3-5; ArrayComm Comments at 5-8.

[36] Metricom Reply Comments at 2-4.

[37] Such services, to the extent they may be offered on these bands, will not necessarily resemble current radio and television broadcast services subject to Part 73 and Part 74 of our Rules, but could still meet the statutory definition of "broadcasting." *See* 47 U.S.C. § 153(6). (The term "broadcasting" means the "dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations.") Because such new broadcast-type services on these bands will necessarily use lower power levels than even existing low-

16. Our recent *Spectrum Reallocation Policy Statement* identifies as a Commission objective the development of a variety of mechanisms to make spectrum markets more efficient, including flexible service rules and innovative assignment mechanisms. In this proceeding, we find that such flexibility cannot extend to opening these bands to both conventional television and wireless services. Establishing regulatory flexibility sufficient to accommodate conventional television broadcasting would impose disproportionate, offsetting burdens on wireless services, constraining their technical effectiveness and, consequently, their economic practicability.[38] This conclusion is supported by the record. AirTouch, for example, asserts that the inherent conflicts between such disparate services "will require burdensome interference protection requirements that will prevent efficient spectrum use and compromise service to the public."[39] Sharing with conventional broadcasting services is also opposed by AMTA, APCO, Motorola, PCIA, RTG, and US WEST.[40] AMTA asserts that protective co-channel and adjacent channel standards designed to prevent land mobile interference to television operations in the 470-512 MHz band severely limited both the number of markets in which spectrum was available for land mobile use, and the area in which operations could be conducted within those markets. According to AMTA, transplanting similar sharing criteria to this band would severely limit provision of wireless services.[41]

17. We find that the contrasting technical characteristics of conventional television broadcasting, using power levels authorized by Part 73, and wireless services effectively preclude the development of interference rules that would enable the practicable provision of both sets of services on this spectrum.[42] The interference problem arises from the disparity between the two services' characteristic power levels, and between their transmitter tower heights.[43] Any substantial disproportion between the power levels of

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power television service, and may differ significantly in both technical and public policy respects from conventional broadcasting, we have not sought to anticipate or develop a regulatory framework, beyond the technical and operational rules we adopt in this Report and Order or that already apply to broadcast services generally.

[38] *See, e.g.*, Bell Atlantic Mobile Reply at 6-8; Intek Comments at 4; ITA Comments at 5-7; Metricom Reply at 4-6; Motorola Comments at 8; PCIA Comments at 4; US WEST Comments at 6-8.

[39] AirTouch Comments at 13. AirTouch recognizes that Commission rules authorize cellular and broadband PCS licensees to provide fixed service on a co-primary basis with mobile operations, and does not object to that type of flexible use authorization. AirTouch Comments at 12; *see* 47 C.F.R. §§ 22.901(d) and 24.3.

[40] AMTA Comments at 12; APCO Comments at 3; Motorola Comments at 8; PCIA Comments at 4; RTG Comments at 11-12; US WEST Comments at 6.

[41] AMTA Comments at 12.

[42] *See, e.g.*, Bell Atlantic Mobile Reply at 6-8; Intek Comments at 4; ITA Comments at 5-7; Metricom Reply at 4-6; Motorola Comments at 8; PCIA Comments at 4; US WEST Comments at 6-8.

[43] Formulas for maximum television transmitter power levels are specified in Section 73.614 of the Commission's Rules. While 5000 kW is the maximum power for UHF NTSC stations, less than a fifth of licensed stations use that level of power; in Washington, D.C., for example, the powers used by four UHF stations range from 2450 kW to 5000 kW. The maximum power permitted PCS licensees in the 900 MHz bands, in contrast, is 3500 watts, more than 1000 times less. 47 C.F.R. § 24.312. The central problem arises from the disparity, amounting to several orders of magnitude, between even a comparatively modest conventional television facility and a maximum-power PCS license. As described in Section III.D.3, we here adopt maximum power levels for these bands of 1000 watts and 30 watts for the lower and upper band segments respectively.

The high transmission power characteristic of conventional analog or digital television service, and the channelization of that spectrum into 6 megahertz sections, reflect standards developed to establish a nationally

services sharing a spectrum band creates much greater interference difficulties for the lower-power service than when sharing or adjacent-band services operate at comparable power levels. The disparity between television transmitter tower heights and those used by typical wireless providers adds to the difficulty by accentuating the power of the more powerful service. Even at considerable distance from the higher-power service's transmitter, its signal is still strong enough, due in part to the effect of tower height, to make a receiver designed for a nearer, lower-power service vulnerable to interference.[44] These effects are recognized by the Commission's Rules establishing minimum distance separation requirements between conventional television facilities using the same channel and between facilities using adjacent channels.[45]

18. Establishing standards to manage the inherent interference between such dissimilar transmissions as conventional television and wireless services would create substantial spectrum inefficiencies in a band where efficiency is especially important because of the band's suitability for uses ranging from wideband mobile communications to innovative, fixed wireless Internet access services and new broadcast-type services.[46] If, for example, we applied standards for the protection of incumbent television licensees on this band to protect new television licensees operating at power levels authorized by Part 73, we would curtail to negligible levels the potential of this band for wireless service. The efficient and intensive use of spectrum resources[47] is critical to facilitating new wireless technologies that have the potential to provide innovative new services and, as well, to serve underserved areas with both narrowband and broadband services.[48] The record in this proceeding demonstrates diverse and substantial demand for expanded wireless broadband spectrum—for uses ranging from the implementation of next generation applications as extensions of existing mobile and fixed uses, to the implementation of various innovative stand-alone technologies.[49] The innovations expected from the transition to DTV have been and will continue to be accommodated on the bands dedicated for television broadcasting.

19. Although we have determined to orient our technical and service rules primarily to enable the efficient and intensive use of these bands for wireless service, we will nonetheless allow any broadcast-type services consistent with the Table of Allocations that meet those rules. This approach will

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consistent television service, which has generally been implemented by allocating bands limited to television service. Neither the high power levels nor the preconfigured 6 megahertz spectrum blocks characteristic of conventional television service are necessary, however, for the flexible range of existing and contemplated wireless services.

[44] *See* Motorola October 27, 1999 *Ex Parte* Filing.

[45] *See* 47 C.F.R. § 73.610. Additional distance separation requirements applicable to conventional television operations on Channels 14-69 are specified in Table II of 47 C.F.R. § 73.698.

[46] *See, e.g.*, Cisco November 1, 1999 *Ex Parte* Filing; *see also, e.g.*, CEMA filings.

[47] *See* 47 U.S.C. 309(j)(3)(D).

[48] RTG asserts that allowing broadcast use on these bands is inconsistent with Sections 309(j) and 706 of the Act, because rules permitting broadcast use "will dramatically reduce the amount of spectrum actually made available for advanced telecommunications services in rural areas." RTG Comments at 12. *See also* FreeSpace October 13, 1999 *Ex Parte* Filing.

[49] *See* FreeSpace October 13, 1999 *Ex Parte* Filing; Clearwire Reply at 3-4.

allow the broadest degree of flexibility possible, consistent with technical interference limits and their economic consequences here.

20. *Section 303(y) Review.* Section 303(y) requires the Commission to make affirmative findings before permitting flexible use as part of the allocations process. Specifically, we are required to determine that such flexibility: (1) is consistent with international agreements; (2) would be in the public interest; (3) would not deter investment in communications services or systems, or technology development; and (4) would not result in harmful interference among users.[50] We find that the flexible allocation we adopted in the allocation Report and Order satisfies the standards of Section 303(y).

21. In the *Reallocation Report and Order*, we preserved the allocation of these bands to broadcasting, but recognized that sharing the spectrum between broadcasting and wireless services presented technical issues.[51] Metricom and other commenters assert that the fundamental purpose of flexible regulation would be defeated, and Section 303(y) would be violated, by an attempt to reconcile the very different interference rules associated with conventional broadcasting and broadband wireless communications.[52] Because we agree that service rules permitting television service based on conventional (Part 73 and Part 74) technical standards are not in the public interest, and have determined against that approach, we need not consider whether that approach to flexible use violates Section 303(y).

22. We do, however, undertake Section 303(y) review with respect to our decision to allow broadcasting that complies with Part 27 technical rules. We have determined that this inter-service aspect of our decision fully satisfies the requirements of Section 303(y). The revised entry in our Table of Allocations continues this band's previous use for broadcast service, and is consistent with international agreements.[53] As for the findings required by Section 303(y)(2), we find that no additional interference will be created by this approach to inter-service flexibility, because new broadcast-type services on these bands will be required to comply fully with the same technical requirements applied to wireless services. In that regard, our technical rules are transparent, and include no provisions to accommodate conventional broadcasting. For this reason, we anticipate no adverse investment or innovation effects on wireless services. In these circumstances, we find that permitting new broadcast-type use on these bands by the flexible use plan adopted here is in the public interest, and otherwise satisfies the review required by Section 303(y).

23. Some commenters have construed the scope of the Section 303(y) review requirement to reach beyond an inter-service interpretation of that mandate. These parties assert that the findings required by Section 303(y) are required to be made when the Commission adopts intra-service rules sufficiently flexible to enable a range of technical and regulatory characteristics within a specific service allocation. Specifically, they assert that Section 303(y) requires us to limit licensees using these 700

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[50] 47 U.S.C. § 303(y).

[51] *Reallocation Report and Order*, 12 FCC Rcd at 22962 para. 18.

[52] Metricom Reply at 5. CEMA contends too broad an approach to flexibility "may have the undesired effect of deterring those investments needed to provide communications services and encourage new technologies on the newly allocated spectrum. The potential sharing of this spectrum between broadcast service licensees and fixed and mobile wireless licensees, alone, complicate these issues." CEMA Comments at 14. *See also* US WEST Comments at 7.

[53] *See Reallocation Report and Order*, 12 FCC Rcd at 22960, 22962 (paras. 14, 19).

MHz commercial spectrum bands, or some portion of them, to specific technical or regulatory categories of wireless service, *e.g.*, specialized mobile radio (SMR) or terrestrial mobile applications. Southern, for example, while supporting a more flexible use for half the spectrum at issue, contends the public interest finding mandated by Section 303(y)(2)(A) requires the Commission to designate 18 Megahertz exclusively for SMR use.[54] AirTouch similarly invokes the public interest finding to assert that the demand for second- and third-generation mobile services, the spectrum needed to meet such demand, and the technical characteristics of the 700 MHz band, together demonstrate that the public interest is served by designation of these bands exclusively for terrestrial mobile use.[55] In addition, Metricom urges us not to diminish the existing flexibility of Part 27 with regard to channelization and other service rules that enable the flexible configuration of a particular service.[56]

24. We interpret the Section 303(y) review requirement as applicable to flexible use determinations by the Commission that would enable the sharing of specific spectrum bands by services treated as distinct by the international and domestic allocations process. Our review of flexible use under Section 303(y) is limited to regulatory decisions that would enable such inter-service flexibility.[57] We disagree with commenters that assert that the Commission is required to make the affirmative findings required by Section 303(y) as a precondition to adoption of flexible intra-service regulations. That statutory provision confers authority to "allocate electromagnetic spectrum so as to provide flexibility of use," but does not address domestic assignments or operational regulations. Nevertheless, while we find that its requirements apply directly and explicitly to our service allocation decisions, we here also consider these criteria under our broader public interest mandates in the statute, when making decisions that may affect the broader allocation through service rules.

25. The Part 27 provisions referred to generally by Metricom enable the type of operational flexibility that, while important to individual licensees, does not involve the type of inter-service regulations that, in our view, might potentially be inconsistent with the terms of Section 303(y). These regulations confer discretion on licensees at the level of individual system implementation, and pose minimal if any potential for interference or discouragement of investment. Thus, while our broad statutory mandate requires that our service and other rules (*e.g.*, competitive bidding regulations) fulfill the general public interest standard as well as enumerated legislative purposes,[58] we find further that, under Section 303(y), our various non-allocative, intra-service regulations meet the statutory criteria to provide such flexibility of use.

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[54] Southern Comments at 3-5. The Commission is required to consider the effect of its policies on competitive conditions within the relevant markets, Southern asserts, *citing Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983), and Southern contends it faces unique competitive concerns in the SMR context. *See also* Southern November 4, 1999 *Ex Parte* Filing.

[55] AirTouch Comments at 4-6. At the same time, however, AirTouch states that it does not object to flexible use provisions that provide for co-primary use by cellular and PCS licensees and mobile operations. AirTouch Comments at 11-12.

[56] Metricom Reply at 2-4.

[57] *See NPRM* at para. 11 n.24.

[58] *See, e.g.*, Section 309(j)(3) (safeguards to protect the public interest in the use of the spectrum) and Section 309(j)(4) (elements of regulations implementing competitive bidding authority).

2. Band Plan

26. **Background.** In the *NPRM*, we sought comment on several aspects of spectrum management, including the extent to which the pace of technical change may affect the desirable balance between licensee discretion and the extent of technical and operational regulations,[59] and how investment generally, and specifically for new and innovative technologies and services, would be affected by service rules. The *NPRM* also sought comment on the effect of different approaches to these bands upon interference to other services,[60] and how the Commission's auction processes should reflect and implement the spectrum management decisions.[61]

27. Several commenters urge us to auction a single, 36 megahertz license. A single, 36 megahertz license would, Metricom contends, leave the details of flexible use, including management of interference between distinct services, to be determined by the licensee.[62] MSTV similarly asserts that a unitary license would leave issues arising from the coordination of services, including the development of methods for sharing spectrum that do not unfairly burden specific services, to the licensee.[63] AirTouch also advocates a single, 36 megahertz license, though it would designate the entire band for terrestrial mobile services, predicated on substantially expanded spectrum needs for the implementation of next generation broadband wireless services.[64] Cisco contends that a single, 36 megahertz license would better enable use of these bands for efficient fixed wireless applications without precluding mobile services, and asserts that discrete sub-bands are not necessary to protect adjacent public safety uses.[65]

28. Several other commenters, including AMTA, FreeSpace, Motorola, PCIA, Intek, and US WEST, support a more structured approach to band management.[66] Some of these commenters argue for division of the band into comparatively modest spectrum segments, configured to flexibly enable a range of new and existing narrowband technologies, and propose division of the 36 megahertz into several bands with varying degrees of flexibility. In this latter category, for example, Motorola has proposed an overall band plan that configures two 1.5 megahertz band pairs, adjacent to the public safety spectrum bands, designated for the licensing of systems to band managers, and divides the remainder of the band into sub-bands intended to support a range of expanded wireless fixed and mobile services.[67] Others seek larger spectrum blocks; Southern, for example, argues that 18 megahertz should be designated for

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59 *NPRM* at para. 6.

60 *NPRM* at paras. 57-70.

61 *NPRM* at paras. 79-83.

62 Metricom Reply at 5-8. Metricom also proposes that the successful bidder be required to make a payment for each transmitter deployed, based on power and bandwidth.

63 MSTV Comments at 4-8.

64 AirTouch Comments at 6.

65 Cisco November 10, 1999 *Ex Parte* Filing.

66 AMTA Comments at 7-9; Free Space October 13, 1999 *Ex Parte* Filing at 2; Motorola Comments at 7; PCIA Comments at 5; Intek Comments at 5-6; US WEST Comments at 3-6.

67 Motorola October 27, 1999 *Ex Parte* Filing.

SMR service, and the remainder for flexible use.[68]

29. Several commenters assert that the failure to establish at least a minimal regulatory framework for services offered on these bands will seriously compromise the overall public benefits from these bands.[69] AMTA, for example, while asserting that relaxed regulation has encouraged innovative technologies and service offerings, also notes that the FCC is properly concerned that "unbridled regulatory flexibility not have the contrary effect of permitting harmful interference among users, deterring investment in communications systems or services or technological development, or otherwise not serve the public interest."[70] PCIA believes that a service allocation that is too flexible will deter investment in communications services and systems and technology.[71]

30. **Discussion.** We will adopt a band plan that establishes a 20 megahertz segment (two paired, 10 megahertz blocks), a 10 megahertz segment (two paired, 5 megahertz blocks), and two small, also paired, Guard Bands of 1 and 2 megahertz adjacent to the established public safety bands. The two larger band segments are not subject to eligibility requirements. The regulatory and technical standards applicable to the smaller Guard Band segments will be resolved in the subsequent Report and Order.

31. We decline to grant a unitary, 36 megahertz license. As an initial matter, we do not consider it desirable, in light of the record regarding the potential for interference to public safety users, to leave determination of the internal framework of these bands, including the structure of Guard Bands, to a single commercial entity. More broadly, in light of the range of technologies, services, and spectrum needs asserted by commenters, we find that the best course is to adopt a band plan that will allow bidders to pursue licenses that are less than the full 36 megahertz, but will allow bidders to aggregate a substantial portion of the band. In that way, the marketplace forces operating through the auction process, rather than regulatory fiat, will determine which of the multitude of service proposals will actually be implemented.[72] In addition, given the relatively small amount of bandwidth presently available, we must achieve a balance between the configuration of bands for broad groups of services, and preserving overall licensee flexibility in technical and service application choices.

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68 Southern Comments at 2-4, 6-7.

69 Motorola states that "[l]ack of activity towards defining a service for the WCS band is the clearest indication that such extreme flexibility does not work in the real world. While auction revenues should not be equated with the public interest, we also note that the WCS auctions attracted less than one percent of the revenue projected by budget experts." Motorola Comments at 5, *citing* 47 U.S.C. § 303(y).

70 AMTA Comments at 1-2.

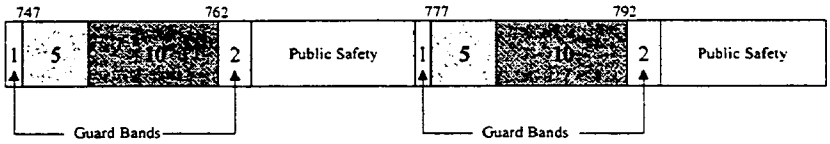
71 PCIA Comments at 2.

72 See Section III.E.

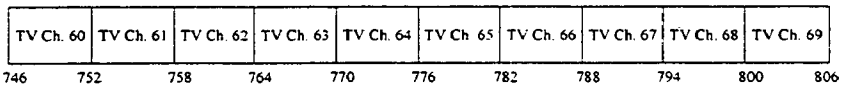
32. Our band plan is presented graphically in the diagram below. Our subsequent description includes the specific public interest basis for each of the plan's several components.

700 MHz Band Plan

Commercial Band Channelization



TV Channelization



33. *Protecting Public Safety Operations Through Guard Bands.* Consistent with the legislative history of Section 337,[73] a primary goal of our band plan structure is to ensure that activation of services in these 36 Megahertz of spectrum will not impair public safety operations in the former channels 63-64 and 68-69 through harmful interference. The Conference Report states that the Commission should ensure that public safety service licensees in the 746-806 MHz band "continue to operate free of interference from any new commercial licensees."[74] The importance attached to interference protection by the Congress is emphasized by APCO, the NCC, and the International Association of Firefighters.[75] In addition, Motorola has recognized this concern in its band plan proposal, which establishes Guard Bands at the extremities of the commercial use bands to insulate the adjacent public safety bands from stronger commercial service emissions in the central segments of these bands.[76] Other commenters, though proposing different approaches, have also recognized the public safety priority.[77] Accordingly,

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[73] H. Conf. Rep. No. 105-217, at 12 (1997), *reprinted at* 1997 U.S.C.C.A.N. 201.

[74] *Id.* at 580.

[75] APCO Comments at 2-5; NCC August 25, 1999 *Ex Parte* Filing; IAFC Comments at 2-3. *See also* Motorola Comments at 14-17; Region 20 Comments at 3-4.

[76] Motorola October 27, 1999 *Ex Parte* Filing.

[77] FreeSpace, for example, proposes bands with low out of band emission levels adjacent to public safety bands. FreeSpace October 13, 1999 *Ex Parte* Filing at 4-6.

we wish to ensure that the public safety bands are protected from interference, given that such spectrum will be used by local, state and Federal agencies for the protection of life, health, or property. This is a core function of this Commission under Section 1 and Section 337(f)(1) of the Communications Act.[78]

34. We agree with commenters who contend that Guard Bands are the best way to ensure protection for public safety uses. In this Report and Order, we establish four sub-bands, two each of 1 and 2 megahertz, designated as Guard Bands in the diagram, in order to protect the immediately adjoining public safety licensees on Channels 63, 64, 68, and 69 from harmful interference. We will require licensees on these Guard Bands to minimize interference to public safety licensees through technical and operational measures to be determined in the subsequent Report and Order. While protecting adjacent public safety bands from harmful interference, the sub-bands we establish here will allow for effective and valued use of the spectrum, consistent with sound spectrum management, rather than the creation of Guard Band spectrum of little use. To that end, we find it is appropriate to establish two 1 megahertz sub-bands at 746 MHz and 776 MHz, to allow for a paired block, and similarly to establish two paired 2 megahertz sub-bands, at 762 and 792 MHz, to provide further protection for public safety bands and to encourage the effective and valued use of the Guard Band spectrum.

35. *Paired sub-bands of 10 megahertz (5 megahertz pairs) and 20 megahertz (10 megahertz pairs).* We have determined to divide each of the two remaining 15 megahertz bands into a 5 megahertz and 10 megahertz segment, to be auctioned as paired bands of 5+5 and 10+10 megahertz. The division into these spectrum blocks furthers several spectrum management goals.

36. The two paired 5 megahertz segments appear well-suited to the expressed preferences of new technology advocates, and, depending on the technology adopted will enable some data services, including Internet access. Five megahertz segments, paired as a 10 megahertz segment, enable a single wideband CDMA channel, which is sufficient to provide some forms of Internet access.[79] FreeSpace initially sought 8 megahertz of spectrum, and subsequently proposed 6 megahertz in four 1.5 megahertz paired channels.[80] AT&T Wireless is reportedly using some elements of its Project Angel to develop a new wireless data service, to compete against wireless data access service provided by, *e.g.*, MCI (reselling Metricom service).[81] Similarly, the Japanese Communications Research Laboratory, applying a new transmission system to existing Personal Handyphone System technology, which employs TDD transmission to serve approximately six million customers, reportedly has demonstrated a high-speed (384 kbps) transmission system for multimedia communications to wireless mobile terminals.[82]

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78 *See* 47 U.S.C. §§ 151, 337(f)(1).

79 *See* Lucent November 15, 1999 *Ex Parte* Filing.

80 FreeSpace October 5, 1999 *Ex Parte* Filing; FreeSpace November 30, 1999 *Ex Parte* Filing (Presentation to National Coordination Committee at November 18-19, 1999 meeting.)

81 "AT&T Revs Up Portable Access Battle," Fred Dawson, October 18, 1999, http://www.zdnet.com/zdnn (downloaded Oct. 19, 1999).

82 "Development of 384 kbps PHS Communication Device," MPT NEWS, June 21, 1999 at 4. While the time division duplex transmission used by PHS does not dedicate bandwidth to data transmission in a manner directly comparable to channelized frequency division systems, the demonstration of this capability on a system widely used for voice and alphanumeric messaging is suggestive.

37. The size and placement of the two 5 megahertz segments achieves other spectrum management goals as well. As the diagram illustrates, this structure reduces the number of existing television channels, and thus of incumbent television licensees, to which a new licensee's operations would potentially cause co-channel interference, compared with equal 7.5 megahertz segments. In addition, we believe that our approach furthers the development and deployment of many services using these segments, but particularly accommodates firms seeking to negotiate accelerated transition agreements with incumbent television licensees. Such firms may likely confront a simpler negotiation process, because the alignment of these segments with existing television channels requires them to negotiate with fewer co-channel incumbents in many areas. Also, because the new license will directly overlap with the spectrum assignment of only a single incumbent television station, this alignment reduces the "free rider" problem created when third parties benefit from others' negotiations. Nor is any offsetting burden created for entities interested in the 10 megahertz segments, as compared to an equal division into 7.5 megahertz segments. Entities interested in providing services consistent with these spectrum blocks thus benefit from a reduced burden of expense and delay in achieving full use of their licensed spectrum.[83]

38. The wider, 10 megahertz segments should enable a broader range of broadband services, including Internet access at higher speeds. A 10 megahertz segment, for example, is sufficient to provide two bidirectional 384 kb/s mobile data streams per sector, as well as smaller-capacity services, using high-tier cellular and PCS technologies consistent with 3G service classifications.[84] Commenters such as Bell Atlantic and AirTouch assert that a large block of spectrum is needed to support 3G mobile telephony.[85] Lucent, in describing the suitability of the 700 MHz band for 3G services, notes that the 5 megahertz minimum bandwidth increment is necessary to support the broadest range of 3G technologies,[86] and the greater flexibility of larger bandwidth segments could be used to satisfy the asymmetric characteristics of data services. These wider segments will enable substantial augmentation of existing CMRS systems, whether for expansion into provision of next generation services under the 3G service classification or some other approach less directly linked to existing systems. They also have the potential to support new systems in appropriate circumstances, as US WEST states.[87]

39. We recognize assertions by Cisco and others that establishing any sub-bands reduces spectrum efficiencies achieved by aggregation and creates more frequency boundaries between licensees

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Telcordia, however, suggests in its November 4, 1999, *Ex Parte* Filing, that DECT, PACS, and Personal Handyphone Service (PHS), while containing "well-defined data transport protocols," would be best at providing moderate-rate (64-128 kb/s) data service.

83 *See* 47 U.S.C. § 309(j)(3)(A).

84 Telcordia November 4, 1999 *Ex Parte* Filing at 2.

85 AirTouch Comments at 16-17; AirTouch Reply at 10-11; Bell Atlantic Mobile Reply at 2-5.

86 Lucent November 15, 1999 *Ex Parte* Filing.

87 US WEST states that the economics of manufacturing new equipment for use in this band, and the preference of wireless service providers to establish services of national scope, require that a significant amount of spectrum be designated for a single nationwide license to enable a new nationwide competitor. US WEST modified its original proposal to ask that we designate 20 megahertz as a national license, and 10 megahertz for regional licensing. US WEST Comments at 4-6; US WEST November 15, 1999 *Ex Parte* Filing.

that require interference management.[88] We believe our decision here is appropriate, however. First, encouraging a variety of technologies and entrants is an important spectrum management goal. Subdividing the 36 megahertz of available spectrum will make it more likely that start-ups and companies that are not highly capitalized will have the opportunity to pursue spectrum. Second, our auction rules allow bidders to aggregate these band segments. This allows entities that believe they need to acquire a larger amount of spectrum than that available in the individual licenses to do so. Third, our choice of two licenses, rather than a single license, adds only one interference boundary as a constraint on spectrum efficiencies. While Cisco suggests that its approach to broadband Internet access would encourage the provision of such access to less densely developed areas, other parties that favor large spectrum block approaches generally do not suggest that a single large block is necessary to accommodate such important spectrum management goals. In the circumstances presented here, we conclude that our band plan, rather than a 30 or 36 megahertz license, best fulfills our statutory spectrum management responsibility.

40. *Paired-Band Architecture.* To achieve effective flexibility, without constraining new technologies and services, the band plan designates the lower and upper 18 megahertz segments for distinct power limits, consistent with traditional practice for paired mobile services and the requests of providers such as AirTouch, AMTA, and US WEST.[89] We establish different power limits for the lower frequency segment and the higher frequency segment. These limits reflect and optimize the efficient use of spectrum for the expected predominant use of each segment. Thus, power limits for the lower frequency band segment reflect its expected primary use for higher-power base station transmissions received by control, mobile and portable stations; in contrast, we have set power limits for the higher frequency band segment at levels that optimize its efficient use for the lower-power transmissions from control, mobile and portable stations that will be received by base stations. This approach enables more efficient spectrum use, by minimizing the "near-far" interference problem that arises in more extreme form by the juxtaposition of television transmission with land mobile services. Our Part 27 rules enable fixed services on either segment.[90]

41. We recognize that advocates of lower power, TDD transmission seek smaller, unpaired sub-bands, and emission standards configured to encourage that mode of transmission.[91] FreeSpace and other parties support the configuration of sub-bands and emission limits for TDD applications, and assert their preference for unpaired spectrum bands.[92] Lower power technologies provide a range of voice and data services by flexibly using a single, contiguous band for asymmetric up- and down-link access.[93] ArrayComm notes a trade press prediction that NTT will rely on TDD-based systems rather than W-CDMA to deploy the first commercial 3G systems, and submits a spectral efficiency comparison

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88 Cisco November 11, 1999, *Ex Parte* Filing at 3.

89 AirTouch Comments at 16-17; AMTA Comments at 7-8; US WEST Comments at 2-5.

90 Determination of maximum allowable power levels is discussed in Section III.D.3.

91 *See* ClearWire Reply at 3; FreeSpace Communications Oct. 13, 1999; *Ex Parte* Filing at 6-7; ArrayComm Comments at 5-7.

92 ArrayComm Comments at 10; DDI Pocket Reply at 3-4; Clearwire at 3.

93 PHS GUIDEBOOK, July, 1998, Japan Ministry of Posts and Telecommunications; DDI Comments at 2-3.

between various wireless technologies.[94]

42. The majority of commenters note, however, that Frequency Division Duplex (FDD), which is the most commonly-used transmission procedure for PCS, cellular, and other mobile telephony applications, requires paired spectrum. Pairing of these bands under these circumstances will facilitate the auction procedure, by not requiring bidders seeking paired bands to prepare multiple bids. In sum, because paired bands are essential to these technologies, while technologies using unpaired spectrum can operate on paired segments if the segments are large enough, we conclude that the post-auction unpairing of this spectrum creates less of an overall problem for the expeditious activation of these bands than would the need to pursue post-auction pairing, if our rules did not initially establish a paired configuration.

B. Licensing Rules

43. In the *NPRM* we sought comment on licensing rules for a full range of possible licensees, consistent with our stated intention to permit as much flexibility in the use of this spectrum as is consistent with the requirements of Section 303(y) of the Act. In the interests of flexibility and optimum spectrum use, we have enabled the provision of any service in this Order, so long as the licensee complies with the technical rules governing spectrum use. The following discussion addresses licensing rules for uses of this spectrum other than new broadcast-type services.[95]

1. Regulatory Status

44. **Background.** In the *NPRM*, we sought comment on whether to apply the existing licensing framework established in Part 27 for Wireless Communications Service (WCS)[96] to the 746-764 MHz and 776-794 MHz bands.[97] Part 27 accords licensees the flexibility to provide any fixed, mobile or radiolocation service contained in the non-government column of Table of Allocations in Part 2 of the Commission's Rules[98] for this spectrum, and provides, *inter alia*: (i) the limitation of eligibility requirements to foreign ownership restrictions set forth in Section 310 of the Communications Act; (ii)

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94 ArrayComm Reply at 5-6, *citing* Baskerville Communications Corp., "Japan Takes Quiet Road to Third-Generation Explosion," 3G MOBILE, May 19, 1999, at 6.

95 There is little record comment on the appropriate regulatory treatment for new broadcast-type services, although several commenters note that different considerations inform the regulatory structures for broadcast services and nonbroadcast services. *See, e.g.*, CEMA Comments at 14. However, we cannot anticipate the nature of those broadcast services that may be developed in the future for use of this spectrum in conformance to to the power limits and band configurations adopted in this Order. While we do not make specific determinations here regarding any new broadcast-type services, we remind potential applicants that certain broadcast regulations are mandatory as a matter of statute and thus must apply to such services. The provision of new broadcast-type services compliant with Part 27 technical standards does not alter the underlying nature of such services, or the licensee's related regulatory and statutory obligations.

96 This regulatory framework was established in response to the Congressional mandate in Section 3001 of the Omnibus Consolidated Appropriations Act of 1997 to reallocate and assign the use of the frequencies at 2305-2320 MHz and 2345-2360 MHz. Omnibus Consolidated Appropriations Act, 1997, P.L. 104-208, 110 Stat. 3009 (1996).

97 *NPRM* at para. 57.

98 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 10797-10802 (paras. 25-36) (*Part 27 Report and Order).*

the exclusion of WCS spectrum holdings from application of the CMRS spectrum cap; (iii) flexibility to partition geographic service areas and disaggregate spectrum blocks; (iv) determination of regulatory status by a licensee's designation in its long-form application; and (v) with some exceptions, incorporation of the competitive bidding rules set forth in Part 1 of the Commission's Rules.[99]

45. Noting in the *NPRM* that the licensing framework for Part 27 permits applicants to request common carrier status as well as non-common carrier status under a single license,[100] we proposed to authorize licensees in the 746–764 MHz and 776-794 MHz bands to provide a variety or combination of fixed and mobile, common carrier and non-common carrier, and broadcast services, anywhere within their licensed areas at any time, consistent with the regulatory status specified by the licensee in its long form application (Form 601) and with applicable interference protection requirements. We tentatively concluded that this approach was likely to achieve efficiencies in the licensing and administrative process. In this regard, we sought comment in the *NPRM* on the need to modify Form 601 or any other appropriate form(s) to account for the flexibility of use permitted for these bands. Several parties advocating regulatory neutrality in administering this spectrum endorsed our proposal.[101] TWDC, for example, contends that traditional regulatory requirements can disadvantage one class of participants and can discourage experimentation and the development of new services.[102]

46. **Discussion.** To fulfill our enforcement obligations and ensure compliance with the statutory requirements of Titles II and III of the Communications Act, we will require applicants to identify whether they seek to provide common carrier services or other services permitted under the final rules adopted in this proceeding. However, licensees in the 747-762 MHz and 777-792 MHz bands will not be required to describe the specific services they seek to provide but only to designate the regulatory status of the services.[103] To facilitate this result, we have amended item 35 of the Form 601 to add the broadcast option. Licensees also will be required to notify the Commission within 30 days of service changes that alter the regulatory status of their services. When the change results in the discontinuance, reduction, or impairment of the existing service, a different approach may apply, depending on the nature of the service affected.[104]

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[99] We have since proposed application of the Part 27 framework to development of service and operational rules for other spectrum bands. See, e.g., *47 GHz Notice*, 13 FCC Rcd at 16968 (para. 51).

[100] *Part 27 Report and Order*, 12 FCC Rcd at 10845-48 (paras. 118-122).

[101] TWDC Comments at 9; TWDC Reply at 8-9; MSTV Comments at 14; Alaskan Choice Comments at 4.

[102] TWDC Comments at 9; TWDC Reply at 8.

[103] *See* Section 27.10 of the Commission's Rules at Appendix B, 47 C.F.R. § 27.10. *See also Part 27 Report and Order*, 12 FCC Rcd at 10848 (para. 121). *See also* 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 19.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service And for Fixed Satellite Services, Petitions for Reconsideration of the Denial of Applications for Waiver of the Commission's Common Carrier Point-to-Point Microwave Radio Service Rules, CC Docket No. 92-297, Suite 12 Group Petition for Pioneer Preference, PP-22, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 12545, 12644 (para. 223) (1997) (*LMDS Second Report and Order*); 47 C.F.R. § 101.1013.

[104] 47 U.S.C. § 214(a). *See* Section 27.66 of the Commission's Rules at Appendix B, 47 C.F.R. § 27.66. *See also* discussion of operating rules, *infra*.

2. Eligibility and Use Restrictions; Spectrum Aggregation

47. **Background.** Sections 27.12 and 27.302 of the Commission's Rules[105] impose no restrictions on eligibility, other than the foreign ownership restrictions set forth in Section 310 of the Communications Act.[106] Our proposal to impose no additional eligibility requirements is endorsed by several parties.[107] We also proposed to impose no restrictions on the amount of spectrum that any one licensee may obtain in the 746-764 MHz and 776-794 MHz bands in the same licensed geographic service area. We received conflicting responses to this portion of our proposal.[108]

48. With respect to out-of-band spectrum aggregation, we noted in the *NPRM* that the 746-764 MHz and 776-794 MHz bands may be used for mobile services comparable to the cellular, broadband Personal Communications Service (PCS), and Specialized Mobile Radio (SMR) spectrum for which the CMRS spectrum cap was devised.[109] The CMRS spectrum cap in Section 20.6 of the Commission's Rules governs the amount of CMRS spectrum that can be licensed to a single entity within a particular geographic area. Under Section 20.6, a single entity may acquire attributable interests in the licenses of broadband PCS, cellular, and SMR services that cumulatively do not exceed 45 megahertz of spectrum within the same geographic area.[110] In rural geographic areas, an entity may acquire as much as 55 megahertz of spectrum. The CMRS spectrum cap is intended to preclude licensees from aggregating sufficient amounts of CMRS spectrum in a single geographic area to enable them, singly or in combination with other licensees, to exclude competitors, reduce the quantity or quality of services provided, or increase prices to the detriment of customers.[111] In the *NPRM* we inquired whether CMRS provided on the 746-764 MHz and 776-794 MHz bands should be exempt from the CMRS spectrum cap.[112] This proposal was supported by a number of commenters,[113] although others argued for

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[105] 47 C.F.R. §§ 27.12, 27.302. *See also Part 27 Report and Order*, 12 FCC Rcd at 10829, para. 83.

[106] 47 U.S.C. § 310.

[107] AirTouch Comments at 22-25; BAM Reply at 11-12.

[108] This proposal is opposed by AirTouch (Comments at 22-24); Bell Atlantic Mobile (Reply at 12); and MSTV (Comments at 14). KM supports limiting the spectrum obtained by a single licensee (KM Comments 4).

[109] *See* Section 20.6(a) of the Commission's Rules, 47 C.F.R. § 20.6(a). *See also Part 27 Report and Order*, 12 FCC Rcd at 10832-34 (paras. 87-91).

[110] *See* 1998 Biennial Regulatory Review--Spectrum Aggregation Limits for Wireless Telecommunications Carriers, WT Docket No. 98-205, Cellular Telecommunications Industry Association's Petition for Forbearance from the 45 MHz CMRS Spectrum cap, Amendment of Parts 20 and 24 of the Commission's Rules--Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, WT Docket No. 96-59, Implementation of Sections 3(n) and 332 of the Communications Act, GN Docket No. 93-252, *Report and Order*, FCC 99-244, released Sept. 22, 1999, 1999 WL 734848 (*Spectrum Cap Report and Order*).

[111] *Spectrum Cap Report and Order* at para. 11.

[112] *NPRM* at para. 28.

[113] AirTouch Comments at 20-22; BAM Reply at 11; MSTV Comments at 14. RTG argues that applying the spectrum cap to this spectrum would preclude deployment of advanced 3G services to rural areas. RTG Comments at 9-10. *See also* RTG Reply at 9.

subjecting these bands to the CMRS spectrum cap.[114]

49. **Discussion.** We will impose no restrictions on eligibility for a license in the 747-762 MHz and 777-792 MHz bands. Thus, no prospective licensee will be barred from participation in the auction or from post-auction acquisition of a license for this spectrum based on its status as a provider of cable services, for example, or of telephone or other telecommunications services. We believe that opening this spectrum to as wide a range of applicants as possible will encourage entrepreneurial efforts to develop new technologies and services, while helping to ensure the most efficient use of the spectrum.[115]

50. We have pursued a policy of flexible use for the 747-762 MHz and 777-792 MHz bands. We are particularly concerned that eligibility restrictions could impede efficient development of this spectrum. Were we to exclude all incumbent providers of services that could compete with services that could be provided using this spectrum, we would exclude virtually every major telecommunications service provider active today. We anticipate that use of this spectrum will offer incumbent providers of both wireline and wireless services an opportunity to augment their existing services and systems, rather than to act in an anticompetitive manner, for example, by warehousing the spectrum acquired.

51. With respect to the CMRS spectrum cap, we noted in the *NPRM* that the 746-764 MHz and 776-794 MHz bands may be used for mobile services comparable to the cellular, broadband PCS, and SMR spectrum for which the CMRS spectrum cap was devised. Recognizing that the spectrum cap limits were set on the basis of the particular amount of spectrum (180 megahertz) available at that time for CMRS, we indicated in the *Spectrum Cap Report and Order* that we would evaluate whether the cap should apply, or be adjusted, at the time that we made more spectrum available for CMRS.[116] It has been our expectation that, as we made more spectrum available for CMRS services, we would either adjust the cap upward or refrain from including the new spectrum within the scope of the cap.

52. Consistent with our proposal in the *NPRM*, we have determined that the 747-762 MHz and 777-792 MHz bands, if used to provide CMRS, should not count against the 45/55 megahertz spectrum cap. In our recent biennial review of the CMRS spectrum cap, we declined to increase the cap, except in those rural areas in which we determined that an increase was necessary to facilitate the deployment of CMRS.[117] We believe that the presence of the CMRS spectrum cap for the existing 180 megahertz of CMRS spectrum provides a sufficient safeguard against consolidation of spectrum to refrain from extending the cap to the 747-762 MHz and 777-792 MHz bands. We also are interested in facilitating the use of these bands for next generation applications that would benefit from those economies of scale provided by licensing on a national or large regional basis. In addition, it is not clear that this spectrum will be used primarily or even substantially for CMRS services or that the services that are provided will be competitive with CMRS. The spectrum is presently encumbered and is likely to remain so, to at least some extent, until 2006. In no part of the country is this band totally unencumbered; in certain parts of

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[114] UTC argues that the imposition of a spectrum cap on CMRS services provided on the spectrum would create needed parity between broadcast and CMRS providers. UTC Comments at 4. *See also* KM Comments at 4.

[115] Given the commercial nature of the spectrum and our recent (and significant) public safety allocation in the 700 MHz band, providers of public safety services as defined in Section 337(f) of the Communications Act will not likely be interested in participating in the auction of this spectrum or acquiring spectrum in post auction transactions. *See* 47 U.S.C. § 337(f).

[116] *Spectrum Cap Report and Order* at paras. 20-27, 66-67.

[117] *Spectrum Cap Report and Order* at paras. 20-27, 66-67.

the country, particularly metropolitan areas, very little of this band is presently available. In light of the present level of encumbrance and the extended transition period provided for incumbent television broadcasters to move out of the band, it would not make sense to count this spectrum against the current cap.

53. Finally, our decision furthers the public interest better than including this spectrum in the cap and then adjusting the cap upward. That course would permit reconsolidation within the present CMRS bands. We note that our approach here is consistent with that in other bands for which we have adopted very flexible allocations and service rules.[118] As we indicated in the *Spectrum Cap Report and Order*, reconsolidation would prompt concern about reductions in competition and attendant increases in prices and diminution in the quality of services provided.[119] We deem it appropriate to provide additional spectrum for incumbent providers to implement broadband CMRS services, provided this can be accomplished without sacrificing the substantial benefits that the public has realized from competition in CMRS services. We believe that excluding this spectrum from the cap will not result in any additional concentration, or reduce competition in the CMRS marketplace. Correspondingly, keeping the cap in place on present CMRS bands, at least for the time being, will help to ensure that the competitive market structure is maintained.

3. Size of Service Areas for Geographic Area Licensing

54. **Background.** In the past, Part 27 spectrum has been licensed based on one of two kinds of service areas:[120] twelve Regional Economic Area Groupings (REAs)[121] or 52 Major Economic Areas (MEAs). REAs and MEAs are based on the 172 Economic Areas (EAs) defined by the U.S. Department of Commerce, as modified by the Commission. Licensing Part 27 spectrum using REAs and MEAs allowed us to balance various specific competing needs.[122] In the 220 MHz auction, we auctioned spectrum in six Economic Area Groupings (EAGs) which were also based on EAs as defined by the Department of Commerce.[123] In the *NPRM*, we requested comment on the type of service area or areas that should be used to license the 746-764 MHz and 776-794 MHz bands.

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118 *See, e.g., LMDS Second Report and Order* at pages 12634-12639.

119 *See Spectrum Cap Report and Order* at paras. 33-36.

120 Section 27.6 of the Commission's Rules, 47 C.F.R. § 27.6; *see also, Part 27 Report and Order*, 12 FCC Rcd 10785, 10814-16 (paras. 54-60) (1997).

121 "REAs" (Regional Economic Areas) refer to the 12 regions established in the WCS auction, which at that time were known as Regional Economic Area Groupings (REAGs). See OET mapping information on the FCC website <www.fcc.gov/oet/info/maps/areas/>.

122 *Part 27 Report and Order*, 12 FCC Rcd at 10814-15 (para. 55).

123 *See* Appendix C. The *220 Third Report and Order* established groupings of EAs into six regions of approximately equal population size based on the 1990 census. *See*, In the Matter of 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, RM-8506, Implmentation of Sections 3(n) and 332 of the Communications Act, GN Docket No. 93-252, Regulatory Treatment of Mobile Services Implementation of Section 309(j) of the Communications Act – Competitive Bidding, PP Docket No. 93-253, FCC 97-57, *Third Report and Order; Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd. 10943, (Appendix E) (1997) (*220 Third Report And Order).*

55. The majority of commenters tended to recommend larger geographic sizes for this spectrum band.[124] Those parties advocating CMRS use for the spectrum generally tended to recommend larger geographic areas. They contend that the trend in the marketplace toward the development of nationwide footprints by CMRS carriers demonstrates that CMRS is increasingly a nationwide service and should be licensed on that basis.[125] Some companies proposing innovative technologies argued for a nationwide license divided into narrow bands at different frequencies, which would enable them to bypass incumbent TV stations.[126] A larger geographic licensing area, it is argued, would also allow these new service providers to build-out over large regions reaching rural areas in a cost-effective manner by taking advantage of the long-distance propagation characteristics of this UHF band.[127] Other reasons given by commenters for larger geographic area licensing include the economies of scale needed to lower equipment costs[128] and to deploy innovative services rapidly;[129] advantages in facilitating interoperability and standards;[130] the simplification of interference coordination;[131] and lowered-cost pricing plans by minimizing roaming costs[132] or allowing for single-rate pricing plans.[133] A few commenters argued for much smaller geographic licensing areas (172 EAs or smaller) in order to be affordable for rural areas,[134] to enable reuse of existing tower sites,[135] or to better serve smaller market areas.[136]

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[124] *See, e.g.*, US WEST Comments at 2; Freespace Oct. 13; 1999 *Ex Parte* Filing at 2-3, 11-13.

[125] *See* AirTouch Comments at 19-20; BAM Reply at 10; FreeSpace Oct. 13; 1999 *Ex Parte* Filing at 11-12 (referring to AT&T, Sprint, Vodafone-AirTouch/Bell Atlantic merger, Nextel, VoiceStream buying up Omnipoint and 360° Comm); US WEST Comments at 3 (arguing for 24 megahertz national and 12 megahertz in areas no smaller than MEAs in order to offer a 3G migration path for wireless companies now holding 10 megahertz broadband PCS licenses).

[126] See FreeSpace Oct. 13, 1999 *Ex Parte* Filing at 2-3.

[127] See FreeSpace Oct. 13, 1999 *Ex Parte* Filing at 6-7.

[128] AirTouch Comments at 18-19; BAM Reply at 9-10; FreeSpace Oct. 13, 1999 *Ex Parte* Filing at 11.

[129] AirTouch Comments at 18-19; BAM Reply at 9-10; FreeSpace Oct. 13, 1999 *Ex Parte* Filing at 12.

[130] AirTouch Comments at 18-19; BAM Reply at 9-10.

[131] AirTouch at Comments 18-19; FreeSpace Oct. 13, 1999 *Ex Parte* Filing at 12 (noting the difficulty of coordination in this band already encumbered with existing TV licensees).

[132] AirTouch Comments at 18-19.

[133] BAM Reply at 9-10; FreeSpace Oct. 13, 1999 *Ex Parte* Filing at 11.

[134] RTG Comments at 3 (seeking to enable rural providers who have extensive physical plant requirements, to afford to bid for a manageable sized region).

[135] SBC Comments at 3 (noting that licensing by SMAs and RSAs would enable reuse of existing towers constructed for build-out of cellular service).

[136] KM Comments at 3-4 (pointing out that local stations are essential to broadcasting); MSTV at 11 (arguing that broadband providers attempt to reach a market which shares similar regional interests and concerns).

56. **Discussion.** We have determined to license both the 20 megahertz and the 10 megahertz licenses according to the six Economic Areas Groupings (EAGs).[137] We believe that auctioning both licenses on the same geographic basis will enable aggregation into a 30 megahertz band needed for certain applications, for example, for high-speed data.

57. In reaching our conclusion on the appropriate service area size for this spectrum, we have considered several factors. First, we have assessed the use or uses to which this spectrum is likely to be put and determined the geographic scope that, based on the record, would best facilitate rapid deployment.[138] Second, Section 309(j) of the Communications Act includes as objectives for competitive bidding the avoidance of excessive concentration of licenses and the dissemination of licenses among a wide variety of applicants.[139] Third, we are mindful of our statutory obligation to conduct the auction for the 746-764 MHz and 776-794 MHz bands to ensure that all proceeds are deposited by September 30, 2000[140] and of our experience in previous auctions, which has shown that simultaneous multiple-round auctions for a larger number of licenses are more complex and take longer to complete than similar auctions involving fewer licenses. Fourth, while individual parties will be able as part of the auction process to aggregate service areas[141] or to join bidding consortia to obtain spectrum rights to areas smaller than the Commission's licensing areas, there are risks and costs associated with attempting to do either. This is particularly true when there are a large number of small geographic areas. Thus, we think the best approach is for the Commission to attempt to determine as a starting point the most efficiently sized geographic areas. Finally, as discussed below, to the extent that our decision does not result in optimally sized initial areas for all licensees, we are also allowing for post-auction partitioning and aggregation of licenses for those bidders whose business plans require smaller or larger geographic areas. These rules should allow post-auction transactions to facilitate the most efficient distribution of licenses.

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[137] For the purposes of the 220 MHz Auction, the Economic Area Groupings did not include the Gulf of Mexico. For the current auction, we will divide the Gulf by a line of demarcation which corresponds to the boundary established for the "Western Gulf Planning Area" as mapped by the Mineral Management Services Bureau of the Department of Interior (MMS). All services to east of that line of demarcation (MSS's Eastern and Central Planning Areas) will be part of the Southeast EAG (EAG 3) and all services to the west (MSS's Western Gulf Planning Area) will be part of the Central/Mountain EAG (EAG 5). Having the service area extend into the Gulf will provide service for oil rigs and other mining installations located there without the difficult interference issues that have arisen in the past when one licensee served the Gulf and different licensee the adjoining land. *See,* In re Cellular Service and Other Commercial Mobile Radio Services in the Gulf of Mexico, WT Docket No. 97-112, Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, CC Docket No. 90-6, *Second Further Notice of Proposed Rule Making*, 12 FCC Rcd 4578 (1997). MMS's boundaries were selected because they are the basis for the leased mineral rights areas which are the major economic divisions in the Gulf and because the mapping data is public information available on their website. See <www.gomr.mms.gov/homepg/offshore/offshore.html>

[138] *Supra,* notes 130-142.

[139] *See* 47 U.S.C. § 309(j)(3)(B).

[140] *See Consolidated Appropriations*, Appendix E, Sec. 213. *See also* 145 Cong. Rec. at H12493-94, (Nov. 17, 1999).

[141] *See* WCS *R&O*, FCC 97-50, at n. 139 (citing as examples the auctions for PCS Narrowband and Broadband A/B blocks).

58. We concur with the comments advocating that we use the same geographic licensing areas for various segments of the band to permit flexibility in the use of this spectrum. For instance, as Cisco argues, regardless of the geographic area, having both licenses (10 and 20 megahertz) auctioned for the same sized regions would enable aggregation into a 30 megahertz band in a particular region. This bandwidth is needed for certain applications, especially as a third pipe for broadband connection to the Internet.[142] Recognizing the significance this capability would add to the flexible uses for this spectrum, we have determined to license both the 20 megahertz and the 10 megahertz licenses according to the same license areas and have opted for the six Economic Areas Groupings (EAGs).

59. In reaching the decision for two sets of six EAG licenses (twelve total), we have ruled out MEAs or EAs recognizing the overall advantages of larger-sized areas for this band:

- To provide optimum opportunity for alternative aggregation approaches to suit a wide variety of possible services and business plans such as building a nationwide footprint or acquiring both licenses in a particular region.[143]

- To allow the growth of existing technologies while encouraging the development of new applications. When areas are inefficiently small, the costs of aggregation during or after the auction in terms of delay and transaction costs may harm both service providers and customers alike.[144]

- To take advantage of opportunities afforded by economies of scale: for developing standard protocols for particular applications and for manufacturing equipment to operate at specific frequencies of the spectrum.[145]

- To help address the problems associated with incumbent TV stations in this band, which operate in fairly large areas protected from interference. To license new spectrum in smaller areas would create many situations in which the protection zone would overlap the incumbent license areas or create the need for complicated protection agreements.

- To facilitate conducting the auction in a timely manner.

60. These large geographic areas would readily allow aggregation into a nationwide service area and would enable multiple parties to bid on this spectrum for the provision of high-speed wireless data services. Given the existing build-out of CMRS carriers on a national level, new providers entering this competitive market or existing carriers adding new services to their growing customer base may wish to

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142 Cisco Nov. 10, 1999 *Ex Parte* Filing at 2.

143 *See infra*, Competitive Bidding Section.

144 For example, this may be what has happened in CMRS where a combination of very large number of small license areas and multiple standards has led to difficult roaming issues and operational inefficiencies (e.g., the need for multiple mode phones) which, in turn, has led to greater costs in the form of higher roaming rates.

145 These geographic areas should permit industry to internalize the costs of developing its own standards. We find that the REA licenses purchased as a 10 megahertz block with the capability of aggregating to nationwide build-out is a sufficient segment to help facilitate the standard-setting process. Smaller regions could hinder the evolution of appropriate standards.

aggregate either the 10 or 20 megahertz regional licenses into a nationwide footprint.[146] Others, following the Cisco proposal, for exclusively fixed high-speed wireless data, may wish to aggregate the two bands within a single region to increase bandwidth to the 30 megahertz to provide high-speed Internet access, resulting in different service providers for different regions.[147] However, in light of the variety of potential services proposed in the record, including for emerging technologies or next-generation applications, the most desirable or efficient scale of service area varies according to the business plans of the particular commenting party. Some may need less spectrum as well as smaller geographic area.[148]

61. In addition, we conclude that the six EAGs, as opposed to a nationwide license, will more easily allow partitioning where appropriate to serve the needs of smaller users and rural communities. Partitioning – which could be conditionally agreed upon prior to the auction or arranged post-auction – will also allow start-ups and rural-based companies additional opportunities to acquire spectrum for the provision of service.[149] Thus, we decide to use EAGs for all licenses but allow licensees to partition them into smaller areas, as well as to aggregate them into larger geographic areas. This approach should provide maximum flexibility to the parties to adjust their operating area most efficiently given marketplace and technological needs.

4. Foreign Ownership Restrictions

62. **Background.** In the *NPRM*, we proposed means for implementing the foreign ownership provisions set forth in Sections 310(a) and 310(b) of the Communications Act.[150] Section 310(a) prohibits any foreign government or representative from holding a station license. Section 310(b) prohibits certain defined foreign ownership interests in broadcast, common carrier, aeronautical en route or aeronautical fixed radio station licenses. One comment, supporting our proposal, was received on this portion of the *NPRM*.[151]

63. **Discussion.** We have determined that Section 27.12 of the Commission's Rules, which implements Section 310 of the Act,[152] should apply to applicants for licenses in the 747-762 MHz and 777-792 MHz bands. A nonbroadcast applicant requesting authorization only for non-common carrier services will be subject to Section 310(a) but not to the additional prohibitions of Section 310(b). An applicant requesting authorization for common carrier services will be subject to both Section 310(a) and Section 310(b).

64. In the case of Multipoint Distribution Service (MDS), satellite service, or Local Multipoint

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146 US WEST Comments at 4-6.

147 Cisco Nov. 10, 1999 *Ex Parte* Filing at 3.

148 *See* Southern Reply at 7 (advocating licensing on the basis of EAs) and Freespace Oct. 13, 1999 *Ex Parte* Filing at 2 (proposing a system requiring as little as 4 megahertz of spectrum).

149 *See infra,* Competitive Bidding Section regarding bidding credits.

150 47 U.S.C. §§ 310(a), 310(b).

151 *See* AirTouch Comments at 25.

152 47 C.F.R. § 27.12. *See also* Section 27.302 of the Commission's Rules, 47 C.F.R. § 27.302.

Distribution Service (LMDS), the Commission requires an applicant electing non-common carrier status to submit the same information that common carrier applicants submit to address the alien ownership restrictions under Section 310(b) of the Act.[153] In light of Part 27 licensees' ability to provide common carrier and non-common carrier services, Commission rules require all licensees, even non-common carriers, to report alien ownership on a consistent basis, to enable the Commission to monitor compliance more effectively. As we proposed in the *NPRM*, we will follow the same approach in the case of applicants for the 747-762 MHz and 777-792 MHz spectrum. Common carriers and non-common carriers will not be subject to varied reporting obligations, but will be required to file changes in foreign ownership information to the extent required by Part 27 of our Rules. By establishing parity in reporting obligations, however, we do not establish a single substantive standard for compliance. Thus, we do not and would not disqualify an applicant requesting authorization exclusively to provide non-common carrier services from a license simply because its citizenship information would disqualify it from a common carrier license.

65. The statutory foreign ownership restrictions are applicable to licensees to the extent they apply to a particular service being offered in the 747-762 MHz and 777-792 MHz bands.However, we note that, in response to the World Trade Organization (WTO) Basic Telecommunications Agreement, we have liberalized our policy concerning foreign ownership of common carrier radio licensees under Section 310(b)(4). We now presume that ownership by entities from countries that are WTO members serves the public interest. Ownership by entities from countries that are not WTO members continues to be subject to the "effective competitive opportunities" test established by the Commission.[154]

5. License Term; Renewal Expectancy

66. **Background.** In the *NPRM* we proposed to adopt the license term and renewal provisions in Part 27 of the Commission's Rules, for other than new broadcast-type services. Section 27.13 limits the license term to 10 years from the date of original issuance or renewal.[155] Section 27.14(c) establishes a licensee's right to a renewal expectancy.[156] Most commenters addressing the issue endorsed this approach.[157] However, one commenter, in addressing the issue of performance requirements, expressed concern that new licensees might not be able to comply with performance requirements in some markets,

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[153] 47 U.S.C. § 310(b). *See* Revisions to Part 21 of the Commission's Rules regarding the Multipoint Distribution Service, CC Docket No. 86-179, *Report and Order*, 2 FCC Rcd 4251, 4253 (para. 16) (1987) (*MDS Report and Order*); Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures, IB Docket No. 95-117, *Report and Order*, 11 FCC Rcd 21581, 21599 (para. 43) (1996) (*Satellite Rules Report and Order*); *LMDS Second Report and Order*, 12 FCC Rcd at 12651 (para. 243).

[154] *See* Rules and Policies on Foreign Participation in the U.S. Telecommunications Market, IB Docket No. 97-142 , Market Entry and Regulation of Foreign-Affiliated Entities, IB Docket No. 95-22, *Report and Order and Order on Reconsideration*, 12 FCC Rcd 23891, 23935-47 (paras. 97-132) (1997). We did not amend our rules for broadcast licenses, which are not covered by the WTO Basic Telecommunications Agreement.

[155] 47 C.F.R. § 27.13.

[156] 47 C.F.R. § 27.14(b).

[157] *See, e.g.,* AirTouch Comments at 26; SBC Comments at 4; *but see* AMTA Comments at 9; MSTV Comments at 14.

given the continued existence of incumbent broadcasters until 2006.[158]

67. **Discussion.** The Communications Act imposes no time limit on licenses issued by the Commission, other than those for broadcast services, which are limited to an eight-year license term.[159] Although we proposed a ten-year license term in the *NPRM*, we are concerned that the continued existence of incumbent broadcasters in the licensed spectrum may retard a licensee's development and use of the spectrum. Thus, we are modifying the license term as it relates to the 747-762 MHz and 777-792 MHz bands, to accommodate licensees' need for additional time to develop and use this spectrum, in light of its continued use by broadcasters until 2006. Based on our estimate that an average of eight years additional time is a reasonable time period in which to comply with the performance requirements set forth below,[160] we have determined that a license issued to a winning bidder for this spectrum will extend eight years beyond the year 2006, the date as of which incumbent broadcasters are required to have relocated to other portions of the spectrum, that is, until January 1, 2014, for a total of approximately 14 years.[161] However, if a licensee commences new broadcast-type operations on or before January 1, 2006, the licensee will be required to seek renewal of its license at the end of the eight-year term following commencement of such broadcast operations.

68. We adopt these license provisions for all licensees in the 747-762 MHz and 777-792 MHz bands, as well as the right to a renewal expectancy established in Section 27.14(b), for nonbroadcast services. In the event that a license is partitioned or disaggregated, as discussed below, any partitionee or disaggregatee is authorized to hold its license for the remainder of the original licensee's term, and the partitionee or disaggregatee may obtain a renewal expectancy on the same basis as other licensees in the band. All licensees meeting the substantial service requirement discussed below will be deemed to have met this element of the renewal expectancy requirement regardless of which of the construction options, described below, the licensee has chosen. This approach is appropriate because a licensee, through partitioning, should not be able to confer greater rights than it was awarded under the terms of its license grant.[162] In addition, we conclude that, to claim a renewal expectancy, a renewal applicant involved in a comparative renewal proceeding must include, at a minimum, the showing required in Section 27.14(b) of the Commission's Rules.[163]

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158 AirTouch Comments at 25-26.

159 *See* 47 C.F.R. § 73.1020(a).

160 *See* Section III.B.6., *infra.*

161 This date may be extended under particular circumstances set forth in 47 U.S.C. § 309(j)(14)(B) including for those markets where 15 percent or more households do not have access to either DTV-equipped receivers or multi-channel video. In addition, given the large geographic licensing areas, each with a number of incumbent broadcasters, we are setting a definite license term, rather than one dependent on the date on which incumbent broadcasters complete their digital television transition.

162 *See* Section 27.15(e) of the Commission's Rules at Appendix B, 47 C.F.R. § 27.15(e); *see also Part 27 Report and Order*, 12 FCC Rcd at 10840, para. 106.

163 47 C.F.R. § 27.14(b). *See also Part 27 Report and Order*, 12 FCC Rcd at 10840-41, 10843-44, paras. 106-107, 113.

6. Performance Requirements

69. **Background.** In the *NPRM*, we proposed to adopt the performance requirement in Section 27.14(a) of the Commission's rules for licensees in the 746-764 and 776-794 bands.[164] Section 27.14(a) requires licensees to provide "substantial service" to their service area within 10 years of being licensed.[165] A failure to meet this requirement results in forfeiture of the license and in the licensee's ineligibility to regain the license. Although our proposal received general support, one commenter expressed concern that the continued existence of incumbent broadcasters may make it difficult for new licensees to comply with these performance requirements in some markets.[166]

70. **Discussion.** In light of the incumbents issue identified by one commenter, we are amending the performance requirement in Section 27.14(a) of the Commission's Rules as it relates to the 747-762 MHz and 777-792 MHz bands. Under the amended performance requirement, a licensee must provide "substantial service" to its service area no later than January 1, 2014, *i.e.*, eight years after 2006, the date as of which incumbent broadcasters are required to have relocated to other portions of the spectrum.[167]

The *Part 27 Report and Order* provided several examples of "safe harbors" that would demonstrate substantial service, which we will apply to licensees in the 747-762 MHz and 777-792 MHz bands.[168] The "substantial service" construction requirement provides licensees with the flexibility to offer the full range of services under the allocations table and accommodate new and innovative services.[169] Licensees in the 747-762 MHz and 777-792 MHz bands may avail themselves of any of the following "safe harbors" for the 747-762 MHz and 777-792 MHz bands. First, for a licensee that chooses to offer fixed, point-to-point services, the construction of four permanent links per one million people in its licensed service area at the license-renewal mark would constitute substantial service. Second, for a licensee that chooses to offer mobile services or fixed, point-to-multipoint services, a demonstration of coverage for 20 percent of the population of its licensed service area at the license-renewal mark would constitute substantial service. We encourage licensees, however, to build out not only in urban areas and areas of high density population but in rural areas as well, or to partition their license to allow others to do so.

71. However, a licensee that limits buildout to urban areas and areas with high density population, will not necessarily be ensured of license renewal, even if otherwise compliant with the construction benchmarks. We believe that the "substantial service" standard requires the licensee to buildout in rural areas as well .

72. We conclude that the buildout requirement we are imposing for this spectrum fulfills our

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164 *NPRM* at para. 33.

165 47 C.F.R. § 27.14(a). This section defines substantial service as "service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal." *See Part 27 Report and Order,* 12 FCC Rcd at 10843-45, paras. 111-115.

166 AirTouch Comments at 25-26.

167 *See* Section 27.14(a) of the Commission's Rules at Appendix B, 47 C.F.R. § 27.14(a).

168 *See Part 27 Report and Order,* 12 FCC Rcd at 10843-44, para. 113.

169 *See Part 27 Report and Order*, 12 FCC Rcd at 10843, para. 112.

obligations under Section 309(j)(4)(B) of the Act,[170] and that the auction rules for this spectrum, together with the service rules adopted in this proceeding, and our overall competition and universal service policies, constitute effective safeguards and performance requirements for licensing this spectrum. However, we reserve the right to review our construction requirements in the future if we receive complaints related to Section 309(j)(4)(B), or if a reassessment is warranted because spectrum is being warehoused or is otherwise not being used despite demand. We will also reserve the right to impose additional, more stringent construction requirements on licenses in the future in the event that actual anticompetitive or universal service problems develop.

7. Disaggregation and Partitioning of Licenses

73. **Background.** In the *NPRM*, we proposed to permit licensees in the 746-764 MHz and 776-794 MHz bands to partition their service areas and to disaggregate their spectrum, and tentatively concluded that geographic partitioning and spectrum disaggregation can result in efficient spectrum use and economic opportunity for a wide variety of applicants, including small business, rural telephone, minority-owned, and women-owned applicants, as required by Section 309(j)(4)(C) of the Communications Act.[171] Although there is general support for our proposal to permit disaggregation and partitioning on these bands, several commenters argue that disaggregation and partitioning are rare and that they thus provide little opportunity for small entities to enter the market for telecommunications services.[172]

74. **Discussion.** We continue to believe it advisable to permit licensees in the 747-762 MHz and 777-792 MHz bands to partition their service areas and to disaggregate their spectrum. Despite assertions to the contrary, we believe that adopting this approach will improve smaller entities' ability to overcome entry barriers through the creation of smaller licenses that require less capital, and will thereby facilitate greater participation by rural telephone companies and other smaller entities, including those owned by minorities and women.[173] With respect to the 10 and 20 megahertz licenses, to be auctioned on an EAG basis, there is an opportunity to partition into smaller regions. This allows bidders for the 10 and 20 megahertz licenses maximum flexibility to partition the service areas so as to provide a particular type of service for a particular service area. As a corollary to this approach, we have also provided bidding credits to encourage participation in the development of this spectrum by rural telephone companies and small businesses.

75. Section 27.15 of the Commission's Rules,[174] to which licensees in the 747-762 MHz and 777-792 MHz bands will be subject, permits licensees to partition their licensed geographic service areas or

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[170] *See Part 27 Report and Order* at 10844-45, paras. 114-115, *citing* 47 U.S.C. § 309(j)(4)(B).

[171] 47 U.S.C. § 309(j)(4)(C).

[172] AMTA Comments at 8-9; RTG Comments at 6-7.

[173] *See* Geographic Partitioning and Spectrum Disaggregation by Commercial Mobile Radio Services Licensees; Implementation of Section 257 of the Communications Act – Elimination of Market Entry Barriers, WT Docket No. 96-148, *Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 21831, 21843-44, paras. 13-17, (1996) (*Partitioning and Disaggregation Report and Order*).

[174] 47 C.F.R. § 27.15.

disaggregate their licensed spectrum at any time following the grant of their licenses.[175] We will permit geographic partitioning of any service area defined by the partitioner and partitionee, spectrum disaggregation without restriction on the amount of spectrum to be disaggregated and combined partitioning and disaggregation.[176] Pursuant to Section 27.15, the partitioning licensee must include with its request a description of the partitioned service area and calculations of the population of the partitioned service area and the licensed geographic service area,[177] and will be subject to the provisions against unjust enrichment set forth in Section 27.15(c).[178]

76. As we proposed in the *NPRM*, parties to partitioning agreements may choose between two options for satisfying the construction requirement.[179] Under the first option, the partitioner and partitionee would each certify that it will independently satisfy the substantial service requirement for its respective partitioned area. If a licensee fails to meet its substantial service requirement during the relevant license term, the non-performing licensee's authorization will be subject to cancellation at the end of the license term. Under the second option, the partitioner can certify that it has met or will meet the substantial service requirement for the entire market. If the partitioner fails to meet the substantial service standard during the relevant license term, only its license will be subject to cancellation at the end of the license term; the partitionee's license will not be affected by the failure.

77. We offer these two options to partitioning parties because we believe that Part 27 licensees in the 747-762 MHz and 777-792 MHz bands may be motivated to enter into partitioning arrangements for different reasons and under various circumstances. For example, a licensee might be motivated to partition its license in order to reduce its construction costs. In that case, the original licensee would have less population to cover in order to meet its substantial service requirement and might find the first option more attractive. Under another scenario, a licensee that has met or is close to meeting its substantial service requirement may be approached by another entity interested in serving a niche market in a portion of the service area. Under these circumstances, the second option may seem more attractive to the parties. In either instance, the public interest is advanced by permitting that flexibility, in terms of service areas and niche markets, conducive to optimizing the viability and value of the licenses partitioned, while precluding circumvention of our construction requirements.[180]

78. In addition, we will allow parties to disaggregation agreements to choose between two options for satisfying the construction requirement.[181] Under the first option, the disaggregator and disaggregatee would certify that each will share responsibility for meeting the substantial service

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175 *See Part 27 Report and Order*, 12 FCC Rcd at 10836-39, paras. 96-103.

176 *See Part 27 Report and Order* at 10836-37, 10839, paras. 97-99, 102, *citing Partitioning and Disaggregation Report and Order*, 11 FCC Rcd at 21847-48, paras. 23-24.

177 47 C.F.R. § 27.15(b)(1).

178 47 C.F.R. § 27.15(c). *See also* 47 C.F.R. § 1.2111.

179 *See* Section 27.15(e)(1) of the Commission's Rules at Appendix B, 47 C.F.R. § 27.15(e)(1). *See also Partitioning and Disaggregation Report and Order*, 11 FCC Rcd at 21857, para. 42.

180 *See Partitioning and Disaggregation Report and Order*, 11 FCC Rcd at 21857, para. 43.

181 *See* Section 27.15(e)(2) of the Commission's Rules at Appendix B, 47 C.F.R. § 27.15(e)(2). *See also Partitioning and Disaggregation Report and Order*, 11 FCC Rcd at 21865, paras. 62-63.

requirement for the geographic service area. If the parties choose this option, both parties' performance will be evaluated at the end of the relevant license term, and both licenses could be subject to cancellation, should the requirement not be met. The second option allows the parties to agree that either the disaggregator or the disaggregatee will be responsible for meeting the substantial service requirement for the geographic service area. If the 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 will be subject to cancellation. As with partitioned licenses, providing these options preserves the public interest in developing the spectrum to the same degree as that required had the disaggregation (or partitioning) not occurred.[182]

8. Public Notice of Initial Applications; Petitions to Deny

79. **Background.** Section 309(b) and Section 309(c) of the Communications Act require public notice for initial applications, and substantial amendments thereof.[183] These requirements provide that no such application shall be granted earlier than 30 days following the issuance of public notice by the Commission, and that the Commission may not require petitions to deny such applications to be filed earlier than 30 days following the public notice. The same provision also grants the Commission the authority to impose public notice requirements for other licenses, even though the statute does not require public notice. However, the administrative procedures for spectrum auctions adopted in Section 3008 of the Balanced Budget Act of 1997[184] and Consolidated Appropriations Act[185] permit the Commission to shorten notice periods in the auction context to five days for petitions to deny and seven days for public notice, notwithstanding the provisions of Section 309(b) of the Communications Act. In the *Part 1 Third Report and Order*,[186] the Commission exercised this statutory authority by amending Section 1.2108(b) and Section 1.2108(c) of the Commission's Rules[187] to provide for a five-day period for filing petitions to deny and a seven-day public notice period for all auctionable services. We received no comments on our proposal to adopt these deadlines for services in the 746-764 MHz and 776-794 MHz spectrum bands.

80. **Discussion.** We have determined to adopt for this spectrum the seven-day notice requirement for initial applications and the five-day deadline for petitions to deny. An applicant filing for both common carrier and non-common carrier authorizations in a single license and wishing to make subsequent status changes will also be subject to the seven-day public notice requirement.

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182 *See Partitioning and Disaggregation Report and Order*, 11 FCC Rcd at 21864-65 (para. 61).

183 47 U.S.C. §§ 309(b), 309(c). *See also* Section 309(d) regarding petitions to deny; 47 U.S.C. § 309(d).

184 47 U.S.C. § 309(j) nt. 3.

185 *See Consolidated Appropriations*, Appendix E, § 213. *See also* 145 Cong. Rec. H12493-94 (Nov. 17, 1999).

186 Amendment of Part 1 of the Commission's Rules – Competitive Bidding Procedures, WT Docket No. 97-82, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, 4660-4685 MHz, ET Docket No. 94-32, *Third Report and Order and Second Further Notice of Proposed Rulemaking*, 13 FCC Rcd 374, 431 (para. 98) (1997), *recon. pending.*

187 47 C.F.R. §§ 1.2108(b), 1.2108(c).

C. Operating Rules

81. In the *NPRM*, we proposed to subject licensees in the 746-764 MHz and 776-794 MHz bands to the Part 27 rules that govern operations, subject to any modifications adopted in this proceeding. We proposed operating rules for a full range of possible licensees, consistent with our stated intention to permit as much flexibility in the use of this spectrum as is consistent with the requirements of Section 303(y) of the Act. The following discussion focuses on operating rules for licensees in the 747-762 MHz and 777-792 MHz bands to the extent that they offer common carrier services on these bands. We do not purport to survey at this time the range of statutory and regulatory provisions that may be relevant to any new service offerings on this band that qualify as new broadcast-type services.[188]

1. Applicability of General Common Carrier Obligations; Forbearance

82. **Background.** In the *NPRM*, we reviewed our decisions respecting forbearance from the requirements of the Communications Act and interpreted the potential effect of these decisions on fixed common carrier services provided on the 746-764 MHz and 776-794 MHz bands. We noted that we have exercised our authority under Section 332(c)(1)(A) of the Communications Act to forbear for CMRS from certain of the obligations imposed on common carriers by Title II of the Communications Act, such as the filing of tariffs and intercarrier contracts and maintenance of certain records.[189] We have also extended the deadline for CMRS providers to support service provider local number portability (LNP) until November 24, 2002,[190] and have forborne from requiring CMRS providers to file tariffs for most international services, and from applying most of Section 226 of the Act, relating to telephone operator services.[191] We noted that we have also exercised our expanded forbearance authority[192] in the case of wireline carriers, for the "complete detariffing" of interstate, interexchange services offered by

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[188] As with the licensing rules, there is little record comment on the appropriate treatment for new broadcast-type services operating in this spectrum. We have not attempted to anticipate the nature of services that may be developed under the service and technical rules adopted here, or to determine how the regulations discussed below would apply to new broadcast-type services. We remind potential applicants, however, that certain regulations are mandatory as a matter of statute and thus must apply to such services.

[189] Implementation of Sections 3(n) and 332 of the Communications Act – Regulatory Treatment of Mobile Services, GN Docket No. 93-252, *Second Report and Order*, 9 FCC Rcd 1411, 1463-90, paras. 124-213, (1994) (*CMRS Second Report and Order*) (*authorizing* forbearance from 47 U.S.C. §§ 203, 204, 205, 211 and 214), *recon. pending.*

[190] Cellular Telecommunications Industry Association's Petition for Forbearance from Commercial Mobile Radio Services Number Portability Obligations, WT Docket No. 98-229, *Memorandum Opinion and Order*, FCC 99-19, (rel. Feb. 9, 1999, 1999) WL 58618.

[191] Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance For Broadband Personal Communications Services, Biennial Regulatory Review--Elimination or Streamlining of Unnecessary and Obsolete CMRS Regulations, Forbearance from Applying Provisions of the Communications Act to Wireless Telecommunications Carriers, WT Docket No. 98-100, Further Forbearance from Title II Regulation for Certain Types of Commercial Mobile Radio Service Providers, GN Docket No. 94-33, GTE Petition for Reconsideration or Waiver of a Declaratory Ruling, MSD-92-14, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857 (1998).

[192] *See* Section 10 of the Communications Act; 47 U.S.C. § 160.

non-dominant interexchange carriers.[193] In addition, we have eliminated Part 41 requirements applicable to franks,[194] as well as the prior approval requirements for most *pro forma* transfer applications involving telecommunications carriers.[195]

83. We also noted that, in the *47 GHz Notice*, which proposed service rules for spectrum bands allocated to both fixed and mobile services, we sought comment on whether the exercise of our Section 332(c)(1)(A) forbearance authority with respect to CMRS, in the *CMRS Second Report and Order*, should be extended to fixed wireless service carriers.[196] We sought comment in the *NPRM* for this proceeding on whether we should exercise our authority under Section 10 of the Act to forbear, in a similar fashion, from applying to non-CMRS licensees of this spectrum the specific Title II requirements that the Commission has previously determined not to apply to CMRS licensees. However, cognizant of the fact that it will take longer for us to conduct a forbearance analysis than to adopt service rules for the 746-764 MHz and 776-794 MHz bands, we proposed an interim solution for non-CMRS licensees of these bands. Section 214(a) of the Communications Act[197] requires that no common carrier may

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[193] "Complete detariffing" refers to a policy of neither requiring nor permitting non-dominant interexchange carriers to file tariffs pursuant to Section 203 of the Communications Act for their interstate, domestic, interexchange services. *See,* Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 245(g) of the Communications Act of 1934, As Amended, CC Docket No. 96-61, *Second Report and Order*, 11 FCC Rcd 20730 (1996) (*Detariffing Second Report and Order*); *stay granted, MCI Telecommunications Corp. v. FCC*, No. 96-1459 (D.C. Cir. Feb. 13, 1997); Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 245(g) of the Communications Act of 1934, As Amended, CC Docket No. 96-61, *Order on Reconsideration*, 12 FCC Rcd 15014, 15016, 15047-54 (para. 2 n.5, paras. 59-73) (1997) (*Detariffing Reconsideration Order*); Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 254(g) of the Communications Act of 1934, As Amended, CC Docket No. 96-61, *Second Order on Reconsideration and Erratum*, 14 FCC Rcd 6004 (1999) (*Detariffing Second Reconsideration Order*).

[194] 1998 Biennial Regulatory Review — Elimination of Part 41 Telegraph and Telephone Franks, CC Docket No. 98-119, *Report and Order*, 14 FCC Rcd 2379 (1999).

[195] Federal Communications Bar Association's Petition for Forbearance from Section 310(d) of the Communications Act Regarding Non-Substantial Assignments of Wireless Licenses and Transfers of Control Involving Telecommunications Carriers and Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance for Broadband Personal Communications Services, *Memorandum Opinion and Order*, 13 FCC Rcd 6293 (1998); *see also* 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 Development and Use of the Universal Licensing System in the Wireless Telecommunications Services, WT Docket No. 98-20, *Report and Order*, 13 FCC Rcd 21027; *but see* 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, Petitions for Further Reconsideration of the Denial of Applications for Waiver of the Commission's Common Carrier Point-to-Point Microwave Radio Service Rules, *Fourth Report and Order*, 13 FCC Rcd 11655, 11669-71, paras. 27-29, (1998). *See also* 1998 Biennial Regulatory Review -- Streamlining of Mass Media Applications, Rules, and Processes, MM Docket No. 98-43, *Notice of Proposed Rulemaking*, 13 FCC Rcd 11349, 11376-79, paras. 72-82, (1998).

[196] *CMRS Second Report and Order*, 9 FCC Rcd at 1463-90, paras 124-213. The statutory sections identified in the Order include 47 U.S.C. §§ 203, 204, 205, 211 and 214.

[197] 47 U.S.C. § 214(a).

discontinue, reduce, or impair service without Commission approval. We proposed a discontinuance provision that is consistent with common carrier obligations set forth in Subpart E of Part 1 and in Parts 61 through Part 64 of the Commission's Rules.[198] We also proposed to apply other parts of the Commission's Rules to ensure compliance of fixed service common carriers operating in the 746-764 MHz and 776-794 MHz bands with Title II of the Communications Act.

84. AirTouch supports the Commission's Part 27 approach to Title II forbearance.[199] AMTA urges the Commission to forbear from imposing its Title II common carrier obligations on non-CMRS licensees and on CMRS licensees that have been exempted from E911 and number portability requirements. AMTA argues that these carriers serve a more specialized business-oriented market oriented principally toward dispatch services and lack those technical capabilities that would permit them to compete in the broader CMRS marketplace.[200]

85. **Discussion.** Pursuant to our prior exercise of authority under Section 332(c)(1)(A) to forbear for CMRS from certain of the obligations imposed on common carriers by Title II of the Communications Act, common carriers classified as CMRS, including those providing mobile services in the 747-762 MHz and 777-792 MHz bands, will not be required to file contracts of service, seek authority for interlocking directors,[201] or submit applications for new facilities or discontinuance of existing facilities, and are prohibited from filing tariffs for interstate service to their customers or for interstate access service. CMRS providers on this spectrum will be required to support service provider LNP by November 24, 2002. Such providers also will not be required to file tariffs for most international services or be subject to most of Section 226 of the Act, relating to telephone operator services. In addition, CMRS providers in the 747-762 MHz and 777-792 MHz bands will be subject to the Commission's complete detariffing of interstate, interexchange services offered by non-dominant interexchange carriers, to our elimination of Part 41 requirements applicable to franks, and to our elimination of the prior approval requirements for most *pro forma* transfer applications involving telecommunications carriers.

86. Although we solicited comment on the proper application of our forbearance authority with respect to this spectrum, we received no comments on the appropriate interpretation of the forbearance criteria in this context and no proposals concerning additional forbearance from specific regulatory provisions otherwise applicable to fixed service providers operating on this spectrum. We continue to invite suggestions on ways in which we can alleviate or streamline regulations that would otherwise be applicable to fixed services provided on this spectrum. In the *NPRM* we specifically addressed the requirements of Section 214(a) as they apply to licensees in the 747-762 MHz and 777-792 MHz bands that voluntarily discontinue, reduce, or impair service to a community or part of a community and are

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198 47 C.F.R. Part 1, Subpart E; 47 C.F.R. Parts 61-64.

199 AirTouch Comments at 26-27.

200 AMTA Comments at 10-11. UTC asks the Commission to forbear from requiring PMRS providers to obtain prior consent to *pro forma* transfers, as it has previously done with CMRS providers. UTC Comments at 4-5. Given the commercial nature of the spectrum, this request is beyond the scope of this proceeding.

201 We recently acted to forbear from requiring all common carriers to seek authority for interlocking directorates. Thus, common carriers that offer fixed services on the 746-764 MHz and 776-794 MHz bands are also exempt from this requirement. *See* 1998 Biennial Regulatory Review of Part 62 of the Commission's Rules, CC Docket No. 98-195, *Report and Order*, FCC 99-163 (rel. Jul. 16, 1999).

subject to the prior authorization requirement in Section 63.71 of the Commission's Rules.[202] Subsequent to issuance of the *NPRM*, we amended Section 63.71 to provide for the automatic grant of a nondominant common carrier's application for discontinuance after 31 days.[203] We are adopting this approach for fixed service common carriers here, to ensure comparable regulatory treatment between wireline providers and fixed wireless providers operating on the 747-762 MHz and 777-792 MHz bands.[204]

87. As we indicated in the *NPRM*, a non-common carrier licensee in the 747-762 MHz and 777-792 MHz bands that voluntarily discontinues, reduces, or impairs service to a community or part of a community will be required to give written notice to the Commission within seven days. However, neither a fixed service common carrier, nor a non-common carrier licensee need surrender its license for cancellation, if "discontinuance" is merely a change in common carrier or non-common carrier status.

88. We do not find that the Commission's network reliability requirements will apply to fixed service common carrier licensees on this spectrum. Thus, if the service provided by a fixed service common carrier licensee is involuntarily discontinued, reduced, or impaired for a period exceeding 48 hours, the licensee must promptly notify the Commission, in writing, of the reasons for the discontinuance, reduction, or impairment of service, including a statement indicating when normal service is to be resumed. When normal service is resumed, the licensee must promptly notify the Commission.

2. Equal Employment Opportunity

89. **Background.** In the *NPRM*, we noted that Part 27 does not include an explicit Equal Employment Opportunity (EEO) provision.[205] We also noted that Parts 24 (PCS) and Part 26 (General Wireless Communications Service) similarly lack an EEO provision although specific EEO provisions exist in other parts of our Rules.[206] We noted that we had initiated a rulemaking on our Part 73 EEO rules and sought comment on whether there are any reasons not to apply Part 73 rules to conventional broadcasters operating in these spectrum bands and licensed under Part 27. As to non-broadcast services on these bands, we invited comment on whether we should include a separate EEO provision in Part 27 and, if so, which of our EEO rules we should adopt.[207] No commenter addressed this issue.

90. **Discussion.** An applicant's EEO requirements will depend on the type of service the applicant chooses to provide. As previously stated, in the interests of flexibility and optimum spectrum use, we have enabled the provision of any service identified in Section 27.2 of the Commission's

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202 47 C.F.R. § 63.71.

203 Implementation of Section 402(B)(2)(A) of the Telecommunications Act of 1996, Petition for Forbearance of the Independent Telephone & Telecommunications Alliance, CC Docket No. 71-11, AAD File No. 98-43, *Report and Order*, FCC 99-104 (rel. Jun 30, 1999).

204 *See* Section 27.66 of the Commission's Rules at Appendix B, 47 C.F.R. § 27.66. This approach is consistent with the modification of Section 101.305(c) of the Commission's Rules adopted for LMDS. *See* 47 C.F.R. § 101.305(c); *see also LMDS Second Report and Order*, 12 FCC Rcd at 12654-55 (paras. 252-55).

205 *NPRM* at para. 55.

206 *Id.*

207 *Id.* at para. 56.

Rules[208] and this Order, so long as the licensee complies with the technical rules governing spectrum use. The Commission's EEO Rules are service-specific; different EEO Rules govern different services. Our modified FCC Form 601 requires an applicant to choose one, or several, of four regulatory statuses: (a) common carrier, (b) non-common carrier, (c) private, internal communications, or (d) broadcast.[209] An applicant's election on its FCC Form 601 will determine the EEO Rules that apply to the applicant.

91. Allowing a licensee to self-characterize its regulatory status in this proceeding is consistent with the flexible approach that the Commission took in the *DBS NPRM*.[210] The Commission in the *DBS NPRM* proposed that DBS (direct broadcast satellite) service licensees have the choice of providing service on a broadcast, common carrier, or non-broadcast, non-common carrier basis with an applicant's self-characterization determinant of the applicable EEO rules. Licensees in the 700 MHz spectrum have the choice of providing any service authorized under Section 27.2 of the Commission's Rules[211] so long as the licensee complies with the technical rules governing spectrum use.[212]

92. We therefore conclude that that an applicant's EEO requirements are determined by the type of service an applicant chooses to provide. All commercial mobile radio service (CMRS) providers are subject to the Commission's EEO requirements,[213] for example, see Parts 22 and 90 of our rules.[214] Similarly, a licensee that provides broadcast service will be subject to the Commission's EEO Rules contained in Section 73.2080.[215] We also note that commercial mobile service providers are generally subject to the Commission's common carrier EEO obligations.[216]

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208 47 C.F.R. § 27.2.

209 *See* FCC Form 601, item number 35.

210 *See* Policies and Rules for the Direct Broadcast Satellite Service, IB Docket 98-21, *Notice of Proposed Rulemaking,* 13 FCC Rcd 6907, 6924-6925 (1998) (*DBS NPRM*).

211 47 C.F.R. § 27.2.

212 *See* 47 C.F.R. Part 27, Subpart C – Technical Standards.

213 *See* Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, GN Docket 93-252, *Third Report and Order*, 9 FCC Rcd 7988, 8097-8100, paras 231-237 (1994) (*CMRS Third Report and Order*).

214 Sections 22.321, 90.168 of the Commission's Rules, 47 C.F.R. §§ 22.321, 90.168.

215 Section 73.2080 of the Commission's Rules, 47 C.F.R. § 73.2080. The U.S. Court of Appeals for the D.C. Circuit has invalidated as unconstitutional the outreach portions of the Commission's EEO program requirements for broadcast stations and remanded to the Commission for a determination whether the non-discrimination rule is within its statutory authority. *See* Lutheran Church-Missouri Synod v. FCC, Case No. 97-1116, 141 F.3d 344, *reh'g denied*, 154 F.3d 487 (D.C. Cir. 1998). We have initiated a rulemaking on our Part 73 Rules EEO Rules. *See* Review of the Commission's Broadcast and Cable Equal Employment Opportunity rules and Policies, MM Docket No. 98-204, and Termination of the EEO Streamlining Proceeding, MM Docket No. 96-16, *Notice of Proposed Rulemaking*, 13 FCC Rcd 23004 (1998).

216 *See* 47 U.S.C. 332(c)(1)(A) (stating in relevant part "[a] person engaged in the provision of a service that is a commercial mobile service shall . . . be treated as a common carrier for purposes of this Act"). *See also* 47 C.F.R. §

D. Technical Rules

93. All licensees in the 747-762 MHz and 777-792 MHz bands, including licensees who acquire their licenses through partitioning or disaggregation, will be subject to the general provisions of Part 27 relating to equipment authorization, frequency stability, antenna structures and air navigation, international coordination, environmental requirements, quiet zones, and disturbance of AM broadcast antenna patterns.[217] In addition, the following technical rules will apply to these licensees.

1. In-Band Interference Control

94. **Background.** As we noted in the NPRM, a broad range of services and technologies will operate on this spectrum, and their nature will affect the potential for interference between licensees operating on the same spectrum in adjacent service areas. We noted that in other frequency bands various means have been employed to avoid interference when we have permitted flexibility in services and technologies. We tentatively concluded that either a coordination[218] or a field strength[219] method could provide a satisfactory means of controlling harmful interference between systems in the 746-764 MHz and 776-794 MHz bands. We observed that a general coordination requirement may minimize the potential for interference to coordinated facilities, but may also impose unnecessary coordination costs for facilities with a low potential for interference and increase the potential for undesirable strategic or anti-competitive behavior.[220] We also noted, however, that a field strength limit, while reducing the need for coordination by giving licensees the ability to unilaterally deploy facilities in boundary areas as long as the limit is met, may not provide sufficient assurance against interference to such facilities. We sought comment on the advantages and disadvantages of both approaches, and on any other approaches that would minimize interference among co-channel licensees.

95. No commenter favors the coordination approach for controlling in-band interference, but AirTouch and SBC endorse the use of the field strength method. AirTouch indicates that the field strength method is "particularly appropriate" for terrestrial mobile services in larger geographic areas."[221] SBC concludes that the field strength method is "the more efficient method of reducing the risk of interference across service areas," and suggests that licensees in adjacent service areas should be permitted to agree to alternative field strengths along their mutual border.[222]

1.815 (stating in relevant part "[e]ach common carrier licensee or permitee with 16 or more full time employees shall file with the Commission . . . an annual employment report").

217 *See* Sections 27.51, 27.54, 27.56, 27.57, 27.59, 27.61, 27.63 of the Commission's Rules, 47 C.F.R. §§ 27.51, 27.54, 27.56, 27.57, 27.59, 27.61, 27.63; *see also Part 27 Report and Order*, 12 FCC Rcd at 10848-65, paras. 123-161.

218 In a "coordination" approach, licensees operating on the same spectrum in adjacent areas would coordinate the location of their stations in order to control interference.

219 The "field strength" approach requires a licensee to limit the field strength of its station transmissions to some prescribed level at the licensee's geographic border.

220 *NPRM* at para. 60.

221 AirTouch Comments at 29.

222 SBC Comments at 4-5.

96. **Discussion.** We agree with commenters that the field strength limit approach should be used to control co-channel interference in this band. That approach provides established, objective criteria for controlling in-band interference, and gives licensees the ability to construct and operate facilities in boundary areas so long as the limit is met. As discussed in the *NPRM*, a coordination approach, on the other hand, could impose unnecessary coordination costs for facilities that are not likely to cause interference, and could lead to possible anti-competitive activities. Furthermore, nothing in the record suggests that use of a field strength method would not provide adequate protection against co-channel interference. Therefore, we will require licensees to limit signals from all base and fixed stations operating in the 747-762 MHz band to a particular predicted or measured field strength at the licensee's geographic border.

97. Although commenters agree on the appropriateness of a field strength approach, they did not provide any guidance as to the proper field strength. In both 800 MHz EA-based and 900 MHz MTA-based SMR licensing,[223] we employed a 40 dBu/m field strength at the geographic border. Because the types of services that will be provided in the 700 MHz band are likely to be similar to the types of services permitted in the 800 and 900 MHz bands,[224] and because of its proximity to these bands, we conclude that the appropriate field strength for the control of in-band interference in the 700 MHz band is 40 dBu/m.[225] We believe that use of the field strength procedure will satisfy the requirement in Section 337(d)(1) that the Commission establish "interference limits at the boundaries of the spectrum block and service area."[226] The use of this procedure should enable licensees to deploy their facilities effectively, while minimizing interference to co-channel licensees in adjacent geographic areas. Finally, we agree with SBC's suggestion to permit licensees in adjoining areas to agree to alternate field strengths at their common border and therefore adopt this approach. It will provide licensees increased flexibility in implementing their systems without increasing the risk of harmful interference.

2. Out-of-Band and Spurious Emission Limits

98. **Background.** We noted in the *NPRM* that different kinds of technical criteria may be used to limit out-of-band and spurious emissions designed to protect services outside the licensee's assigned spectrum. We also noted Congress's concern,[227] with ensuring that "public safety service licensees continue to operate free of interference from any new commercial licensees." We therefore proposed that licensees operating in the 746-764 MHz and 776-794 MHz bands be required to attenuate the power below the transmitter power (P) by at least 43 + 10 $\log_{10}$(P) dB, or 80 decibels, whichever is less ("43 + 10 log P"), for any emission on all frequencies outside the licensee's authorized spectrum -- except for emissions that fall within the GPS band, which is addressed in Section III.D.4, below.[228]

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223 *See* Sections 90.7, 90.689, and 90.671, 47 C.F.R. §§ 90.7, 90.689, and 90.671.

224 *See* Section 90.419(f), which permits SMR licensees to operate fixed services on a co-primary basis with their mobile operations. 47 C.F.R. § 90.419(f).

225 The predicted 40 dBu/v field strength shall be calculated using Figure 10 of Section 73.699 of this chapter, with a correction factor for antenna height differential of –9 dB. 47 C.F.R. § 73.699, Fig. 10.

226 47 U.S.C. § 337(d)(1).

227 H. Conf. Rep. No. 105-217, at 12 (1997, *reprinted at* 1997 U.S.C.C.A.N. 201.

228 *NPRM* at para. 69.

99. Several commenters support our proposal that licensees in the 746-764 MHz and 776-794 MHz bands be required to comply with the 43 + 10 log P attenuation requirement.[229] APCO, however, points out that interference exists in the 800 MHz band from "low-site, low-power commercial systems [that] are intermixed in a common area and operate on adjacent frequencies to public safety systems."[230] Motorola notes that such adjacent channel interference exists even though 800 MHz technologies are providing out-of-band emission characteristics "superior" to the 43 + 10 log P requirement.[231] Motorola identifies several possible interference scenarios that could occur when both commercial and public safety base transmissions originate in the 746-776 MHz band (the "lower band") and commercial and public safety mobile transmissions originate in the 776-806 MHz band (the "upper band") -- *e.g.*, potential interference from commercial base transmitters to public safety mobile receivers at the 764 MHz interface and potential interference from public safety base transmitters to commercial base receivers at the 776 MHz interface.[232]

100. In recent *ex parte* filings, a number of parties addressed the subject of out-of-bound emissions ("OOBE"). For example, Motorola asserts that because of the interference scenario that exists at the 764 MHz interface,[233] emissions from non-coordinated commercial base stations should be attenuated to –57 dBm in the first 6.25 kHz channel of the 764-776 MHz public safety band.[234] FreeSpace supports a requirement that a Guard Band licensee attenuate its out-of-band emissions by a factor of not less than 87 + 10 log P in a 6.25 kHz bandwidth.[235] Bell Atlantic takes issue with Motorola's proposal, and believes that the Commission should establish an OOBE limit that is comparable to the 43 + 10 log P limit applied elsewhere in our rules for other commercial services.[236] Lucent, in comments attached by Bell Atlantic, indicates that the limits proposed by Motorola to protect public safety are "excessive," and concludes that the level of attenuation demanded by Motorola would "place an unwarranted burden on the CMRS provider, significantly reduce the useable spectrum, and reduce the value of the spectrum to potential bidders." Lucent suggests that we consider interference parameters that are consistent with those currently applied to other commercial services.[237]

101. Motorola subsequently suggests that switching both the commercial and public safety transmit bands, so that mobile transmissions originate in the lower band and base transmissions originate

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229 IMSA/IAFC Comments at 2; Harris Comments at 2; SBC Comments at 5; AirTouch Comments at 29.

230 APCO Comments at 4.

231 Motorola Reply at 12.

232 *Id.* at 15-16.

233 Motorola describes this scenario as causing possible interference to public safety mobile receivers from emissions from commercial base transmitters. Motorola December 2, 1999 *Ex Parte* Filing at 1.

234 *Id.* at 5 (unpaginated). This limit, as descriibed, is the equivalent to requiring that the out-of-band emission be attenuated by at least 87 + 10 log P in a 6.25 kHz bandwidth.

235 FreeSpace December 16, 1999 *Ex Parte* Filing at 1.

236 Bell Atlantic December 9, 1999 *Ex Parte* Filing at 3.

237 *Id.* at 4.

in the upper band, "would provide better protection to public safety services."[238] Motorola supports the following interference limits under its "reverse band" proposal: (1) limiting emissions from commercial base transmitters operating in the upper band to –57 dBm per 6.25 kHz into the 794-806 MHz public safety band;[239] (2) limiting emissions from commercial base transmitters operating in the upper band to –62 dBm per 6.25 kHz into the 764-776 MHz band;[240] and (3) limiting emissions from commercial mobile transmitters operating in the lower band to –35 dBm per 6.25 kHz into the 764-776 MHz band.[241] APCO opposes the reversal of the commercial and public safety bands because it would impact the ability to "integrate 700 MHz public safety radio systems with the substantial number of public safety radio systems operating above 806 MHz."[242] US WEST argues that the standards proposed by Motorola could "adversely affect commercial licensees' ability to utilize the spectrum won at auction."[243]

102. The Federal Law Enforcement Wireless Users Group (FLEWUG), which consists of law enforcement and public safety officials from numerous federal agencies, recommends the following attenuation values to protect public safety receivers in the 764-776 MHz and 794-806 MHz bands: (1) for transmitters with power levels above 1 watt: 65 + 10 log P dB; and (2) for transmitters with power levels below 1 watt: 65 dBc (db relative to the carrier).[244] Motorola, commenting on the FLEWUG proposal, and citing its earlier analysis, states that the 65 + 10 log P limit is only appropriate at the interface where commercial mobiles could cause interference to public safety base station receivers.[245] Motorola believes that the 87 + 10 log P protection limit it proposed for the interface where base-to-

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[238] Reversing the base and mobile transmit bands creates different interference scenarios at the 764 MHz, 776 MHz, and 794 MHz interfaces than exist under the base/mobile configuration currently used in the 700 MHz public safety bands -- in particular, replacing what Motorola considers to be a very undesirable "mobile-to-mobile" interference scenario at the 776 MHz interface with a "base-to-base" interference scenario at that interface. Motorola December 6, 1999 *Ex Parte* Filing at 4-5 (unpaginated); Motorola December 13, 1999 *Ex Parte* Filing at 2 (unpaginated).

[239] Motorola December 13, 1999 *Ex Parte* Filing at 2 (unpaginated).

[240] This limit is the equivalent to requiring that out-of-band emissions be attenuated by at least 92 + 10log P in a 6.25 kHz bandwidth. Motorola recommends that, in addition to applying this level of protection to public safety, commercial licensees operating in the upper band be required to "work with public safety operators to resolve instances of interference." *Id.* at 3 (unpaginated).

[241] This limit is the equivalent to requiring that out-of-band emissions be attenuated by at least 65 + 10 log P in a 6.25 kHz bandwidth. *Id.* at 4 (unpaginated).

[242] APCO further notes that one of the principal reasons for adopting the current band plan for the 764-776/794-806 MHz public safety bands is the "potential for integrated and interoperable radio systems across the bands. APCO December 16, 1999 *Ex Parte* Filing at 2.

[243] US WEST December 21, 1999 *Ex Parte* Filing at 1. US WEST anticipates that the proposed stadards would affect carrier's ability to provide viable wireless services using existing IS-95 CDMA technologies, and the impact of the standards on the use of wideband CDMA technologies "could even be more acute." *Id.* at 2.

[244] FLEWUG December 9, 1999 *Ex Parte* Filing at 5.

[245] Motorola December 22, 1999 *Ex Parte* Filing at 2. Under Motorola's "reversed band" approach, this would be the 764 MHz interface. When the 746-764 MHz band is used for base transmissions and the 776-794 MHz band is used for mobile transmissions, this would be the 794 MHz interface.

mobile interference could occur "results in the appropriate protection for public safety."[246] Motorola also points out differences between its analysis and FLEWUG analysis of the mobile-to-mobile interference scenario that exists at the 776 MHz interface when the 746-764 MHz band is used for base transmissions and the 776-794 MHz band is used for mobile transmissions, but notes that under its reversed band plan this "extremely severe interference problem" would not exist.[247] The National Telecommunications and Information Administration (NTIA) provides a technical analysis of the interference scenarios that could exist between commercial and public safety operations in the 700 MHz band, and concludes that, in order to protect public safety receivers, we should: (1) require that out-of-band emissions from commercial transmitters operating in the upper band be attenuated by 65 + 10 log P into the 764-776 MHz public safety band, and by 70 + 10 log P into the 794-806 MHz public safety band; and (2) require that out-of-band emissions from commercial transmitters operating in the lower band be attenuated by 80 + 10 log P into the 764-776 MHz and 794-806 MHz public safety bands[248]

103. **Discussion**. We conclude that licensees operating in the 747-762 MHz and 777-792 MHz bands should, at a minimum, be required to attenuate the power below the transmitter power (P) by at least 43 + 10 $\log_{10}$(P) dB for any emission on all frequencies outside the licensee's authorized spectrum -- except for emissions that fall within the GPS band, which is addressed in Section III.D.4, below. We also provide additional measures of interference protection to operations in the public safety bands, as described below.

104. In establishing OOBE limits in the 700 MHz service, we are guided by Congress's concern that public safety service licensees be able to operate free of harmful interference from new commercial licensees. Parties to this proceeding also have made convincing engineering showings of the potential for interference to public safety licensees from commercial users in adjacent bands, and those showings are supported by independent evidence of increasing instances of actual interference between commercial and public safety operations in other parts of the spectrum, principally the 800 MHz band.[249] Against this backdrop, we recognize the need to adopt technical rules that provide adequate protection to public safety entities operating in this band. We are mindful, however, that Congress also intended that we establish rules that will enable viable commercial operations here. Thus, while we might set extremely stringent OOBE limits in an effort to afford maximum protection to public safety licensees, we conclude that, as a practical matter, at some point, the incremental benefits to protection of public safety from ever higher OOBE limits would be outweighed by the adverse effects on the commercial usefulness of the spectrum. Moreover, even the most stringent OOBE limits do not guarantee there will never be any interference under any circumstance between commercial and public safety licensees. We conclude, therefore, that we should set OOBE limits that, while achieving the primary goal of protecting public safety, also strike a reasonable balance between protecting public safety and maintaining the

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246 *Id.* at 2. Under Motorola's "reverse band" approach, this would be the 794 MHz interface.

247 *Id.* at 4.

248 *See* January 5, 2000 letter from William T. Hatch, Acting Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration, to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission.

249 *Id. See also, e.g.,* Motorola December 2, 1999 *Ex Parte* Filing; FLEWUG December 9, 1999 *Ex Parte* Filing; Dary DeForest, *Analysis into Potential Interference from Out-of-Band Emissions to Public Safety Operations in the 821-824/866-869 MHz Band,* Industry Canada, December 4, 1998; Joe Kuran, *A Conflict of Public Interest*, Mobile Radio Technology, March 1999.

commercial viability of this band. As explained below, we adopt OOBE limits for 30 megahertz licensees in the 700 MHz band that we believe will satisfy these dual objectives.

105. Some commenters believe that we should provide OOBE limits in line with the 43 + 10 log P limits currently used to provide interference protection in other wireless services.[250] Motorola believes that the appropriate OOBE limit needed to protect public safety receivers from commercial base stations, which will operate in the 747-762 MHz band,[251] is a requirement to attenuate the power below transmitter power (P) operating in that spectrum by at least 87 + 10 log P dB per 6.25 kHz in the 764-776 MHz public safety band.[252] NTIA, however, favors an 80 + 10 log P attenuation of commercial base station transmissions in the 747-762 MHz band to protect public safety receivers in both the 764-776 MHz and 794-806 MHz public safety bands, and FLEWUG supports a 65 + 10 log P dB attenuation requirement to protect public safety receivers in these bands. Similarly, Bell Atlantic, Lucent, and US WEST urge the adoption of a lower OOBE limit, arguing that Motorola's recommended limit could inhibit the utility of the spectrum for commercial use. As noted above, based on the record, we are persuaded that we should adopt an OOBE limit higher than 43 + 10 log P in order to provide adequate protection to public safety. On the other hand, we are not persuaded that the 87 + 10 log P recommended by Motorola is necessary, and are concerned about the negative impact that standard could have on the viability of 30 megahertz systems operating in the 747-762 MHz band. While we believe that an OOBE limit in line with the 65 + 10 log P standard proposed by FLEWUG and others might well protect public safety licensees, we adopt a more conservative OOBE limit of 76 + 10 log P for emissions from 30 megahertz base station transmitters into the 764-776 MHz and 794-806 MHz public safety bands.[253] We conclude that this limit strikes the proper balance among the competing recommendations of the various parties, is closely in line with 80 + 10 log P standard recommended by NTIA, and will adequately protect public safety while maintaining the viability of the band for 30 megahertz users.

106. With regard to the appropriate OOBE limit for mobile and portable transmitters, which will operate in the 777-792 MHz band, FLEWUG supports the adoption of a 65 +10 log P standard for mobiles transmitters. Motorola concurs with this OOBE limit for emissions from mobile transmissions into the 794-806 MHz public safety band. NTIA favors a 65 + 10 log P requirement for emissions into the 764-776 MHz public safety band, but supports a 70 + 10 log P standard for emissions into the 794-806 MHz band. Again, our goal is to adopt OOBE limits that will adequately protect public safety while enabling viable commercial operations. We therefore adopt a requirement to attenuate the power of mobile and portable transmitters operating in that spectrum by at least 65 + 10 log P dB per 6.25 kHz in the 764-776 MHz and 794-806 MHz public safety bands. We find that compliance with a more stringent OOBE limit could make it difficult to produce mobile and portable equipment to meet our base station

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250 *See, generally,* Bell Atlantic Comments; Lucent Comments; IMSA/IAFC Comments; Harris Comments; SBC Comments; and AirTouch Comments.

251 We agree with APCO that reversing the mobile and base transmit bands, as Motorola proposes, would be in contradiction of our intention to provide for integratation of public radio systems across the 700 MHz and 800 MHz bands. *See Public Safety Spectrum Report and Order*, 14 FCC Rcd 152, 168 (1998). We therefore reject this proposal.

252 This assumes a band plan that would provide for base transmissions in the 747-762 MHz band and mobile transmissions in the 777-792 MHz band.

253 As recommended by NTIA, we restrict the out-of-band emissions from 30 megahertz base station transmitters into both the 764-776 MHz and the 794-806 MHz public safety bands.

standard while maintaining commercial viability in the 700 MHz spectrum band.[254] In particular, the amount of frequency separation that would be required between a 30 megahertz mobile or portable transmission and the public safety bands if a more stringent standard were required could be so great that a significant portion of the 30 megahertz spectrum might become unusable. Because we permit fixed operations in the 777-792 MHz band, we also address the adoption of an OOBE limit for fixed equipment operating in this band. If fixed transmissions are employed in the 777-792 MHz band, then interference to public safety operations in the 764-776 MHz band from such transmissions would resemble the type of interference to that band that could occur from base stations transmitting in the 746-764 MHz band (and for which we have adopted a 76 + 10 log P standard). In addition, Motorola indicates that if fixed operation is permitted in the band designated for mobile and portable transmissions, then a "base-to-base" interference scenario would occur, and that a 92 + 10 log P standard should be applied in this instance.[255] We conclude that, to protect public safety operations from fixed equipment operating in the 777-792 MHz band, we should adopt the standard we have adopted for emissions from base stations operating in the 747-762 MHz band, *i.e.*, a requirement to attenuate the power of fixed transmitters operating in the 747-762 MHz band by at least 76 + 10 log P dB per 6.25 kHz in the 764-776 MHz and 794-806 MHz public safety bands,.

107. Finally, we decide that where an emission from a 30 megahertz transmitter is found to cause harmful interference to public safety operations, at our discretion, we may require greater out-of-band attenuation from such transmitters.[256] In conclusion, while no OOBE limits can *guarantee* non-interference to public safety operations, we believe that the OOBE limits we adopt herein will limit such occurrences, and that in adopting these limits we have satisfied the Congressional concern to ensure that public safety licensees are protected from interference.

3. RF Safety/Power Limits

108. **Background**. Section 27.52 of the Commission's Rules[257] subjects licensees and manufacturers to the RF radiation exposure requirements specified in Sections 1.1307(b), 2.1091, and 2.1093 of the Commission's Rules, which list the services and devices for which an environmental evaluation must be performed.[258] In adopting the rule, we concluded that routine environmental evaluations for RF exposure are required for applicants desiring to use the following types of

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[254] We believe that it would be more difficult for manufacturers to produce mobile and portable equipment that could meet a stringent OOBE standard than it would for manufacturers to produce base station equipment to meet such a standard due to cost considerations and the need to minimize power consumption in mobile and portable equipment.

[255] In our adopted band plan, this interference scenario would occur with respect to the 794-806 MHz public safety band. *See* Motorola *Ex Parte* Filing of December 22, 1999 at 5.

[256] We note that historically-followed coordination procedures, requiring cooperation and accommodation by both commercial and public safety entities, may resolve many instances of potential interference.

[257] 47 C.F.R. § 27.52.

[258] 47 C.F.R. §§ 1.1307(b), 2.1091, 2.1093. The RF radiation exposure limits are set forth in 47 C.F.R. §§ 1.1310, 2.1091, and 2.1093, as modified in Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, ET Docket No. 93-62, *Report and Order*, 11 FCC Rcd 15123 (1996); First Memorandum Opinion and Order, 11 FCC Rcd 17512 (1997); *Second Memorandum Opinion and Order*, 12 FCC Rcd 13494 (1997) (*RF Guidelines Second Reconsideration Order*).

transmitters: (1) fixed operations, including base stations and radiolocation transmitters, when the effective radiated power (ERP) is greater than 1,000 watts; (2) all portable devices; and (3) mobile devices, if the ERP of the device, in its normal configuration, will be 1.5 watts or greater.[259] In the *NPRM*, we proposed to treat services and devices in the 746-764 MHz and 776-794 MHz bands in a manner comparable to other services and devices that have similar operating characteristics, and tentatively concluded that the requirements in Section 27.52 for licensees in the 2.3 GHz band should apply to licensees in the 746-764 MHz and 776-794 MHz bands. SBC supports this approach.[260] In the *NPRM* we did not propose specific power limits for operations in the 746-776 MHz and 776-794 MHz bands.

109. **Discussion**. With respect to RF Safety, we adopt a threshold of 1000 w ERP for categorical exclusion from routine evaluation for RF exposure for base and fixed stations. As in the 2.3 GHz band, where we adopted an identical standard, this threshold recognizes the flexibility with respect to use, power, location, and other factors accorded licensees operating in this band. We determine that this power limit should be appropriate to ensure compliance with our RF exposure standards for most situations.[261]

110. Although we are adopting a maximum power limit of 30 w ERP for mobile transmitters in the 777-792 MHz band, the threshold for routine evaluation of these devices for RF safety purposes shall be 1.5 w or greater in conformance with Section 2.1091 of our Rules.[262] For portable devices in these bands, we adopt a maximum power limit of 3 w ERP with the provision that these devices be evaluated for RF exposure in compliance with Section 2.1093 of our Rules.[263] Thus we will modify Sections 1.1307(b), 2.1091, and 2.1093 of the Commission's Rules[264] to include potential services and devices developed for use in the 747-762 MHz and 777-792 MHz bands. As we have previously stated, we are providing guidance on acceptable methods of evaluating compliance with the Commission's RF exposure limits in OET Bulletin No. 65, which has replaced OST Bulletin No. 65.[265]

111. Turning to power limits, we adopt power limits that will provide for base-to-mobile and

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[259] *Part 27 Report and Order*, 12 FCC Rcd at 10861 (para. 154 n.344), noting that 1,000 watts ERP equates to 1,640 watts EIRP. In the *RF Guidelines Second Reconsideration Order*, the Commission increased the exclusion threshold for mobile devices operating above 1.5 GHz from 1.5 watts to 3 watts ERP. *RF Guidelines Second Reconsideration Order*, 12 FCC Rcd at 13514 (para. 51).

[260] SBC Comments at 5.

[261] *Part 27 Report and Order*, 12 FCC Rcd at 10862, para. 154 n.345, noting that, in a pending petition for reconsideration of the *RF Guidelines Report and Order*, the Commission was considering whether to revise the threshold for requiring routine evaluation of mobile devices above 1.5 GHz from 1.5 watts to 3 watts. This change was made in the *RF Guidelines Second Reconsideration Order*.

[262] 47 C.F.R. § 2.1091.

[263] 47 C.F.R. § 2.1093.

[264] 47 C.F.R. §§ 1.1307(b), 2.1091, 2.1093.

[265] *Part 27 Report and Order*, 12 FCC Rcd at 10862 (para. 154 n.346). OET Bulletin No. 65 (Edition 97-01) was issued on August 25, 1997, and is available for downloading at the FCC Web Site: www.fcc.gov/oet/rfsafety. Copies of OET Bulletin No. 65 also may be obtained by calling the FCC RF Safety Line at (202) 418-2464.

fixed-to-fixed communication in the 747-762 MHz band, and for mobile-to-base and fixed-to-fixed communication in the 777-792 MHz band. Specifically, we adopt the following power limits: (1) for base stations and fixed stations operating in the 747-762 MHz band, an ERP no greater than 1,000 watts and an antenna height above average terrain (HAAT) no greater than 305 m;[266] (2) for mobile, fixed, and control stations operating in 777-792 MHz band, an ERP no greater than 30 watts; and (3) for portable stations operating in 777-792 MHz band, an ERP no greater than 3 watts. We believe that the adoption of these power limits will facilitate both mobile and fixed service operations in the 700 MHz band. The 1000 w ERP power limit for base and fixed stations operating in the 747-762 MHz band should enable satisfactory coverage for commercial systems operating in this band. The 30 w ERP power limit for mobile, fixed, and control stations in the 777-792 MHz band is the power limit adopted for mobile and control station operation in the 700 MHz public safety band. And the 3 w ERP power limit for portable stations in the 777-792 MHz band is consistent with the power limit adopted for portables in the 700 MHz public safety band.

4. Special Considerations for Use of Channels 65, 66, and 67

112. **Background.** The second harmonic transmissions[267] of services that will be operating on TV channels 65-67 fall within a band used for radionavigation in the Global Navigation Satellite System (GNSS), which includes the Global Positioning System (GPS) at 1563.42-1587.42 MHz.[268] To protect this system and to ensure that equipment that operates in these bands does not cause radio interference to the GNSS,[269] particularly when that system is used for precision approach and landing, NTIA recommended[270] that the following out-of-band emission limits from fixed and mobile transmitters operating in the 746-764 MHz and 776-794 MHz bands be applied to all spurious emissions, including second harmonic emissions in the 1559-1610 frequency range: (1) for wideband emissions, -70 dBW/MHz equivalent isotropically radiated power (EIRP); and (2) for narrowband emissions,[271] -80

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[266] Antenna heights greater than 305 m HAAT are permitted in accordance with Table 1 in Section 27.50 of our Rules, as amended. 47 C.F.R. § 27.50.

[267] Radio transmitters produce energy not only on the desired frequency (such as 784 MHz) but also lesser amounts of energy on multiples of the desired frequency, known as harmonics. In this example, the second harmonic (twice the desired frequency) would be 1568 MHz. Although most of the power generated is on the desired frequency, very sensitive receivers can detect the smaller amounts of power generated on the harmonic frequencies.

[268] The GPS is in operation, and will be the United States component of the GNSS. GPS utilizes the lower portion of the Radionavigation-Satellite Service (space-to-Earth) allocation from 1559-1610 MHz on a primary basis, and is maintained by the United States Department of Defense. The other component of the GNSS is GLONASS, the Russian Federation Global Orbiting Navigation Satellite System, which will use the 1598-1605 MHz portion of that allocation (i.e., the second harmonic frequencies of TV channels 68 and 69) when the system reaches its final frequency configuration after 2005.

[269] GNSS, as currently envisioned, will consist of the GPS and GLONASS systems that provide radionavigation satellite services (RNSS) worldwide.

[270] *See* May 11, 1999 letter from William T. Hatch, Acting Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration, to Dale Hatfield, Chief, Office of Engineering and Technology, Federal Communications Commission.

[271] For purposes of NTIA's analysis, interference from wideband emissions was considered to have a bandwidth in the range of 100 kHz to 1 MHz; interference from narrowband emissions was considered to have a bandwidth less

dBW/700 Hz. NTIA also proposed the adoption of the DTV out-of-band limit of –110 dBc for emissions in the 1559-1610 MHz band from broadcast transmitters operating in the 746-764 MHz and 776-794 MHz bands. Thus, in the NPRM we sought comment on the risk of harmonic interference to GNSS operations from systems licensed in the 776-794 MHz bands, and whether the emissions limits recommended by NTIA would provide the necessary protection for GNSS systems from anticipated fixed and mobile operations in these bands.

113. In addition, we sought comment on the impact of imposing the out-of-band emission limits proposed by NTIA on the design of equipment for use in the 776-794 MHz band. Noting that stringent OOBE"[272] limits are generally more difficult to meet for mobile and hand-held transmitters than for base and control stations or for fixed service stations, we sought information on how our proposal might affect the cost, size, weight, and battery life for handheld or portable equipment, and whether the proposal could severely curtail the availability of the 36 megahertz of spectrum designated by Congress for commercial use.[273]

114. In response to the *NPRM* AirTouch states generally that the proposed OOBE limits could affect the production of portable units and thereby affect the availability of the commercial 700 MHz spectrum.[274] In detailed comments, the U.S. GPS Industry Council ("USGPS"), on the other hand, asserts that the proposed OOBE standards do not sufficiently protect GPS receivers from the second harmonic emissions of systems operating in the 776-794 MHz band.[275] USGPS contends that NTIA levels were developed solely to protect aircraft GPS receivers from interference from MSS Mobile Earth Terminals (METs) operating in the 1-3 GHz band.[276] According to USGPS, if these levels are adopted for different types of services, "each one of those services would endanger the availability of GPS by itself, raising the noise floor above the level that GPS receivers can operate . . . and the cumulative effect from all services operating at emissions of –70/80 dBW/MHz would be devastating for critical safety-of-life GPS applications."[277] USGPS argues that the only default level that can safely be established at this time, "absent case-by-case independent studies," is a wideband out-of-band emission threshold limit of –

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than or equal to 700 Hz. The limits identified by NTIA are based on international recommendations by RTCA and ETSI for mobile earth terminals in the Mobile Satellite Service (MSS). *See* RTCA Inc. Special Committee 159, Assessment of Radio Frequency Interference Relevant to the GNSS, Document No, RTCA/DO-235, January 27, 1997; European Testing and Standards Institute (ETSI) standards TBR-041 and TBR-042 for Mobile Earth Terminals in the 1.6/2.4 GHz and 2.0 GHz range, respectively.

[272] The out-of-band emissions include both spurious and harmonic emissions.

[273] We determined that the standard recommended by NTIA would require approximately 85-90 dB suppression for typical full-power mobile equipment and approximately 75-80 dB for handhelds and portables. For the purposes of the GLONASS standard, we assumed the narrowband limit of -80 dBW as sufficient for commercial services bandwidths of up to 150 kHz. *NPRM* at paras. 73-78.

[274] AirTouch Comments at 30.

[275] USGPS Comments at 3.

[276] USGPS Comments at 4 n.4.

[277] *Id.* at 4.

100 dBW/MHz"[278]

115. **Discussion.** Like the concerns we addressed above in balancing public safety and commercial interests, we are similarly committed to ensuring that the GNSS is protected adequately against interference without adopting OOBE limits on equipment operating in the 777-792 MHz band that could effectively prohibit the use of this band by new 30 megahertz licensees. Rather, we seek to enable such licensees to implement new services in a timely manner. As discussed below, we believe that the proposed OOBE limits provide the appropriate balance to meet the needs of both of these competing requirements. Thus, we adopt the following OOBE limits for all spurious emissions, including harmonics, that fall within the 1559-1610 frequency range, from equipment operating in the 747-762 MHz and 777-792 MHz bands: (1) for wideband emissions, -70 dBW/MHz equivalent isotropically radiated power (EIRP); and (2) for discrete emissions of less than 700 Hz bandwidth, an absolute EIRP limit of –80 dBW. Outside of emissions into the 1559-1610 MHz RNSS band, the OOBE standards adopted in Section III.D.2 will apply.

116. We are concerned about critical safety-of-life applications of GPS, particularly those systems that will use GPS for aeronautical radionavigation, and seek to ensure that the rules we adopt in this proceeding do not adversely affect these operations. NTIA, which represents the Federal Government's positions on spectrum management matters, has suggested specific OOBE limits for equipment operating in this band that it believes will sufficiently protect aeronautical radionavigation operations. We agree with NTIA that the proposed OOBE limits will "ensure that fixed and mobile equipment will not cause radio frequency interference to the GNSS when those systems are used for precision approach and landing" and we adopt NTIA's recommendations.[279]

117. We reject USGPS's argument that our proposed emission limits are insufficient to protect GPS operations.[280] Similar arguments were raised by USGPS in a proceeding regarding an application by AirTouch Satellite Services U.S., Inc. for a license to construct and operate mobile earth terminals transmitting in the 1.6 GHz band. Consistent with the International Bureau's October 4, 1999 Order,[281] we find that the degree of precision needed to provide position updates for planes moving at high speeds is more rigorous than the precision that is needed for other GPS uses. Although GPS has and will be used for a variety of non-aeronautical safety-of-life applications, USGPS has not established that such other uses of GPS will require the high level of protection from unwanted signals that we are adopting herein, much less a *greater* level of protection. We thus conclude that USGPS has not justified

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[278] USGPS incorporates by reference, and attaches its comments in the GMPCS proceeding. In that proceeding, USGPS further notes that USGPS and the United States, in ITU-R study group activities earlier in 1999, were prepared to accept the –70 dBW/MHz limitation, provided that it was made clear that this value would not be applied to any emitters other than 1-3 GHz MSS METs without independent studies. *See* USGPS Reply at 8.

[279] NTIA Comments at 1. AirTouch suggests that our proposed OOBE emission limits could be difficult to meet for portable units, but does not suggest that they would be so difficult as to prevent equipment manufacturers from producing mobiles and portables meeting those limits. We have not received any indication from any potential 700 MHz band equipment manufacturers commenting in this proceeding that it will be difficult to suppress wideband OOBE to the –70 dBW/MHz level.

[280] USGPS Reply at 7.

[281] AirTouch Satellite Services, Inc. Application For Blanket Authority To Construct And Operate Up To 50,000 Mobile Satellite Earth Terminals Through The GLOBALSTAR Mobile Satellite System, *Order and Authorization,* PA 99-2010, October 4, 1999, paras. 10-13.

a need for a more stringent standard.

118. With regard to the tests USGPS conducted to determine the effects of unwanted emissions into the GPS band from emitters complying with the proposed limits, we believe that USGPS has not sufficiently demonstrated that signals from emitters meeting the proposed emission limits will cause interference to GPS receivers that will affect the ability of such GPS receivers to perform their functions.[282] We recognize that in certain scenarios a 700 MHz emitter and a GPS receiver could be placed in very close proximity and that this could result in interference to the GPS receiver. We do not believe, however, that it is in the public interest to protect GPS receivers in every such possible scenario. Our analysis must be based on reasonable assumptions of emitter-receiver proximity. Specifically, we must balance the needs of competing requirements of the spectrum. In this case we must balance the needs of users of GNSS and future users of the 700 MHz band. We conclude that our proposed OOBE limit will be sufficient to protect critical GPS operations.

119. Contrary to USGPS' argument, we also find that our proposed –70 dBW/MHz wideband OOBE limit is not inconsistent with the United States' position in the ITU-R study group activities. Our decision in this proceeding is consistent with the decisions adopted on this matter internationally. Should future actions internationally result in conflicts between the decision we adopt here and international positions, we would consider those differences as part of a separate, future proceeding, if appropriate.

120. USGPS also asks us to adopt a harmonized spectrum policy that considers the cumulative impact on the GPS noise floor from all relevant services. The protection of GPS, as with all services, is an ongoing obligation of this agency. Nonetheless, even if we undertook a study to analyze the effects of various services on GPS, we believe it would be difficult to identify and consider all relevant services, as well as all possible future services. Therefore, we conclude that the protection of GPS is better handled on a case-by-case basis, in the context of each relevant proceeding. In this proceeding we have considered all relevant technical findings of interested parties and believe we have come to a reasonable balance -- protecting GPS operations while proceeding expeditiously to make this spectrum available to the public.

E. Competitive Bidding

1. Statutory Requirements

121. **Background.** Most of the auctions the Commission has conducted to date have been simultaneous multiple-round auctions. In Section 3002 of the Balanced Budget Act, Congress directed the Commission to "provide for the design and conduct (for purposes of testing) of competitive bidding using a contingent combinatorial bidding system that permits prospective bidders to bid on combinations or groups of licenses in a single bid and to enter multiple alternative bids within a single bidding round."[283] In the *NPRM*, we sought comment on whether the auction of the 746-764 MHz and 776-794 MHz bands may present a suitable context for such combinatorial procedures, especially if our service rules provide for broadcast services. We also asked commenters to consider whether, absent the

[282] USGPS testing concluded that under "co-location" conditions, wideband OOBE of –70 dBW/MHz completely prevented GPS receivers from tracking and securing fixes from GPS satellites.

[283] Codified at 47 U.S.C. § 309(j)(3).

application of combinatorial rules, the existing standardized auction rules in Part 1 are adequate.[284] In addition, we sought comment on whether our statutory obligations prohibited public safety entities from participating in the auction of licenses for this spectrum.[285]

122. Those commenters who addressed the issue believe the auction of licenses for the 746-764 MHz and 776-794 MHz bands presents a suitable context for using a combinatorial bidding system. AirTouch contends that while combinatorial bidding is not essential, it is suitable for the auction of the 746-764 MHz and 776-794 MHz bands.[286] KM and MSTV also support the use of combinatorial bidding, but MSTV suggests as well allowing consortia of potential service providers to participate in the auction, with the expectation that, if a consortium won, the spectrum could be divided pursuant to a predetermined plan to accommodate the needs of each individual member. This would address the difficulties caused to some providers by the pairing of frequency blocks.[287]

123. On the issue of public safety participation, we received little comment. APCO asserts that there is no rational reason to prevent a public safety entity from participating in the auction, and Southern similarly contends that public safety uses should be permitted, with public safety applicants subject to the same rules as commercial applicants.[288]

124. **Discussion.** We will not use combinatorial bidding procedures for the 747-762 MHz and 777-792 MHz bands, although we believe that such procedures may well have certain benefits in the auction of licenses for these bands. The primary benefit is that combinatorial bidding allows bidders to bid on licenses in packages rather than single units. This allows bidders to better express the value of any synergies that may exist among licenses. In this context, for example, it would be possible for a bidder to bid on several geographic area licenses as a package or on channels as either paired or unpaired. To date we have not yet tested or employed combinatorial bidding, which involves numerous complications for both the Commission and bidders. Consistent with Congress' directive, we are actively developing theoretical and applied combinatorial bidding approaches, but we have not yet

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284 *See NPRM* at para. 82.

285 Section 309(j)(2) of the Act, which exempts "public safety radio services" from competitive bidding, defines that term as including "private internal radio services used by State and local governments and non-government entities and 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." 47 U.S.C. § 309(j)(2)(A). Section 337, which directs the Commission to allocate 24 megahertz of spectrum for "public safety services," defines that term as services--

> the sole or principal purpose of which is to protect the safety of life, health, or property; that are provided-- (i) by State or local government entities; or (ii) by nongovernmental organizations that are authorized by a governmental entity whose primary mission is the provision of such services; and that are not made commercially available to the public by the provider.

47 U.S.C. § 337(f)(1).

286 AirTouch Comments at 30-31.

287 KM Comments at 3; MSTV Comments at 9-10.

288 APCO Comments at 6; Southern Comments at 4n.8, 8.

completed the development of a practical means of implementing such an auction design. We therefore find that we should not use this complex and untested auction design for the 747-762 MHz and 777-792 MHz bands, especially in light of the statutory deadline imposed here.[289]

125. We believe our existing competitive bidding rules generally will be adequate for the auction of licenses for all permitted uses in the 747-762 MHz and 777-792 MHz bands. As explained above, we have adopted a geographic area licensing scheme for licenses in these bands that we believe is appropriate in light of the services that may be provided consistent with our rules. There is nothing in the Commission's rules that would prevent any parties from participating as part of a consortium of service providers, so long as the consortium observes the Commission's rules. Section 1.2105(a) of the Commission's rules requires that applicants that have entered into consortia identify all consortium members and any agreements relating to the post-auction market structure, and consortia must comply with the anti-collusion provisions of Section 1.2105(c).[290] Consortia may also qualify for bidding credits under our small business provisions.[291] We also find that our partitioning and disaggregation rules offer licensees sufficient flexibility to assign unused spectrum to others.

126. We recognize that there may be entities whose business plans are such that they may not wish to acquire any licenses if they are unable to aggregate the 10 megahertz and 20 megahertz blocks to create a nationwide 30 megahertz license. Our current rules are designed to facilitate the aggregation of licenses, and bidders in a number of past auctions have been successful in putting together nationwide licenses through aggregation. We believe that our current rules are adequate to facilitate the aggregation of all 10 megahertz or all 20 megahertz licenses. The bid withdrawal provisions of our Part 1 rules could, however, potentially discourage bidders from attempting a 30 megahertz nationwide aggregation in an auction where there are divergent business plans. This is because, were such an aggregation attempt ultimately to fail, a bidder might be left with a subset of licenses for which its bids exceeded the value it places on that subset absent the complete aggregation. The bidder would then be forced to withdraw any high bids it holds and pay a bid withdrawal payment, or perhaps retain licenses for which it cannot recoup the price paid. We therefore direct the Bureau to adopt, if operationally feasible, a nationwide bid withdrawal procedure for the 747-762 MHz and 777-792 MHz bands to limit the exposure of bidders seeking a 30 megahertz nationwide aggregation. Pursuant to standard practice, in its public notice seeking comment on auction procedures, the Bureau will seek comment on whether to implement this procedure, and it will announce, prior to the filing of short-form applications for the auction, whether a 30 megahertz nationwide aggregation subject to this procedure will be available to bidders.[292]

127. Bidders may still aggregate licenses pursuant to our standard bid withdrawal provisions.[293] The following procedure would be available, however, to limit the exposure associated with bid withdrawal for those seeking a 30 megahertz nationwide aggregation, while still discouraging insincere bidding. Under this approach, an applicant would be required to declare on its short-form

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289 *See* Section I, *supra.*

290 *See* 47 C.F.R. § 1.2105(a)(2)(viii); 47 C.F.R. § 1.2105(c).

291 *See* 47 C.F.R. § 27.502(a).

292 *See Part 1 Third Report and Order*, 13 FCC Rcd 374, 447-49, paras. 124-25.

293 47 C.F.R. § 1.2104(g).

application whether it is seeking a 30 megahertz nationwide aggregation and wishes to be subject to the nationwide bid withdrawal provisions. An applicant that chooses to be such a nationwide bidder would not be allowed to bid on anything other than all licenses comprising the 30 megahertz nationwide aggregation, and must win either this nationwide aggregation or no licenses at all. Thus, once such a nationwide bidder withdraws from a market, it must withdraw from all markets and will be ineligible to continue bidding for any licenses. The bid withdrawal payment for a 30 megahertz nationwide bidder that withdraws from the auction would be calculated as the difference between the sum of the withdrawn bids and the sum of the subsequent high bids on the withdrawn licenses. Calculating the payment this way may result in a payment that is lower than a payment calculated on a license-by-license basis. In addition, nationwide bid withdrawal payments would be limited to a certain percentage, such as 5 percent, of the aggregate withdrawn bids. The withdrawn licenses would be offered in the next round at the second highest bid price, which may be less than, or equal to, the amount of the withdrawn bid, without any bid increment. The FCC would serve as the "place holder" on the license until a new acceptable bid is submitted. When a 30 megahertz nationwide bidder withdraws, eligibility and waivers for all other bidders would be restored to beginning auction levels, except for those nationwide bidders that have withdrawn from the auction by withdrawing their high bids. Without this restoration, few bidders may be eligible to bid on licenses withdrawn late in the auction.[294] Finally, if the Bureau implements the bid withdrawal procedure outlined here, it will suspend the Part 1 bid withdrawal rule for those applicants that choose to become 30 megahertz nationwide bidders.

2. Incorporation by Reference of Part 1 Standardized Auction Rules

128. **Background.** In the *NPRM*, we proposed to conduct the auction for initial licenses in the 746-764 MHz and 776-794 MHz bands in conformity with the general competitive bidding rules set forth in Part 1, Subpart Q, of the Commission's Rules, and substantially consistent with the bidding procedures that have been employed in previous auctions.[295] Specifically, we proposed to employ the Part 1 rules governing designated entities, application issues, payment issues, competitive bidding design, procedure and timing issues, and collusion issues.[296] We further stated that these rules would be subject to any modifications that the Commission may adopt in the Part 1 proceeding. We sought comment on whether any of our Part 1 rules would be inappropriate in an auction of licenses for the 746-764 MHz and 776-794 MHz bands.[297] No commenters oppose the use of the Part 1 standardized auction rules.

129. **Discussion.** We will use the competitive bidding procedures contained in Subpart Q of Part 1 of the Commission's Rules for the 747-762 MHz and 777-792 MHz bands, including any amendments adopted in the ongoing Part 1 proceeding.[298] As discussed above, however, we direct the

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[294] We adopted a similar rule for the General Wireless Communications Service. *See* Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, ET Docket No. 94-32, *Second Report and Order*, 11 FCC Rcd 624, 652-53, paras. 71-73 (1995).

[295] *See NPRM* at para. 83.

[296] *Id.*

[297] *Id.*

[298] The most recent comprehensive order in this proceeding was the *Third Report and Order and Second Further Notice of Proposed Rule Making*. *See* Amendment of Part 1 of the Commission's Rules – Competitive Bidding, WT Docket No. 97-82, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, 4660-4685

Bureau to adopt a nationwide bid withdrawal procedure for the 747-762 MHz and 777-792 MHz bands, if operationally feasible, to facilitate a 30 megahertz nationwide license aggregation. The Bureau will announce after public comment whether this procedure will be implemented.

130. We decline to follow TWDC's suggestion that, given the uniquely broad allocation of this spectrum, which will involve service providers traditionally subject to different regulatory requirements bidding against each other for the same spectrum for the first time, the Commission should explicitly state that implementing rules adopted in this proceeding will not be considered to be precedent in future rulemaking proceedings with respect to other spectrum auctions.[299] Because we will use our standardized Part 1 rules for the auctioning of the spectrum, we find that it is inappropriate to adopt TWDC's suggestion. Moreover, to the extent we depart from the Part 1 rules, we cannot exclude the possibility that any such departure will be useful in future auctions.

3. Small Business Definitions

131. **Background.** In the *NPRM*, we proposed to adopt for the 746-764 MHz and 776-794 MHz bands definitions of small and very small businesses that the Commission also adopted for broadband PCS, 2.3 GHz, and 39 GHz applicants.[300] Specifically, we proposed to define a small business as any entity with average annual gross revenues for the three preceding years not in excess of $40 million, and a very small business as an entity with average annual gross revenues for the three preceding years not in excess of $15 million.[301]

132. We sought comment on these definitions as they relate to the size of the geographic area to be covered and the spectrum allocated to each license. We also sought comment on whether the proposed designated entity provisions would be sufficient to promote participation by businesses owned by minorities and by women, and participation by rural telephone companies. We asked commenters, to the extent that they propose additional provisions to ensure participation by minority-owned and women-owned businesses, to address how such provisions should be crafted to meet the relevant standards of judicial review.[302]

133. **Discussion.** We will define a small business as an entity with average annual gross revenues for the preceding three years not exceeding $40 million. A very small business is an entity with average annual gross revenues for the preceding three years not exceeding $15 million.[303] Although we

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MHz, ET Docket No. 94-32, *Third Report and Order and Second Further Notice of Proposed Rule Making*, 13 FCC Rcd 374 (1997) ("*Part 1 Third Report and Order*" and "*Second Further Notice of Proposed Rule Making*"), *recon. pending.*

299 TWDC Comments at 8.

300 *See NPRM* at paras. 85-86.

301 *Id. See also* 47 C.F.R. § 24.720(b); 47 C.F.R. § 27.210(b); 47 C.F.R. § 101.1209(b).

302 *NPRM* at para. 87. *See Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995); *United States v. Virginia*, 518 U.S. 515 (1996).

303 For the 746-764 MHz and 776-794 MHz bands, the Commission is exempt from 15 U.S.C. § 632, which requires Federal agencies to obtain Small Business Administration approval before adopting small business size standards. *See Consolidated Appropriations*, Appendix E, Section 213(a)(4)(B). *See also* 145 Cong. Rec. at H12493, Nov. 17, 1999.

received no comments on the capital costs of operations in the bands at issue here, we believe that these two definitions will provide businesses seeking to provide a variety of services with opportunities to participate in the auction of licenses for this spectrum. In calculating gross revenues for purposes of small business eligibility, we will adopt our proposal to attribute the gross revenues of the applicant, its controlling interests and its affiliates. This approach is consistent with our proposal in the *Part 1 Second Further Notice,*[304] and is similar to the attribution rules we have employed for the recent LMDS, 800 MHz SMR, and LMS auction proceedings.[305]

134. We agree with Alaskan Choice that existing bidding credits should apply to this spectrum.[306] We will therefore adopt tiered bidding credits for small and very small businesses, consistent with the levels adopted in the Part 1 proceeding.[307] Accordingly, small businesses will receive a 15 percent bidding credit.[308] Very small businesses will receive a 25 percent bidding credit.[309] Bidding credits for small businesses are not cumulative.[310] As noted in the Part 1 proceeding, we believe that this approach will provide adequate opportunities for small businesses of varying sizes to participate in spectrum auctions.[311]

135. We decline to adopt KM's suggestion that the Commission provide bidding credits to any LPTV licensee that has been or will be displaced by a DTV station.[312] We do not believe that we have an adequate record regarding the legal and policy implications of such bidding credits. In addition, LPTV licensees have not established a record that they need bidding credits in order to be able to compete in the auction.[313] As explained above, we are not permitting public safety entities as defined in

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304 *See Part 1 Third Report and Order*, 13 FCC Rcd at 477-78, paras. 185-87.

305 *See* Amendment of 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, 12692-93 (1997); Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *Second Report and Order*, 12 FCC Rcd 19079, 19169 (1997); 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, 15194 (1997).

306 Alaskan Choice Comments at 5.

307 *See Part 1 Third Report and Order*, 13 FCC Rcd at 403-04, paras. 47-48.

308 *See* 47 C.F.R. § 1.2110(e)(2)(iii).

309 *See* 47 C.F.R. § 1.2110(e)(2)(ii).

310 In other words, very small businesses may not accumulate a 15 percent credit and a 25 percent credit.

311 *See Part 1 Third Report and Order*, 13 FCC Rcd at 403-04, para. 47.

312 KM Comments at 4-5.

313 In the competitive bidding proceeding, the Commission concluded that the record clearly demonstrates that the primary impediment to participation by designated entities is lack of access to capital. *See* Implementation of Section 309(j) of the Communications Act --- Competitive Bidding, PP Docket No. 93-253, *Fifth Report and Order*, 9 FCC Rcd 5532, 5537, para. 10 (1994) ("*Competitive Bidding Fifth Report and Order*"). Bidding credits,

Section 337(f) of the Act to participate in the auction of licenses for this spectrum. It is therefore unnecessary to address APCO's suggestion that state and local governments seeking spectrum for public safety communications should be given "auction credits" similar to the bidding credits offered to small businesses.[314]

136. We will not adopt special preferences for entities owned by minorities or women.[315] No commenters submitted quantifiable evidence or data to support race- or gender-based auction provisions. Therefore, we conclude that we do not have an adequate record to support such special provisions at this time under the current standards of judicial review. 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 and women. We believe the bidding credits we adopt here for small businesses will further these objectives because many minority- and women-owned entities, as well as rural telephone companies, are small businesses and will therefore qualify for these special provisions. We also believe that our standardization of the rules, through the *Part 1 Third Report and Order*, regarding eligible entities, unjust enrichment, and bidding credits will assist small and minority- and women-owned businesses because the resulting predictability will facilitate the business planning and capital fundraising process.[316]

IV. PROTECTION OF TELEVISION SERVICES

137. **Background.** In the *NPRM* we discussed technical requirements for protecting incumbent broadcast licensees and planned DTV allotments against interference. In the *DTV Sixth Report and Order*,[317] we stated that all analog TV and DTV operations in the 746-806 MHz band would be fully protected during the DTV transition period. In the *Reallocation Notice*[318] we noted that new licensees in the band will have to protect both analog TV and DTV operations from interference. We subsequently addressed the protection of TV and DTV operations in the 764-776 MHz and 794-806 MHz public safety bands in the *Public Safety Spectrum Report and Order*, which adopted service rules for

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established in response to Congress' directive that such entities be given the opportunity to provide spectrum-based services, were designed in particular to ease the difficulties women and minorities often experience in gaining access to capital. *Competitive Bidding Fifth Report and Order*, 9 FCC Rcd at 5571-79, paras. 93-110.

[314] APCO Comments at 6-7.

[315] *See* Alaskan Choice Comments at 4 (suggesting preferences for minorities, women, and underserved communities).

[316] *See Part 1 Third Report and Order*, 13 FCC Rcd at 386, para. 14.

[317] *See* Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, MM Docket No. 87-268, *Sixth Report and Order*, 12 FCC Rcd 14588, 14626-27 (para. 80)(1997)(*DTV Sixth Report and Order*).

[318] Reallocation of Television Channels 60-69, the 746-806 MHz Band, ET Docket No. 97-157, *Notice of Proposed Rule Making*, 12 FCC Rcd 14141, 14148, para. 17 (1997)(*Reallocation Notice*).

public safety uses of this spectrum.[319]

138. In reaching our decisions in that proceeding, we noted that land mobile and TV stations have successfully shared the 470-512 MHz band (TV Channels 14-20) in 11 major metropolitan areas of the United States.[320] In the 470-512 MHz band, we relied on minimum separation distances based on the various heights and powers of the land mobile stations to prevent harmful interference.[321] Because this method has been successful, we decided in the public safety proceeding to continue to administer protection criteria for these services in the 700 MHz band in this same manner.[322] In making that determination, we examined the previous methodology with consideration of the more recent technological changes, the physical characteristics of the 700 MHz band, and the goals Congress established in the Balanced Budget Act of 1997.

139. **Discussion.** We conclude that the factors and considerations examined in the *Public Safety Spectrum Report and Order* with regard to the protection of TV and DTV operations should apply to the use of the 747-762 MHz and 777-792 MHz bands.[323] We note that Motorola, although seeking reconsideration of the television protection rules adopted in the public safety proceeding, believes that the sharing criteria for the public safety and the remaining portions of the 746-806 MHz band can be the same.[324] We will require licensees operating on the 747-762 MHz and 777-792 MHz bands to comply with the provisions of Section 90.545 of our Rules and will incorporate those provisions into Part 27.[325]

140. One commenter, the Association of America's Public Television Stations (APTS), expresses some concern over establishing interference criteria for an untested service such as DTV and suggests a trial period in which to test actual (or objectionable) interference on a case-by-case basis. However, APTS does not propose an objective standard by which TV licensees and commercial licensees could determine if, in fact, interference is being caused to an incumbent station. We believe that the engineering standards we adopt herein will effectively minimize interference and that testing of the type proposed by APTS will not be necessary.

141. Thus, licensees operating on the spectrum associated with Channels 60, 61, 62, 65, 66, and 67 must comply with the co-channel and adjacent channel provisions of Section 27.60 of our Rules.

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319 *See Public Safety Spectrum Report and Order*, 14 FCC Rcd. 152 (1998) at 217-227, paras. 146-164.

320 *Public Safety Spectrum Report and Order*, at 218, para. 148.

321 *See* Further Sharing of the UHF Television Band by Private Land Mobile Radio Services, General Docket No. 85-172, *Notice of Proposed Rulemaking*, 101 FCC 2d 852, 865 (1985), *proceeding suspended*, 2 FCC Rcd 6441 (1987).

322 *Public Safety Spectrum Report and Order* at 220-227, paras. 150-164.

323 Certain of our decisions with regard to TV protection in the Public Safety Spectrum Report and Order are the subject of reconsideration. To the extent that our actions with regard to that reconsideration result in subsequent changes to the rules adopted in that proceeding, those changes may be reflected as they apply or are relevant.

324 Motorola Comments at 18.

325 The provisions of Section 90.545 of our Rules will be contained in Section 27.60 of our Rules. 47 C.F.R. § 27.60.

For example, a licensee operating on any portion of the 10 megahertz block (i.e., between 752 MHz and 762 MHz) that coincides with Channels 61 will have to provide co-channel protection to television stations operating on Channels 61 and adjacent channel protection to television stations operating on Channels 60 and 62; and any licensee operating on any portion of the 10 megahertz block that coincides with Channels 62 will have to provide co-channel protection to television stations operating on Channels 62 and adjacent channel protection to television stations operating on Channels 61 and 63. Licensees operating on spectrum between 747 MHz and 752 MHz (Channel 60), in addition to providing co-channel protection to Channel 60 television stations, will have to provide adjacent channel protection to television stations operating on both Channel 61 and 59.[326]

A. Negotiations with Incumbent Broadcast Licensees

142. Background. We proposed in the NPRM to permit new licensees in this spectrum to reach agreements with licensees of protected, incumbent television stations that would compensate incumbents for: (1) converting to DTV-only transmission before the end of the statutory transition period;[327] (2) accepting higher levels of interference than allowed by the protection standards; or (3) otherwise accommodating new licensees.[328] Various commenters have addressed the significant effect of continued television operations by protected incumbents on the usefulness of these spectrum blocks.[329]

143. Discussion. One of the spectrum management challenges in expeditiously achieving efficient and intensive commercial use of the 700 MHz bands is minimizing the operational difficulties presented by incumbent TV licensees to new wireless licensees, consistent with maintaining broadcast services through their transition. Promoting broadcasters' ability to build digital businesses, and continue their free programming service, requires both regulatory flexibility in their use of channels and the practical recognition that they may rely on revenue from existing, analog operations for some years. The extended license term specified for services on these bands in part reflects the recognition that incumbent television licensees on these frequencies may, under the statutory provision for DTV transition, continue to broadcast for some years, delaying the time when new licensees have uncompromised use of the spectrum resource. The Commission policy to promote broadcasters' ability to establish full DTV transmission by allowing maximum flexibility in developing viable business plans during the transition period is consistent with many of the objectives for the long-term use of the 700 MHz bands.[330]

144. The joint license structure adopted for incumbent television operators, however,

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[326] In addition, licensees operating fixed stations in the 747-762 MHz band must comply with the relevant provisions for "base stations" in Section 90.309 of our Rules; and licensees operating fixed stations in the 777-792 MHz band must comply with the relevant provisions for "control stations" in Section 90.309 of our Rules. 47 C.F.R. § 90.309.

[327] 47 U.S.C. 309(j)(14). *See also DTV Proceeding* 12 FCC Rcd 12809, 12832 (1997), para. 54 (outlining elements of the transition schedule "by the sixth year from the date of adoption of this *Report and Order* a requirement of 50% simulcasting of the video programming of the analog channel on the DTV channel; by the seventh year, a 75% simulcasting requirement; by the eighth year, a 100% simulcasting requirement, until the analog channel is terminated and that spectrum returned.").

[328] *NPRM* at para. 99.

[329] *See, e.g.*, US WEST Comments at 10.

[330] *DTV Proceeding*, 12 FCC Rcd 12809, 12834, para. 60.

potentially complicates this process. The Commission licenses both the NTSC and DTV facilities, once digital transmission begins, under a "single, paired license."[331] While administrative efficiency is furthered by having one license for the purposes of revocation or non-renewal,[332] the unitary license may pose administrative complications if an incumbent wishes to consider accommodations to new licensees that affect only its analog, UHF operations.

145. The Congressional plan set forth in Sections 336 and 337 of the Act and in the 1997 Budget Act is to transition this spectrum from its current use for broadcast services to commercial use and public safety services.[333] Congress also has directed us to auction the 36 MHz spectrum for commercial use six years before the relocation deadline for incumbent broadcasters in this spectrum, while adopting interference limits and other technical restrictions necessary to protect full-service analog television service during the transition to DTV.[334] In these circumstances, we will consider specific regulatory requests needed to implement voluntary agreements reached between incumbent licensees and new licensees in these bands. In considering whether the public interest would be served by approving specific requests, we would, for example, consider the benefits to consumers of the provision of new wireless services, such as next generation mobile services or Internet fixed access services. We would also consider whether such agreements would help clear spectrum for public safety use in these bands and could result in the provision of new wireless service in rural and other relatively underserved communities. On the other hand, we would also consider loss of service to the broadcast community of the licensee. For example, we would consider the availability of the licensee's former analog programming within the service area, through simulcast of that programming on the licensee's DTV channel or distribution of the programming on cable or DBS, or the availability of similar broadcast services within the service area, (e.g., whether the lost service is the only network service, the only source for local service, or the only source for otherwise unique broadcast service).

V. CANADIAN AND MEXICAN BORDER REGIONS

146. There are currently separate agreements with Canada and Mexico covering TV broadcast use of the UHF 470-806 MHz band. Such agreements do not reflect the additional use or services being adopted in this item for 746-764 and 776-794 MHz bands. While the Commission staff has been involved in discussions with both countries regarding coordination or interference criteria for the use of these bands in the border areas for the additional services, agreements have yet to be reached.[335] Therefore, until such agreements have been finalized, we believe it necessary to adopt certain interim requirements for licenses in these bands along the Canada and Mexico borders.[336] Accordingly, licenses

331 *DTV Proceeding*, 12 FCC Rcd 12809, 12834, para. 59.

332 *DTV Proceeding*, 12 FCC Rcd 12809, 12834, para. 57.

333 47 U.S.C. §§ 336-337.

334 *See Consolidated Appropriations*, Appendix E, Sec. 213. *See also* 145 Cong. Rec. at H12493-94, (Nov. 17, 1999).

335 Both Canada and Mexico have been notified that the Commission has changed the allocation of these bands, and the Commission has discussed with them the possibility of mutually compatible spectrum use in all three countries.

336 Many agreements have used the geographic distance of 120 km from the border as the coordination or effected area. We will apply this criterion until agreements are reached.

issued for these bands within 120 km of the borders will be subject to whatever future agreements the United States develops with these two countries. In that the existing agreements for the protection of TV stations in these countries are still in effect and must be recognized until they are replaced or modified to reflect the new uses, licenses in the border areas will be granted on the condition that harmful interference may not be caused to, but must accept interference from, UHF TV transmitters in Canada and Mexico. Furthermore, modifications may be necessary to comply with whatever provisions are ultimately specified in future agreements with Canada and Mexico regarding the use of these bands. Pending further negotiations, we also adopt the protection criteria for domestic TV and DTV stations as interim criteria for Canadian and Mexican TV and DTV stations as described herein.[337]

VI. PROCEDURAL MATTERS AND ORDERING CLAUSES

147. Authority. This action is taken pursuant to Sections 1, 4(i), 7, 10, 201, 202, 208, 214, 301, 303, 307, 308, 309(j), 309(k), 310, 311, 315, 317, 324, 331, 332 and 336 and 337 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 157, 160, 201, 202, 208, 214, 301, 303, 307, 308, 309(j), 309(k), 310, 311, 315, 317, 324, 331, 332, and 336, and 337 and the Consolidated Appropriations Act, 2000, Pub. Law 106-113, 113 Stat. 1501, Section 213.

148. Accordingly, IT IS ORDERED that Part 27 of the Commission's Rules IS AMENDED to establish service rules for the 746-764 and 776-794 MHz bands, as set forth in Appendix B, and that, in accordance with Section 213 of the Consolidated Appropriations Act, 2000, Pub. Law 106-113, 113 Stat. 1501 (1999), these Rules shall be effective immediately upon publication in the Federal Register.

149. IT IS FURTHER ORDERED that, pursuant to 47 U.S.C. § 155(c), the Chief of the Wireless Telecommunications Bureau IS GRANTED DELEGATED AUTHORITY to implement and modify auction procedures in the Wireless Communications Service, including the general design and timing of the auction; the manner of submitting and withdrawing bids; the amount of any minimum opening bids and bid increments; activity and stopping rules; and application and payment requirements, including the amount of upfront payments; and to announce such procedures by public notice.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas
Secretary

[337] *See* Section IV, *supra.*

APPENDIX A

A. Comments

AirTouch Communications, Inc. (AirTouch)
Alaskan Choice Television (Alaskan Choice)
American Mobile Telecommunications Association, Inc. (AMTA)
ArrayComm, Inc.
Association for Maximum Service Television, Inc. (MSTV)
Association of America's Public Television Stations (APTS)
Association of Public-Safety Communications Officials-International, Inc. (APCO)
BayCom Inc.
Bruggeman, Jeffrey A.
Consumer Electronics Manufacturers Association (CEMA)
Harris Corporation (Harris)
Houston 2-Way Radio (H2)
Industrial Telecommunications Association, Inc. (ITA)
Intek Global Corp.
International Association of Fire Chiefs, Inc. and International Municipal Signal Association (IAFC/IMSA)
Jones, Charles
Kemp, Edwin, F.
KM Communications, Inc.
Microradio Empowerment Coalition
MRFAC, Inc.
Motorola, Inc.
National Translator Association (NTA)
Northside Plumbing Supply
Palletized Trucking, Inc.
Personal Communications Industry Association, Inc. (PCIA)
Rand McNally & Company
Region 20
Rural Telecommunications Group (RTG)
SBC Communications, Inc. (SBC)
Shure Brothers Inc.
Southern Communications, Inc. (Southern)
Telecommunications Industry Assn. (TIA)
U S WEST, Inc.
U.S. GPS Industry Council (GPS Council)
United Telecom Council (UTC)
Utility Communications, Inc.
Walt Disney Company (TWDC)

B. Reply Comments

AirTouch Communications, Inc.
American Mobile Telecommunications Association, Inc.
ArrayComm, Inc.
Association of American Railroads

Association for Maximum Service Television, Inc. (MSTV)
Association of Public-Safety Communications Officials (APCO)
AT&T Corp.
Bell Atlantic Mobile, Inc. (BAM)
Clearwire Technologies, Inc. (Clearwire)
Consumer Electronics Manufacturers Association (CEMA)
DDI Pocket, Inc.
Fox Ridge Communications, Inc.
Harris Corporation (Harris)
Industrial Telecommunications Association, Inc. (ITA)
International. Inc.
KM Communications, Inc. (KM)
Metricom, Inc.
Motorola, Inc.
National Association of Broadcasters (NAB)
Nextel Communications, Inc. (Nextel)
New York State Technology Enterprise Corporation (NYSTEC)
Public Safety Wireless Network Program (PSWNP)
SBC Communications, Inc. (SBC)
Southern Communications Services, Inc. (Southern)
USA Digital Radio, Inc. (USADR)
US GPS Industry Council (GPS Council)
U S WEST, Inc.
Walt Disney Company (TWDC)

C. Ex Parte Communications and/or Late Filed Comments

Advanced Electronics
Alaska Digital, LLC
All-Com Technologies, Inc.
Allcom Wireless, Inc.
American Mobile Telecommunications Association
APCO International
Arizona Department of Public Safety
ArrayComm, Inc.
Association for Maximum Service Television, Inc.
Associations of Public-Safety Communications Officials-International
AT & T Wireless
Atlanta Communications Company
Bair's Electronics Services, Inc.
BayCom, Inc.
BCI Communications
BearCom
Bell Atlantic
Bell Atlantic Mobile
Blair Communications, Inc.
Boeing Company
Burlington Northern Santa Fe Railway Company
Burst Networks, Inc.

Bytel, Inc.
Canadian Pacific Railway
Cellular Telecommunications Industry Assn. (CTIA)
Centre Communications
Cisco Systems, Inc. (Cisco)
City of Chicago, Office of Emergency Communications-Mr. Donatelli
City of Chicago, Office of Emergency Communications-Mr. Nowakowski
City of El Cajon
City of Fort Lauderdale
City of Mishawaka
City of San Diego
Coastal Electronics, Inc.
Cole, Gordon
Coloma Wireless, LLC
Commercial Communications, LLC
Communications & Electronics, Inc.
Communications Electronics, Inc.
Communications Engineering Services
Consumer Electronics Manufacturers Association
Coosa Valley Communications
County of Charleston
CTI Products, Inc.
DATARADIO
Dataradio Group of Companies
Day Wireless Systems
Delta Radio Systems, Inc.
DFW Communications
Dorler Communications Co.
Douglas County Sheriff
EMCO, Inc.
Express Radio, Inc.
Ford Communications
FreeSpace Communications (FreeSpace)
Greer Communications, Inc
Hankey's Radio, Inc.
Hasty's Communication East, Inc.
Houston 2-Way Radio
Industrial Communications & Electronics LLP
Industrial Telecommunications Association, Inc
Intel Government Affairs
Jackson Communications, Inc
Kay Communications, Inc.
KM Communications, Inc.
Leap Wireless International Inc.
Lucent Technologies (Lucent)
Macon Communications, Inc.
Maryland State Police
Mashantucket Pequot Tribal Nation
Maximum Service Television, Inc.

McCord Communications
McDermott Communications Co., Inc.
Metropolitan Communications
Microradio Empowerment Coalition
Microsoft Corporation (Microsoft)
Mobex Communications, Inc.
Mobilcomm
Mobile Communications of Gwinnett, Inc.
Motorola, Inc.
MRFAC, Inc.
National Coordination Committee on Public Safety Spectrum (NCC)
National Telecommunications and Information Administration (NTIA)
Nex-Tech
Nextel Communications, Inc. (Nextel)
North Carolina Smartnet Users Network
North County Dispatch J.P.A.
Office of Emergency Management
Ohio Valley 2-Way Radio, Inc.
P&R Communications, Inc.
PCT Communications
Personal Communications Industry Association (PCIA)
Platte Valley Communications
PSINet
Puget Sound Instrument
QualComm Inc.
Regional Communications, Inc.
Rep. Bliley
Rural Telecommunications Group (RTG)
S&P Communications
Savannah Communications
SBC Wireless, Inc.
Senator Dorgan et al.
Sierra Electronics
Southern Communications Services, Inc. (Southern)
Spectrum
Spectrum Exchange
Supreme Radio Communications, Inc.

Talladega County Emergency Management Agency
TBA Communications, Inc.
Telcordia Technologies, Inc. (Telcordia)
Telephone and Data Systems, Inc. et al. (TDS)
Teletouch Communications, Inc.
Texas Communications
Two Way Radio Services, Inc.
U.S. West Wireless, LLC
Union Pacific Railroad Company
University of Maryland
Walt Disney Company
Western Communications
Whitten's 2-Way Services
Yahoo! Inc.

Appendix B

FINAL RULES

For those reasons discussed in the accompanying Order part 27 of Title 47 of the Code of Federal Regulations is amended as follows:

1. The authority citation for part 27 is revised to read as follows:
Authority: 47 U.S.C. 154, 301, 302, 303, 307, 309, 332, 336, and 337 unless otherwise noted.

PART 27 — WIRELESS COMMUNICATIONS SERVICE

2. The title for part 27 is amended to read as follows:

PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

3. The table of contents for part 27 is amended by adding a Sec. 27.10 at the beginning of subpart B, by adding Secs. 27.60 and 27.66 to subpart C, by amending the titles for subpart D and for Sec. 27.201, and by adding subpart F as follows:

PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

* * * * *

Subpart B -- Applications and Licenses

Sec.
27.10 Regulatory Status.

* * * * *

Subpart C – Technical Standards

* * * * *

Sec.
27.60 TV/DTV interference protection criteria.

* * * * *

27.66 Discontinuance, reduction, or impairment of service.

Subpart D -- Competitive Bidding Procedures for the
2305-2320 MHz and 2345-2360 MHz Bands

Sec.
27.201 2305-2320 MHz and 2345-2360 MHz bands subject to competitive bidding.

* * * * *

Subpart F -- Competitive Bidding Procedures for the
747-762 MHz and 777-792 MHz Bands

Sec.

27.501 747-762 MHz and 777-792 MHz bands subject to competitive bidding.
27.502 Designated entities.

4. Section 27.1 is amended in paragraph (a) by deleting the phrase "for the Wireless Communications Service (WCS)" and substituting the phrase "for miscellaneous wireless communications services (WCS)" in lieu thereof, and by revising paragraph (b) to read as follows:

§ 27.1 Basis and purpose.

* * * * *

(b) Purpose. This part states the conditions under which spectrum is made available and licensed for the provision of wireless communications services in the following bands.
(1) 2305-2320 MHz and 2345-2360 MHz.
(2) 747-762 MHz and 777-792 MHz.

* * * * *

5. Section 27.2 is amended to read as follows:

§ 27.2 Permissible communications.

(a) Miscellaneous wireless communications services. Subject to technical and other rules contained in this part, a licensee in the frequency bands specified in § 27.5 of this part may provide any services for which its frequency bands are allocated, as set forth in the non-Federal Government column of the Table of Allocations in § 2.106 of part 2 of this chapter (column 5).

(b) Satellite DARS. Satellite digital audio radio service (DARS) may be provided using the 2310-2320 and 2345-2360 MHz bands. Satellite DARS service shall be provided in a manner consistent with part 25 of this chapter.

6. Section 27.3 is amended by redesignating paragraph (e) as paragraph (f) and paragraphs (f), (g), and (h) as paragraphs (k), (l), and (m), respectively, and by adding new paragraphs (e), (g), (h), (i), (j) and (n) to read as follows:

§ 27.3 Other applicable rule parts.

* * * * *

(e) Part 15. This part sets forth the requirements and conditions applicable to certain radio frequency devices.
* * * * *
(g) Part 20. This part sets forth the requirements and conditions applicable to commercial mobile radio service providers.
(h) Part 21. This part sets forth rules the requirements and conditions applicable to point-to-point microwave services relating to communications common carriers.
(i) Part 22. This part sets forth the requirements and conditions applicable to public mobile services.
(j) Part 24. This part sets forth the requirements and conditions applicable to personal communications services.

* * * * *

(n) Part 101. This part sets forth the requirements and conditions applicable to fixed microwave services.

7. Section 27.4 is amended by revising the definition of ``wireless communications service'' and by adding a definition of "broadcast services" in alphabetical order to read as follows:

§ 27.4 Terms and definitions.

* * * * *

Broadcast services. ***This term shall have the same meaning as that for "broadcasting" in section 3(6) of the Communications Act of 1934, i.e., "the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations." 47 U.S.C. § 153(6).***

* * * * *

Wireless communications service. A radiocommunication service licensed pursuant to this part for the frequency bands specified in § 27.5.

8. Section 27.5 is amended by redesignating the introductory text as paragraph (a) and paragraphs (a) and (b) as paragraphs (a)(1) and (a)(2), respectively, by inserting the title "2305-2320 MHz and 2345-2360 MHz bands" at the beginning and then adding the phrase "in the 2305-2320 MHz and 2345-2360 MHz bands" at the end of newly-designated paragraph (a), and by adding a new paragraph (b) to read as follows:

§ 27.5 Frequencies.

* * * *

(b) 746-764 MHz and 776-794 MHz bands. The following frequencies are available for licensing pursuant to this part in the 746-764 MHz and 776-794 MHz bands:
(1) Two paired channels of 1 megahertz each are available for assignment. Block A: 746-747 MHz and 776-777 MHz.
(2) Two paired channels of 2 megahertz each are available for assignment. Block B: 762-764 MHz and 792-794 MHz.
(3) Two paired channels of 5 megahertz each are available for assignment. Block C: 747-752 MHz and 777-782 MHz.
(4) Two paired channels of 10 megahertz each are available for assignment. Block D: 752-762 MHz and 782-792 MHz.

9. Section 27.6 is amended by redesignating the introductory text as paragraph (a) and paragraphs (a) and (b) as paragraphs (a)(1) and (a)(2), respectively, by inserting the title "2305-2320 MHz and 2345-2360 MHz bands" at the beginning and then adding the phrase "for the 2305-2320 MHz and 2345-2360 MHz bands" between the words "areas" and "are" in the first sentence of newly-designated paragraph (a), and by adding a new paragraph (b) to read as follows:

§ 27.6 Service areas.

* * * * *

(b) 746-764 MHz and 776-794 MHz bands.
(1)[Reserved.]
(2) Service areas for Blocks C and D in the 747-762 MHz and 777-792 MHz bands are based on Economic Area Groupings (EAGs) as defined by the Federal Communications Commission. *See* 62 FR

15978 (April 3, 1997) extended with the Gulf of Mexico. *See also* 62 FR 9636 (March 3, 1997), in which the Commission created an additional four economic area-like areas for a total of 176. Maps of the EAGs and the FEDERAL REGISTER Notice that established the 172 Economic Areas (EAs) are available for public inspection and copying at the Reference Center, Room CY A-257, 445 12th St., S.W., Washington, DC 20554. These maps and data are also available on the FCC website at www.fcc.gov/oet/info/maps/areas/.
(i)There are 6 EAGs, which are composed of multiple EAs as defined in the table below:

Economic Area Groupings[1]	Name	Economic Areas[2]
EAG001	Northeast	1-11, 54
EAG002	Mid-Atlantic	12-26, 41, 42, 44-53, 70
EAG003	Southeast	27-40, 43, 69, 71-86, 88-90, 95, 96, 174, 176(part)
EAG004	Great Lakes	55-68, 97, 100-109
EAG005	Central/Mountain	87, 91-94, 98, 99, 110-146, 148, 149, 152, 154-159, 176(part)
EAG006	Pacific	147, 150, 151, 153, 160-173, 175

Note 1: Economic Area Groupings are defined by the Federal Communications Commission; *see* 62 FR 15978 (April 3, 1997) extended with the Gulf of Mexico.

Note 2: Economic Areas are defined by the Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce February 1995 and extended by the Federal Communications Commission, *see* 62 FR 9636 (March 3, 1997).

(ii) For purposes of paragraph (b)(2)(i) of this section, EA 176 (the Gulf of Mexico) will be divided between EAG003 (the Southeast EAG) and EAG005 (the Central/Mountain EAG) in accordance with the configuration of the Eastern/ Central and Western Planning Area established by the Mineral Management Services Bureau of the Department of Interior (MMS). That portion of EA 176 contained in the Eastern and Central Planning Areas as defined by MMS will be included in EAG003; that portion of EA 176 contained in the Western Planning Area as defined by MMS will be included in EAG005. Maps of these areas may be found on the MMS website.
www.gomr.mms.gov/homepg/offshore/offshore.html.

10. A new section 27.10 is added at the beginning of subpart B to read as follows:

§ 27.10 Regulatory status.

(a) Single authorization. Authorization will be granted to provide any or a combination of the following services in a single license: common carrier, non-common carrier, and broadcast. A licensee may render any kind of communications service consistent with the regulatory status in its license and with the Commission's rules applicable to that service. An applicant or licensee may submit a petition at any time requesting clarification of the regulatory status for which authorization is required to provide a specific communications service.

(b) Designation of regulatory status in initial application. An applicant shall specify in its initial application if it is requesting authorization to provide common carrier, non-common carrier, or broadcast

services, or a combination thereof.

(c) Amendment of pending applications. The following rules apply to amendments of a pending application.
(1) Any pending application may be amended to:
(i) Change the carrier regulatory status requested, or
(ii) Add to the pending request in order to obtain common carrier, non-common carrier, or broadcast status, or a combination thereof, in a single license.
(2) Amendments to change, or add to, the carrier regulatory status in a pending application are minor amendments filed under § 1.927 of part 1 of this chapter.

(d) Modification of license. The following rules apply to amendments of a license.
(1) A licensee may modify a license to:
(i) Change the regulatory status authorized, or
(ii) Add to the status authorized in order to obtain a combination of services of different regulatory status in a single license.
(2) Applications to change, or add to, the carrier status in a license are modifications not requiring prior Commission authorization. The licensee must notify the Commission within 30 days of the change. If the change results in the discontinuance, reduction, or impairment of an existing service, the licensee is subject to the provisions of § 27.66 of this part.

11. Section 27.11 is amended by adding the following sentences to the end of paragraph (a), by revising paragraph (b), and by adding a new paragraph (c) to read as follows:

§ 27.11 Initial authorization.

(a) * * * Initial authorizations shall be granted in accordance with § 27.5 of this part. Applications for individual sites are not required and will not be accepted, except where required for environmental assessments, in accordance with §§ 1.1301 through 1.1319 of part 1 of this chapter.

(b) 2305-2320 MHz and 2345-2360 MHz bands. Initial authorizations for the 2305-2320 MHz and 2345-2360 MHz bands shall be for 10 megahertz of spectrum in accordance with § 27.5(a) of this part.
(1) Authorizations for Blocks A and B will be based on Major Economic Areas (MEAs), as specified in § 27.6(a)(1) of this part.
(2) Authorizations for Blocks C and D will be based on Regional Economic Area Groupings (REAGs), as specified in § 27.6(a)(2) of this part.

(c) 746-764 MHz and 776-794 MHz bands. Initial authorizations for the 746-764 MHz and 776-794 MHz blocks shall be for 1, 2, 5, or 10 megahertz of spectrum in accordance with § 27.5(b) of this part.
(1) Authorizations for Block A, consisting of two paired channels of 1 megahertz each, will be based on those geographic areas specified in § 27.6(b)(1) of this part.
(2) Authorizations for Block B, consisting of two paired channels of 2 megahertz each, will be based on those geographic areas specified in § 27.6(b)(1) of this part.
(3) Authorizations for Block C, consisting of two paired channels of 5 megahertz each, will be based on Economic Area Groupings (EAGs), as specified in § 27.6(b)(2) of this part.
(4) Authorizations for Block D, consisting of two paired channels of 10 megahertz each, will be based on EAGs, as specified in § 27.6(b)(2) of this part.

13. Section 27.13 is amended by designating the present text as paragraph (a), by inserting the title

"2305-2320 MHz and 2345-2360 MHz bands" and then the phrase "Except as provided in paragraph (b)" at the beginning thereof, and by adding a new paragraph (b) to read as follows:

§ 27.13 License Period.

* * * * *

(b) 746-764 MHz and 776-794 MHz bands. Initial authorizations for the 746-764 MHz and 776-790 MHz bands, will extend until January 1, 2014, except that a Part 27 licensee commencing broadcast services, will be required to seek renewal of its license for such services at the termination of the eight-year term following commencement of such operations.

14. Section 27.14 is amended by deleting the phrase "ten years of being licensed" in paragraph (a) and substituting the phrase "the prescribed license term set forth in § 27.13 of this part" in lieu thereof.

15. Section 27.15 is amended by revising paragraph (b)(4) and adding a new paragraph (e) to read as follows:

§ 27.15 Geographic partitioning and spectrum disaggregation.

* * * * *

(b) Technical Standards.

* * * * *

(4) Signal levels. For purposes of partitioning and disaggregation, Part 27 systems must be designed so as not to exceed the signal level specified for the particular spectrum block in § 27.55 of this part at the licensee's service area boundary, unless the affected adjacent service area licensees have agreed to a different signal level.

* * * * *

(e) Compliance with construction requirements. The following rules apply for purposes of implementing the construction requirements set forth in § 27.14 of this part.

(1) Partitioning. Parties to partitioning agreements have two options for satisfying the construction requirements set forth in § 27.14 of this part. Under the first option, the partitioner and partitionee each certifies that it will independently satisfy the substantial service requirement for its respective partitioned area. If a licensee subsequently fails to meet its substantial service requirement, its license will be subject to automatic cancellation without further Commission action. Under the second option, the partitioner certifies that it has met or will meet the substantial service requirement for the entire, pre-partitioned geographic service area. If the partitioner subsequently fails to meet its substantial service requirement, only its license will be subject to automatic cancellation without further Commission action.

(2) Disaggregation. Parties to disaggregation agreements have two options for satisfying the construction requirements set forth in § 27.14 of this part. Under the first option, the disaggregator and disaggregatee each certifies that it will share responsibility for meeting the substantial service requirement for the geographic service area. If the parties choose this option and either party subsequently fails to satisfy its substantial service responsibility, both parties' licenses will be subject to forfeiture without further Commission action. Under the second option, both parties certify either that the disaggregator or the disaggregatee will meet the substantial service requirement for the geographic service area. If the parties choose this option, and the party responsible subsequently fails to meet the substantial service requirement, only that party's license will be subject to forfeiture without further Commission action.

16. Section 27.50 is amended by redesignating paragraphs (a) and (b) as paragraphs (b)(1) and (b)(2), respectively, deleting in both of these redesignated paragraphs the phrase "in the 2305-2320 MHz and 2345-2360 MHz bands," by adding new paragraphs (a) and (b), and by adding Table 1 following paragraph (c) to read as follows:

§ 27.50 Power and antenna height limits.

(a) The following power and antenna height limits apply to transmitters operating in the 747-762 MHz and 777-792 MHz bands:
(1) Fixed and base stations transmitting in the 747-762 MHz band must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section;
(2) Fixed, control, and mobile stations transmitting in the 777-792 MHz band are limited to 30 watts ERP;
(3) Portable stations (hand-held devices) transmitting in the 777-792 MHz band are limited to 3 watts ERP;
(4) Maximum composite transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true maximum composite measurement for the emission in question over the full bandwidth of the channel.

(b) The following power limits apply to the 2305-2320 MHz and 2345-2360 MHz bands.

* * * * *

(c) * * *

Table 1 – Permissible Power and Antenna Heights for Base and Fixed Stations in the 747-762 MHz Band

Antenna Height (AAT) in meters (feet)	Effective Radiated Power (ERP) (watts)
Above 1372 (4500)	65
Above 1220 (4000) to 1372 (4500)	70
Above 1067 (3500) to 1220 (4000)	75
Above 915 (3000) to 1067 (4000)	100
Above 763 (2500) to 915 (3000)	140

Above 610 (2000) to 763 (2500)	200
Above 458 (1500) to 610 (2000)	350
Above 305 (1000) to 458 (1500)	600
Up to 305 (1000)	1000

17. Section 27.51 is revised to read as follows:

§ 27.51 Equipment authorization.

(a) Each transmitter utilized for operation under this part must be of a type that has been authorized by the Commission under its certification procedure.

(b) Any manufacturer of radio transmitting equipment to be used in these services may request equipment authorization following the procedures set forth in subpart J of part 2 of this chapter. Equipment authorization for an individual transmitter may be requested by an applicant for a station authorization by following the procedures set forth in part 2 of this chapter.

18. Section 27.53 is amended by revising paragraph (a), redesignating paragraph (c) as paragraph (f), and adding new paragraphs (c), (d) and (e) to read as follows:

§ 27.53 Emission limits.

(a) For operations in the bands 2305-2320 MHz and 2345-2360 MHz, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by the following amounts:

* * * * *

(c) For operations in the 747 to 762 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On any frequency outside the 747 to 762 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On all frequencies between 764 to 776 MHz and 794 to 806 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment;
(3) Compliance with the provisions of paragraph (c)(1) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
(4) Compliance with the provisions of paragraph (c)(2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(d) For operations in the 777 to 792 MHz band, the power of any emission outside the licensee's frequency band(s)of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On any frequency outside the 777 to 792 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On all frequencies between 764 to 776 MHz and 794 to 806 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations transmitting in the 777 to 792 MHz band;
(3) On all frequencies between 764 to 776 MHz and 794 to 806 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for fixed stations transmitting in the 777 to 792 MHz band;
(4) Compliance with the provisions of paragraph (d)(1) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
(5) Compliance with the provisions of paragraphs (d)(2) and (d)(3) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(e) For operations in the 747-762 MHz and 777-792 MHz bands, emissions in the band 1559-1610 MHz shall be limited to –70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and –80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(f) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

19. Section 27.55 is amended to read as follows.

§ 27.55 Field strength limits.

The predicted or measured median field strength at any location on the geographical border of a Part 27 service area shall not exceed the value specified for the following bands, unless the adjacent affected service area licensees agree to a different field strength. This value applies to both the initially offered service areas and to partitioned service areas.

(a) 2305-2320 and 2345-2360 MHz bands: 47 dBuV/m
(b) 747-762 and 777-792 MHz bands: 40 dBuV/m

20. Section 27.60 is added to read as follows.

§ 27.60 TV/DTV interference protection criteria.

Base, fixed, control, and mobile transmitters in the 747-762 MHz and 777-792 MHz frequency bands must be operated only in accordance with the rules in this section to reduce the potential for interference to public reception of the signals of existing TV and DTV broadcast stations transmitting on TV Channels 59 through 68.

(a) D/U ratios. Licensees must choose site locations that are a sufficient distance from co-channel and

adjacent channel TV and DTV stations, and/or must use reduced transmitting power or transmitting antenna height such that the following minimum desired signal-to-undesired signal ratios (D/U ratios) are met.
(1) The minimum D/U ratio for co-channel stations is 40 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers (55 miles)) of the TV station or 17 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers (55 miles)) of the DTV station.
(2) The minimum D/U ratio for adjacent channel stations is 0 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers (55 miles)) of the TV station or -23 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers (55 miles)) of the DTV station.

(b) TV stations and calculation of contours. The methods used to calculate TV contours and antenna heights above average terrain are given in §§ 73.683 and 73.684 of this chapter. Tables to determine the necessary minimum distance from the 747-762 MHz or 777-792 MHz station to the TV/DTV station, assuming that the TV/DTV station has a hypothetical or equivalent Grade B contour of 88.5 kilometers (55 miles), are located in § 90.309 and labeled as Tables B, D, and E. Values between those given in the tables may be determined by linear interpolation. The locations of existing and proposed TV/DTV stations during the period of transition from analog to digital TV service are given in Part 73 of this chapter and in the final proceedings of MM Docket No. 87-268. The DTV allotments on Channels 60 through 68 are:

STATE	CITY	NTSC TV Ch.	DTV Ch.	ERP (kW)	HAAT (m.)
California	Concord	42	63	61	856
California	Long Beach	18	61	413.6	725
California	Los Angeles	2	60	865.9	1107
California	Los Angeles	11	65	688.7	896
California	Los Angeles	13	66	679.7	899
California	Riverside	62	68	180.1	723
California	Sacramento	10	61	1000	595
California	Stockton	64	62	63.5	874
New Jersey	Newark	13	61	198.7	500
New Jersey	Vineland	65	66	107.8	280
Pennsylvania	Allentown	39	62	50	302
Pennsylvania	Philadelphia	6	64	1000	332
Pennsylvania	Philadelphia	10	67	791.8	354
Puerto Rico	Aguada	50	62	50.1	343
Puerto Rico	Arecibo	60	61	55	242
Puerto Rico	Mayaguez	16	63	50.1	347
Puerto Rico	Naranjito	64	65	50.1	142
Puerto Rico	Ponce	7	66	407.4	826
Wisconsin	Milwaukee	18	61	519.8	307

DTV stations on Channel 59 must be considered even though they are not indicated in the above table. The transition period is scheduled to end on December 31, 2006. After that time, unless otherwise directed by the Commission, 747-762 MHz and 777-792 MHz stations will no longer be required to protect reception of co-channel or adjacent channel TV/DTV stations.

(1) Licensees of stations operating within the ERP and HAAT limits of § 27.50 of this part must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval:
(i) utilize the geographic separation specified in the tables referenced below;
(ii) submit an engineering study justifying the proposed separations based on the actual parameters of the land mobile station and the actual parameters of the TV/DTV station(s) it is trying to protect; or,

(iii) obtain written concurrence from the applicable TV/DTV station(s). If this method is chosen, a copy of the agreement must be submitted with the application.
(2) The following is the method for geographic separations.
(i) Base and fixed stations that operate in the 747-762 MHz band having an antenna height (HAAT) less than 152 m. (500 ft.) shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table B (co-channel frequencies based on 40 dB protection) and Table E (adjacent channel frequencies based on 0 dB protection) in § 90.309 of this chapter. For base and fixed stations having an antenna height (HAAT) between 152-914 meters (500-3,000 ft.) the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure B in § 90.309 of this chapter. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the hypothetical or equivalent Grade B contour of a co-channel TV/DTV station (*i.e.*, it exceeds the distance from the appropriate Table in § 90.309 to the relevant TV/DTV station), an authorization will not be granted unless it can be shown in an engineering study (*see* paragraph (b)(1)(ii) of this section) that actual terrain considerations are such as to provide the desired protection at the actual Grade B contour (64 dBμV/m for TV and 41 dBμV/m for DTV stations) or unless the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the actual Grade B contour (64 dBμV/m for TV and 41 dBμV/m coverage contour for DTV stations) will be achieved. Directions for calculating powers, heights, and reduction curves are listed in § 90.309 for land mobile stations. Directions for calculating coverage contours are listed in §§ 73.683-685 for TV stations and in § 73.625 for DTV stations.
(ii) Control, fixed, and mobile stations (including portables) that operate in the 777-792 MHz band are limited in height and power and therefore shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection for TV stations and 17 dB for DTV stations) in § 90.309 of this chapter and a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV stations and - 23 dB for DTV stations). Since control, fixed, and mobile stations may affect different TV/DTV stations than the associated base or fixed station, particular care must be taken by applicants/licensees to ensure that all appropriate TV/DTV stations are considered (*e.g.* a base station may be operating within TV Channel 62 and the mobiles within TV Channel 67, in which case TV Channels 61, 62, 63, 66, 67 and 68 must be protected). Control, fixed, and mobile stations shall keep a minimum distance of 96.5 kilometers (60 miles) from all adjacent channel TV/DTV stations. Since mobiles and portables are able to move and communicate with each other, licensees must determine the areas where the mobiles can and cannot roam in order to protect the TV/DTV stations.
(iii) In order to protect certain TV/DTV stations and to ensure protection from these stations which may have extremely large contours due to unusual height situations, an additional distance factor must be used by all base, fixed, control, and mobile stations. For all co-channel and adjacent channel TV/DTV stations which have an HAAT between 350 and 600 meters, licensees must add the following DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control, fixed, and mobile stations on adjacent TV/DTV channels (96.5 km).

> DISTANCE FACTOR = (TV/DTV HAAT - 350) ÷ 14 in kilometers, where HAAT is the TV or DTV station antenna height above average terrain obtained from its authorized or proposed facilities, whichever is greater.

For all co-channel and adjacent channel TV/DTV stations which have an antenna height above average terrain greater than 600 meters, licensees must add 18 kilometers as the DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control, fixed, and mobile stations on adjacent TV/DTV channels (96.5 km).

Note: The 88.5 km (55 mi) Grade B service contour (64 dBμV/m) is based on a hypothetical TV station

operating at an effective radiated power of one megawatt, a transmitting antenna height above average terrain of 610 meters (2000 feet) and the Commission's R-6602 F(50,50) curves. *See* § 73.699 of this chapter. Maximum facilities for TV stations operating in the UHF band are 5 megawatts effective radiated power at an antenna HAAT of 610 meters (2,000 feet). *See* § 73.614 of this chapter. The equivalent contour for DTV stations is based on a 41 dBμV/m signal strength and the distance to the F(50,90) curve. *See* § 73.625 of this chapter.

21. A new section 27.66 is added to read as follows:

§ 27.66 Discontinuance, reduction, or impairment of service.

(a) Involuntary act. If the service provided by a fixed common carrier licensee is involuntarily discontinued, reduced, or impaired for a period exceeding 48 hours, the licensee must promptly notify the Commission, in writing, as to the reasons for discontinuance, reduction, or impairment of service, including a statement when normal service is to be resumed. When normal service is resumed, the licensee must promptly notify the Commission.

(b) Voluntary act by common carrier. If a fixed common carrier licensee voluntarily discontinues, reduces, or impairs service to a community or part of a community, it must obtain prior authorization as provided under § 63.71 of this chapter. An application will be granted within 30 days after filing if no objections have been received.

(c) Voluntary act by non-common carrier. If a fixed non-common carrier licensee voluntarily discontinues, reduces, or impairs service to a community or part of a community, it must given written notice to the Commission within seven days.

(d) Notifications and requests. Notifications and requests identified in paragraphs(a) through (c) of this section should be sent to: Federal Communications Commission, Common Carrier Radio Services, 1270 Fairfield Road, Gettysburg, Pennsylvania, 17325.

22. Section 27.308 is amended by deleting the phrase "WCS (see subparts C and D of this part as appropriate)" and inserting the phrase "applicable frequency band (*see* subparts C, D, and F of this part, as appropriate)" in lieu thereof.

23. A new subpart F is added to read as follows.

Subpart F – Competitive Bidding Procedures for the 747-762 MHz and 777-792 MHz Bands.

§ 27.501 747-762 MHz and 777-792 MHz bands subject to competitive bidding.

Mutually exclusive initial applications for licenses in the 747-762 MHz and 777-792 MHz bands 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.

§ 27.502 Designated entities.

(a) Eligibility for small business provisions.
(1) A small business is an entity that, together with its controlling interests and affiliates, has average gross revenues not exceeding $40 million for the preceding three years.
(2) A very small business is an entity that, together with its controlling interests and affiliates, has

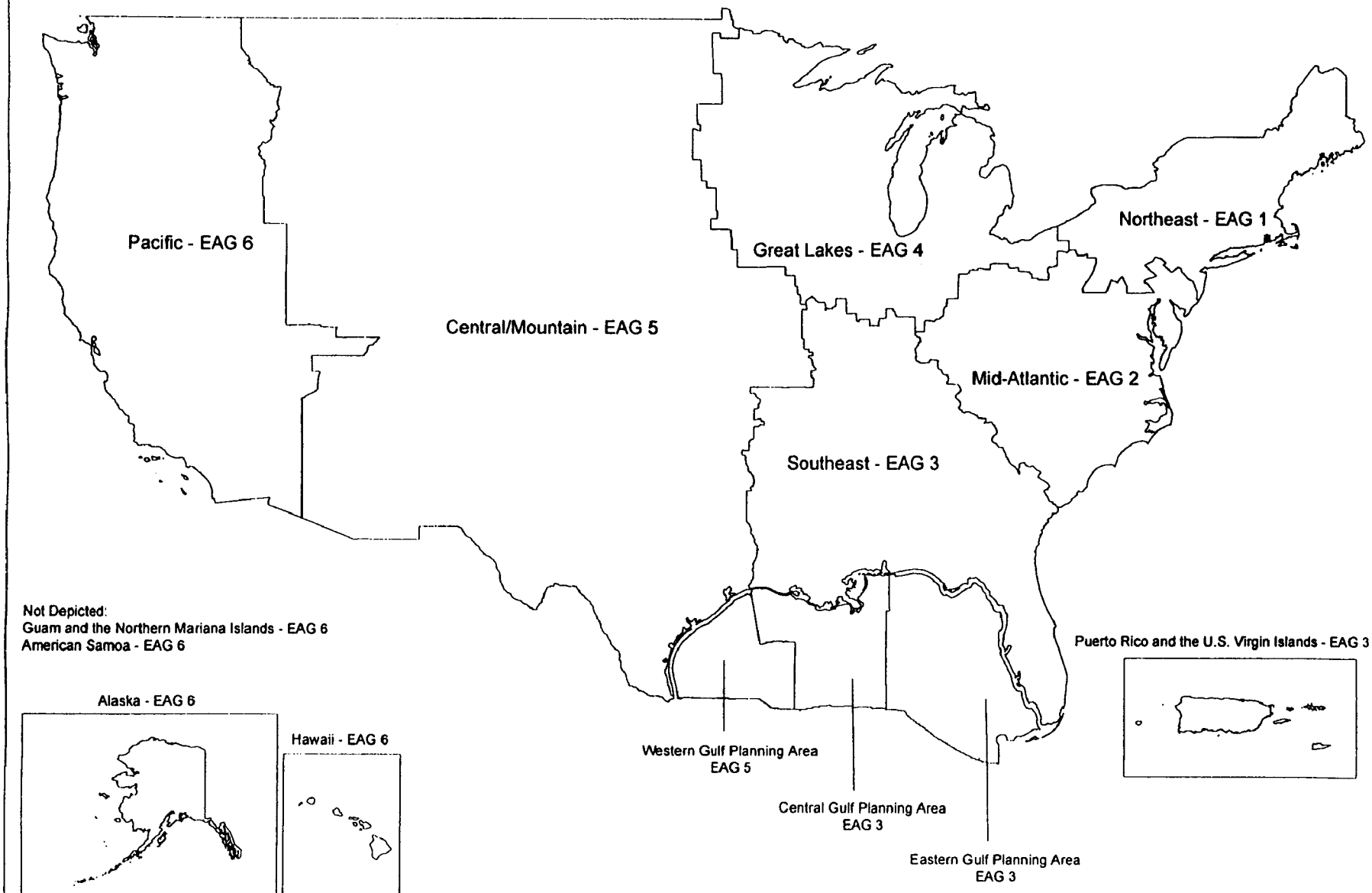
average gross revenues not exceeding $15 million for the preceding three years.
(3) For purposes of determining whether an entity meets either of the definitions set forth in paragraphs (a)(1) and (a)(2) of this section, the gross revenues of the entity, its controlling interests and affiliates shall be considered on a cumulative basis and aggregated. An applicant seeking status as a small business or very small business under this section must disclose on its short- and long-form applications, separately and in the aggregate, the gross revenues of the applicant (or licensee), its controlling interests and affiliates for each of the previous three years.
(4) Persons or entities that hold interests in an applicant (or licensee) that are affiliates of each other or have an identity of interests identified in § 1.2110(b)(4)(iii) of this chapter will be treated as though they were one person or entity and their ownership interests aggregated for purposes of determining an applicant's (or licensee's) compliance with the requirements of this section.
(5) Where an applicant (or licensee) cannot identify controlling interests under the standards set forth in this section, the gross revenues of all interest holders in the applicant, and their affiliates, will be attributable.
(6) A consortium of small businesses (or a consortium of very small businesses) is a conglomerate organization formed as a joint venture between or among mutually independent business firms, each of which individually satisfies the definition in paragraph (a)(1) of this section (or each of which individually satisfies the definition in paragraph (a)(2) of this section). Where an applicant or licensee is a consortium of small businesses (or very small businesses), the gross revenues of each small business (or very small business) shall not be aggregated.
(7) Designated entities must describe on their long-form applications how they satisfy the requirements for eligibility for designated entity status, and must list and summarize on their long-form applications all agreements that affect designated entity status such as partnership agreements, shareholder agreements, management agreements and other agreements, including oral agreements, establishing, as applicable, *de facto* or *de jure* control of the entity. Such information must be maintained at the licensee's facilities or by its designated agent for the term of the license in order to enable the Commission to audit designated entity eligibility on an ongoing basis.

(b) Controlling interest.
(1) For purposes of this section, a controlling interest includes individuals or entities with either *de jure* or *de facto* control of the applicant. *De jure* control is evidenced by holdings of greater than 50 percent of the voting stock of a corporation, or in the case of a partnership, general partnership interests. *De facto* control is determined on a case-by-case basis. An entity must disclose its equity interest and demonstrate at least the following indicia of control to establish that it retains *de facto* control of the applicant:
(i) The entity constitutes or appoints more than 50 percent of the board of directors or management committee;
(ii) The entity has authority to appoint, promote, demote, and fire senior executives that control the day-to-day activities of the licensee; and
(iii) The entity plays an integral role in management decisions.
(2) The following rules apply for the calculation of certain interests.
(i) Ownership interests shall be calculated on a fully diluted basis; all agreements such as warrants, stock options, and convertible debentures will generally be treated as if the rights thereunder already have been fully exercised.
(ii) Partnership and other ownership interests and any stock interest equity, or outstanding stock, or outstanding voting stock shall be attributed as specified below.
(iii) Stock interests held in trust shall be attributed to any person who holds or shares the power to vote such stock, to any person who has the sole power to sell such stock, and to any person who has the right to revoke the trust at will or to replace the trustee at will. If the trustee has a familial, personal, or extra-trust business relationship to the grantor or the beneficiary, the stock interests held in trust will be

attributed to the grantor or beneficiary, as appropriate.
(iv) Non-voting stock shall be attributed as an interest in the issuing entity.
(v) Limited partnership interests shall be attributed to limited partners and shall be calculated according to both the percentage of equity paid in and the percentage of distribution of profits and losses.
(vi) Officers and directors of an entity shall be considered to have an attributable interest in the entity. The officers and directors of an entity that controls a licensee or applicant shall be considered to have an attributable interest in the licensee or applicant.
(vii) Ownership interests that are held indirectly by any party through one or more intervening corporations will be determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest.
(viii) Any person who manages the operations of an applicant or licensee pursuant to a management agreement shall be considered to have a controlling interest in such applicant or licensee if such person, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence:
(A) The nature or types of services offered by such an applicant or licensee;
(B) The terms upon which such services are offered; or
(C) The prices charged for such services.
(ix) Any licensee or its affiliate who enters into a joint marketing arrangement with an applicant or licensee, or its affiliate, shall be considered to have a controlling interest, if such applicant or licensee, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence:
(A) The nature or types of services offered by such an applicant or licensee;
(B) The terms upon which such services are offered; or
(C) The prices charged for such services.

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

Appendix C
Geographic Areas for Licensing in the 747-762 MHz & 777-792 MHz Bands



FCC - WTB
MCD 01/06/2000

SEPARATE STATEMENT OF COMMISSIONER SUSAN NESS

Re: Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168

I strongly support our action today, unleashing 30 MHz of prime spectrum for a variety of wireless services, including fixed and mobile Internet access. I am excited about the prospect of wireless alternatives to the local loop and/or Internet connections to mobile devices – as determined by a robust marketplace. Our decision best balances the needs of these competing demands for the same spectrum.

Our decision also recognizes the paramount importance of shielding the public safety bands from interference. Our further actions on the guard bands established in this order first and foremost should ensure the protection of public safety communications.

While I support the order, I would have preferred to act concurrently on the licensing and service rules for the 6 MHz of guard bands. These guard bands, which are adjacent to the public safety spectrum, also are adjacent to the spectrum allocated today. The licensing and service rules that will apply to the guard bands also may effect business strategies of those planning to bid on the 30 MHz. Potential bidders therefore should have the opportunity to factor into their business plans the rules governing the guard bands when considering participation in the auctions governing this newly available spectrum.

Despite my regret that we have not acted concurrently on the full 36 MHz of spectrum, I do look forward to the expeditious resolution of the subsequent actions the Commission will take on these new commercial allocations. I await with anticipation the new advanced wireless services that will be provided to consumers as a result of our action today, and to the competition that will result in the marketplace from the initiation of these new services.

SEPARATE STATEMENT OF COMMISSIONER HAROLD FURCHTGOTT-ROTH, Approving in Part, Dissenting in Part

Re: Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168

As an initial matter, I wish to applaud the Wireless Bureau and the Office of Engineering and Technology for their tireless work in producing this item. Recent legislation greatly expedited our consideration of these issues. The Bureau and OET have made every effort to give full and fair consideration to the positions of all of the parties in order to reach the best policy results. By and large, I believe they have succeeded in crafting flexible and technology-neutral rules that will facilitate the prompt availability of significant spectrum for the highest valued uses.

The Order's approach to the primary spectrum blocks warrants particular praise. As the communications marketplace becomes increasingly competitive and dynamic, the Commission will be challenged to craft rules that allow for maximum flexibility in utilizing spectrum. This proceeding presented such a challenge. The sizing of spectrum blocks, the geographic licensing units, the aggregation and disaggregation rules, and the auction approach all have implications for the types of service providers that will succeed in the auction. Our task to balance the competing interests for the size and width of spectrum blocks has not been easy, but I believe we have done our best to preserve as many service and technology options as practicable in designing our rules for the primary spectrum blocks.

I must, however, part company with my colleagues on the item's approach to our statutory obligation to craft rules which protect public safety licensees from harmful interference. Rather than creation of so-called "guard bands," I would have been inclined to resolve our mandate by establishing strict interference limits with significant penalties for noncompliance. This approach is consistent with our statutory charge to "establish interference limits at the boundaries of the spectrum block and service areas."[338] I believe such a system would have appropriately left it to the marketplace to determine the appropriate uses of the spectrum and left to us the obligation to enforce rules that protect public safety licensees from interference. This approach would also have taken the Commission out of the difficult role of assessing the appropriate size and use of the guard bands. Nonetheless, there may well be some utility to the guard band concept as a basis for establishing boundaries and thresholds for interference. The creation of such bands alone may not have warranted a dissent.

However, even assuming "guard bands" are a necessary and appropriate convention, I am not convinced that a full 6 MHz is necessary to protect public safety. Indeed, it appears that 4 MHz or less would have provided a sufficient guard band to protect public safety licensees. Some parties have suggested that 6 MHz is necessary based on some other factors – such as the need for additional private spectrum or the need to create a viable market for "guard band

[338] 47 U.S.C. § 337 (d)(1).

spectrum." It may indeed be true that private users need additional spectrum or that 6 MHz is necessary to create a thriving market in guard band spectrum – but I find neither of these priorities in the statute. Nor do I believe these goals necessarily further the statute's purpose. Thus, to the extent I acquiesce the creation of guard bands at all, I would do so based only on an interference rationale and allocate only 4 MHz for such bands.

Today's item stops there. It only establishes the size of the guard bands. However, I feel compelled to express some concerns about some proposals that have gained currency in recent months about potential restrictions on the use of the guard bands. These items will be resolved in our Second Report and Order, but I wish to take this opportunity to state clearly my view of these pending issues.

I believe these guard bands should be open to all bidders willing to accept our interference limits on these bands. Although I believe the band manager concept is an innovative and potentially useful spectrum management tool, I cannot support proposals that would limit eligibility to a particular type of licensee. It seems to me the Commission should not be dictating business models to our licensees. In essence this limitation would say, if you want this spectrum, here is what your company needs to look like. I see no basis for such a proposed limitation. In addition, there may be many licensees who can use the guard bands for higher valued purposes than the band manager concept will allow. If a licensee can protect public safety, win the auction, and offer wireless Internet access to underserved areas, who are we to stop that higher-valued use based on some interest in testing a spectrum management tool?

In addition, the statute specifically requires that this spectrum be put to "commercial use." Whether band managers even qualify as a "commercial use" has been the subject of substantial debate. These doubts are only magnified by proposals to limit eligibility to "band managers" and preclude traditional "commercial" licensees who are prepared to comply with our interference limits.

I am also unconvinced by those who argue that we must limit guard band auction eligibility in order to "test" the band manager concept. In my view, the concept can be tested when band managers compete against other licensees in an open auction. You cannot truly test the concept by fixing the result, so that only band managers can win. Moreover, we should not in good conscience adopt any proposals that eliminate an opportunity for legitimate commercial entities to compete for spectrum simply because they fail to meet newly-minted criteria for a new non-statutory licensee, the band manager.

There are other questions that remain about these band manager proposals. First, it is not clear how a band manager is different from any other licensee that can lease its spectrum to other users. Second, how would a band manager fit into our traditional common carrier jurisprudence? What impact does that classification have on universal service? Although these regulatory issues may well be resolved, the band manager proposals create lingering doubts in my mind about the desirability of restricting eligibility to this class of new licensees.

My concerns about the various guard band proposals being considered in the Second Report and Order should not overshadow the overall strength of this item as an effort to permit market forces to determine the most-highly valued use of this spectrum. American business and consumers stand to gain significant benefits from this flexible, technology-neutral approach.