

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

In the Matter of)	
)	
Service Rules for Advanced Wireless Services)	WT Docket No. 07-195
in the 2155-2175 MHz Band)	

NOTICE OF PROPOSED RULEMAKING

Adopted: September 7, 2007

Released: September 19, 2007

Comment Date: (30 days after date of publication in the Federal Register)]

Reply Comment Date: (60 days after date of publication in the Federal Register)

By the Commission: Chairman Martin and Commissioners Copps, Adelstein and Tate issuing separate statements.

TABLE OF CONTENTS

Heading	Paragraph #
I. INTRODUCTION	1
II. EXECUTIVE SUMMARY	5
III. BACKGROUND	6
IV. NOTICE OF PROPOSED RULE MAKING	10
A. Technological Approaches to this Band	11
1. Uplink/downlink use	14
2. Structured uplink/downlink use.....	19
3. Downlink use.....	19
B. Band Plan.....	24
1. Spectrum Block Size	24
2. Geographic Area Licensing	31
3. Size of Geographic Areas	34
C. Auction Issues.....	39
D. Technical Issues.....	49
1. Protection of Adjacent Band Services	49
a. Out-of-Band Emission (OOBE) Limits	53
b. Power Limits.....	61
c. Protection of AWS-3 Operations from Adjacent Block AWS-3 Systems	67
d. Protection of AWS-3 Operations from Adjacent Band Systems.....	71
2. Protection of Incumbent Services.....	72
3. Co-Channel Interference between Licensees in the 2155-2175 MHz Band.....	78

a.	Protection of Co-Channel AWS Licensees Operating in Adjacent Regions	78
b.	Antenna Height Restrictions for Base and Fixed Stations.....	81
E.	Regulatory Issues; Licensing and Operating Rules	82
1.	Flexible Use.....	83
2.	Other License Conditions	86
3.	Regulatory Framework	92
4.	Assignment of Licenses.....	95
5.	Regulatory Status.....	96
6.	Ownership Restrictions.....	100
a.	Foreign Ownership Reporting	100
b.	Spectrum Aggregation Limits; Eligibility Restrictions	101
7.	License Term	104
8.	Criteria for Renewal	107
9.	Performance Requirements.....	111
10.	Disaggregation and Partitioning of Spectrum; Secondary Markets.....	127
11.	Facilitating Access to Spectrum and the Provision of Service to Tribal Lands	135
12.	Conditional Licenses	142
13.	Other Operating Requirements	143
F.	Other Technical Rules	145
1.	Radio Frequency (RF) Safety	145
2.	Other Technical Rules; Canadian and Mexican Coordination	146
G.	Competitive Bidding Procedures.....	148
1.	Incorporation by Reference of the Part 1 Standardized Auction Rules	149
2.	Provisions for Designated Entities	150
V.	PROCEDURAL MATTERS	156
A.	<i>Ex Parte</i> Rules – Permit-But-Disclose	156
B.	Comment Period and Procedures	157
C.	Initial Regulatory Flexibility Analysis.....	162
D.	Initial Paperwork Reduction Analysis	163
E.	Further Information	165
VI.	ORDERING CLAUSES	166
APPENDIX – Initial Regulatory Flexibility Analysis		

I. INTRODUCTION

1. In this Notice of Proposed Rule Making, we seek comment on service rules for licensed fixed and mobile services, including Advanced Wireless Services (AWS), in the 2155-2175 MHz band (AWS-3).¹ We seek comment on rules for licensing this newly designated

¹ Advanced Wireless Services is the collective term we use for new and innovative fixed and mobile terrestrial wireless applications using bandwidth that is sufficient for the provision of a variety of applications, including those using voice and data (such as Internet browsing, message services, and full-motion video) content. Although AWS is commonly associated with so-called third generation (3G) applications and has been predicted to build on the successes of such current-generation commercial wireless services as cellular and Broadband Personal Communications Services (PCS), the services ultimately provided by AWS licensees are limited only by the Fixed and Mobile designation of the spectrum we allocate for AWS and the service rules we ultimately adopt for the bands.

spectrum in a manner that will permit it to be fully and promptly utilized to bring advanced wireless services to American consumers.

2. Our objective in this proceeding is to allow for the most effective and efficient use of the spectrum in this band, while also encouraging development of robust wireless broadband services. In this Notice of Proposed Rulemaking, we propose to apply our flexible, market-oriented Part 27 rules to the band in order to meet this objective. Because the available spectrum is one 20-megahertz segment as opposed to two separate bands, the symmetrical pairing approach previously used by the Commission for AWS spectrum² is not possible. We therefore seek comment on three different technological approaches to this band: (1) permitting both base station transmissions and mobile handset transmissions in the band, as needed to support the licensees' choice of technology ("uplink/downlink approach"); (2) permitting both base station transmissions and mobile handset transmissions in the band, but only in particular parts of the band specifically designated by the Commission ("structured uplink/downlink approach"); or (3) allowing only base station transmissions in the band ("downlink approach"). Each approach raises different sets of tradeoffs between flexible use and interference protection requirements. We also recognize that permitting either of our approaches that include uplink transmissions may raise potentially significant interference issues associated with the presence of both mobile and base station transmissions in the band. We therefore seek comment on methods to address such concerns, including the use of power limits and out-of-band emission restrictions. In addition, we seek comment on licensing and operating rules, including those pertaining to flexible use, the license term, criteria for renewal, and performance requirements. We seek comment on any other technological approaches that could be employed in this band.³ We also seek comment on whether an auction of licenses in a simplified subset of alternative band plans with different technological approaches might be the optimal way to determine which technological approach to implement.

3. Finally, we specifically request comment on various proposals proffered recently by various parties that had previously filed applications to operate in this band, including M2Z Networks, Inc. (M2Z), NetfreeUS, and others.⁴ For example, M2Z has suggested that the

² See Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 02-353, *Report and Order*, 18 FCC Rcd 25162 (2003) (*AWS-1 Service Rules Report and Order*); modified by Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 02-353, *Order on Reconsideration*, WT Docket No. 02-353, 20 FCC Rcd 14058 (2005); see also Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands; Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 04-356; WT Docket No. 02-353, *Notice of Proposed Rulemaking*, 19 FCC Rcd 19263 (2004) (*AWS-2 Service Rules NPRM*).

³ See, e.g., Application for License and Authority to Provide Nationwide Broadband Service in the 2155-2175 MHz Band filed by NextWave Broadband Inc., (filed March 2, 2007) (proposing to provide broadband service in the 2.1 GHz band on the same terms, conditions and technical requirements that the Commission adopted for the 3.65 GHz band, modified as necessary for the 2.1 GHz band).

⁴ We recently dismissed all pending applications for operation in this band, determining that the public interest would best be served by initiating this rulemaking process to seek comment on the appropriate service rules and licensing mechanisms for the AWS-3 band. See Applications for License and Authority to Operate in the 2155-2175 MHz Band, WT Docket No. 07-16, *Order*; Petitions for Forbearance Under 47 U.S.C. § 160, WT Docket No. 07-30, *Order*, FCC 07-161 (rel. Aug. 31, 2007) (*AWS-3 Applications and Forbearance Petitions Order*).

licensees in this band should be subject to certain public interest requirements, including the provision of free broadband internet service at certain data rates and certain population-based build out benchmarks. Some have also suggested that the Commission should consider licensing this spectrum in a manner that would avoid the filing of mutually exclusive applications, and accordingly allow licensing on a non-auctioned basis.⁵

4. Through this proceeding, we anticipate making further progress toward providing all Americans with universal, affordable access to broadband technology. Wireless broadband systems developed using the 2155-2175 MHz band may offer consumers another choice for broadband access, competing in price and features with existing landline offerings or reaching areas not currently served by landline networks. We commit to issuing an order adopting rules in this proceeding within nine months following the publication of this Notice in the Federal Register. This commitment is intended to facilitate the introduction of new and innovative wireless broadband services to American consumers as soon as possible.

II. EXECUTIVE SUMMARY

5. In this Notice of Proposed Rulemaking, we consider application, licensing, operating, and technical rules for the 2155-2175 MHz band, and, among other things, we:

- Seek comment on the use of an “uplink/downlink approach” to licensing the spectrum, which would permit the use of technologies that allow for both mobile and base transmissions in the band, such as technologies based on Time Division Duplexing (TDD) or Half-Duplex Frequency Division Duplexing (HFDD),⁶ and on methods to resolve any interference challenges that may be associated with such an approach.
- Seek comment on a “structured uplink/downlink approach,” which would permit both mobile-plus-base transmit operations and base transmit operations, but only in particular parts of the band, as dictated by the band plan set by the Commission.
- Seek comment on a “downlink approach” for the AWS-3 spectrum, which would limit use of the 2155-2175 MHz band to base transmissions only, but would enable licensees to use this spectrum in combination with other Frequency Division Duplexing (FDD) bands.⁷
- Seek comment on whether an auction of licenses in a simplified subset of alternative band plans might best further our overall goals in this proceeding.
- Seek comment on the appropriate license block size for the 2155-2175 MHz band under each of the three technical approaches under consideration for this band.

⁵ See, e.g., NextWave Application at 1-2.

⁶ See *infra* paragraph 13; note 82.

⁷ See *infra* notes 20, 82.

- Seek comment on whether to license the band using a geographic area licensing scheme, under our flexible, market-oriented Part 27 rules, as well as on the appropriate geographic license block size for the band.
- Seek comment on interference issues specific to the band under each of the three technical approaches under consideration for this band.
- Seek comment on whether to adopt a boundary limit approach to limit co-channel interference that could be caused by AWS licensees operating in the 2155-2175 MHz band.
- Propose that AWS licensees operating in the 2155-2175 MHz band should be required to coordinate with incumbent Fixed Service (FS) licensees operating on co-channel and adjacent channel spectrum in the band prior to initiating operations.
- Seek comment on our proposals on the power limits, out-of-band emission restrictions, and other technical or operational requirements that might be needed to prevent harmful interference to operations in adjacent bands.
- Seek comment on whether any limit should be placed on the height-above-average-terrain (HAAT) of base or fixed station antennas operating in the 2155-2175 MHz band.
- Propose to permit any use of this spectrum that is consistent with the band's fixed and mobile allocations.
- Seek comment on whether we should adopt any of the various specific conditions proposed by parties that filed applications for operation in this band, including conditions to govern the provision of broadband services at particular data rates, with specific build out requirements, and with specific pricing plans.⁸
- Propose that the foreign ownership provisions of section 27.12 should apply to applicants applying for licenses in the 2155-2175 MHz band.
- Propose not to impose a spectrum aggregation limit or eligibility restrictions for the 2155-2175 MHz band.
- Note that, to the extent that a licensee in the 2155-2175 MHz band provides a Commercial Mobile Radio Service, such service would be subject to the provisions of Part 20 of the Commission's rules, including 911/E911 and hearing aid-compatibility

⁸ Seven parties filed applications for licenses to provide service in the 2155-2175 MHz band, which we recently dismissed without prejudice in an Order released August 31, 2007. *See AWS-3 Applications and Forbearance Petitions Order*. On May 5, 2006, M2Z filed an application seeking an exclusive, nationwide, 15-year license in the 2155-2175 MHz band to operate a wireless broadband network. Six additional applications for license and authority to operate in the band were filed in March 2007 – by Commnet Wireless, LLC; McElroy Electronics Corp.; NetfreeUS, LLC; NextWave Broadband, Inc.; Open Range Communications, Inc.; and TowerStream Corporation.

(HAC) requirements, along with the provisions in the rule part under which the license was issued.

- Propose that the threshold for environmental review of fixed transmission facilities should be an effective radiated power (ERP) greater than 1000 Watts.
- Propose to employ our Part 1 competitive bidding rules, if the Commission establishes a licensing regime that requires the use of competitive bidding to resolve mutually exclusive applications; seek comment on whether any of our Part 1 rules would be inappropriate or should be modified for an auction of licenses in this band.
- Propose to define a small business as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a very small business as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million.
- Propose to provide small businesses with a bidding credit of 15 percent and very small businesses with a bidding credit of 25 percent if we establish non-nationwide service areas, and seek comment on whether, if we decide to license the 2155-2175 MHz band on a nationwide basis, small business credits would be appropriate for this band.

III. BACKGROUND

6. Growth in demand for mobile wireless services, coupled with the increasingly important role of the Internet for voice and data applications, has elevated the need for advanced technologies capable of providing wireless Internet access and other voice and high-speed data services and spectrum to accommodate these advanced technologies.⁹ Mobile telephone carriers have begun to deploy significantly faster broadband technologies over their mobile cellular networks and many have announced plans to launch or expand these technologies further in the future. CDMA and TDMA/GSM¹⁰ carriers have begun deploying next-generation network technologies, such as EV-DO and WCDMA/HSDPA,¹¹ to upgrade their networks to offer

⁹ As of year-end 2006, there were an estimated 233 million mobile telephone subscribers, up from 208 million at the end of 2005. See CTIA, *Background on CTIA's Semi-Annual Wireless Industry Survey* <http://files.ctia.org/pdf/CTIA_Survey_Year_End_2006_Graphics.pdf> (Annualized Wireless Industry Survey Results – December 1985 To December 2006: Reflecting Domestic U.S. Commercially-Operational Cellular, ESMR and PCS Providers)..

¹⁰ CDMA stands for Code Division Multiple Access, and GSM stands for Global System for Mobile Communications. The third major type of digital cellular technology used in the U.S. is U.S.-TDMA (Time Division Multiple Access); however, the mobile carriers using U.S.-TDMA are in the process of upgrading their cellular systems to GSM. In addition, the carriers using Specialized Mobile Radio (SMR) licenses to deploy mobile telephone services use a digital technology called iDEN (integrated Digital Enhanced Network). These four technologies are commonly referred to as Second Generation, or “2G.”

¹¹ The International Telecommunication Union (“ITU”) has defined 3G network technologies as those that can offer maximum data transfer speeds of two megabits per second (“Mbps”) from a fixed location, 384 kilobits per second (kbps) at pedestrian speeds, and 144 kbps at vehicular speeds of 100 kilometers per hour. See *Tenth CMRS Competition Report*, at ¶ 116, n.250; Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Ninth Report*, 19 FCC Rcd 20587, 20650 n.314 (2004) (*Ninth CMRS Competition Report*). CDMA (continued....)

mobile data services at higher data transfer speeds and, in some cases, increased voice capacity. The FCC estimates that, as of June 30, 2006, 11 million mobile wireless devices capable of accessing the Internet at broadband speeds were in use, versus almost none at the end of 2003.¹²

7. Since 2001, the Commission has designated 130 megahertz of spectrum for use by advanced wireless services.¹³ Corresponding service rules have been adopted for 90 megahertz of the spectrum in the 1710-1755 MHz and 2110-2155 MHz bands (AWS-1).¹⁴ In addition, service rules have been proposed for another 20 megahertz in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz, and 2175-2180 MHz bands (AWS-2).¹⁵ In this Notice of Proposed Rulemaking, the Commission proposes service rules for an additional 20 megahertz of spectrum for a third AWS block (AWS-3) at 2155-2175 MHz, adjacent to the 2110-2155 MHz band of AWS-1 and the 2175-2180 MHz band of AWS-2.

8. The following chart illustrates the spectrum designated (or proposed) for AWS:

(Continued from previous page) _____

1xEV-DO (EV-DO) is a 3G technology being deployed by CDMA carriers, and WCDMA/HSDPA (Wideband CDMA/High-Speed Downlink Packet Access) is a 3G technology being deployed by GSM carriers in the United States.

¹² *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, Jan. 2007, at Table 1. The number of wireline broadband connections as of June 30, 2006 totaled 52.8 million. *Id.*

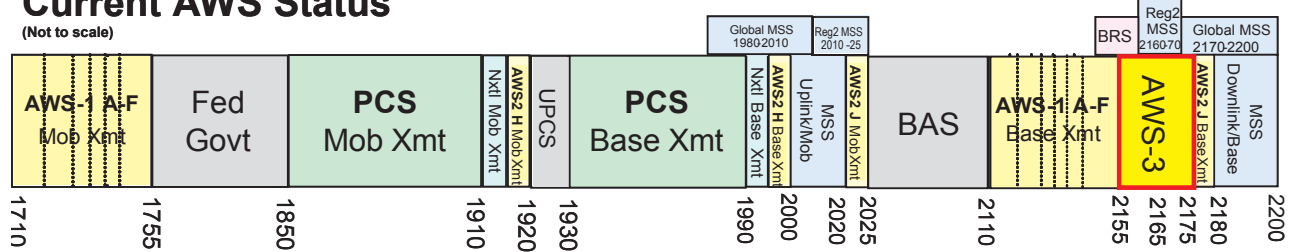
¹³ In the November, 2002 *AWS Allocation Second Report and Order*, the Commission identified and reallocated 90 megahertz (1710-1755 MHz and 2110-2155 MHz bands) to the fixed and mobile services for AWS. *See* Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, ET Docket No. 00-258, *Second Report and Order*, 17 FCC Rcd 23193 (2002) (*AWS Allocation Second Report and Order*). In the September, 2004 *AWS Allocation Sixth Report and Order*, the Commission designated 20 megahertz (1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz, and 2175-2180 MHz bands) for fixed and mobile services that include AWS. *See* Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, ET Docket No. 00-258, *Sixth Report and Order, Third Memorandum Opinion and Order and Fifth Memorandum Opinion and Order*, 19 FCC Rcd 20720 (2004) (*AWS Allocation Sixth Report and Order*). With regard to the 20-megahertz block at 2155-2175 MHz, the 2160-2165 MHz band was already allocated for non-Federal Government fixed services and mobile services. *See* 47 C.F.R. Parts 21, 22, and 101. In the *AWS Allocation Third Report and Order*, the 2165-2180 MHz band was reallocated for fixed and mobile services, including AWS. *See* Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ET Docket No. 00-258, *Third Report and Order, Third Notice of Proposed Rulemaking and Second Memorandum Opinion and Order*, 18 FCC Rcd. 2223, 2238 ¶ 28 (2002) (*AWS Allocation Third Report and Order & NPRM*). In the *AWS Allocation Eighth Report and Order*, the Commission allocated 2155-2160 MHz for fixed and mobile services, including AWS, and designated the entire 2155-2175 MHz band as AWS spectrum. *See AWS Allocation Eighth Report and Order*, 20 FCC Rcd at 15872 ¶ 9.

¹⁴ *See AWS-1 Service Rules Report and Order*, *supra* note 2.

¹⁵ *See AWS-2 Service Rules NPRM*, *supra* note 2.

Current AWS Status

(Not to scale)



9. There are numerous incumbents in the 2155-2175 MHz band, which contains over 1,800 active licenses. These incumbents consist primarily of Fixed Microwave Service (FS) and Broadband Radio Service (BRS) licensees, who are subject to relocation by emerging technology (ET) licensees (including future AWS-3 licensees). The Commission has already addressed relocation and cost-sharing issues with respect to the 2155-2175 MHz band in a separate proceeding based on the assumption that the AWS-3 band would be exclusively licensed.¹⁶ Generally, incumbents retain primary status unless and until an ET licensee requires use of the spectrum. AWS-3 licensees will be required to relocate, or share in the cost of a relocation paid for by other AWS licensees (including, possibly, AWS-1 licensees), until the relocation and cost sharing rules “sunset.” For FS, the rules sunset ten years after the first ET license is issued in the 2160-2175 MHz band.¹⁷ For BRS, the rules sunset 15 years after the first AWS license is issued in the 2150-2160/62 MHz band.¹⁸ Although we do not anticipate having to adopt any further rules regarding these issues, we do seek comment below on whether changes may be necessary in light of the service rules we adopt.

IV. NOTICE OF PROPOSED RULE MAKING

10. Unlike other bands designated for AWS, the AWS-3 band is a single, contiguous 20-megahertz block with base transmit bands on either side (AWS-1 at 2110-2155 MHz and proposed AWS-2 operations at 2175-2180 MHz), which presents interference challenges particular to this band. We seek comment on three different technological approaches to this band (discussed further below), with each raising its own set of tradeoffs between flexible use and the necessary interference protection measures. As described above, our goal is to allow for the most effective and efficient use of this spectrum.

¹⁶ See Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ET Docket No. 00-258, *Ninth Report and Order and Order*, FCC 06-45 (rel. April 21, 2006) (*AWS Ninth R&O*). See also Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ET Docket No. 00-258, *Eighth Report and Order and Fifth Notice of Proposed Rulemaking and Order*, 20 FCC Rcd 15866 (2005) (*AWS Allocation Eighth Report and Order and Fifth NPRM*).

¹⁷ See 47 C.F.R. § 101.79(a)(1) (10-year sunset date); 27 C.F.R. § 27.1174 (Termination of Cost-Sharing Obligations).

¹⁸ See 47 C.F.R. § 27.1253(a) (Sunset Provisions).

A. Technological Approaches to this Band

11. Our intention is to develop an approach for 2155-2175 MHz that will enable service providers to maximize use of this spectrum to provide advanced wireless services, while providing the necessary protections against interference. Our plan for achieving that objective is to permit as many types of technologies in the band as possible that are consistent with our fixed and mobile allocation, and with the need to protect against interference. As described in more detail below, allowing for both mobile and base transmissions in the band presents certain additional adjacent channel and co-channel interference concerns. Thus, granting that additional flexibility may come at the cost of additional interference protections that would severely restrict the utility of mobile transmissions in the band, limit base transmissions, or limit both mobile and base transmissions. If we can maximize the use of this band by permitting mobile-transmit operations in the entire band, in addition to base-transmit operations, in combination with sufficient interference protections, such as out-of-band emissions limits, we would propose to adopt such an uplink/downlink approach.

12. We may, however, determine that the interference protection measures necessary to protect mobiles receiving in the designated AWS-1 and proposed AWS-2 base-transmit bands adjacent to the AWS-3 spectrum and mobiles receiving in co-channel and adjacent channel AWS-3 bands would limit the ability of transmitting AWS-3 mobiles to operate effectively. We may also determine that the need to protect base stations receiving in the AWS-3 band would significantly limit the performance of base-transmit operations in the AWS-3 band. In that case, we would consider confining base-plus mobile transmit operations to the center portion of the band, and allowing downlink (base) transmissions only at the edges of the AWS-3 band in a “structured uplink/downlink” approach. Alternatively, if we determine that for interference reasons mobile-transmit operations in any part of the AWS-3 spectrum would not allow for effective use of the spectrum in this band, we would consider prohibiting mobile-transmit operations and permitting only base-transmit operations in the band under a downlink approach. These approaches are discussed in more detail below.

13. First, we seek comment on the uplink/downlink approach, which would allow for both mobile and base transmissions in the AWS-3 spectrum. Allowing mobile-transmit along with base-transmit operations in the entire band provides licensees the flexibility to choose which technology to deploy, subject to interference limits, and could encourage efficient spectrum usage. In addition, the uplink/downlink approach could promote market entry by new providers, such as entities using TDD or HFDD, if interference challenges that may undermine their utility can be adequately addressed. We seek comment on the type of technologies that could be deployed in this particular spectrum band under this approach. Because certain uses of the band may present difficult technical problems, as described in detail below, we also seek comment on how to address those problems. Second, we seek comment on whether we should adopt a structured uplink/downlink approach that allows for base-plus-mobile transmit operations only in the center of the band. Adopting this type of approach may afford some flexibility while possibly minimizing interference concerns by restricting the outer edges of the band to fixed (base) operations. Alternatively, the most efficient use of this band, once interference concerns are taken into account, might be a third approach that would limit the use of the entire AWS-3 band to base-transmissions only. We note that increasing use of wireless technology for applications

requiring greater speed has generated support from commenters¹⁹ for permitting AWS-3 spectrum to be combined with other AWS spectrum blocks and other non-AWS spectrum blocks to achieve higher downstream data rates.²⁰ We invite commenters to develop a thorough record on the merits and pitfalls of these approaches, which are discussed in greater detail below. We also seek comment on the spectrum block sizes and geographic licensing areas that best correspond to each proposed technical approach.

1. Uplink/downlink use

14. We seek comment on an approach featuring an unpaired, stand-alone 20-megahertz block available for technologies that would allow the use of both mobile and base station transmissions in the 2155-2175 MHz band.²¹ A licensee would have the flexibility to determine which technology it will use (including whether it would choose to operate mobiles in the band), which, ultimately, could help ensure that the AWS-3 spectrum is put to its highest valued uses. Certain technologies permit both base and mobile transmissions to occur in the same band, rather than requiring paired band segments to provide mobile service. For example, rather than designate separate radio channels for directional transmission (“to” and “from” an individual user or base station) as in a paired FDD scheme, TDD-based transmission technology allows a base station and associated mobile subscriber units to share the same spectrum by alternating transmission time slots. A TDD system also has the capability to dynamically modify the time slots used by a base station and its subscriber units, in order to efficiently accommodate an asymmetric data flow.²² Similarly, HFDD systems allow mobile and base transmissions in the same spectrum band by utilizing separate, adjacent channels at different times. Some commenters in the *AWS-1 Service Rules* proceeding and the *Wireless Broadband Access Task Force Report* proceeding expressed their support for an unpaired TDD approach.²³

¹⁹ See *infra* notes 36-37 citing comments in the AWS allocation proceeding, ET Docket No. 00-258, and comments to the *Wireless Broadband Access Task Force Report* in GN Docket No. 04-163.

²⁰ For example, if the AWS-3 spectrum at 2155-2175 MHz is used for base-transmit, it could theoretically be paired with mobile-transmit spectrum from the Personal Communications Services (PCS) at 1850-1910 MHz, AWS-1 at 1710-1755 MHz, proposed AWS-2 spectrum at 1915-1920 MHz or 2020-2025 MHz, or Nextel/1.9 GHz spectrum at 1910-1915 MHz.

²¹ We note that several of the recently dismissed applications for licenses in this band proposed technologies that would allow the use of both mobile and base station transmissions. See, e.g., M2Z Application at 13 (proposing to use a TDD technology in conjunction with advanced antenna system (“AAS”) technology and Orthogonal Frequency Division Multiple Access (“OFDMA”) waveforms; NextWave Application at 2-3 (proposing to use TDD technology based on the IEEE 802.16e WiMAX standard); Open Range Application at 9-11 (proposing to use technology based on the IEEE 802.16e standard with key features including OFDMA and multiple input multiple output (“MIMO”)).

²² Asymmetric data transmissions typically involve greater amounts of data flowing “downstream,” from base to mobile, than “upstream,” from mobile to base. TDD proponents claim that TDD technology offers the potential for dynamic, real-time balancing of upload/download traffic loads, and handsets that are less complex, less expensive, and yield longer battery life than other alternatives. See, e.g., <<http://www.umtstd.org/technology.html>>; TDD Coalition Comments to the *Spectrum Policy Task Force Report*, ET Docket No. 02-135 (Jan. 27, 2003).

²³ See ArrayComm Reply Comments at 2-4 and TDD Coalition Reply Comments at 8, 15, 22 submitted in the *AWS-1 Service Rules* proceeding, WT Docket No. 02-353. CTIA urges the Commission to pursue an unpaired (continued....)

15. Permitting this type of use could encourage efficient spectrum usage and promote market entry of new service providers.²⁴ Allowing both mobile and base transmissions in the 2155-2175 MHz band to support applications such as Wireless Interoperability for Microwave Access (WiMax)²⁵ could also foster more competition among emerging broadband technologies. Under this approach, however, the band would be surrounded by spectrum used for AWS base station transmissions.²⁶ Because this type of application can use the same spectrum band for both base station and mobile transmitting and receiving, this could result in mobile-to-mobile and base-to-base interference to adjacent and co-channel operations.²⁷ Mobile-to-mobile and base-to-base interference scenarios could occur if we permit base *and* mobile transmissions in the AWS-3 band because of the presence of *transmitting* and receiving mobiles, *i.e.*, AWS-3 mobile transmitters near other mobiles that are receiving base stations that transmit in co-channel, adjacent and nearby spectrum bands.²⁸ Additionally, mobile-to-mobile and base-to-base

(Continued from previous page)

TDD option but cautions the Commission on the potential technical limits and the need to prevent the potential for harmful interference. CTIA Comments to the *Wireless Broadband Access Task Force Report* at 13 in GN Docket 04-163 (filed April 22, 2005).

²⁴ See IPWireless Reply Comments to the *Wireless Broadband Access Task Force Report* at 3, GN Docket No. 04-163 (filed July 1, 2004).

²⁵ WiMax is a standards-based technology, which is intended to deliver “last-mile” wireless broadband access to fixed, portable, nomadic, and mobile users. Because of the flexibility of the IEEE 802.16 WiMax standards, WiMax technology could also be utilized in an unpaired approach. WiMax standards currently support TDD, FDD, and HFDD technologies. See, e.g., WiMAX Forum Regulatory Working Group, *Initial Certification Profiles and the European regulatory framework*, September, 2004, available at <http://www.wimaxforum.org/news/downloads/Initial_profiles_final.pdf>; Darcy Poulin, SiGe Semiconductor Inc., *WiMax advantages bring about new challenges*, Wireless Net DesignLine, Aug. 25, 2005, available at <<http://www.wirelessnetdesignline.com/howto/showArticle.jhtml?articleID=169300289>>.

²⁶ The 2110-2155 MHz and 2175-2180 MHz bands are designated and proposed to be designated, respectively, for base transmissions.

²⁷ When a TDD mobile or base station is transmitting, it will affect mobile or base station receivers in the adjacent spectrum unless sufficient distance or frequency separation is present. The transmitting mobile and base station will also affect mobile and base station receivers in the same spectrum in adjacent areas unless the networks are synchronized to a common timing standard and have the same channel asymmetry. See Harri Holma, Sanna Hekkkinen, Otto-Aleksanteri Lehtinen, and Antti Toskala, *Interference Considerations for the Time Division Duplex Mode of the UMTS Terrestrial Radio Access*, IEEE Journal on Selected Areas in Communications, Vol. 18, No. 8, August 2000, available at <<http://lib.tkk.fi/Diss/2003/isbn9512267187/article10.pdf>>. See also Gordon J R Povey, Elektrobit (UK) Ltd, Edinburgh Technology Transfer Centre, “Investigation of Multiple Access Interference Within UTRA-TDD,” available at <<http://www.eurasip.org/content/Eusipco/2000/sessions/TueAm/SS1/cr1909.pdf>>.

²⁸ Examples could include AWS-1 mobiles receiving at 2110-2155 MHz, AWS-2 mobiles receiving at 2175-2180 MHz (proposed), and MSS mobile or ATC stations receiving at 2180-2200 MHz. Mobile Satellite Service (MSS) is a radiocommunication service involving transmission between mobile Earth stations and one or more space stations. See 47 C.F.R. § 2.1(c). Ancillary Terrestrial Components (ATC) allows MSS operators to utilize their satellite spectrum terrestrially in urban areas and in buildings, where the satellite signal is weak. See generally Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, IB Docket No. 01-185, *Report and Order and Notice of Proposed Rulemaking*, FCC 03-15, 18 FCC Rcd 1962 (2003), *modified sua sponte*, *Order on Reconsideration*, FCC 03-162, 18 FCC Rcd 13590 (2003), *on reconsideration*, *Memorandum Opinion and Order and Second Order on Reconsideration*, FCC 05-30, 20 FCC Rcd 4616 (2005), *further recon pending*.

interference scenarios could occur in the same band in adjacent service areas.²⁹ Therefore, we seek comment on options for addressing all of the possible interference scenarios that may exist within and outside the 2155-2175 MHz band. Some options for addressing these interference scenarios are explored below, including requiring more stringent out-of-band emissions (OOBE) limits and power limitations.³⁰

16. We also seek comment on whether the benefits of permitting mobile-transmit operations in the AWS-3 band would outweigh the potential costs of addressing the “mobile-to-mobile” and “base-to-base” interference. Because adjacent band operations should be protected regardless of the type of application a licensee decides to deploy, we ask commenters to describe what protections should be incorporated into the service rules to ensure that adjacent band mobile receivers are protected from harmful interference. If mobile and base operations are permitted in the AWS-3 band, we seek comment on how our service rules should address the potential interference issues, including the appropriate power levels, the type of receiver and transmitter filters, and the appropriate interference protection distance.

17. Because with TDD different parts of each cell can experience different levels of interference depending on the geometry, channel asymmetry, and synchronization, power and OOBE limitations may not be sufficient to overcome the adjacent channel and co-channel interference potential. Therefore, we seek comment on methods besides limits on power and out-of-band emissions for mitigating potential co-channel and adjacent channel interference.

18. Under this approach, we propose to allow mobile use in the band, but not to require it. We would require only that licensees comply with the interference protection requirements that we adopt. For example, a licensee could divide its AWS-3 spectrum into smaller blocks and apply some of the spectrum in an asymmetrical mobile-transmit and base-transmit FDD pairing with other mobile-transmit spectrum, including Personal Communications Service (PCS) or other AWS spectrum, and apply the remaining spectrum to TDD use.³¹ Or, a licensee could use FDD in one portion of the band while other licensees in the band could choose to deploy, for example, WiMax using TDD or HFDD architectures. A licensee of the entire AWS-3 band could also opt to use FDD and limit the band to base-transmit use only, as

²⁹ If we only permit base transmissions in the 2155-2175 MHz band, then the only interference scenario that would be present would be the “base-to-mobile” interference scenario – *i.e.*, AWS-3 base transmissions causing interference to adjacent channel mobile stations. Fortunately, the “base-to-mobile,” and related “mobile-to-base,” interference scenarios are somewhat less difficult to address than the base-to-base and mobile-to-mobile interference scenarios, which will be present if we allow mobile transmissions in the band. *See infra* paragraph 21 for a more detailed discussion of this subject.

³⁰ Some commenters have already submitted suggestions on how to address the TDD-related interference issues. For example, with respect to the 2155-2180 MHz band, IPWireless asserts that state-of-the-art filtering allows TDD and FDD systems to coexist harmoniously in adjacent spectrum. IPWireless Comments at 3 GN Docket No. 04-163, ET Docket No. 00-258, IB Docket No. 99-81 (filed July 28, 2004). These comments were directed at the 2155-2180 MHz band because they were submitted at a time when the 2175-2180 MHz had not yet been designated for AWS and/or included in the AWS-2 spectrum band. *See infra* note 36.

³¹ For instance, that carrier could utilize the upper and lower five-megahertz blocks for fixed station transmissions with mobile transmissions limited to the 10 megahertz in the middle of the band. *See discussion infra* at paragraphs 19 and 60.

discussed below, and combine it with other symmetrically paired mobile- and base-transmit blocks. Giving licensees the flexibility to determine which technology they will use would help ensure that the AWS-3 spectrum is put to its highest valued uses, subject to any constraints placed by the interference protection standards that we adopt. Moreover, with flexible service rules, licensees should be able to adjust their choice of technology in response to evolving consumer demands so that the band will continue to reflect market pressures without further regulatory action.

2. Structured uplink/downlink use

19. We also seek comment on whether the Commission should allow licensees to utilize the 20 megahertz of AWS-3 spectrum for both mobile-plus-base transmit and base-transmit operations, each in specified parts of the band. Due to concerns about potential interference to the adjacent AWS-1, AWS-2, and MSS bands from mobile transmissions in the AWS-3 band, we could allow for mobile-plus-base transmit operations, but only in the center portion of the band. Specifically, we could designate the upper and lower five-megahertz blocks of the band, at 2155-2160 and 2170-2175 MHz, for fixed or base transmit-only operations, such as “fixed wireless access,” backhaul, or one-way (downstream) video services. This would leave the ten megahertz of spectrum in the middle of the band, which could be used for TDD or HFDD-based mobile services.

20. We are interested in receiving comments on how to address the potential interference issues that may arise under such a scenario, particularly the appropriate power levels to be used, the type of transmitter and receiver filters to be used, and what interference protection distance is appropriate under this “structured uplink/downlink” approach. Commenters should include the techniques that would be necessary to prevent interference between TDD systems in the center portion of the band and FDD systems in the outer portions, as well as the techniques needed to prevent co-channel and adjacent channel interference to adjacent areas (both geographically and spectrally) which may be using FDD and/or TDD-type applications. Further, we seek comment on the tradeoffs of this structured approach, with its more liberal interference protection measures but more limited licensee flexibility regarding deployment of services, as compared to the “uplink/downlink use” approach described above. Specifically, commenters should explain how their choice of services and technologies will be curtailed under the structured uplink/downlink approach.

3. Downlink use

21. Finally, we seek comment on adopting a downlink approach. This approach would prohibit mobile transmissions in this band, but would greatly simplify the treatment of interference issues in this band. This may, ultimately, turn out to be the most effective approach for obtaining the efficient utilization of this band. For instance, this approach would permit licensees that are operating FDD systems to customize their spectrum by combining this spectrum with other available base- and mobile-transmit spectrum bands and utilize asymmetric pairing.³² By providing greater spectrum capacity for downstream transmission, asymmetric

³² Asymmetric pairing typically involves pairing larger-sized base station transmission blocks with smaller mobile-transmission blocks. Most Internet traffic is asymmetric, *i.e.*, the average user typically downloads more data than he or she uploads. Hence, Internet service providers typically offer higher downstream data rates than upstream data rates. For example, Verizon’s mobile wireless EV-DO service has an 11 to 1 average download speed/upload (continued....)

pairing could promote the efficient provision of new and innovative wireless services that use FDD technology. For example, a downlink approach would enable asymmetric pairing of AWS-3 spectrum with AWS-1, proposed AWS-2, or other Commercial Mobile Radio Service (CMRS) bands,³³ and various fixed services. Such an approach may be well-suited for high data rate Internet applications, such as video-streaming.³⁴ Given the asymmetric nature of Internet traffic and the data-centric applications being deployed for the next-generation of wireless broadband services, providing additional spectrum for download transmissions could offer great potential for meeting the spectral demands of such applications.³⁵ A downlink approach could also enable an AWS-3 licensee to combine this spectrum with spectrum in other bands used for high-powered downlink-only video systems. However, we also seek comment on whether a downlink-only approach would inhibit new entry into this band by potential providers that may not be licensed to use spectrum in other bands.

22. Several commenters in the AWS allocation proceeding have urged the Commission to adopt an approach that would allow for asymmetric pairing for at least a portion of the AWS spectrum.³⁶ Similarly, commenters in the *Wireless Broadband Access Task Force*

(Continued from previous page) _____

speed ratio, Comcast offers internet connection speeds with a 10.4 to 1 average ratio, and Cox Communications offers maximum data rates with a 6 to 1 ratio. See <<http://news.vzw.com/news/2005/09/pr2005-09-19d.html>>; <http://www.manifest-tech.com/ce_wireless/wireless_vcast.htm>; <<http://www.comcast.com/Benefits/CHSIDetails/Slot3PageOne.asp>>; <http://www.coxbusiness.com/pdfs/cox_internet.pdf>.

³³ This use of AWS-3 spectrum would provide additional downstream (base station) transmission capacity for FDD systems operating on AWS-1, proposed AWS-2, or other CMRS spectrum.

³⁴ For example, Verizon, a CDMA carrier, is migrating from CDMA2000 1xRTT to a high-speed mobile internet access service using CDMA2000 1x EV-DO (evolution-data-optimized, “EV-DO”) technology. The EV-DO network is capable of maximum burst transmission speeds of up to 2.4 Mbps, with average user download speeds in the broadband range of 400 to 700 kbps. It is an asymmetrical service like digital subscriber line (DSL), with slower upload speeds between 40 and 60 kbps. Douglas Dixon, *TV on Your Mobile Phone: Verizon Wireless V Cast*, May, 2005, at <http://www.manifest-tech.com/ce_wireless/wireless_vcast.htm>; see <<http://getitnow-origin.vzwshop.com/vcasthome.do>>.

³⁵ For instance, the technologies being developed for certain broadband applications, such as Wideband CDMA (W-CDMA) and WiMax, offer bit-rate intensive applications that are driving high downlink bit rates and traffic asymmetry. Wideband Code-Division Multiple-Access (W-CDMA) is a technology that is being used for the implementation of third-generation (3G) cellular and PCS systems and is also known as Universal Mobile Telecommunications System, or “UMTS.” W-CDMA/UMTS is the next migration step for GSM carriers beyond Enhanced Data Rates for GSM Evolution (EDGE) technology and allows maximum downstream data speeds of up to two Mbps, and typical, user-experienced speeds of 220-320 kbps. See *Wireless Broadband Access Task Force Report*, GN Docket No. 04-163, at page 25.

³⁶ Several commenters in ET Docket No. 00-258 advocate combining the 2155-2180 MHz band with other AWS base transmit spectrum and pairing the resulting base transmit block with AWS mobile transmit spectrum, to create an asymmetric uplink/downlink pairing to accommodate greater amounts of downlink traffic. AT&T Wireless Reply Comments at 1, 7-8 (filed April 28, 2003); Verizon Wireless Comments at 2, 7 (filed April 14, 2003). We note that at the time that these comments were filed, the 2175-2180 MHz band had not yet been designated for AWS. In the September, 2004 *AWS Allocation Sixth Report and Order*, the Commission designated 20 megahertz, including the 2175-2180 MHz band, for fixed and mobile services, including AWS, and paired the 2175-2180 MHz block with the 2020-2025 MHz block as part of the AWS-2 band plan. See *AWS Allocation Sixth Report and Order*, note 13. One commenter asserts that the 2155-2180 MHz band should be made available as unpaired base transmit spectrum because such an approach, using blocks of at least five megahertz, would allow for the spectrum (continued....)

Report docket also expressed support for the use of asymmetric pairing as a means to enhance downstream capacity.³⁷ To meet the need for enhanced downlink capacities for wireless networks, we propose to adopt an asymmetric approach that would limit the 2155-2175 MHz band to base station-only use, should we determine that it is technically infeasible to allow mobile-transmit operations in the band.³⁸ This approach would make this band useful in connection with the existing allocation, designated use, and service rules for the 1710-1755 MHz and 2110-2155 MHz (AWS-1) bands.

23. We seek comment on this downlink approach. While some commenters have stated that this approach may provide a potential means for FDD-based carriers to accommodate the increasing asymmetrical download/upload demand, we seek to further develop the record on the demand for asymmetric pairing and the technology that would support such pairings. Therefore, we seek comment on whether adopting a downlink band will address the increasing asymmetric nature of data traffic and also on whether technology exists to deploy useful applications based upon asymmetric pairing. We also seek comment on whether a downlink approach would facilitate the introduction of a downlink-only videostreaming application such as the one being implemented in an unpaired spectrum block in the 700 MHz band.³⁹ Finally, we note that, under more flexible uplink/downlink options, a licensee still may adopt a downlink-only operation. We therefore seek comment on whether it is necessary to require downlink only, as opposed to simply protecting adjacent-channel licensees with appropriate OOB limits and

(Continued from previous page) _____

to be used in several ways, including allowing operators to pair the spectrum with other AWS spectrum in order to create an asymmetric uplink/downlink pairing to accommodate greater downlink traffic. Motorola Comments at 1 (filed July 20, 2004); *see also* Motorola Comments at iv, 14-16 (filed April 14, 2003), Motorola Reply Comments at 5 (filed April 28, 2003). Others assert that an asymmetric band plan for AWS spectrum is needed because many advanced wireless applications will require more spectrum for base transmit (“downstream”) paths than for mobile transmit (“upstream”) paths. Verizon Wireless Comments at 7, CTIA Comments at 6 (filed April 14, 2003); *see* Cingular Comments to the *AWS Allocation Fourth NPRM*, at 2 (filed Nov. 3, 2003); Cingular Comments to the *AWS Allocation Third NPRM*, at 6, 9-10 (filed April 14, 2003).

³⁷ Several commenters to the *Wireless Broadband Access Task Force Report*, GN Docket No. 04-163, recommend that the Commission adopt rules flexible enough to facilitate asymmetric pairing of spectrum bands in order to accommodate the higher volume of downstream traffic associated with broadband access. *See, e.g.*, Cingular/BellSouth Comments at 4-5, GN Docket No. 04-163 (filed April 22, 2005); WCA Comments at 7, GN Docket No. 04-163 (filed April 22, 2005); CTIA Comments at 12-13, GN Docket No. 04-163 (filed April 22, 2005). Others urge the Commission to allow asymmetric pairing and to adopt flexible rules that will allow an operator to combine multiple spectrum bands to form a single service. Cingular/BellSouth Comments at 5, CTIA Comments at 12-13, GN Docket No. 04-163 (filed April 22, 2005). One commenter recommends that the Commission pursue spectrum band options such as asymmetric pairing and unpaired TDD but cautions the Commission to remain cognizant of their potential technical limits, and to be careful to prevent the potential for harmful interference. CTIA Comments at 13.

³⁸ AWS-3 spectrum for downlink paths could be used in conjunction with AWS, PCS, and other CMRS spectrum.

³⁹ *See, e.g.*, In the Matter of Qualcomm Inc. Petition For Declaratory Ruling, Order, 21 FCC Rcd 11,683, 11,684 ¶ 3 (2006). In the Lower 700 MHz Band, the Commission divided the 48 megahertz of spectrum into several blocks of both paired and unpaired spectrum to accommodate a potential range of new fixed, mobile and broadcast services and technologies (and the unpaired spectrum consists of two 6-megahertz unpaired, contiguous blocks Block D at 716-722 MHz and Block E at 722-728 MHz). *See, e.g.*, Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), *Report and Order*, 17 FCC Rcd 1022, 1053-54, 1056-57 ¶¶ 76, 84 (2002).

related technical rules. In this connection, we seek comment on the potential costs of a downlink-only approach (*i.e.*, the potential to inhibit new entry) as compared to the potential benefits of such an approach (*i.e.*, potentially advantageous technical characteristics).

B. Band Plan

1. Spectrum Block Size

24. We seek comment on how to best subdivide the spectrum, if at all, and which block size(s) offer the best opportunity to use the 20 megahertz of spectrum efficiently, depending on which technological approach is adopted. For example, instead of five- or 10-megahertz blocks, WiMax systems can use variable bandwidths from 1.25 to 20 megahertz, with the first WiMax roll-outs expected to use 3.5- and 7-megahertz channel bandwidths. Because there are many different wireless channel bandwidth standards, *e.g.*, GSM (0.2 megahertz), CDMA (1.25 megahertz), W-CDMA/UMTS (5 megahertz), besides that of WiMax, we seek comment on what would be the most spectrally efficient spectrum block size for the 20-megahertz block of AWS-3 spectrum, recognizing the differences between the three approaches.⁴⁰

25. *Uplink/Downlink Approach.* Specifically, we seek comment on the appropriate block sizes in a band plan if we decide to adopt the uplink/downlink approach. Licensing multiple blocks of licenses in different geographic areas would enable licensees even more flexibility to tailor their service offerings to the interests of the market. If the 20-megahertz block were divided into four five-megahertz blocks, for example, bidders could aggregate those blocks in a number of different ways depending upon their particular needs. Moreover, since the decision of how blocks would be aggregated and which technology would be deployed would be made by the licensees in each geographic area, the pattern of use would vary depending upon specific needs in the area, as explained further in paragraph 0 below. Alternatively, we also seek comment on proposals for an uplink/downlink license for all 20 megahertz of spectrum nationwide.⁴¹

26. We seek comment on which band plan would achieve the maximum amount of flexibility for various types of technologies and business plans, should we choose to adopt this approach. For example, we could adopt a band plan that will maximize the flexibility of licensees to aggregate spectrum in a manner that best suits their spectral needs and technology-based limitations. Such a band plan could be composed of four equal five-megahertz blocks with geographic license areas that could be easily aggregated and/or combined with the licensee's existing spectrum portfolio. We believe that blocks should be no smaller than five megahertz because the Commission has, for some time, considered five megahertz to be the necessary,

⁴⁰ Some commenters in the *Wireless Broadband Access Task Force Report* proceeding, GN Docket 04-163, advocate dividing the spectrum band into smaller five-megahertz blocks. *See, e.g.*, Global UMTS TDD Alliance Comments at 7, GN Docket No. 04-163 (filed June 3, 2004). IP Wireless asserts that the 2155-2180 MHz block should be auctioned in blocks of at least five megahertz, under rules affording the licensees adequate protection from future users of adjacent spectrum. IPWireless Comments at 3-4, GN Docket No. 04-163, ET Docket No. 00-258, IB Docket No. 99-81 (filed July 28, 2004).

⁴¹ *See, e.g.*, M2Z Application at 11; Commnet Application, Exhib. 2 at 1; NextWave Application at 1 (seeking authorization to operate on a nationwide, shared basis).

minimum spectrum block size for 3G technologies.⁴² 3G technologies could be effectively accommodated on unpaired five-megahertz AWS-3 blocks through use of the recently developed UMTS TDD standard. Because TDD and FDD-based 802.16 (WiMax) standards are expected to be developed for a variety of bandwidths, which are multiples of 1.25 and 1.75 megahertz, it is possible that five-megahertz blocks in the AWS-3 band could accommodate WiMax systems as well. We seek comment on this proposal, and any other configurations that commenters believe would most benefit a flexible approach that would allow for both TDD and FDD to operate in the band, should we decide to adopt this approach.

27. *Structured Uplink/Downlink Approach.* Further, we seek comment on the appropriate block sizes under the proposed structured uplink/downlink approach, which would allow for mobile-transmit and base-transmit operations in the center of the band and only base or fixed-transmit operations on the edges of the band. As explained in paragraph 19, *supra*, under this approach, we propose designating the upper and lower five-megahertz blocks, at 2155-2160 MHz and 2170-2175 MHz, for fixed service or base-transmit only (*i.e.*, FDD use), while the middle of the band, 2160-2170 MHz, could be used for base or mobile-transmit operations. We seek comment on this proposal, and any other suggested block sizes that would achieve the goal of minimizing adjacent band interference concerns by permitting mobile-transmit operations only in the middle of the band.

28. *Downlink Approach.* Finally, for the downlink approach, we seek comment on whether to divide the 2155-2175 MHz band into smaller blocks in order to allow licensees to combine specific base-transmit spectrum blocks from AWS-3 with symmetrically paired base- and mobile-transmit spectrum elsewhere to create asymmetric pairings with enhanced download (*i.e.*, base-transmit) capacity. For example, we could offer AWS-3 in building blocks of one particular size (*e.g.*, four blocks of five megahertz each or two blocks of ten megahertz each) and allow potential licensees to match them to other spectrum pursuant to their business plans. We note that breaking the AWS-3 band into smaller blocks would not preclude licensees from aggregating all 20 megahertz of AWS-3 to achieve increased downlink capacity. For example, the best opportunity to maximize efficient spectrum use may be combining blocks of base-transmit spectrum from AWS-3 (2155-2175 MHz) with base-transmit blocks from the adjacent AWS-1 upper band (2110-2155 MHz) to create a larger base transmit spectrum band that is then asymmetrically paired with blocks of mobile-transmit spectrum from the AWS-1 lower band (1710-1755 MHz). In this regard, we seek comment on whether we should make the spectrum block sizes for AWS-3 coordinate with those established in AWS-1 and if so, what is the best way to accomplish this coordination.

29. In addition to combining AWS-3 spectrum with AWS-1 blocks, licensees also might choose to combine the AWS-3 spectrum with other symmetrically paired AWS or CMRS spectrum blocks. If the AWS-3 spectrum at 2155-2175 MHz is used for base-transmit, it could be combined with symmetrically paired base- and mobile-transmit blocks from the PCS or

⁴² See 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, *First Report and Order*, 15 FCC Rcd 476, 491 ¶ 36 (2000) (*Upper 700 MHz First Report and Order*) (the Commission discussed the need for five-megahertz blocks to accommodate Wideband CDMA transmissions).

proposed AWS-2 bands, or the 1910-1915 MHz and 1990-1995 MHz bands.⁴³ For example, a licensee could specify the 2020-2025 MHz block of AWS-2 as the mobile-transmit block, and combine the corresponding proposed AWS-2 base-transmit block with all of the AWS-3 blocks to form a larger base-transmit block at 2155-2180 MHz, providing a 5:1 ratio (25 megahertz downlink to five megahertz uplink). Such a pairing provides a significant amount of spectrum for uplink transmissions (*e.g.*, the requests for websites), and five times more spectrum to accommodate the downlink transmission of the data from those websites.

30. With respect to commenting on the appropriate band plans for each approach, commenters are asked to support their recommendations with evidence that either subdividing the spectrum or keeping it as one 20-megahertz spectrum block will promote greater efficiency and more flexible use of the band. Particular block size/geographic area combinations may be best suited for different types of uses of the band. Some licensees may prefer a smaller spectrum block size and small geographic licensing area (*e.g.*, five-megahertz block/Economic Area (EA) geographic licensing area) for maximum flexibility to tailor their use of the spectrum on a market-specific basis while others may prefer larger spectrum blocks and larger geographic areas to facilitate aggregation and spectrum efficiency. In that regard, we also seek comment on how we should consider the relationship between spectrum block size and geographic licensing area in determining the appropriate licensing scheme for the 2155-2175 MHz band.

2. Geographic Area Licensing

31. We propose that we should license the 2155-2175 MHz band using a geographic area licensing scheme, and we seek comment on this proposal. As opposed to a station-defined site-by-site licensing approach, we believe that a geographic area licensing scheme is better suited for the types of fixed and mobile services that will likely be developed in this band. Geographic area licensing is also consistent with the licensing approach the Commission adopted for the AWS-1 bands, and proposed in the AWS-2 bands.⁴⁴ As with those spectrum bands, the spectrum at issue in this proceeding is also suitable for AWS.

32. For the types of services that are likely to develop in the 2155-2175 MHz band, it has been our experience that geographic area licensing offers many advantages over site-by-site licensing. As the Commission has noted in the other AWS service rules proceedings, the Commission believes that geographic area licensing will maximize flexibility and permit new and innovative technologies to rapidly develop in these bands. Geographic area or wide-area licensing also allows a licensee substantial flexibility to respond to market demand, which results in significant improvements in spectrum utilization. In particular, geographic area licensing permits economies of scale because it allows a licensee to coordinate usage across an entire geographic area to maximize the use of spectrum. It also reduces regulatory burdens and transaction costs, because wide-area licensing does not require site-by-site approval and a licensee can aggregate its service territories without incurring the administrative costs and delays associated with site-by-site licensing. This approach is especially advantageous where spectrum

⁴³ For instance, as a technical matter, an AWS-1 mobile could easily transmit a request for high bandwidth download and receive that data in AWS-3 spectrum rather than in the symmetrically paired AWS-1 spectrum.

⁴⁴ See *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25174 ¶ 30; *AWS-2 Service Rules NPRM*, 19 FCC Rcd 19271-72 ¶ 18.

is likely to be used for services that require ubiquity and mobility over wide areas. As a result, licensees can more rapidly roll out their services under a geographic area licensing approach.

33. Commenters that do not support geographic area licensing for this spectrum should identify the type of station-defined site-by-site licensing scheme they support, and explain the costs and benefits associated with the alternative licensing proposal. For instance, one approach would be an exclusive use approach where the first licensee to acquire a license is guaranteed to have its operations protected from interference from other later-in-time licensees. Another approach would be a shared use approach where a frequency coordinator similar to those for the shared private land mobile radio (PLMR) frequencies determines where licensees can locate their facilities. We note that NextWave has proposed a variation of the shared use approach for this band, based on the licensing scheme the Commission adopted for the 3650-3700 MHz band, and we seek comment on that proposal.⁴⁵

3. Size of Geographic Areas

34. Assuming that we utilize a geographic area approach for licensing this band, we must determine the appropriate size(s) of service areas on which licenses should be based. Traditionally, in establishing a service, the Commission attempts to adopt optimal spectrum block sizes and optimal geographic area sizes, taking into consideration that parties may aggregate licenses through the auction process and may also adjust their service areas through secondary market mechanisms such as partitioning and disaggregation, if such fine-tuning is necessary.

35. In the past the Commission has licensed spectrum utilizing a wide variety of geographic licensing areas, including nationwide licensing, regional licensing, local licensing, or some combination of these approaches, as is illustrated in the following table:

⁴⁵ NextWave Application at 1-2; *see also* Rules for Wireless Broadband Services in the 3650-3700 MHz Band, WT Docket No. 05-96, *Report and Order and Memorandum Opinion and Order*, 20 FCC Rcd 6502 (2005).

Number of Licenses	Description of areas	Examples
1	Nationwide	Narrowband PCS ⁴⁶ 1.6 GHz band ⁴⁷ Block D, Upper 700 MHz ⁴⁸
5	Narrowband PCS Regional	Narrowband PCS ⁴⁹
6	Economic Area Groupings (EAG)	220 MHz ⁵⁰ Block D, Lower 700 MHz ⁵¹
12	Regional Economic Area Groupings (REAG)	Wireless Communication Service (WCS) ⁵² D/E/F--Block AWS ⁵³ Block C, Upper 700 MHz ⁵⁴
51	(see note below)	A & B-Block PCS ⁵⁵
51 or 52	Major Economic Areas (MEA)	WCS ⁵⁶ 929/931 MHz Paging ⁵⁷
175	Economic Areas (EA)	220 MHz ⁵⁸ 800 MHz SMR ⁵⁹ Paging ⁶⁰ B/C-Block AWS ⁶¹ Blocks A/E, Lower 700 MHz ⁶²
493	(see note below)	C/D/E/F-Block PCS ⁶³
734	306 Metropolitan Statistical Areas (MSA) plus 428 Rural Service Areas (RSA)	Cellular ⁶⁴ Blocks B/C, Lower 700 MHz ⁶⁵ A-Block AWS ⁶⁶

⁴⁶ See 47 C.F.R. § 24.102(a).

⁴⁷ See 47 C.F.R. § 27.6(f).

⁴⁸ See Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones, WT Docket No. 01-309, Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket 03-264, Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules, WT Docket No. 06-169, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket No. 06-229, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket No. 96-86, Second Report and Order, FCC 07-132, (2007) ("700 MHz Second Report and Order") at ¶¶ 62, 65; 47 C.F.R. § 27.6(b)(3) (2007).

In the AWS-1 proceeding, the Commission adopted a variety of geographic licensing area sizes in the band plan to accommodate the competing needs for large and small geographic area licenses and to afford applicants the opportunity to combine spectrum blocks and service areas to suit their business plans: Regional Economic Area Groupings (REAG), EAs, and Rural Service Areas/Metropolitan Statistical Areas (RSA/MSAs).⁶⁷

36. With respect to the AWS-3 spectrum, depending on the type of advanced wireless services that are provided in the band, different block sizes would be better suited for different services. We seek comment on the optimal service area sizes to offer the greatest flexibility for potential licensees. In addition, we note that the spectrum at issue in this proceeding may be

(Continued from previous page) _____

⁴⁹ See 47 C.F.R. § 24.102(b).

⁵⁰ See 47 C.F.R. §§ 90.7, 90.761(b).

⁵¹ See 47 C.F.R. § 27.6(c)(3) (2007).

⁵² See 47 C.F.R. § 27.6(a).

⁵³ See 47 C.F.R. § 27.6(h).

⁵⁴ See 700 MHz Second Report and Order at ¶¶ 65, 74-82; 47 C.F.R. §§ 27.6(b)(2) (2007).

⁵⁵ See 47 C.F.R. § 24.202(a). These 51 areas were used under licenses issued by Rand McNally & Company for certain specific radio services, not including advanced wireless services, and are therefore not available for consideration in this proceeding. See Copyright Liabilities, *Public Notice*, 11 FCC Rcd 22429 (Mass Media Bur., 1996).

⁵⁶ See 47 C.F.R. § 27.6(a). WCS MEA number 52 consists of the Gulf of Mexico.

⁵⁷ See 47 C.F.R. § 22.503(b)(2), (3). The 51 paging MEAs do not include the Gulf of Mexico.

⁵⁸ See 47 C.F.R. §§ 90.7, 90.761(a).

⁵⁹ See 47 C.F.R. §§ 90.7, 90.681.

⁶⁰ See 47 C.F.R. § 22.503(b)(2), (3).

⁶¹ See 47 C.F.R. § 27.6(h).

⁶² See 700 MHz Second Report and Order at ¶¶ 65, 83-88; 47 C.F.R. §§ 27.6(c)(1) (2007).

⁶³ See 47 C.F.R. § 24.202(b). These 493 areas were used under licenses issued by Rand McNally & Company for certain specific radio services, not including advanced wireless services, and are therefore not available for consideration in this proceeding. See Copyright Liabilities, *Public Notice*, 11 FCC Rcd 22429 (Mass Media Bur., 1996).

⁶⁴ See 47 C.F.R. § 22.909.

⁶⁵ See 47 C.F.R. § 27.6(c)(2) (2007).

⁶⁶ See 47 C.F.R. § 27.6(h).

⁶⁷ See Service Rules for Advanced Wireless Services In the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 02-353, *Order on Reconsideration*, WT Docket No. 02-353, 20 FCC Rcd 14058 (2005).

used in conjunction with other AWS spectrum, including the bands allocated as part of AWS-1.⁶⁸

37. In discussing geographic license areas, commenters are requested to take into consideration whether a particular band plan serves the Commission's spectrum management goals, including flexible and efficient spectrum use.⁶⁹ We are also aware that some licensees may need smaller service areas, since the most desirable or efficient scale of service area may vary according to the business plan of the potential licensee, in light of the variety of potential services that we envision will use these bands, including emerging technologies or next-generation applications. Thus, in discussing these issues, commenters should also take into consideration the possibility of aggregating licenses through the auction process as well as post-auction partitioning of licenses.⁷⁰

38. In summary, we seek comment on how we should consider the relationship between spectrum block size and geographic licensing area in determining the appropriate licensing plan for the 2155-2175 MHz band. An option that might be more suited to certain technologies that would be permitted under the uplink/downlink approach would be to license larger spectrum blocks, perhaps on a larger geographic basis, such as REAGs or nationwide licenses, for TDD-based 3G services. We seek comment on the proposals by several applicants for nationwide spectrum rights for the entire 20 megahertz of spectrum at issue in this proceeding.⁷¹ Additionally, as stated above (in paragraph 25), some licensees, such as proponents of the downlink approach to allow for asymmetric use of the band, may prefer small "building block" AWS-3 licenses that are 5-MHz block sizes, licensed on an EA or RSA/MSA basis, which might allow licensees maximum flexibility to tailor their use of the spectrum on a market-specific basis. Or, those seeking to deploy WiMax in underserved areas may prefer the spectrum to be licensed in smaller geographic areas, such as MSAs/RSAs or EAs. Alternatively, the structured uplink/downlink approach may suggest a different preferred geographic license size, depending on the technologies employed in the particular block.

C. Auction Issues

39. As discussed above, our overall objective in this proceeding is to adopt an approach that is likely to lead to the most efficient and effective use of this band. We have identified three different technological approaches that appear to raise different tradeoffs between flexibility of use and the necessary interference protection requirements, and have sought

⁶⁸ As noted above, AWS-3 spectrum could also be asymmetrically paired with AWS-2 spectrum at 2020-2025 MHz and 2175-2180 MHz. Whereas service rules for AWS-1 were adopted in the *AWS-1 Service Rules Report and Order*, equivalent service rules for the AWS-2 spectrum have been proposed but not yet adopted. See *AWS-2 Service Rules NPRM*, *supra* note 2.

⁶⁹ See 47 U.S.C. § 309(j)(3)(D). We also note several applicants propose a nationwide license for the 2155-2175 MHz band. See, e.g., M2Z Application at 11; Commnet Application, Exhibit 2 at 1; NextWave Application at 1; NetfreeUS Application at 10-11 (seeking a nationwide license with the obligation to lease its spectrum through a "private commons" model).

⁷⁰ See discussion *infra* paragraphs 101-103, 127-134.

⁷¹ See, e.g., M2Z Application at 11; Commnet Application, Exhibit 2 at 1; NextWave Application at 1; NetfreeUS Application at 10-11.

comment on which approach is most likely to serve our overall objective. We here seek comment on certain related auction issues, if the Commission establishes a licensing regime that requires the use of competitive bidding to resolve mutually exclusive applications.

40. We have discussed above band plan alternatives that might be established in connection with adoption of any of the technological approaches laid out. Further, we note that each of the individual alternatives discussed above is consistent with options available to the Commission under the Part 1 rules for choice of auction design to be determined during pre-auction preparations.⁷² Under its Part 1 rules, the Commission is able to choose among a variety of auction formats in order best to carry out its obligation to conduct competitive bidding for spectrum use licenses.⁷³ Typically the Commission has elected to utilize a simultaneous multiple round ascending auction in which license-by-license bidding occurs on multiple licenses at the same time. If the particular circumstances indicate that another format would better be suited to a specific auction, the Commission may choose to utilize or seek comment on another of its auction designs, such as a single-round sealed-bid auction⁷⁴ or a simultaneous multiple round auction with package bidding.⁷⁵ In addition, the Commission may also make certain modifications to the procedures of particular auctions to address the circumstances presented by a specific auction.⁷⁶

41. In considering how these auction issues relate to the determination of a band plan, we ask that commenters bear in mind that the auction formats available to the Commission under its rules, including simultaneous multiple round auctions with and without package bidding, generally offer bidders the opportunity to aggregate smaller licenses, in terms of geographic area or spectrum block size, into larger ones. Notwithstanding the ability of bidders to aggregate

⁷² See 47 C.F.R. § 1.2103; Amendment of Part 1 of the Commission's Rules—Competitive Bidding Procedures, WT Docket No. 97-82, *Third Report and Order and Second Further Notice of Proposed Rule Making*, 13 FCC Rcd 374, 447-49 ¶¶ 124-125 (1997) (*Part 1 Third Report and Order*). See also paragraph 149 *infra* in which we propose to use our Part 1 Competitive Bidding rules for any auction of initial licenses in the 2155-2175 MHz band.

⁷³ See 47 C.F.R. § 1.2103

⁷⁴ 47 C.F.R. § 1.2103(a)(3). See Closed Auction of Licenses for Cellular Unserved Service Areas Scheduled for February 12, 2003; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Auction Procedures, *Public Notice*, 17 FCC Rcd 22894 (2002).

⁷⁵ 47 C.F.R. § 1.2103(a)(4). See 700 MHz *Second Report and Order* at ¶¶ 287-292; Auction of 700 MHz Band Licenses Scheduled for January 16, 2008; Comment Sought on Competitive Bidding Procedures for Auction 73, *Public Notice*, DA 07-3415 (rel. August 17, 2007) (*Auction 73 Public Notice*). See also Auction of Regional Narrowband PCS Licenses Scheduled for September 24, 2003; Comment Sought on Package Bidding Procedures, Reserve Prices or Minimum Opening Bids, and Other Auction Procedures, *Public Notice*, 18 FCC Rcd 6366 (2003) (*Auction No. 51 Comment Public Notice*). See also Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006; Comment Sought on Reserve Prices or Minimum Opening Bids and Other Procedures, *Public Notice*, 21 FCC Rcd 794 (2006) (*Auction No. 66 Comment Public Notice*).

⁷⁶ See Auction of 800 MHz Air-Ground Radiotelephone Service Licenses Scheduled for May 10, 2006; Comment Sought on Reserve Prices or Minimum Opening Bids and Other Procedures for Auction No. 65, *Public Notice*, 21 FCC Rcd 4 (2006) (*Auction No. 65 Comment Public Notice*); Auction of 800 MHz Air-Ground Radiotelephone Service Licenses Scheduled for May 10, 2006; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments and Other Procedures for Auction No. 65, *Public Notice*, 21 FCC Rcd 1278 (2006) (*Auction No. 65 Procedures Public Notice*).

licenses in a simultaneous auction without package bidding, we ask whether and how package bidding may alter the determination of optimal license configuration. For example, would smaller license sizes be more attractive if offered with a package bidding auction format, since bidders would be able to aggregate with minimal exposure risk? If not, what geographic area and spectrum block sizes would provide the best opportunities for bidders to put the AWS-3 spectrum to its optimal use? In addressing these questions, we request that commenters provide a record on the technological and business considerations that should inform a determination of optimal spectrum block and geographic area sizes, and how those factors may be affected by the choice of auction design.

42. We seek comment here on the possibility of not selecting one of the approaches outlined above, but instead relying on an auction-based mechanism for selecting among a limited number of band plan options. One option might be to offer simultaneously in an auction licenses from more than one alternative band plan, each of which incorporates a different technological approach as discussed above, in a manner similar to that used in our auction of Air-to-Ground licenses.⁷⁷ Licenses would be awarded to the winning bidders, subject to the review of long-form applications, in the band plan with the highest aggregate bid, and in this way, determine which of the band plans and technological approaches would be implemented. We seek comment below on whether the Commission's auction format choices would make such an auction feasible and economically efficient, or whether there are additional auction formats not yet contemplated by our rules that should be available to the Commission to enhance the feasibility of such an auction. We also seek comment on what bandwidth and geographic license area determinations we should make in order to define the candidate band plans.

43. We are seeking comment here because offering all of the licenses in the mutually incompatible band plans simultaneously in one auction may have drawbacks that would limit the economic and procedural efficiency of such an auction, particularly as the complexity of the band plans increases, *i.e.*, the number of geographic areas and spectrum blocks available in each. An auction with all licenses offered at the same time, even though only some of them (those in the winning band plan) will be awarded, may make it difficult for bidders to determine their optimal bidding strategies. In contrast to an auction in which all offered licenses are to be sold, bidding strategies may be complicated, since the same bids will determine both the winners of the licenses and the chances that the licenses will be assigned as part of the winning band plan. If bidders do not express their preferences over the various licenses and band plans optimally, prices may not reflect the true demands for the licenses, and the auction may be less likely to assign licenses to those that value them the most. Moreover, since in such an auction only some of the licenses are intended to be awarded, a simultaneous multiple round auction format may give bidders an opportunity for strategic manipulation, which also may distort prices and reduce the chances that the auction mechanism will correctly assign the licenses to the users that value

⁷⁷ See Amendment of Part 22 of the Commission's Rules to Benefit the Consumers of Air-Ground Telecommunications Services, Biennial Regulatory Review — Amendment of Parts 1, 22, and 90 of the Commission's Rules, Amendment of Parts 1 and 22 of the Commission's Rules to Adopt Competitive Bidding Rules for Commercial and General Aviation Air-Ground Radiotelephone Service, WT Docket Nos. 03-103 and 05-42, *Report and Order and Notice of Proposed Rulemaking*, 20 FCC Rcd 4403, 4405-06, 4418-22 ¶¶ 1, 24-32 (2005) (licenses in three band plans were to be available, but the only licenses to be awarded were those that comprised the band plan that received the highest aggregate bid).

them most highly. For example, bidders may use bids that have little chance of winning to signal other bidders. Such bids may also be used to prolong the auction. Although the Commission's auction format alternatives set out in its rules include the single round sealed bid auction format, that format may not sufficiently address the issues inherent in assigning licenses in one band plan through an auction of licenses in multiple band plans. While the single round sealed bid format would eliminate opportunities for delay and gaming created by insincere bidding in multiple rounds, a single round sealed bid format may not simplify bidding strategies and, by eliminating the price discovery process, may make it more difficult for bidders to bid optimally.

44. Accordingly, the Commission may need to be able to choose a format not now identified in its Part 1 rules in order to ensure that the underlying structure of the auction will function so as to give bidders the opportunities and the correct incentives to bid honestly based on their valuations for the licenses as defined by the service rules. We therefore seek comment on auction alternatives not presently available to the Commission under its rules that would mitigate the issues inherent in offering licenses in an auction in which only some licenses are intended to be sold, as discussed above. Such auction alternatives are likely to have certain benefits and disadvantages, when applied to a possible auction of this band, and we seek comment on what those tradeoffs are likely to be.

45. One possibility on which we seek comment is a two-stage auction, in which the choice of a band plan is determined in a first stage auction and the winning licensees are determined in a second auction. We seek comment on auction designs that would select among incompatible band plans while also resulting in an economically efficient assignment of the licenses.

46. In considering the question of whether to include in our Part 1 competitive bidding rules an auction format option not currently available to us for purposes of offering AWS-3 licenses at auction, we ask that commenters consider such questions as whether bidders can and are motivated to sincerely express the values they put on the items available so that the auction is likely to assign the licenses to the bidders that value them most highly; how best to define the various band plans if an auction in which licenses from each of several band plan options are offered simultaneously; and whether the Commission has the statutory authority to conduct an auction using such a format, and if so, whether a rule should be adopted giving us the option to use such a design.

47. We also seek comment below on the possibility of utilizing an auction approach to determine appropriate performance requirements and whether such an approach would require modifications to our Part 1 competitive bidding rules.⁷⁸ Accordingly, we seek comment on whether using an auction approach to establish performance requirements could be compatible with an auction approach for selecting among band plan options. For instance, could we use a two-stage or other auction format to select a band plan, assign licenses and establish the applicable performance requirements as described below, in a way that adequately ensures the economic efficiency of the outcome? If commenters believe that there are tradeoffs to be made

⁷⁸ See *infra* paragraph 126, in which we suggest the possibility of a "scoring auction" in which participants place two-part bids that specify both a dollar amount and a build-out or other performance-related commitment.

in utilizing auction formats in these ways, they should identify those tradeoffs and indicate what choices should be made to best advance our goals for this spectrum.

48. Finally, in the event that the Commission adopts for this spectrum a licensing framework that would result in an auction to resolve mutually exclusive applications, we seek comment on the timing for commencing any such auction. The auction of AWS spectrum in the 1710-1755 MHz and 2110-2155 MHz bands, Auction 66, concluded on September 18, 2006. In addition, the Commission recently announced that it will commence an auction of 700 MHz band spectrum, Auction 73, on January 16, 2008, pursuant to statutory mandate.⁷⁹ It is widely anticipated that this 700 MHz band spectrum will also be used for deploying advanced wireless services. Given these recent auctions, we seek general comment on the effect that this sequence of auctions will have on the wireless spectrum market. How might the timing of an auction of licenses for AWS-3 spectrum affect different types of applicants? For instance, how would timing of an auction affect competitors with varied business models? Would timing have a different impact on incumbents as opposed to new entrants? Would a third wireless spectrum auction have a disproportionate impact on smaller entities? We note that smaller entities have previously expressed the need for adequate time to “digest” the spectrum marketplace and conduct due diligence in preparation for deciding whether to participate in an auction,⁸⁰ and we seek comment on this concern. We seek comment on the specific benefits or drawbacks of various time frames in the event that the Commission ultimately auctions licenses for this spectrum.

D. Technical Issues

1. Protection of Adjacent Band Services

49. Transmissions originating in the AWS-3 band could potentially cause harmful interference to adjacent band services. For example, AWS-3 base, fixed or mobile stations could cause interference to AWS-1 and proposed AWS-2 services, which will operate in the 2110-2155 MHz and 2175-2180 MHz bands, respectively, as well as other existing services that currently operate in the upper part of the 2.1 GHz band – such as Broadband Radio Service (BRS), Fixed Microwave services (FS) and MSS/ATC.⁸¹ In the following paragraphs, we seek comment on possible technical and operational rules to protect these various services from harmful interference.

⁷⁹ See 47 U.S.C. § 309(j)(15)(v) (Commission must conduct the auction of licenses for recovered analog spectrum by commencing the bidding not later than January 28, 2008). See also *Auction 73 Public Notice* at 2 citing Digital Television Transition and Public Safety Act of 2005 (“DTV Act”). Title III of the Deficit Reduction Act of 2005, Pub. L. No. 109-171, 120 Stat. 4 (2006) is the DTV Act, which is codified in various portions of Title 47 of the United States Code. See *Auction 73 Public Notice* at n.4.

⁸⁰ See MetroPCS Communications *Ex Parte* Comments, WT Docket No. 06-150 (filed Feb. 8, 2007) at 11-12. See also Aloha Partners, L.P., *Ex Parte* Comments, WT Docket No. 06-150 (filed Feb. 6, 2007) at 4-5 (urging the Commission not to accelerate its then-current auction schedule because prospective participants need six months to obtain financing).

⁸¹ BRS and FS operations will eventually be relocated to other spectrum, but until that time, BRS and FS systems will have to be protected from interference (see *infra* paragraphs 72-76).

50. As discussed above, if we were to adopt an uplink/downlink approach for the 2155-2175 MHz band, it could be used to implement systems using TDD or HFDD-based access technologies.⁸² To accommodate such systems, we would have to provide for both base and mobile transmissions in the band. Mobile transmissions, however, are not presently permitted in most of the allocated bands from 2110 MHz to 2200 MHz.⁸³

51. The presence of base *and* mobile transmissions in the same band, adjacent to spectrum designated for base transmissions, creates the possibility for certain types of adjacent channel interference scenarios, which are not present when base and mobile transmissions are situated in spectrum far apart from one another. For example, if a handset transmitting in the 2155-2175 MHz band is in close physical proximity to a handset receiving in the adjacent 2110-2155 MHz band, then “mobile-to-mobile” interference could occur to the receiving handset; and if a base station transmitting in the 2155-2175 MHz band is in close physical proximity to a TDD or HFDD base station receiving on an adjacent block in the 2155-2175 MHz band, then “base-to-base” interference could occur to the receiving base station. “Base-to-mobile” and “mobile-to-base” interference scenarios will also be present if we permit base and mobile transmissions in the 2155-2175 MHz band. However, these interference scenarios are somewhat less difficult to address than base-to-base and mobile-to-mobile interference scenarios.⁸⁴ In the following discussions, we shall seek comment on measures to address all of the possible adjacent channel interference scenarios that could be present, both within and outside the 2155-2175 MHz band.

52. There are two types of adjacent channel interference that can occur. The first is caused by OOB, which fall directly within the pass band of an adjacent-band receiver. Such emissions cannot be “filtered out,” and can only be mitigated by: 1) providing sufficient physical separation between the transmitter and receiver;⁸⁵ and/or 2) suppressing OOB at the source (*i.e.*, the transmitter). The second type of interference is caused by “receiver overload.” Receiver overload interference occurs when a strong signal from an adjacent band transmission falls just

⁸² TDD, for example, places base and mobile transmissions on the same channel, but in different time slots, while HFDD uses separate, adjacent channels in different time slots for base and mobile transmissions. FDD, on the other hand, employs spectrally separated base and mobile transmit channels with base and mobile transmissions occurring at the same time. WiMax is a new application, which supports TDD, FDD, and HFDD access technologies.

⁸³ The 2110-2155 MHz AWS-1 band is restricted to base transmissions, and the 2180-2200 MHz MSS/ATC band is restricted to satellite downlink and base transmissions. The Commission tentatively concluded, in the *AWS-2 Service Rules NPRM*, that the 2175-2180 MHz band should be designated for base transmissions as well. Base station, mobile, and customer premises equipment (CPE) transmissions, however, may operate in the 2150-2160/62 MHz BRS band.

⁸⁴ This is because, in a typical land mobile environment – where there are likely to be physical (natural and/or man-made) obstructions and some amount of distance separation between base and mobile stations – there will likely be significant signal attenuation between base stations and interfering mobiles, and between mobiles and interfering base stations. Conversely, in base-to-base and mobile-to-mobile interference scenarios, pairs of base stations and mobile stations can be situated very close to one another, with no intervening obstructions – and under these conditions, there will be relatively little signal attenuation between stations.

⁸⁵ The interfering signal is attenuated by “free space path loss,” which results from the physical separation between the transmitter and receiver.

outside the pass band of a receiver,⁸⁶ where the front-end filter of the receiver can only provide limited attenuation of the unwanted signal. There are three ways to minimize receiver overload interference: (1) improve the filtering of the adjacent band receiver; (2) limit the power of the transmitter; and (3) provide physical separation between the transmitter and receiver.

a. Out-of-Band Emission (OOBE) Limits

53. *Mobile Station OOBE Limits:* If a mobile is attempting to receive a signal from its base station, but is situated near to where an adjacent band mobile is transmitting, the possibility exists for OOBE interference to the receiving mobile.⁸⁷ This “mobile-to-mobile” interference scenario will exist if we permit mobile transmissions in the 2155-2175 MHz AWS-3 band because of the presence of receiving mobiles in various adjacent bands (e.g., the AWS-1 (2110-2155 MHz), proposed AWS-2 (2175-2180 MHz), and MSS/ATC (2180-2200 MHz) bands). The most viable way to mitigate this interference will be to adopt appropriate OOBE limits for mobiles transmitting in the 2155-2175 MHz band.⁸⁸

54. In the *AWS-2 Service Rules NPRM*, the Commission sought comment on the OOBE limits that might be needed to protect PCS handsets (receiving in the 1930-1990 MHz band) from handsets transmitting in the 1915-1920 MHz band (“AWS-2 block”).⁸⁹ The Commission tentatively concluded that an OOBE limit of at least -60 dBm/MHz into the PCS mobile receive band was appropriate.⁹⁰ And in the *MSS/ATC Report and Order*, the Commission adopted OOBE limits to protect PCS handsets from interference from MSS/ATC handsets, which were to operate in the 2000-2020 MHz band.⁹¹ Specifically, the Commission decided that MSS/ATC handsets would have to attenuate out-of-band emissions: below 1995 MHz, by at least $70 + 10\log P$ dB; in the 1995-2000 MHz band, by at least a value as determined by the linear interpolation of $70 + 10\log P$ dB at 1995 MHz to $43 + 10\log P$ dB at 2000 MHz, and

⁸⁶ A passband is “[t]he portion of spectrum, between limiting frequencies, that is transmitted with minimum relative loss or maximum relative gain.” See Alliance for Industry Telecommunications Solutions, *Glossary*, available online at: http://www.atis.org/tg2k/_passband.

⁸⁷ Under these conditions, there would be insufficient path loss between the mobiles to satisfactorily attenuate the interfering signal.

⁸⁸ We note that overcoming mobile-to-mobile interference may not simply be a matter of limiting out-of-band emissions or power limits, as different parts of a cell can experience different levels of interference depending on geometry, asymmetry, and synchronization.

⁸⁹ See Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands; Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 04-356; WT Docket No. 02-353, *Notice of Proposed Rulemaking*, 19 FCC Rcd 19263 (2004) (“*AWS-2 Service Rules NPRM*”).

⁹⁰ See *AWS-2 Service Rules NPRM*, 19 FCC Rcd at 19299 ¶ 91.

⁹¹ See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, IB Docket No. 01-185, *Report and Order and Notice of Proposed Rulemaking*, FCC 03-15, 18 FCC Rcd 1962, 2025-30 ¶¶ 119-127 (2003) (*MSS/ATC Report and Order*), modified sua sponte, *Order on Reconsideration*, FCC 03-162, 18 FCC Rcd 13590 (2003), on reconsideration, *Memorandum Opinion and Order and Second Order on Reconsideration*, FCC 05-30, 20 FCC Rcd 4616 (2005), further recon pending.

elsewhere, by $43 + 10 \log P$ dB.⁹² In determining the appropriate OOB limit for mobiles operating in the 2155-2175 MHz band, we will have to take various factors into consideration. For example, in the *AWS-2* and *MSS/ATC* proceedings the Commission proposed or adopted relatively strict OOB limits for AWS-2 block mobiles and MSS/ATC handsets, respectively, into the PCS mobile receive band – but in those circumstances 10 megahertz of spectrum was available (*i.e.*, from 1920 MHz to 1930 MHz and from 2000 MHz to 1990 MHz) to reach those limits.⁹³ If we require mobiles operating in the 2155-2175 MHz band to reach similarly strict OOB limits at the edges of the band, then because of the limited size of the AWS-3 band, the occupied bandwidth of the mobile transmission might have to be restricted to a relatively small portion of spectrum near the center of the band.⁹⁴

55. AWS-1 licensees have not begun to operate in the adjacent 2110-2155 MHz band and licensing has not yet begun in the adjacent 2175-2180 MHz (AWS-2) band. However, we are concerned about the potential for interference to mobile receivers operating in these “base-transmit” bands if we were to permit mobile transmissions in the 2155-2175 MHz band. We therefore seek comment on whether, if we were to allow mobile transmissions in the 2155-2175 MHz band, it will be necessary to adopt strict measures, *e.g.*, stringent OOB limits, to guard against such interference.

56. Specifically we seek comment on what OOB limit, beyond our standard $43 + 10 \log P$ dB limit, might be required for 2155-2175 MHz mobile transmitters in order to protect adjacent band mobile receivers,⁹⁵ and whether such limits would be appropriate to the types of technologies and system architectures that are being contemplated for the 2155-2175 MHz band.⁹⁶ In this connection we note that, as part of its previously filed application to receive an exclusive nationwide license, M2Z had proposed a license condition that would require the attenuation factor for user stations to be not less than $43 + 10 \log (P)$ dB at the channel edges and $55 + 10 \log (P)$ dB three megahertz outside the channel edges.⁹⁷ In its earlier application NetfreeUS also had proposed using this attenuation factor.⁹⁸ We seek comment on the OOB

⁹² See *MSS/ATC Report and Order*, 18 FCC Rcd at 2025-30 ¶¶ 119-127 and 47 C.F.R. § 25.252.

⁹³ See *AWS-2 Service Rules NPRM*, 19 FCC Rcd at 19299 ¶ 91 and *MSS/ATC Report and Order*, 18 FCC Rcd at 2025-30 ¶¶ 119-127.

⁹⁴ The occupied bandwidth of a transmitted or received signal is the spectrum within which the signal is, for the most part, unattenuated.

⁹⁵ The $43 + 10 \log P$ dB OOB limit is used in Part 24 and Part 90 to provide appropriate out-of-band emission interference protection to base and mobile receivers operating in the PCS, 800 MHz, and 900 MHz services.

⁹⁶ See, *e.g.*, AT&T PTD at 10-14 and Declaration of David Shively, PhD (Technical Declaration) attached to AT&T PTD (“the operation of TDD and FDD systems in adjacent bands raises substantial interference concerns that are well known”). See Technical Declaration at 1 citing 2500-2690 MHz, 21010-2025 MHz, and 2290-2302 MHz Spectrum Awards - Engineering Study (Phase 2), Mason Communications Ltd (Nov. 2006) (“Ofcom Study”).

⁹⁷ See M2Z Application, App. 2 at 3.

⁹⁸ NetfreeUS Application at 16 (proposing use of the BRS/EBS emission rules of the $43 + 10 \log (P)$ dB standard). As discussed above in notes 5 and 21, we recently dismissed applications by M2Z, NetfreeUS, and several other parties to operate in this band, noting that we would be issuing this Notice of Proposed Rule Making to consider appropriate rules for this band. See *AWS-3 Applications and Forbearance Petitions Order*.

limits proposed by M2Z and NetfreeUS to address “mobile-to-mobile” interference into adjacent bands. We also ask commenters to consider the impact a stringent OOB limit might have on the viability of mobile (*i.e.*, TDD or HFDD-based) operations in the 2155-2175 MHz band. More specifically, we ask whether the need to incorporate filters necessary to achieve a strict OOB limit might result in a significant increase in the cost, size, and/or battery requirements of handsets transmitting in the band. Alternatively, if the necessary filtering is not utilized and all of the usable spectrum cannot be used efficiently because of the need to locate a mobile’s transmission near the center of the 2155-2175 MHz band, how would this impact the viability of TDD or HFDD-based operations in the band?

57. Finally, if in this proceeding we adopt rules permitting mobile transmissions in the 2155-2175 MHz band, then the possibility would exist for mobile-to-mobile interference to MSS/ATC mobile receivers operating above 2180 MHz.⁹⁹ Although there are five megahertz of spectral separation between the AWS-3 and MSS/ATC bands, in seeking to prevent harmful interference to operations above 2180 MHz, it may be necessary to require mobile transmitters operating in the 2155-2175 MHz band to comply with an out-of-band emission limit more restrictive than our standard attenuation requirement of $43 + 10 \log_{10}(P)$ dB. For example, although the 2000-2020 MHz MSS/ATC band was 10 megahertz removed from the 1930-1990 MHz PCS band, the Commission adopted OOB limits in the *MSS/ATC* proceeding that required MSS/ATC mobiles operating in the 2000-2020 MHz band to suppress their emissions by at least $70 + 10 \log P$ dB in the 1990-1995 MHz band.¹⁰⁰ We therefore seek comment on what OOB attenuation, beyond our standard $43 + 10 \log P$ dB limit, might be required to enable AWS-3 mobiles to protect MSS/ATC mobiles operating in the 2180-2200 MHz band. We also ask whether we should adopt some type of variable out-of-band emission limits based on the particular technologies and system architecture used by AWS-3 licensees to protect such mobiles.

58. *Base and Fixed Station OOB Limits:* We have presented two potential technological uses for the 2155-2175 MHz band through our three proposed approaches: (1) operations involving base and mobile transmissions, which would enable the use of TDD or HFDD-based applications, such as WiMax (the uplink/downlink and structured uplink/downlink approaches); and (2) operations involving base or fixed transmissions only (the downlink approach), which would enable asymmetric pairing of AWS-3 spectrum with AWS-1, AWS-2, or other CMRS bands,¹⁰¹ high-powered downlink-only video systems, and various fixed services. Under both of these potential uses (*i.e.*, base-and-mobile use and base or fixed use), base and fixed stations would be permitted to operate in the band. But because the AWS spectrum below the AWS-3 band is already limited to base station transmissions and AWS spectrum above the

⁹⁹ This is due to the fact that 2180-2200 MHz MSS/ATC band will be used for downstream (*e.g.*, base-to-mobile and satellite-to-mobile) transmissions.

¹⁰⁰ See *supra* paragraph 54, discussing the requirement that MSS/ATC mobiles transmitting above 2000 MHz provide attenuation of at least $70 + 10 \log P$ dB below 1995 MHz. We require, on spectrum between 1995-2000 MHz, an MSS/ATC OOB attenuation defined by the linear interpolation of $70 + 10 \log P$ dB and $43 + 10 \log P$ dB at the 2000 MHz MSS band edge.

¹⁰¹ This use of AWS-3 spectrum would provide additional downstream (base station) transmission capacity for FDD systems operating on AWS-1, proposed AWS-2, or other CMRS spectrum.

AWS-3 band will likely be limited to base station transmissions as well, base transmissions in the 2155-2175 MHz band will not introduce any “base-to-base” OOB interference into those adjacent bands.¹⁰² We thus propose that, in protecting adjacent band AWS operations from harmful interference, base and fixed stations operating in the 2155-2175 MHz band should be permitted to operate with the same OOB limit that is applied to base and fixed stations operating in the adjacent 2110-2155 MHz AWS band to address “base-to-mobile” interference in that band – *i.e.*, an attenuation requirement of $43 + 10 \log_{10} (P)$ dB.¹⁰³ We seek comment on this proposal. We also seek comment on the proposal by M2Z with respect to attenuation for fixed digital stations.¹⁰⁴

59. As previously stated, MSS/ATC operations occupy the spectrum from 2180 MHz to 2200 MHz. If in this proceeding we adopt rules permitting base and fixed station transmissions only in the 2155-2175 MHz band, then AWS operations in the band will be consistent with the current use of the MSS/ATC spectrum above 2180 MHz, which is to be used for MSS downlink and ATC base station transmissions. Thus, we believe that, in seeking to prevent OOB interference to operations above 2180 MHz, it should not be necessary to require base and fixed transmitters operating in the 2155-2175 MHz band to comply with an out-of-band emission limit that is more stringent than our standard attenuation requirement of $43 + 10 \log_{10} (P)$ dB. We seek comment on this suggestion.

60. *Band Plan Options if Strict OOB Limits are Necessary for Mobile Transmissions:* As previously discussed, we seek comment on the best approach for licensing the AWS-3 spectrum in the most flexible and spectrally efficient way. If stringent OOB limits are imposed on mobile transmissions in the 2155-2175 MHz band to protect adjacent band operations, this could affect the ability of licensees operating in the outer portions of the band to provide mobile services. Thus, if a strict OOB limit is necessary to protect adjacent band operations, should we consider designating the spectrum near the edges of the 2155-2175 MHz band for fixed or base transmit-only operations, as described in our proposed “structured uplink/downlink” approach? For example, should we consider restricting the upper and lower 5-megahertz blocks, at 2155-2160 MHz and 2170-2175 MHz, to fixed operations, such as “fixed wireless access” or backhaul, and/or base transmit-only services, such as downstream video applications similar to the one being implemented by Qualcomm/MediaFLO in the Lower 700 MHz Band (at 698-746 MHz). This would leave the 10 megahertz of spectrum in the middle of

¹⁰² We have adopted rules limiting the 2110-2155 MHz band to base station transmissions and have proposed rules restricting the 2175-2180 MHz band as well to base transmissions. *See AWS-1 Service Rules Report and Order*, *supra* note 14; *see also AWS-2 Service Rules NPRM*, *supra* note 15. The MSS/ATC band (2180-2200 MHz) is also used only for base transmissions. *See* 47 C.F.R. §§ 25.202(a)(4)(ii) and 25.252.

¹⁰³ *See AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25210-12 ¶¶ 127-131 for a discussion on the OOB limits to be applied to AWS-1 base and fixed stations.

¹⁰⁴ As part of its earlier filed application to receive an exclusive nationwide license, M2Z proposed a license condition that would require the attenuation for fixed digital stations to be not less than $43 + 10 \log (P)$ dB, unless a documented harmful interference complaint from an adjacent channel licensee cannot be resolved by the parties, in which case both licensees shall reduce their out-of-band emissions by at least $67 + 10 \log (P)$ dB measured at 3 megahertz from the channel edges. *See* M2Z Application, App. 2 at 3.

the band, which could be used for TDD or HFDD-based mobile services.¹⁰⁵ We therefore seek comment on what operational restrictions, if any, should be imposed in certain portions of the band, if strict mobile OOB limits are determined to be necessary to protect adjacent band operations.

b. Power Limits

61. As discussed above, there are three ways to minimize receiver overload interference: (1) improve receiver filtering; (2) provide physical separation between the receiver and the interfering transmitter; and (3) limit the power of the transmitter. With regard to the 2155-2175 MHz band, we believe that, of these three methods, the one that would most readily protect adjacent channel mobile receivers from overload interference from AWS-3 mobiles would be to limit the transmitting power of the AWS-3 mobile transmissions. We seek comment on this suggestion. Specifically, commenters should address the merits of limiting the transmitting power of the AWS-3 mobiles or whether other methods could or should be used to minimize potential receiver overload interference from AWS-3 mobiles.

62. *Mobile Station Power Limits:* We have suggested that if we permit mobile transmissions in the 2155-2175 MHz band, we will have to adopt measures to minimize the potential for harmful interference to the mobile receivers operating in adjacent bands.¹⁰⁶ Any determination of the appropriate mobile station power limit to prevent receiver overload interference to adjacent band handsets will, however, depend, in large part, on the filter characteristics of the handsets. Based on data about the state of filter technology for 2 GHz band handsets that was submitted in the AWS-2 allocation proceeding regarding the capabilities of different filters used in today's PCS phones,¹⁰⁷ the Commission determined, in the *AWS Allocation Sixth Report and Order*, that a power level of 200 mW peak equivalent isotropic radiated power (EIRP) in handsets transmitting in the 1915-1920 MHz band may be sufficient to address concerns about receiver overload interference to PCS handsets operating in the 1930-1990 MHz band.¹⁰⁸ Based on this and perhaps more current data, we could make a finding as to the power limit that should be applied to 2155-2175 MHz handsets to prevent such interference to adjacent band mobiles.

63. We therefore seek comment on what power limit should be applied to 2155-2175 MHz mobiles to prevent receiver overload interference to mobiles operating in adjacent AWS bands. For example, would a 250 mW EIRP power limit adequately protect AWS handsets operating in the 2110-2155 MHz and proposed to be operating in the 2175-2180 MHz bands – or

¹⁰⁵ See *supra* note 31. The practical constraints resulting from a strict OOB limit on mobile operations could be mitigated by future improvements in transmitter filter technology. Providing licensees with the ability to use all the AWS-3 spectrum for mobile transmissions would enable them to take advantage of such improvements and could provide additional incentives for investment in filter technology.

¹⁰⁶ See *supra* paragraph 55.

¹⁰⁷ See CTIA *Ex Parte* Comments, ET Docket No. 00-258 (filed Aug. 5, 2004); CTIA *Ex Parte* Comments, ET Docket No. 00-258 (filed Aug. 13, 2004); CTIA *Ex Parte* Comments, ET Docket No. 00-258 (filed Aug. 18, 2004); Agilent Technologies *Ex Parte* Comments, ET Docket No. 00-258 (filed Aug. 19, 2004); and CTIA *Ex Parte* Comments, ET Docket No. 00-258 (filed Aug. 27, 2004).

¹⁰⁸ See *AWS Allocation Sixth Report and Order*, 19 FCC Rcd at 20735 ¶ 27.

would some lesser power limit be required because the 2110-2155 MHz and 2175-2180 MHz bands are situated immediately adjacent to the 2155-2175 MHz band?¹⁰⁹ Also, given that there is no embedded base of AWS handsets already in the marketplace and that future AWS handsets are in all likelihood still being developed, we seek comment on whether filtering technologies being considered for AWS handsets will be an improvement over those found in existing PCS handsets. If so, should we consider these improvements when crafting power limits to protect adjacent band services from mobiles that may operate in the 2155-2175 MHz band? Finally, because receiver overload interference becomes less severe as the separation between the interfering and receiving frequencies increases, we seek comment also as to whether a relatively low power limit could be applied to a limited portion of the uppermost and lowermost parts of the 2155-2175 MHz band, while greater power limits are permitted near the center of the band.

64. Although the upper edge of the AWS-3 band is 5 megahertz away from the MSS/ATC band (at 2180-2220 MHz), we must also determine what power limits might be needed to prevent receiver overload interference to mobiles operating in that band. We therefore seek comment on whether some restrictive power limit (*e.g.*, 250 mW EIRP) on AWS-3 mobiles would be necessary to prevent interference to mobiles operating in the MSS/ATC band, and if so, what that power limit should be.

65. *Base and Fixed Station Power Limits:* If we adopt rules permitting only base and fixed station transmissions in the 2155-2175 MHz band, then, as noted above, operations in the band would be consistent with the planned use of the MSS/ATC spectrum above 2180 MHz (*i.e.*, for MSS downlink and ATC base station transmissions), the planned use of AWS spectrum below 2155 MHz, and proposed in the 2175-2180 MHz band for base station transmissions. In seeking to prevent potential “base-to-mobile” overload interference from AWS-3 base and fixed stations to mobiles receiving on spectrum above 2180 MHz, below 2155 MHz, and proposed in the 2175-2180 MHz band, we believe it may necessary to require the 2155-2175 MHz band base and fixed transmitters to comply with a power limit less than 1640 Watts EIRP (with a 3 dB increase in rural areas), which is the power limit that is applied to base and fixed stations in the 2110-2155 MHz band to prevent base-to-mobile interference. We seek comment on this proposal. We may also wish to permit licensees operating in the 2155-2175 MHz band to provide certain communications that could require power levels greater than 1640 Watts EIRP. One such type of communications could be a downstream video application similar to the one being implemented by Qualcomm/MediaFLO in the Lower 700 MHz Band (at 698-746 MHz). Our 700 MHz band rules currently permit high-powered base station transmissions (up to 50 kW effective radiated power (ERP)) so long as licensees adhere to a prescribed power flux density (PFD) limit near their transmitter.¹¹⁰ We therefore seek comment on whether AWS-3 licensees should be permitted to operate base and fixed stations at power levels greater than 1640 watts EIRP and, if so, what additional technical requirements they should have to meet if operating at such power levels, *e.g.*, the provisions of Section 27.55(b) of our rules. We also seek comment on whether we should adopt a power spectral density rule that would allow for more radiated

¹⁰⁹ In our AWS-2 proceeding, we sought comment on a 200 mW power limit for “AWS-2 block” handsets. In this proceeding, however, we seek comment on a 250 mW EIRP limit for AWS-3 handsets. This differential is due to the 25 percent greater signal propagation loss that exists in the 2.1 GHz band (where AWS-3 handsets may operate) than in the 1.9 GHz band (where “AWS-2 block” handsets are proposed to operate).

¹¹⁰ See Section 27.55(b) of our rules.

power, the specific amount being proportional to emission bandwidth, as raised in the *Further Notice* in the 2005 Biennial Review proceeding.¹¹¹ Specifically, we ask whether we should adopt rules that implement a PSD model for defining power limits. This would result in the maximum allowable power levels to be permitted per 1 megahertz of spectrum rather than per carrier. Because this would permit higher power signals from wideband technologies than permitted under current AWS-1 rules, we also ask whether we should adopt additional measures in this band to protect against any possible increased risk of interference, should we adopt the PSD model.

66. *Alternative Operations if Strict Mobile Power Limits are Required:* If stringent power limitations are necessary to prevent 2155-2175 MHz band mobiles from causing harmful interference to adjacent band mobiles, we seek comment as to what impact such power restrictions might have on the viability of TDD or HFDD-based operations in the 2155-2175 MHz band. More specifically, we seek comment on whether we should adopt rules for the 2155-2175 MHz band that would either restrict mobile operations to the center portion of the band (see paragraphs 19-20, above) or allow only services that would provide significant physical separation between AWS-3 and adjacent band mobiles.¹¹² We seek comment on these, or any other proposals for the use of the 2155-2175 MHz band, if strict mobile power limits are determined to be necessary to protect adjacent band operations.

c. Protection of AWS-3 Operations from Adjacent Block AWS-3 Systems

67. *Mobile Station Power and OOB Limits to Address Interference to Other AWS-3 Operations:* If the AWS-3 band is assigned in multiple blocks, we anticipate that multiple licensees may be operating in the 2155-2175 MHz band in a given geographic area.¹¹³ If we allow licensees to operate mobile transmissions in this spectrum (*e.g.*, licensees employing TDD or HFDD-based systems), we must decide whether they should be required to protect both base stations and mobile stations receiving on adjacent AWS-3 blocks within the 2155-2175 MHz band.¹¹⁴ Protecting *mobile* station reception on adjacent AWS-3 blocks, in particular, could

¹¹¹ See In the Matter of Biennial Regulatory Review - Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket No. 03-264, *Report and Order and Further Notice of Proposed Rulemaking*, 20 FCC Rcd 13900, 13923-24 ¶ 51 (2005).

¹¹² We seek comment on whether there are any services that could be deployed in the AWS-3 band, which would place transmitting AWS-3 mobiles physically far enough from adjacent band receiving mobiles to eliminate the possibility of “mobile-to-mobile” interference. If such services were deployed in the AWS-3 band, we could adopt higher power limits for mobiles operating in the band.

¹¹³ Although block size depends to some extent on the type of technology applied (*e.g.*, Wideband CDMA requires five-megahertz blocks but WiMax may use bandwidths from 1.25 to 20 megahertz, *see supra* paragraph 14), we anticipate that most current technologies could be accommodated on five- and 10-megahertz blocks.

¹¹⁴ Base stations receiving on these adjacent blocks could be operating on either TDD or HFDD systems. Mobiles receiving on adjacent blocks could be operating on FDD, TDD, or HFDD systems.

require strict OOB limits and/or strict power limits, and depending on how stringent these limits are, the viability of mobile operations on AWS-3 blocks could be significantly affected.¹¹⁵

68. We therefore seek comment on whether an AWS licensee operating mobile transmissions on a five- or 10-megahertz block in the 2155-2175 MHz band should be required to provide protection to adjacent block base and adjacent block mobile stations in the 2155-2175 MHz band. If commenters believe that AWS licensees operating mobile transmissions should be required to protect adjacent block base and/or mobile station receivers from interference, we seek comment on whether such receivers will be protected through use of a $43 + 10\log(P)$ dB OOB attenuation requirement and a one watt EIRP power limit. If commenters believe that AWS licensees operating mobile transmissions cannot protect adjacent block base and mobile receivers through the use of these technical limits, we seek comment on what OOB and/or power limits would protect such receivers from interference. And if limits on power and out-of-band emissions are insufficient to protect receivers operating in adjacent blocks in the 2155-2175 MHz band, we seek comment on what other methods would be necessary to prevent harmful interference to such receivers.

69. *Base and Fixed Power and OOB Limits to Address Interference to Other AWS-3 Operations:* In paragraph 50, above, we suggested that, in providing protection to adjacent band mobile receivers from out-of-band emission interference, AWS base and fixed transmitters need only satisfy an OOB attenuation requirement of $43 + 10\log_{10}(P)$ dB; and we proposed as well, in paragraph 57, that, in protecting adjacent band mobiles from overload interference, AWS base and fixed station transmitters could operate at power levels up to 1640 Watts EIRP. Similarly, we seek comment on whether, if multiple AWS-3 licensees operate in a given geographic area, base and fixed stations transmitting in the band will be able to protect mobiles operating on adjacent AWS-3 blocks by employing greater than 1640 watts EIRP and by satisfying OOB limit of $43 + 10\log P$ dB.

70. If, however, TDD or HFDD-based operations are employed in the 2155-2175 MHz band, and there are multiple licensees operating in the AWS-3 band in a given geographic area, there would be the potential for base-to-base interference among such licensees (*e.g.*, interference from a licensee employing a TDD, HFDD, or FDD base station transmitter to an adjacent block licensee employing a TDD or HFDD base station receiver). One way to limit such interference would be for the licensees to cooperate with one another in locating and operating their base stations.¹¹⁶ Another way would be to limit the power and/or OOB levels of licensees' base station transmissions. We seek comment, therefore, on whether it will be necessary to limit the power and/or OOB levels of base and fixed station transmissions beyond the limits that would likely be employed to address base-to-mobile interference (as discussed in the previous paragraph) in order to address base-to-base interference among licensees operating in the 2155-2175 MHz band, or whether voluntary cooperation among parties will adequately

¹¹⁵ As noted above, imposing strict OOB limits may require licensees to either employ costly transmitter filtering or confine their occupied bandwidth to the center portion of their spectrum block.

¹¹⁶ To avoid causing interference, it could also be necessary for licensees operating TDD and HFDD systems on adjacent channels to synchronize their systems so that their base stations will transmit and receive at the same time. *See supra* note 27.

address these interference concerns.¹¹⁷ If reduced power limits or stricter OOB limits are considered necessary to limit base-to-base interference, we seek comment as to what those limits should be. If limits on power and out-of-band emissions are insufficient to protect base station receivers operating in adjacent AWS-3 blocks, we seek comment on what other methods would be necessary to prevent harmful interference to such receivers.¹¹⁸

d. Protection of AWS-3 Operations from Adjacent Band Systems

71. If we permit mobile transmissions in the 2155-2175 MHz band, base stations receiving such transmissions could be subject to “base-to-base” interference from nearby base stations transmitting in adjacent spectrum bands.¹¹⁹ Thus, the opportunity for AWS-3 licensees to deploy TDD or HFDD-based systems could come with a cost, *i.e.*, the susceptibility of their base station receivers to harmful interference from adjacent band base stations. We suggest, however, that no special restrictions should be placed on licensees operating in adjacent bands to protect 2155-2175 MHz band base station receivers from harmful interference. We seek comment on these proposals.

2. Protection of Incumbent Services

72. Terrestrial fixed service (FS) stations are currently authorized within the 2160-2175 MHz band. Those facilities operating in the 2160-2175 MHz band, as well as FS facilities operating in the spectrum from 2175 MHz to 2200 MHz, are subject to relocation¹²⁰ but FS licensees maintain primary status unless and until an emerging technology (ET) licensee requires use of the spectrum.¹²¹ ET licenses are responsible for FS relocation costs until ten years after the first ET license is issued in the relevant band, *i.e.*, 2160-2175 MHz.¹²² In the *AWS-1 Service Rules Report and Order*, the Commission required AWS licensees operating in the 2110-2155 MHz band to coordinate, prior to initiating operations from any base or fixed station, their frequency usage with co-channel and adjacent channel, incumbent fixed-point-to-point microwave licensees operating in the 2110-2155 MHz band.¹²³ The Commission also decided

¹¹⁷ Commenters, in responding to this question, should indicate what possible, special measures might be needed to protect AWS-3 base stations if we permit adjacent band AWS-3 stations to operate at power levels up to 50 kW ERP, as discussed *supra* paragraph 65.

¹¹⁸ See *supra* note 88.

¹¹⁹ Two of the three bands adjacent to or near the 2155-2175 MHz band (*i.e.*, the 2110-2155 MHz and 2180-2200 MHz bands) have been designated as base transmit bands, and we have proposed that the 2175-2180 MHz band be designated for base transmissions as well.

¹²⁰ See 47 C.F.R. § 101.69 (Transition of the 1850–1990 MHz, 2110–2150 MHz, and 2160–2200 MHz bands from the FS to PCS and emerging technologies).

¹²¹ See 47 C.F.R. § 101.79 (Sunset provisions for licensees in the 1850–1990 MHz, 2110–2150 MHz, and 2160–2200 MHz bands).

¹²² *Id.*

¹²³ See 47 C.F.R. § 27.1131. See also *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25206 ¶ 114. The Commission stated that some fixed point-to-point microwave systems will continue to operate in the 2110-2155 MHz band after AWS licensing begins. *Id.* at 25205 ¶ 112.

that, in determining when such coordination is necessary, it would apply the provisions of Section 24.237 of the Commission's rules, which details the coordination requirements for protecting incumbent fixed microwave systems operating in the PCS bands.¹²⁴ The Commission sought comment on this approach in the *AWS-2 Service Rules NPRM*, tentatively concluding that AWS licensees operating in the 2175-2180 MHz band should be required to coordinate with incumbent FS facilities operating on co-channel and adjacent channel spectrum in that band prior to initiating operations.¹²⁵ Similarly, we believe that AWS licensees operating in the 2155-2175 MHz band should be similarly required to coordinate with incumbent FS licensees operating on co-channel and adjacent channel spectrum in the band prior to initiating operations.¹²⁶ We seek comment on this proposal. However, if we adopt rules that allow base and mobile transmissions in the band, we also seek comment on whether a modified coordination requirement would be necessary to coordinate unpaired mobiles with FS and if so, what methods could or should be used to prevent this form of interference.

73. AWS-3 base and/or mobile transmissions in the 2155-2175 MHz band could also cause interference to Fixed Service (FS) stations receiving in the 2110-2155 MHz and 2175-2180 MHz bands. To prevent such interference, it might be necessary to require AWS-3 base, fixed, and mobile station transmitters to comply with reduced power limits, strict OOB limits, and to operate at some minimum distance from the FS stations.¹²⁷ Alternatively, we could require AWS-3 licensees to protect adjacent-band FS operations in accordance with the same coordination rules that we believe should be adopted to protect FS operations *within* the 2155-2175 MHz band (*see* paragraph 79 below). We thus seek comment on what technical and operational measures might be required to protect FS stations operating in the 2110-2155 MHz and 2175-2180 MHz bands from OOB and receiver overload interference.¹²⁸ We note also that fixed AWS stations may employ directional antennas. We therefore ask whether different limits or measures might be needed to protect FS stations from AWS *fixed* stations than would be needed to protect FS stations from AWS *base* stations.

74. Authorized below and within the 2155-2175 MHz band is the BRS, which is licensed in the 2150-2160/62 MHz band.¹²⁹ In the *AWS Ninth Report and Order*, the Commission

¹²⁴ Section 24.237(a) of our rules specifies that the Telecommunications Industry Association (TIA) Technical Services Bulletin (TSB) 10-F be used as the guideline to determine when co-channel and adjacent channel fixed microwave facilities must be coordinated. 47 C.F.R. § 24.237(a).

¹²⁵ *See AWS-2 Service Rules NPRM*, 19 FCC Rcd at 19303 ¶ 104.

¹²⁶ In the *AWS Allocation Ninth Report and Order*, FCC 06-45, the Commission adopted relocation and cost sharing procedures for FS licensees in the 2160-2180 MHz band.

¹²⁷ *See supra* note 85.

¹²⁸ Commenters, in responding to this question, should indicate what possible, special measures might be needed to protect FS stations if we permit AWS-3 stations to operate at power levels up to 50 kW ERP under the provisions of Section 27.55(b).

¹²⁹ The Multipoint Distribution Service (MDS) was renamed the Broadband Radio Service (BRS) in the *BRS/EBS Report and Order*. *See* Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands; Part 1 of the Commission's Rules - Further Competitive Bidding Procedures; Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed (continued....)

established the criteria that AWS licensees, including AWS licensees operating in the 2155-2175 MHz band, will have to follow in protecting BRS operations.¹³⁰ Specifically, the Commission determined that an AWS entrant would be required to relocate a BRS system if the AWS entrant was commencing operation of a base station that was co-channel with the BRS system and if the base station had line-of-sight to a receiver in the incumbent system.¹³¹ The Commission further determined that AWS entrants commencing base station operations that were not co-channel with a BRS system would not be subject to a line-of-sight relocation requirement, but that any AWS entrant operating in the 2110-2180 MHz band and causing actual and demonstrable interference to a BRS system was still responsible for taking the necessary steps to eliminate the harmful interference, up to and including relocating the incumbent.¹³² ET licenses are responsible for BRS relocation costs until 15 years after the first ET license is issued in the relevant band, *i.e.*, 2150-2160/62 MHz.¹³³

75. If we permit mobile transmissions along with base transmissions in the 2155-2175 MHz band, the possibility also exists for interference from AWS-3 mobiles to BRS stations receiving in the 2150-2160/62 MHz band. We note that the procedures we have established to protect BRS operations require AWS entrants to take the steps necessary to eliminate any interference to a BRS system. Parties that believe additional provisions should be employed to account for the case of interference to BRS operations from AWS-3 mobiles to BRS incumbents should demonstrate why our existing procedures should be modified.

(Continued from previous page) _____

Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions; Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico; WT Docket Nos. 03-66, 03-67, 02-68, MM Docket No. 97-217, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165, 14177-14180, ¶¶ 23-29 (2004) (*BRS/EBS Report and Order*). BRS Channels 1 and 2/2A operations are located in the 2150 MHz to 2160/62 MHz band which includes both the 2150-2155 MHz portion of the AWS-1 band and the 2155-2160/62 MHz portion of the AWS-3 band. In 1974, BRS Channels 1 and 2A were allotted the 2150-2160 MHz band and were operated with corresponding channels in the 2500-2690 MHz band. Amendment of Parts 1, 2, 21, and 43 of the Commission's Rules and Regulations to Provide for Licensing and Regulation of Common Carrier Radio Stations in the Multipoint Distribution Service, Docket No. 19493, *Report and Order*, 45 FCC 2d 616 (1974), *recon. denied*, 57 FCC 2d 301 (1975) (*1974 R&O*). In 50 of the largest metropolitan areas, the Commission allotted an extra 2 megahertz for BRS Channels 1 and 2 to create two 6-megahertz channels at 2150-2156 MHz and 2156-2162 MHz respectively. Amendment of Part 21.703(g), and (h) of the Commission's Rules, *Memorandum Opinion and Order*, 47 FCC 2d 957 (1970). In the rest of the country, only 10 megahertz of spectrum was allotted to BRS, namely Channel 1 (2150-2156 MHz) and Channel 2A (2156-2160 MHz). *Id.*

¹³⁰ See *AWS Ninth R&O*, FCC 06-45, at ¶¶ 46-54, App. A (sections 27.1132, 27.1255). Wireless Communications Association International (WCAI) filed a petition for reconsideration in WT Docket 02-353 seeking reconsideration of the criteria AWS licensees must employ in protecting incumbent Broadband Radio Service (BRS) operations in the 2150-2160/62 MHz band. In light of the rules adopted in the *AWS Ninth R&O*, the Commission dismissed WCAI's petition as moot. See *AWS Ninth R&O*, FCC 06-45, at ¶¶ 126-28.

¹³¹ *Id.* at ¶¶ 51, 52.

¹³² *Id.* at ¶¶ 53, 54.

¹³³ See 47 C.F.R. § 27.1253(a) (BRS licensees will maintain primary status in the 2150-2160/62 MHz band unless and until an AWS licensee requires use of the spectrum but AWS licensees are not required to pay relocation costs after fifteen years from the date that the first AWS license is issued in the band).

76. We also note that the Commission has adopted rules pursuant to which AWS entrants may relocate FS and BRS incumbents to which they would otherwise cause harmful interference, and that it also established rules providing for sharing of relocation costs among AWS entrants that benefit from the relocation of an incumbent.¹³⁴ Parties that believe that the introduction of mobile transmissions in the 2155-2175 MHz band would warrant changes to the existing rules, including the associated rules for sharing of relocation costs among AWS entrants, should describe any such changes and demonstrate why they are necessary.

77. Finally, we seek comment specifically on how the relocation and reimbursement rules would operate – or how they would need to be amended – if the 2155-2175 MHz band was designated for unlicensed use or for non-exclusive licenses, similar to the 3650-3700 MHz band, as explained further below.¹³⁵ For example, how would non-exclusive licensees or unlicensed users apportion reimbursements costs among themselves?¹³⁶

3. Co-Channel Interference between Licensees in the 2155-2175 MHz Band

a. Protection of Co-Channel AWS Licensees Operating in Adjacent Regions

78. If we ultimately decide to license the 2155-2175 MHz band on a non-nationwide geographic service area basis, the potential for harmful interference will exist between co-channel systems operating in adjacent regions.¹³⁷ We therefore seek comment as to the best method for controlling such interference. In other Part 27 proceedings,¹³⁸ the Commission has adopted a “boundary limit” approach¹³⁹ for providing interference protection between co-channel

¹³⁴ See *AWS Ninth R&O*, generally.

¹³⁵ See *infra* para. 95.

¹³⁶ The Commission has previously established procedures for clearing spectrum designated for unlicensed use. In 1995 the Commission designated UTAM, Inc., as the coordinator for clearing fixed point-to-point microwave links from the 1910-1930 MHz band which was designated for use by unlicensed personal communications service (UPCS) devices. See *Amendment of the Commission’s Rules to Establish New Personal Communications Services*, General Docket No. 90-314, 10 FCC Rcd 7955 (1995); see also Part 15, Subpart D of the Commission’s Rules, 47 C.F.R. § 15.301 *et seq.* UTAM assumed responsibility for clearing the spectrum and was reimbursed for its efforts by manufacturers of devices designed to operate in the band. When the Commission reallocated some of the UPCS band for AWS use in 2004, it established procedures whereby UTAM would be reimbursed by AWS licensees on a *pro rata* basis for the expense it incurred in clearing the reallocated spectrum. See *Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, ET Docket No. 00-258, *Sixth Report and Order, Third Memorandum Opinion and Order, and Fifth Memorandum Opinion and Order* 19 FCC Rcd 20720 (2004).

¹³⁷ If we authorize a single licensee in this band, it will not be necessary to adopt co-channel interference protection criteria. Our co-channel protection rules would, however, apply to any partitioned portions of a nationwide license. See 47 C.F.R. § 27.55.

¹³⁸ See, e.g., *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25197-8 ¶¶ 89-90.

¹³⁹ With this method, a licensee would be required to limit the field strength of its transmissions to some prescribed level at its geographic border.

licensees after having initially proposed the use of a “boundary limit” or “coordination”¹⁴⁰ approach. The coordination approach ensures that interference is reduced to a level that is acceptable to both licensees, but could also impose an unnecessary cost in coordinating facilities that have a low potential for interference. In contrast, a boundary limit approach allows licensees to deploy facilities in boundary areas without the need for coordination, but could require some additional planning between licensees to protect against harmful interference.

79. In other bands where spectrum has been allocated for Fixed and Mobile services, the Commission has uniformly adopted the boundary limit method to minimize co-channel interference.¹⁴¹ We propose that the boundary limit or coordination approach should be adopted to limit co-channel interference that could be caused by licensees operating in the 2155-2175 MHz band. We seek comment on this proposal. To the extent parties believe that a coordination method is preferable, we invite specific comments on how to implement that approach in the 2155-2175 MHz band. If a boundary limit methodology is employed, we seek comment as to the appropriate signal level to be permitted at licensees’ borders.¹⁴²

80. We also seek comment on whether a different signal limit should be required at licensees’ borders if we permit both base *and* mobile transmissions in the 2155-2175 MHz band. Our traditional purpose for limiting signal levels at geographic borders has been to minimize potential harmful interference to mobiles caused by the transmissions of co-channel base stations operating in adjacent regions.¹⁴³ However, if we adopt rules that allow base and mobile transmissions in the band, a base station transmitting in a given region could potentially cause interference to co-channel base stations receiving in adjacent regions; and a mobile crossing into, and transmitting in, an adjacent region could potentially cause interference to co-channel mobiles and base stations receiving in that region.¹⁴⁴ We therefore seek comment on whether we should protect base and mobile station receivers from potential co-channel “base-to-base” and/or “mobile-to-mobile” interference as well as “base-to-mobile” and “mobile-to-base” interference, and if so, how we would provide such protection. If boundary limits are insufficient to prevent harmful base-to-base and mobile-to-mobile interference, or if the boundary limits required to provide such protection would significantly reduce the viability of operations on AWS-3 blocks, we seek comment on what other methods could or should be used to prevent these forms of interference.¹⁴⁵ Finally, we ask whether, if the boundary limit method is adopted to address co-

¹⁴⁰ Under this approach, licensees operating on the same spectrum in adjacent areas would be required to coordinate the location and technical parameters of their stations.

¹⁴¹ See, e.g., 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, *First Report and Order*, 15 FCC Rcd. 476, 514-515 ¶¶ 94-97 (2000), *modified by errata*, 15 FCC Rcd. 8634 (2000), 15 FCC Rcd. 25495 (2000).

¹⁴² We note that a 40 dB $\mu\text{V}/\text{m}$ field strength limit is used in the 700 MHz services, and a 47 dB $\mu\text{V}/\text{m}$ field strength limit is used in the Broadband PCS, AWS, and WCS services. See 47 C.F.R. §§ 24.236 and 27.55.

¹⁴³ In those circumstances, base and mobile stations operated in separate frequency bands.

¹⁴⁴ In this instance, we are concerned about mobiles communicating with base stations in their own region, even though the mobiles are physically located outside their region.

¹⁴⁵ To avoid causing interference to co-channel base and mobile receivers in adjacent areas, it could also be necessary for adjacent networks to be synchronized to a common timing standard and to employ the same channel asymmetry. See *supra* note 27.

channel interference, we should permit licensees operating in adjoining areas to employ alternative, agreed-upon signal limits at their common borders.

b. Antenna Height Restrictions for Base and Fixed Stations

81. If we license the 2155-2175 MHz band using a geographic area licensing scheme, we seek comment on whether any limit should be placed on the height-above-average-terrain (HAAT) of base or fixed station antennas operating in the 2155-2175 MHz band. In the recent *AWS-1 Service Rules Order*,¹⁴⁶ the Commission concluded that such a restriction, which is designed to limit the coverage area of individual base stations, was unnecessary, in light of the requirement to limit signal strength at a licensee's geographic border. Likewise, we seek comment on whether, in the event that we do not adopt a geographic licensing scheme for this band, any limit should be placed on the HAAT of base or fixed station antennas operating in the band.

E. Regulatory Issues; Licensing and Operating Rules

82. As we have generally done recently with other spectrum being reallocated or redesignated for licensed fixed and mobile services, including the related AWS-1 band, we propose to give licensees in these bands the flexibility to provide any fixed or mobile service that is consistent with the allocations for this spectrum. We also propose to license this spectrum under our market-oriented Part 27 rules. We seek comment on this proposal. In addition, we seek comment on other proposals for the AWS-3 band, including those that were proffered earlier by applicants that sought to operate in this band.¹⁴⁷ We also seek comment on the appropriate regulatory framework for AWS-3 licenses, the license term, criteria for renewal, performance requirements, and other licensing and operating rules pertaining to this band.

1. Flexible Use

83. We propose service rules for this band that would permit a licensee to employ this spectrum for any use permitted by the United States Table of Frequency Allocations contained in Part 2 of our rules (*i.e.*, fixed or mobile services). Congress recognized the potential benefits of flexibility in allocations of the electromagnetic spectrum and amended the Communications Act in 1999 to add Section 303(y). This section gives the Commission authority to provide for flexibility of use if: “(1) such use is consistent with international agreements to which the United States is a party; 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.”¹⁴⁸

84. We determine that our proposal for flexibility fully meets these section 303(y) criteria. Such use would be subject to bilateral discussions commonly undertaken whenever

¹⁴⁶ See *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25202 ¶ 103.

¹⁴⁷ As noted above, we recently dismissed all pending applications for operation in this band, determining that the public interest would best be served by initiating this rulemaking process to seek comment on the appropriate service rules and licensing mechanisms for the AWS-3 band. [cite to AWS-3 Order]

¹⁴⁸ Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997) (BBA-97); 47 U.S.C. § 303(y).

spectrum is put to use in border areas, but is consistent with applicable international agreements. The public interest benefits of flexibility are manifold. The Commission has identified the establishment of maximum feasible flexibility in both allocations and service rules as a critical means of ensuring that spectrum is put to its most beneficial use. Thus, in a 1999 *Policy Statement* on spectrum management, the Commission observed that “[i]n the majority of cases, efficient spectrum markets will lead to use of spectrum for the highest value end use,” and that “[f]lexible allocations may result in more efficient spectrum markets.”¹⁴⁹ We would expect these economic efficiencies to foster—not deter—technology development and investment in communications services and systems. And the technical rules we are proposing herein would prevent harmful interference among users.

85. We therefore seek comment on our proposal to provide for flexible use of this frequency band, especially in light of the section 303(y) criteria noted above. If any restrictions are warranted, what should they be and why are they needed? Are there trade-offs between flexibility and investment in technology and new services that we should consider? To the extent commenters believe flexibility will deter investment in these bands, they should also suggest specific restrictions on how spectrum should be used by a licensee, and provide detailed analysis of the economic tradeoffs between flexibility and investment that justify any particular recommended restriction on use. We also specifically seek comment on the types of uses that pose the greatest risk of interference to uses planned by parties interested in using this spectrum.¹⁵⁰

2. Other License Conditions

86. We seek comment generally on whether to apply various conditions to govern the operation of networks using this band, as had been proposed by several parties in their applications pertaining to this band (i.e., M2Z Networks, Inc.; Commnet Wireless, LLC; McElroy Electronics Corp. (MEC); NetfreeUS, LLC; NextWave Broadband, Inc.; Open Range Communications, Inc.; and TowerStream Corporation).¹⁵¹ In addition to certain technical rules and build out obligations proposed by these entities and discussed elsewhere herein, some applicants, such as M2Z, proposed additional requirements to be imposed on licensees in this band. For example, they suggest that licensees should be obligated to provide broadband services at specific data rates,¹⁵² with specific pricing plans (including free of service charges in certain circumstances),¹⁵³ and with mechanisms designed to filter content inappropriate for

¹⁴⁹ See Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, *Spectrum Policy Statement*, 14 FCC Rcd 19868, 19870 ¶ 9 (1999).

¹⁵⁰ In paragraphs 49-81 and 145-147, we seek comment on appropriate technical rules for use of this spectrum.

¹⁵¹ [See generally *AWS-3 Petitions and Applications Order*.]

¹⁵² See, e.g., M2Z Application at App. 2 at 2-4; Commnet Application at Exhibit 5; MEC Application at Exhibit 1 at 6 (offering to provide data rates of 384 kbps downstream and 128 kbps upstream); Open Range Application at Annex D (offering to provide data rates of 1.5Mbps downstream and 512 kbps upstream)

¹⁵³ See, e.g., M2Z Application, App. 2; NetfreeUS Application at 5 (offering service to the public free of service charges); Open Range Application at 4-5 (offering service to schools and medical facilities free of service charges); Commnet Application at Exhibit 2 at 1 (offering basic service priced at \$11.95 per month).

children.¹⁵⁴ We seek comment on these proposals. In addition, we seek comment on whether any other conditions should govern the operation of a provider's network should it be granted a license to operate in this band. Further, should the additional requirements be applied only to free service, if a licensee must offer free service, or should they be applied more broadly? What are the potential problems that may be associated with the Commission's adoption of any of these potential requirements, and how do they compare to the potential benefits?

87. For example, M2Z previously proposed a requirement to provide wireless broadband services, without charge to end-users, "at engineered data rates" of 384 kbps downstream and 128 kbps upstream.¹⁵⁵ Should we mandate any of the specific speeds proposed in the previously pending applications, such as 384 kbps downstream and 128 kbps upstream, as minimum speeds to be provided for free broadband service?¹⁵⁶ Should we consider 384/128 kbps to be a broadband service?¹⁵⁷ Should the Commission require a minimum data rate, or other minimum capabilities, even if it does not require the licensee to offer a free service? We note that, in a separate proceeding, we are currently considering whether to revise the definition of broadband service to increase the minimum threshold for reporting broadband speed information, and to establish a system whereby the "speed tiers" would be automatically adjusted upwards over time to reflect technological advances.¹⁵⁸ If we adopt specific requirements regarding transmission speeds for licensees of this spectrum, should we provide for possible revisitation of those speeds over the term of the service? Should we require a network "engineered to provide" specific speeds to actually provide those speeds system-wide to each user in all conditions? Should each user be guaranteed to receive such speeds, or should the theoretical capability of the network to provide such speeds under ideal conditions to certain customers be sufficient to satisfy the condition?

88. We also seek comment on whether we should require specific pricing plans. In its previously pending application, M2Z proposed to provide the "engineered data rates" discussed above "free of airtime or service charges."¹⁵⁹ Should we require that licensees in this band provide service for free? If we imposed such a requirement, should we also allow licensees to charge for certain services, such as a service which presumably would include more features and

¹⁵⁴ See, e.g., M2Z Application, App. 2; Commnet Application at Exhibit 2 at 3.

¹⁵⁵ See *id.*, App. 2 at 2-4.

¹⁵⁶ See, e.g., M2Z Application, Appendix 2 at 2; NetfreeUS Application at 12; Commnet Application at Exhibit 2; MEC Application at Exhibit 1 at 6.

¹⁵⁷ We seek comment on M2Z's proposed license-condition for "[c]onstruction requirements; [c]riteria for comparative renewal proceedings" in sections IV.E.8 and IV.E.9, below.

¹⁵⁸ See Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership, *Notice of Proposed Rulemaking*, 22 FCC Rcd 7760, 7769-70 (2007) (asking, *inter alia*, whether to modify the broadband service speed information collected by the Commission to reflect the increased transmission speeds resulting from technological developments).

¹⁵⁹ M2Z Application, Appendix 2 at 4.

a faster data rate, and if so, what should that faster data rate be? If so, should licensees be allowed to guarantee a certain quality of service to paying customers at the expense of customers receiving service for free or should licensees be prohibited from prioritizing fee-based services? We note that M2Z also proposed that it be allowed to “condition service provision on the use of customers services equipment that is certified by [the licensee] to operate in the band according to its specifications”¹⁶⁰ If we were to require licensees to provide free service, should we nevertheless allow them to dictate customer equipment pricing, features, and availability? If the Commission does not require the licensee to provide free service, should the licensee be required to provide a private commons¹⁶¹ or, alternatively, should the Commission simply clarify that such private commons are permissible under current rules?

89. In addition, we seek comment on whether we should require an operator in this band to comply with certain access requirements. For example, should we adopt a requirement to provide wholesale access, as proposed by the Public Interest Spectrum Coalition (PISC)?¹⁶² Should we impose open device rules similar to those adopted for the 700 MHz C Block?¹⁶³

90. We also seek comment on previously proposed conditions relating to content and public safety. For example, in its application, M2Z proposes “automatic, default blocking of access to pornographic, obscene, and/or indecent material” that could be disabled for paying customers that provide “proof that they are of the age of majority.”¹⁶⁴ Should we mandate the provision of broadband services with mechanisms designed to filter content inappropriate for children?¹⁶⁵ If so, how should we implement such a requirement? Should it be an opt-in or an opt-out requirement? How should we define inappropriate content? Should the content subject to blocking be defined consistently with our existing standards for over the air broadcasts? Would requiring mandatory filtering for a free tier service and filtering using an “opt out” approach for a premium tier service, as proposed in M2Z’s Application,¹⁶⁶ raise constitutional or statutory concerns, as suggested by PISC?¹⁶⁷

¹⁶⁰ M2Z Application, Appendix 2 at 4.

¹⁶¹ See NetfreeUS Application at 13-15.

¹⁶² See Public Interest Spectrum Coalition (PISC) August 28, 2007 *Ex Parte* at 8-9 (incorporating by reference its previous comments and proposals for wholesale filed in WT Docket No. 06-150). See also Google August 28, 2007 *Ex Parte* at 1 n.4.

¹⁶³ See PISC August 28, 2007 *Ex Parte* at 2, 10; 700 MHz *Second Report and Order* at ¶¶ 189-230. See also Google August 28, 2007 *Ex Parte* at 2 (stating that an NPRM should consider the desirability of service rules that foster competition through “open platforms”).

¹⁶⁴ M2Z Application, App. 2 at 4-5.

¹⁶⁵ See, e.g., M2Z Application, App. 2; Commnet Application at Exhibit 2, Page 3.

¹⁶⁶ See M2Z Application at Appendix 3 (“M2Z’s Commitment to Protect Minors From Indecent Material on M2Z’s Network”).

¹⁶⁷ See PISC August 28, 2007 *Ex Parte* at 6, citing U.S. Const. amend. I, 47 U.S.C. § 326, *Sable Communications of California, Inc. v. FCC*, 492 U.S. 115 (1990) (stating that the U.S. Supreme Court has held that neither Congress nor the Commission may censor speech that is merely indecent made via common carrier to protect (continued....))

91. Finally, we seek comment on whether the Commission should require licensees in this band to provide free, prioritized service to public safety organizations?¹⁶⁸ Is this band suitable for public safety communications? Would the resulting service and network meet public safety needs? We seek comment on whether requiring licensees to provide such service to public safety providers is necessary in light of our recent adoption of the Public/Private Partnership in the 700 MHz proceeding.¹⁶⁹ We also seek comment, however, on whether there are ways in which this spectrum can be used to further the Commission's goal of making a nationwide, interoperable broadband network available to state and local public safety users.

3. Regulatory Framework

92. Given that we propose to permit flexible use of this band, we propose licensing it under the flexible regulatory framework of Part 27 of our rules.¹⁷⁰ Unlike other rule parts applicable to specific services, Part 27 does not prescribe a comprehensive set of licensing and operating rules for the spectrum to which it applies. Rather, for each frequency band under its umbrella, Part 27 defines permissible uses and any limitations thereon, and specifies basic licensing requirements. The licensing requirements for a number of spectrum bands, including the Upper and Lower 700 MHz bands¹⁷¹ and the AWS spectrum at 1710-1755 MHz and 2110-2155,¹⁷² are contained in Part 27.¹⁷³

93. In earlier AWS proceedings, the Commission disagreed with some commenters who expressed a preference that AWS be regulated under Part 24 of our Rules to ensure its efficient integration with Broadband PCS services.¹⁷⁴ Nothing about application of the Part 27 rules, or the specific technical rules we propose, should stand as an impediment to the provision of Broadband PCS-type services in this band. Differences in the technical rules for AWS and PCS are due to the different spectrum environments of the services rather than placement of the rules in one or another rule part, and we make every effort to minimize them. To the extent that some licensees may face additional regulatory requirements by deploying multi-band

(Continued from previous page) _____

minors, despite the ubiquity of telephones). According to PISC, the Commission may not permit – and cannot require – mandatory filtering for indecent content. *Id.* at 10.

¹⁶⁸ See, e.g., M2Z Application at Appendix 2 at 4; NetfreeUS Application at 6, 12. See also NetfreeUS Application at 18 (offering to “equip a special override software code to all first responders that would quickly and simply clear channel traffic in times of emergency.”)

¹⁶⁹ See *700 MHz Second Report and Order* at ¶¶ 386-553; 47 C.F.R. Part 27, Subpart N (§§ 27.1301-27.1340).

¹⁷⁰ Of course, Part 27 licensees must also comply with other Commission rules of general applicability. See 47 C.F.R. § 27.3.

¹⁷¹ See Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10785 (1997).

¹⁷² See *AWS-1 Service Rules Report and Order*, *supra* note 14.

¹⁷³ Likewise, we have proposed to license the AWS spectrum at 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz, and 2175-2180 MHz under Part 27. See *AWS-2 Service Rules NPRM*, *supra* note 15.

¹⁷⁴ See *AWS-1 Service Rules Report and Order*, 18 FCC Rcd 25169-70 ¶¶ 17-21.

equipment,¹⁷⁵ we seek comment on what modifications to our rules and processes could be made to eliminate duplication of effort and still ensure that devices are tested as appropriate for operation in each spectrum block.

94. In order to promote flexibility and permit market forces to determine what services are ultimately offered in this band, we therefore seek comment on our proposal to license the 2155-2175 MHz band under Part 27. As set out in more detail below, we also seek comment on what additional rule provisions should be included in Part 27 or incorporated by reference, in light of the services that may be offered under a flexible use approach.

4. Assignment of Licenses

95. Section 309(j) of the Communications Act requires that the Commission assign initial licenses through the use of competitive bidding when mutually exclusive applications for such licenses are accepted for filing, except in the case of certain specific statutory exemptions not applicable here.¹⁷⁶ In this *Notice*, we ask for comment concerning whether we should adopt a geographic area licensing scheme for the 2155-2175 MHz band, as well as whether we should accept mutually exclusive applications and, consistent with section 309(j), resolve such applications through competitive bidding.¹⁷⁷ We propose competitive bidding procedures in paragraphs 148-155 below, should we determine that a licensing scheme that may lead to assignment by auction is in the public interest. Several applicants, however, including M2Z, NetfreeUS, and NextWave, suggest that the Commission should consider processes that are designed to avoid mutual exclusivity for this spectrum.¹⁷⁸ We seek comment on whether we should adopt any such processes. In this connection, we also seek comment on the benefits and

¹⁷⁵ For example, a multi-band handset or base station would need to be certified under our equipment authorization procedures under both Parts 24 and 27. This may require, for example, separate radio frequency (RF) safety tests for the frequency bands under each rule part.

¹⁷⁶ 47 U.S.C. § 309(j)(1), (2).

¹⁷⁷ See Implementation of Sections 309(j) and 3376 of the Communications Act of 1934 As Amended, WT Docket No. 99-87, *Report and Order and Further Notice of Proposed Rule Making*, 15 FCC Rcd 22709 (2000) (*BBA Report and Order*).

¹⁷⁸ See, e.g., M2Z Application at 34-43 (arguing that the Commission has legal authority to grant its application for license without conducting an auction based on public interest considerations, including the rapid achievement of universally available broadband in the U.S.); NetfreeUS Application at 23-27 (arguing that the Commission should use regulatory tools other than competitive bidding, including (1) establishing a cut-off date for acceptance of applications; (2) announcing within 10 days of the cut-off date applicants who have satisfied threshold eligibility requirements and setting period for correction of defective applications; (3) establishing a deadline by which applicants may propose settlements to avoid mutual exclusivity determinations; and (4) acting on applications based on responses submitted during settlement window, or proceeding to auction or assignment of spectrum by other means); NextWave Application at 7-8 (arguing that Commission has wide latitude under Section 309(j)(6)(E) of the Act to adopt licensing schemes other than competitive bidding to avoid mutual exclusivity, and that granting NextWave's application would establish parameters under which it, M2Z and other users could operate in the 2.1 GHz band on a shared basis). We recently dismissed all pending applications for operation in this band, determining that the public interest would best be served by initiating this rulemaking process to seek comment on the appropriate service rules and licensing mechanisms for the AWS-3 band. See *AWS-3 Applications and Forbearance Petitions Order*, *supra* note 4.

costs of establishing an unlicensed regime,¹⁷⁹ as suggested by PISC, either in lieu of a licensed regime or as a complement to the licensed regime (by permitting an unlicensed underlay).¹⁸⁰ We also seek comment on using a non-exclusive licensing approach for this band, similar to the rules adopted in the 3650-3700 MHz band, as suggested by PISC.¹⁸¹ In addition, M2Z and NetfreeUS have suggested that in assigning one or more licenses in this band, the Commission should license the spectrum for free, and instead condition the license on a payment of a “spectrum usage fee” to the U.S. Treasury in the amount of 5% of its revenues from certain services offered by the licensee.¹⁸² For example, in the event it made available “Premium Services” on a subscription basis, M2Z proposed to pay to the U.S. Treasury, on an annual basis, a “voluntary usage fee” of 5% of the gross revenues derived from such “Premium Services.”¹⁸³ Similarly, NetfreeUS proposed to pay to the U.S. Treasury, on an annual basis, a spectrum fee of 5% of the gross revenues derived from its Wireless Public Broadband service.¹⁸⁴ We seek comment on these proposals.

5. Regulatory Status

96. We propose to apply the regulatory status provisions of section 27.10 to licensees in the 2155-2175 MHz band. The Commission's current mobile service license application requires an applicant for mobile services to identify the regulatory status of the service(s) they intend to provide,¹⁸⁵ since service offerings may bear on eligibility and other statutory and

¹⁷⁹ See 47 U.S.C. § 302, 47 C.F.R. Part 15.

¹⁸⁰ See M2Z Application at 26 and Appendix 2 at 4 (proposing to pay to the U.S. Treasury a “usage fee” of 5% of the gross revenues derived from subscription “Premium Services” on an annual basis, to the extent such services are made available); NetfreeUS Application at 23 and Exhibit 2 at 4 (proposing (1) to require its local leasing partners to pay a nominal fee to cover NetfreeUS’s transaction costs, and (2) to pay the U.S. Treasury a spectrum fee of 5% of the gross revenues derived from the Wireless Public Broadband service on an annual basis). See also PISC August 28, 2007 *Ex Parte* at 3, 11-13 (stating that the Commission should consider the “enormous value in opening the band on an unlicensed basis or on a non-exclusive licensed basis similar to the rules adopted in the 3650-3700 MHz band”); Google August 28, 2007 *Ex Parte* at 2.

¹⁸¹ *Id.*

¹⁸² See PISC August 28, 2007 *Ex Parte* at 7 (stating, as compared to the current auction approach, that requiring a licensee to pay a regular return of 5% of gross revenue from its premium tier would facilitate participation by small businesses and encourage business models that promote slow and steady growth rather than maximizing immediate cash flow to pay down auction debt).

¹⁸³ M2Z Application, Appendix 2 at 4.

¹⁸⁴ NetfreeUS Application, Exhibit 2 at 4.

¹⁸⁵ In the *LMDS Second Report and Order*, the Commission required applicants for fixed services to indicate if they planned to offer services as a common carrier, a non-common carrier, or both, and to notify the Commission of any changes in status without prior authorization. Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission’s Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket No. 92-297, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 12545, 12636-38 ¶¶ 205-208, 12644-45 ¶¶ 225-226, 12652-53 ¶¶ 245-251 (1997) (*LMDS Second Report and Order*); *aff’d, Melcher v. FCC*, 134 F.3d 1143 (D.C. Cir. 1998).

regulatory requirements.¹⁸⁶ The Commission has adopted a similar licensing framework for Part 27 of our Rules.¹⁸⁷ Under Part 27, the Commission permits applicants to request common carrier status as well as non-common carrier status for authorization in a single license, rather than to require the applicant to choose between common carrier and non-common carrier services.¹⁸⁸ Regardless of which rule part is used to license advanced wireless services in the 2155-2175 MHz band, we propose to adopt this same approach. Licensees in this band would be able to provide all allowable services anywhere within their licensed area at any time, consistent with their regulatory status.¹⁸⁹ We believe that this approach is likely to achieve efficiencies in the licensing and administrative process, and provide flexibility to the marketplace.

97. We further propose that applicants and licensees in the 2155-2175 MHz band be required to indicate a regulatory status based on any services they choose to provide. Apart from this designation of regulatory status, we would not require applicants to describe the services they seek to provide.¹⁹⁰ We wish to point out to potential applicants that an election to provide service on a common carrier basis requires that the elements of common carriage be present;¹⁹¹ otherwise the applicant must choose non-common carrier status.¹⁹² If potential applicants are unsure of the nature of their services and their classification as common carrier services, they may submit a petition with their applications, or at any time, requesting clarification and including service descriptions for that purpose.¹⁹³

98. We also propose that if a licensee were to change the service or services it offers, such that its regulatory status would change, the licensee must notify the Commission.¹⁹⁴ A change in a licensee's regulatory status would not require prior Commission authorization, provided the licensee was in compliance with the foreign ownership requirements of section 310(b) of the Communications Act that apply as a result of the change.¹⁹⁵ We propose to require

¹⁸⁶ See, e.g., foreign ownership requirements, discussed *infra* paragraph 100.

¹⁸⁷ See 47 C.F.R. § 27.10.

¹⁸⁸ Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service, GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10785, 10846 ¶ 119, 10848 ¶ 122 (1997) (*Part 27 Report and Order*).

¹⁸⁹ For instance, we note that to the extent a licensee provides a Commercial Mobile Radio Service, such service would be subject to the provisions of Part 20 of the Commission's rules, 47 C.F.R. Part 20; see also *infra* note 274.

¹⁹⁰ See *id.* at 10848 ¶ 121; see also *LMDS Second Report and Order*, 12 FCC Rcd at 12644 ¶ 223; 47 C.F.R. § 101.1013.

¹⁹¹ See 47 U.S.C. § 153(44) ("A telecommunications carrier shall be treated as a common carrier under this Act . . ."); see also 47 U.S.C. § 332(C)(1)(A) ("A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such person is so engaged, be treated as a common carrier for purposes of this Act . . .").

¹⁹² See *Part 27 Report and Order*, 12 FCC Rcd at 10848 ¶¶ 121-22. The Commission examined services in the *LMDS Second Report and Order* and explained that any video programming service would be treated as a non-common carrier service. *LMDS Second Report and Order*, 12 FCC Rcd at 12639-41 ¶¶ 213-15.

¹⁹³ *Part 27 Report and Order*, 12 FCC Rcd at 10848 ¶ 121.

¹⁹⁴ See 47 C.F.R. § 27.10(d). See also 47 C.F.R. § 27.66.

¹⁹⁵ 47 U.S.C. § 310(b); see *infra* paragraph 100.

the notification within 30 days of a change made without the need for prior Commission approval. We note, however, that a different time period may apply, as determined by the Commission, where the change results in the discontinuance, reduction, or impairment of the existing service.¹⁹⁶

99. In addition, we note that we recently found that wireless broadband Internet access service is an information service under the Act.¹⁹⁷ We seek comment on whether any of the proposals set forth in this subsection should be modified to reflect this ruling.

6. Ownership Restrictions

a. Foreign Ownership Reporting

100. We propose that the provisions of section 27.12 should apply to applicants applying for licenses in the 2155-2175 MHz band.¹⁹⁸ Section 27.12 implements section 310 of the Communications Act, as modified by the Telecommunications Act of 1996. Sections 310(a) and 310(b) of the Communications Act, as modified by the Telecommunications Act of 1996, impose foreign ownership and citizenship requirements that restrict the issuance of licenses to certain applicants.¹⁹⁹ An applicant requesting authorization for services other than broadcast, common carrier, aeronautical en route, or aeronautical fixed services would be subject to section 310(a), but not to the additional prohibitions of section 310(b). An applicant requesting authorization for these particular services would be subject to both sections 310(a) and 310(b). As applicable to these bands, we do not believe that common carriers and non-common carriers filing an application should be subject to varied reporting obligations. By establishing parity in reporting obligations, however, we do not propose a single, substantive standard for compliance. For example, we would be unlikely to deny a license to an applicant requesting authorization exclusively to provide services not enumerated in section 310(b), solely because its foreign ownership would disqualify it from receiving a license if the applicant had applied for a license to provide the services enumerated in section 310(b). We request comment on this proposal.

b. Spectrum Aggregation Limits; Eligibility Restrictions

101. We propose not to impose a spectrum aggregation limit or eligibility restrictions for the 2155-2175 MHz band. The Commission decided in 2001 to “sunset” the CMRS spectrum aggregation limit, or “spectrum cap,”²⁰⁰ effective January 1, 2003.²⁰¹ The Commission found that the cap, by setting an *a priori* limit on spectrum aggregation without looking at the

¹⁹⁶ See 47 C.F.R. § 27.66.

¹⁹⁷ Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, WT Docket No. 07-53, *Declaratory Ruling*, FCC 07-30 (rel. March 23, 2007)

¹⁹⁸ 47 C.F.R. § 27.12. (Except as provided in § 27.604, any entity other than those precluded by § 310 of the Communications Act is eligible to hold a license under Part 27.)

¹⁹⁹ 47 U.S.C. § 310(a), (b).

²⁰⁰ See 47 C.F.R. § 20.6.

²⁰¹ See 2000 Biennial Regulatory Review: Spectrum Aggregation Limits for Commercial Mobile Radio Services, WT Docket No. 01-14, *Report and Order*, 16 FCC Rcd 22668 (2001) (*Spectrum Cap Order*), recon. pending.

particular circumstances of specific proposed transactions, was unnecessarily inflexible and could be preventing beneficial arrangements that promote efficiency without undermining competition. The Commission also stated that it would continue to pursue the objectives of “discourag[ing] anticompetitive behavior while at the same time maintaining incentives for innovation and efficiency,”²⁰² but would do so by performing case-by-case reviews of proposed CMRS spectrum transactions rather than by applying a prophylactic rule.²⁰³ Moreover, the Commission found that “to the extent that the initial distribution of spectrum through auction is an issue in the future, that is also amenable to case-by-case review, in the sense that [the Commission] can shape the initial distribution through the service rules adopted with respect to specific auctions.”²⁰⁴

102. Due to the sunset of the CMRS spectrum cap, applicants in the 2155-2175 MHz band will not be subject to any generalized limits on spectrum aggregation. We do not believe we should adopt any band-specific service rules addressing spectrum aggregation limits applicable to the initial licensing of these bands, but consistent with the approach the Commission described in the *Spectrum Cap Order*, we seek comment on whether any such limits are necessary or appropriate. In particular, we seek comment on whether we should limit the amount of spectrum in these bands that any one entity (or related entities) may acquire the right to use at auction or through the secondary market in the same geographic area. Commenters should provide economic data and analysis supporting their positions. Commenters who support adoption of such limits should also address with particularity what the limitations should be (including whether they should depend on factors such as the amount of CMRS spectrum an applicant holds in other bands), what competitive problems the proposed limits are designed to solve, and how their proposals will address these problems without imposing undue costs or inefficiencies.

103. In recent years the Commission has determined in a number of services that eligibility restrictions on licenses may be imposed only when open eligibility would pose a significant likelihood of substantial harm to competition in specific markets and when an eligibility restriction would be effective in eliminating that harm. This approach relies on market forces absent a compelling showing that regulatory intervention to exclude potential participants is necessary.²⁰⁵ At this time, open eligibility in the 2155-2175 MHz band does not appear to pose

²⁰² *Spectrum Cap Order*, 16 FCC Rcd at 22679 ¶ 26 n.71 (citing Implementation of Sections 3(n) and 332 of the Communications Act—Regulatory Treatment of Mobile Services, GN Docket No. 93-252, *Third Report and Order*, 9 FCC Rcd 7988, 8105 ¶ 251 (1993)).

²⁰³ “[I]n light of the growth of both competition and consumer demand in CMRS markets, we conclude that case-by-case review, accompanied by enforcement of sanctions in cases of misconduct, is now preferable to the spectrum cap rule because it gives the Commission flexibility to reach the appropriate decision in each case, on the basis of the particular circumstances of that case.” *Spectrum Cap Order*, 16 FCC Rcd at 22693-94 ¶ 50.

²⁰⁴ *Id.* at 22696 ¶ 54.

²⁰⁵ See, e.g., Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands, *Report and Order*, 18 FCC Rcd 23318, 23346-47 ¶ 70 (2003); Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range, Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates, and Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. to Provide A Fixed Service in the 12.2-12.7 GHz Band, (continued....)

a significant likelihood of substantial harm to competition in any specific markets, and thus it does not appear that an eligibility restriction in this band is warranted. We believe that open eligibility in these bands is consistent with our statutory mandate to promote the development and rapid deployment of new technologies, products, and services; economic opportunity and competition; and the efficient and intensive use of the electromagnetic spectrum.²⁰⁶ We seek comment on these views.

7. License Term

104. We propose to establish a 10-year license term and to apply the renewal expectancy provisions of section 27.14 to licensees in these bands. The Communications Act imposes no specific term limit on licenses that will be issued by the Commission for this spectrum.²⁰⁷ Generally, however, the Commission's rules provide for a 10-year license term for wireless licenses.²⁰⁸ We propose that in the 2155-2175 MHz band the license term be 10 years, with a renewal expectancy similar to that afforded PCS, cellular, and Part 27 licensees. In the case of these licensees, a renewal applicant receives a preference or renewal expectancy if the applicant has provided substantial service during its past license term and has complied with the Communications Act and applicable Commission rules and policies.²⁰⁹ We have defined substantial service as "service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal."²¹⁰ We believe that a 10-year license term, combined with a renewal expectancy upon a showing of substantial service and compliance with the Act and applicable Commission rules and policies (including applicable performance requirements), will help to provide a stable regulatory environment that will be attractive to investors, and thereby encourage development of services in these frequency bands. We seek comment on this proposal.

(Continued from previous page) _____

Memorandum Opinion and Order and Second Report and Order, 17 FCC Rcd 9614, 9677-82 ¶¶ 159-70 (2002); Amendment of Parts 1, 2, 87 and 101 of the Commission's Rules To License Fixed Services at 24 GHz, *Report and Order*, 15 FCC Rcd 16934, 16948-49 ¶¶ 30-32 (2000); Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz, *Report and Order and Second Notice of Proposed Rule Making*, 12 FCC Rcd 18600, 18619-20 ¶¶ 32-35 (1997); *cf.* Auction of Direct Broadcast Satellite Licenses, 19 FCC Rcd 23849, 23856, 23869-71 (2004) (making DBS incumbents ineligible for two DBS licenses that afford a last opportunity for new entry in the DBS market).

²⁰⁶ 47 U.S.C. § 309(j)(3)(A), (B) & (D).

²⁰⁷ The only statutory limit on license terms is eight years for licenses in the broadcast services. *See* 47 U.S.C. § 307(c)(1); *see also* 47 C.F.R. § 73.1020(a). The Table of Allocations does not permit broadcast use of the 2155-2175 MHz band.

²⁰⁸ *E.g.*, 47 C.F.R. §§ 24.15, 27.13(a).

²⁰⁹ *See* 47 U.S.C. § 151 *et seq.*; 47 C.F.R. § 22.940(a)(1)(i) (cellular), § 24.16(a) (PCS), § 27.14 (WCS and 700 MHz).

²¹⁰ *See, e.g.*, 47 C.F.R. §§ 22.940(a)(1)(i), 24.16(a), 27.14(a).

105. We also seek comment on whether a license term longer than 10 years is appropriate to achieve these goals and better serve the public interest.²¹¹ Commenters who favor a license term in excess of 10 years should specify a reasonable license term and include a basis for the period proposed. Commenters should also address whether it would be possible to have different license terms, depending on the type of service offered by the licensee. We also seek comment on how we would administer such an approach, particularly if licensees provide more than one service in their service area, or decide to change the type of service they plan to offer.

106. Under our proposal, in the event that a license in the subject bands is partitioned or disaggregated, any partitionee or disaggregatee would be authorized to hold its license for the remainder of the partitioner's or disaggregator's original license term, and would be eligible for a renewal expectancy on the same basis as other licensees.²¹² This approach is similar to the partitioning provisions the Commission adopted for BRS (formerly MDS),²¹³ for broadband PCS licensees,²¹⁴ for the 700 MHz band licensees,²¹⁵ and for AWS-1 licenses at 1710-1755 MHz and 2110-2155 MHz.²¹⁶ Specifically, we do not believe that a licensee, by partitioning or disaggregation, should be able to confer greater rights than it was awarded under the terms of its license grant. We seek comment on these proposals.

8. Criteria for Renewal

107. AWS-1 licensees are required to make a showing of “substantial service” under the performance requirements of Section 27.14(a) as well as in the context of any renewal proceedings under Section 27.14(b) of the Commission's rules.²¹⁷ In addition, Section 27.14(b)-(d) of the Commission's rules governing AWS-1 licensees indicate that a comparative process is

²¹¹ We note that in the *AWS-1 Service Rules Report and Order*, we established an initial license term in the 1710-1755 MHz and 2110-2155 MHz bands of 15 years and subsequent renewal terms of 10 years given the relocation and band clearance issues that were associated with those bands. *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25190 ¶ 70. We also note that M2Z, in its application for an exclusive, nationwide license, proposes an initial license term of 15 years for the AWS-3 band. See M2Z Application at 11.

²¹² “Partitioning” is the assignment of geographic portions of a license along geopolitical or other boundaries. “Disaggregation” is the assignment of discrete portions of “blocks” of spectrum licensed to a geographic licensee or qualifying entity. Disaggregation allows for multiple transmitters in the same geographic area operated by different companies on adjacent frequencies (thus increasing the possibility of harmful interference). Paragraphs 127-129, *infra*, discuss partitioning and disaggregation in further detail.

²¹³ See Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service, MM Docket No. 94-131, *Report and Order*, 10 FCC Rcd 9589, 9614 ¶ 46 (1995).

²¹⁴ See Geographic Partitioning and Spectrum Disaggregation by Commercial Mobile Radio Services Licensees and Implementation of Section 257 of the Communications Act—Elimination of Market Barriers, WT Docket No. 96-1148, *Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 21831, 21870 ¶¶ 76-77 (1996).

²¹⁵ See *Upper 700 MHz First Report and Order*, 15 FCC Rcd at 506-08 ¶¶ 73-78; Reallocation and Service Rules for 698-746 MHz Spectrum Band, *Report and Order*, 17 FCC Rcd 1022, 1079-81 (2002).

²¹⁶ *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25193-95 ¶¶ 80-83.

²¹⁷ See *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25190-91 ¶ 71.

used to choose among renewal applicants based on certain showings, although these provisions do not describe the factors that the Commission will consider in connection with a license renewal application to the extent no competing application is filed. We seek comment on whether to apply these same rules for renewals of AWS-1 licenses to the AWS-3 licenses in the adjacent 2155-2175 MHz band. We also seek comment on the possibility of stating explicitly the criteria for renewal that apply to 2155-2175 MHz band authorizations under Part 27, regardless of whether licensees are involved in a comparative hearing. Further, we seek comment on whether to use these criteria to replace the procedures for the filing of competing applications at renewal time. For instance, should a license not be renewed, the Commission could offer a new license for use of the spectrum associated with the non-renewed license.

108. We also seek comment on whether we should adopt any of the modifications to the renewal criteria that we recently adopted for 700 MHz band licenses that are also regulated under Part 27.²¹⁸ For example, in the *700 MHz First Report and Order* we eliminated the provision allowing for the filing of competing applications in response to renewal requests.²¹⁹ We also required that, in addition to satisfying applicable performance requirements, 700 MHz licensees must demonstrate, to satisfy their renewal requirements, that they have provided substantial service during their past license term.²²⁰ We propose to adopt a similar policy for the AWS-3 licenses at renewal, and we seek comment on this proposal.

109. We also seek comment generally on the appropriate renewal application requirements for 2155-2175 MHz band licensees. We seek comment on whether we should define more extensively the standards and informational filings that apply to license renewal applications for these licenses.²²¹ In particular, we seek comment on the requirements (or factors) that should be considered for 2155-2175 MHz band licensees at renewal, including: the level of service and whether it was “substantial”; whether service was ever interrupted and discontinued; whether service has been provided to any rural areas; whether a licensee has received any requests from others seeking to enter into spectrum leasing arrangements, and whether it has entered into any such arrangements; and any other factors typically associated with assessments of a licensee’s level of service to the public. Commenters should address which, if any, of these

²¹⁸ See Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones, WT Docket No. 01-309, Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket 03-264, Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 06-169, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket No. 06-229, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket No. 96-86, *Report and Order and Further Notice of Proposed Rulemaking*, 22 FCC Rcd 8064, 8092-94 (2007) (*700 MHz First Report and Order*).

²¹⁹ *700 MHz First Report and Order*, 22 FCC Rcd at 8093-94.

²²⁰ *Id.* at 8094 ¶ 75.

²²¹ These criteria for renewal would apply to 2155-2175 MHz authorizations that have been assigned, transferred, partitioned or disaggregated during their license terms.

or other elements should be codified as requirements for renewal or, in the alternative, whether the Commission should list factors that are relevant to a licensee's demonstration that renewal is in the public interest.

110. In the event commenters propose some form of modified or combined Section 27.14 standard,²²² we seek comment on whether to use codified renewal criteria to measure the 2155-2175 MHz band licensees' level of service instead of relying on any performance incentives that may arise due to the possibility of competing applications being filed against a renewal (with the concomitant need for the incumbent to demonstrate "substantial service" to receive a renewal expectancy preference). Although Sections 27.14(b)-(d) of the Commission's rules indicate that a comparative process is used to choose among renewal and competing applicants, the precise type of comparative hearing to be employed is not specified. Under a modified Section 27.14 of the Commission's rules, the Commission could eliminate the filing of competing applications at renewal time and, for example, adopt a process by which the spectrum reverts to the Commission if a license is not renewed, allowing the Commission to offer a new license for use of the associated spectrum at auction. To the extent such an approach is adopted, commenters should address the procedures for processing a renewal, the components of a renewal filing and any demonstrations of "substantial service" or other requirements, provisions for petitions to deny renewal applications, and procedures governing dismissal/denial of renewal applications and subsequent re-licensing of spectrum through competitive bidding to competing bidders.²²³ In addition, we seek comment on whether the petition to deny process, coupled with the ability of a petitioner to participate in any subsequent auction to re-license spectrum that reverts to the Commission if the license is not renewed for lack of renewal, creates sufficient incentives to challenge inferior service by licensees at renewal and thereby protect the public interest.

9. Performance Requirements

111. In the *AWS-1 Service Rules Report and Order*, the Commission applied the substantial service requirement in section 27.14(a) of the Commission's rules to the 1710-1755 and 2110-2155 MHz bands. According to that provision, by the end of its license term an AWS-1 licensee must provide "substantial service," that is, service that is sound, favorable and substantially above the level of mediocre service that just might minimally warrant renewal."²²⁴ The Commission decided not to impose mid-license term performance requirements on AWS-1 licensees.²²⁵ The Commission recently adopted more stringent performance requirements for

²²² See 47 C.F.R. § 27.14.

²²³ For example, if the Commission dismisses or denies a renewal application, the spectrum could automatically revert to either the Commission (in the case of geographic-area licenses) to re-license using competitive bidding or to the geographic-overlay licensee (in the case of site-specific licenses subject to reversionary rights for geographic-overlay licensees) as part of its licensed service area. Moreover, the petitioner could be eligible to participate in any auction of the non-renewed license.

²²⁴ 47 C.F.R. § 27.14(a). *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25192 ¶ 75.

²²⁵ *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25192 ¶ 77. In the *AWS-2 Service Rules NPRM*, the Commission sought comment on whether licensees in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz, and 2175-2180 MHz bands should be subject to any performance requirements in addition to a substantial service requirement at license renewal. *AWS-2 Service Rules NPRM*, 19 FCC Rcd at 19293-94 ¶ 74.

certain portions of the 700 MHz Band, however, including both population-based and geographic area mid-term and end-of-term benchmarks as well as a keep-what-you-use condition. M2Z recently proposed that the AWS-3 spectrum should be subject to a 95% population-based benchmark measured “by counties.”

112. We seek comment on the appropriate performance requirements for licenses in the 2155-2175 MHz band in order to further access to spectrum and provision of service to consumers, including those in rural areas. We seek comment below on these approaches, including how the various proposals may offer certain additional benefits that outweigh possible additional costs. For each of the proposals below, commenters should address the potential advantages to consumers in the license service areas, including those in rural areas, as well as any possible disadvantages, such as possibly limiting the flexibility of licensees to deploy services under time frames responsive to market conditions.

113. *Substantial Service.* The current performance requirement for the AWS-1 band, as described above,²²⁶ is based on the substantial service standard defined in Section 27.14(a).²²⁷ We seek comment as to the effectiveness of this approach in promoting service in the 2155-2175 MHz band, especially in rural areas. As discussed above, licensees in the unpaired AWS-3 band may seek to operate a network that also uses the paired spectrum in the adjacent AWS-1 band.²²⁸ Would adoption of performance requirements for AWS-3 that differ from the substantial service requirements applicable to the adjacent AWS-1 band complicate compliance for licensees wishing to operate systems in both bands? For example, to the extent an incumbent AWS-1 licensee also obtained an AWS-3 band license as part of its network using AWS spectrum, would applying a different set of performance requirements to the different licenses be impractical?

114. Should the Commission adopt a substantial service standard, we also seek comment on whether the Commission should establish “safe harbors” to provide examples of what would be considered substantial service in the 2155-2175 MHz band.²²⁹ We note that in the *Rural Report and Order*, the Commission established a safe harbor for providing mobile service to rural areas.²³⁰ In particular, it stated that a mobile wireless service licensee “will be deemed to have met the substantial service requirement if it provides coverage to at least 75 percent of the

²²⁶ See *supra* paragraph 111.

²²⁷ 47 C.F.R. § 27.14(a).

²²⁸ See, e.g., *supra* paragraph 28.

²²⁹ For examples of safe harbors, see, e.g., Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands, *Third Memorandum Opinion and Order*, WT Docket No. 03-66, FCC 06-46 at ¶ 286 (*BRS/EBS Third Memorandum Opinion and Order*); *Upper 700 MHz First Report and Order*, 15 FCC Rcd at 505 ¶ 70; Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), GN Docket No. 01-74, *Report and Order*, 17 FCC Rcd 1022, 1079 ¶ 151 (2002) (*Lower 700 MHz Report and Order*).

²³⁰ The order defines “rural areas” as “those counties (or equivalent) with a population density of 100 persons per square mile or less, based upon the most recently available Census data.” *Rural Report and Order*, 19 FCC Rcd at 19087 ¶ 11.

geographic area of at least 20 percent of the ‘rural areas’ within its licensed area.”²³¹ We seek comment on whether this “rural safe harbor” for mobile wireless services should apply to the 2155-2175 MHz band licenses or whether it should be revised. We also seek comment as to whether to apply a safe harbor to other types of services (e.g., fixed) in the 2155-2175 MHz band and, if so, what other services should be included and how the safe harbor should be defined. In addition, we ask how “coverage” would be measured for these other services so as to improve incentives to serve rural areas. Finally, we seek comment on whether there are other safe harbors pertaining to construction in rural areas that should fulfill the substantial service requirement and that would provide additional regulatory certainty regarding the Commission’s performance requirements.

115. To the extent commenters address whether Section 27.14(a) or safe harbors should be applied, they should also consider whether any other provisions in the existing Part 27 rules require specific recognition or adjustment to comport with the potential application of those performance requirements for 2155-2175 MHz band licensees. For example, we seek comment on whether we need to clarify the extent to which certain of the Commission’s non-Part 27 rule parts, as listed in Section 27.3, apply to 2155-2175 MHz band licensees with regard to performance requirements relating to build out and/or provision of service.²³² In addition, we note that Section 27.15 describes *inter alia* elections for “geographic partitioning and spectrum disaggregation” to ensure the Commission’s performance requirements are met when licenses are divided spectrally or geographically between two or more parties.²³³ We seek comment on whether to change any aspect of Section 27.15 in order to help ensure the provision of service to consumers, including any rural areas that are part of a partitioned or disaggregated license.²³⁴

116. *Construction Benchmarks.* As an alternative to maintaining the substantial service standard that the Commission previously determined should apply to the related AWS-1 band,²³⁵ we seek comment on whether we should apply more specific construction benchmarks to the 2155-2175 MHz band. In some other proceedings, the Commission has adopted specific construction benchmarks that require a licensee to make service available to a certain percentage of the population or geographic area. For instance, in our recent *700 MHz Second Report and*

²³¹ Facilitating the Provision of Spectrum-Based Services to Rural Areas and promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, *Report and Order and Further Notice of Proposed Rule Making*, 19 FCC Rcd 19078, 19123 ¶ 79 (*Rural R&O and FNPRM*). We note that the Commission, in adopting substantial service requirements and safe harbors for the Broadband Radio Service (BRS) and the Educational Broadband Service (EBS), stated that “the traditional safe harbors associated with other Part 27 services are too lenient given the particular circumstances of BRS and EBS.” *BRS/EBS Third Memorandum Opinion and Order*, 21 FCC Rcd 5606, 5722-26 ¶¶ 281-290 (quoting para. 286). In addition, the Commission adopted modified versions of the safe harbors which had been adopted in the *Rural R&O and FNPRM*. *Id.* at 5728 ¶ 294.

²³² Section 27.3, entitled “Other applicable rule parts,” lists various of the Commission’s other, non-Part 27 rule parts that are applicable to Wireless Communications Services. *See* 47 C.F.R. § 27.3.

²³³ *Id.* § 27.15(d).

²³⁴ Under the current rule in Section 27.15(d), licensees in some cases are able to decide that one party has the performance obligation regardless of the amount of spectrum or area held by that party. *Id.*

²³⁵ *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25192 ¶ 75.

Order we adopted stringent performance requirements for those 700 MHz band licenses that have not been auctioned, including interim and end-of-term benchmarks, geographic benchmarks for certain licenses and population benchmarks for others, as well as additional reporting requirements.²³⁶ Some broadband PCS licensees originally were required to build out their networks to meet certain interim and end-of-term population benchmarks.²³⁷ Elsewhere, narrowband PCS licensees were given the option of constructing networks sufficient to serve at least a minimum amount of the geographic area of the license, or constructing networks sufficient to meet different interim and end-of-term population benchmarks, or meeting a substantial service requirement.²³⁸

117. We seek comment on whether the Commission should adopt a population-based construction requirement in the 2155-2175 MHz band, and whether such a requirement should include interim and end-of-term benchmarks. We ask for comment on the advantages of adopting this type of benchmark. If such a benchmark were adopted, we seek comment on the precise population benchmark(s) that should be adopted. We also request comment on the disadvantages that adoption of population-based benchmarks might cause, such as the risk that licensees would be less likely to serve less-populous areas, at least during the initial license term.

118. We note that a number of the previously filed applications had proposed population-based construction requirements. For example, Commnet proposed requiring service to one-third of the U.S. population within three years of license grant, two-thirds within 7 years, and 90 percent within 10 years of license grant.²³⁹ NetfreeUS suggested requiring substantial service to at least 50 percent of the 734 CMAs within four years of initial license grant, 75 percent of CMAs within six years, and 95 percent within 10 years.²⁴⁰ TowerStream proposed requiring service to at least 50 percent of the population of its licensed area within five years and at least 75 percent within 10 years.²⁴¹ And M2Z proposed requiring (1) construction of one base station in one Statistical Market Service Area (SMSA) within 24 months of license grant; (2) construction and operation of sufficient base stations to provide service to 33 percent of the U.S. population measured by counties within 3 years of the grant; (3) service to 66 percent of the population measured by counties within five years; and (4) service to 95 percent of the

²³⁶ Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, *Second Report and Order*, FCC 07-132 at Section III.A.2(a)(i) (rel. August 10, 2007) (*700 MHz Second Report and Order*).

²³⁷ See 47 C.F.R. § 24.203.

²³⁸ See 47 C.F.R. § 24.103. Nationwide narrowband PCS licensees that chose to meet the geographic requirement had to construct sufficient to serve a composite area of 750,000 square kilometers, regional licensees that chose this option had to construct sufficient to serve a composite area of 150,000 square kilometers, and Major Trading Areas (MTA) licensees in the service that chose this option had to construct sufficient to serve a composite area of 75,000 square kilometers.

²³⁹ See Commnet Application, Exhibit 2 at 2.

²⁴⁰ See NetfreeUS Application at 12.

²⁴¹ See TowerStream Application at 4.

population measured by counties within ten years.²⁴² We seek comment on the feasibility and appropriateness of these proposed performance measures.

119. We note that some of these proposals are less aggressive than the build out requirements the Commission has established for some other services,²⁴³ and we seek comment on whether these proposals are sufficient to spur the deployment of advanced services to rural and underserved populations. For example, how would measuring the percentage of covered U.S. population “by counties” as proposed by M2Z work, and would this be an appropriate measurement? Would measuring population by counties mean that the licensee would be credited with serving the entire population of a county by constructing one base station in a given county – regardless of signal coverage? If so, would this means of measurement result in an overstatement of coverage? We seek input on the best way to determine whether a licensee has constructed base stations sufficient to meet applicable performance requirements.

120. As an alternative to a population-based construction requirement, we seek comment on whether a geography-based construction requirement for 2155-2175 MHz band licenses would be more effective in promoting service to underserved areas. We note that, in the *Rural R&O and FNPRM*, the Commission considered whether it should adopt geographic based benchmarks for any particular service, but declined at that time to adopt such a policy based on the record in that proceeding.²⁴⁴ Conversely, in the *700 MHz Second Report and Order*, the Commission adopted geography-based benchmarks for certain license sizes, subject to certain exceptions.²⁴⁵ In the instant rulemaking, we seek comment on whether geographic-based benchmarks warrant further consideration and, in particular, whether these rules could be designed to promote build out in rural portions of these licenses yet to be auctioned. If so, we seek comment on how such a geography-based benchmark could or should be structured. We also seek comment on any other geographic benchmarks that would be appropriate for these

²⁴² See M2Z Application at App. 2 (measuring population by counties).

²⁴³ See, e.g., 47 C.F.R. § 27.14(e)(1) (Broadband Radio Service (BRS) construction requirements and safe harbors); Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones, WT Docket No. 01-309, Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket 03-264, Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 06-169, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket No. 06-229, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket No. 96-86, *Second Report and Order*, FCC 07-132 at paras. 153-177 (2007) (*700 MHz Second Report and Order*) (adopting performance requirements applicable to certain 700 MHz Band licenses).

²⁴⁴ *Rural R&O and FNPRM*, 19 FCC Rcd at 19124-25 ¶ 82. In the *Rural NPRM*, the Commission had sought comment on whether it should adopt geographic-based benchmarks for certain services that are licensed on a geographic area basis and that do not have such a requirement. Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, WT Docket No. 02-381, *Notice of Proposed Rulemaking*, 18 FCC Rcd 20802, 20824-25 ¶¶ 41-42 (2003) (*Rural NPRM*).

²⁴⁵ See *700 MHz Second Report and Order* at paras. 153-177.

licenses. For any proposed benchmark, we ask commenters to describe how the Commission should apply it to the variety of fixed, mobile, broadcast, and private services that are authorized in this spectrum.

121. *“Keep What You Use.”* We also seek comment on whether the Commission should consider adopting a “keep what you use” re-licensing mechanism²⁴⁶ for the 2155-2175 MHz band. Such an approach could be similar to the approach adopted for cellular service in the 1980s,²⁴⁷ or that which was adopted in our recent 700 MHz proceeding.²⁴⁸ Under a “keep what you use” rule, the Commission would reclaim any “unused” spectrum in a license area after a pre-defined period of time. We also seek comment on whether the Commission should consider a modified version of this rule, such as a “triggered keep what you use” rule, in which the Commission, rather than reclaiming “unused” spectrum after a period of time, would reclaim spectrum only in the event a party other than the licensee (*e.g.*, a spectrum lessee) seeks access to the licensed spectrum in an unserved portion of the license area. Similarly, we seek comment on whether the Commission should consider applying either the “keep what you use” rule or “triggered keep what you use” rule only to a portion of the spectrum (*e.g.*, one-half) of the spectrum that otherwise would be reclaimed, or eligible for reclamation, by the Commission.

122. Given that these variations of the “keep what you use” approach may make unused spectrum available to other parties interested in gaining access to spectrum, we seek comment on whether it may be an effective means to provide additional service, including in rural areas. If commenters believe licensees are less likely to use spectrum in rural portions of their license areas, would such a mechanism be an efficient way to provide spectrum access to other potential service providers? To the extent that licensees may be less likely to use the spectrum in rural portions of their license areas, we also seek comment as to whether the Commission should apply this approach only to licenses covering rural areas, or only to that portion of licenses that covers rural areas.

123. To the extent commenters believe a “keep what you use” mechanism is appropriate, we seek comment on how “use” could or should be defined, given the goals we here seek to further. In particular, we seek comment on how the Commission should define what type of activities demonstrate that the spectrum is being “used” in this context, considering that the Part 27 rules that the Commission adopted facilitate a wide variety of services and uses in this band.

124. *Additional provisions.* We also seek comment on whether, in the event that a license is partitioned or disaggregated, a partitionee or disaggregatee should be bound by the standard (either substantial service or a construction requirement) that we may adopt in this proceeding.

125. If a licensee does not comply with the performance requirement we adopt, the Commission must consider what action to take. We propose to apply the procedures set forth in

²⁴⁶ See generally *Rural R&O and FNPRM*, 19 FCC Rcd at 19156-59 ¶¶ 151-156.

²⁴⁷ 47 C.F.R. §§ 22.947, 22.949.

²⁴⁸ See *700 MHz Second Report and Order* at ¶¶ 153-177.

section 1.946(c) of the Commission's rules to licensees who fail to meet their performance requirements. This section states that "[i]f a licensee fails to commence service or operations by the expiration of its construction period or to meet its coverage or substantial service obligations by the expiration of its coverage period, its authorization terminates automatically, without specific Commission action, on the date the construction or coverage period expires."²⁴⁹ We seek comment on our proposal to apply this rule to licensees in the 2155-2175 MHz band. In addition, if a geographic area licensee loses its license for failure to comply with coverage requirements, we seek comment on whether the licensee should be ineligible to regain it.

126. *Auction Approach.* We also seek comment on whether we should determine appropriate performance requirements with a market-based approach, such as via a "scoring auction." In a scoring auction, individual bids would not be simply dollar amounts, but compound statements such as a dollar amount plus commitments on other performance dimensions. For example, bids might have two parts: a dollar amount plus a promised year-5 coverage percentage. The Commission would convert each multipart bid into a "score," based on a weighting formula announced prior to the auction, and the winning bidder would be the one with the highest score. This approach would integrate the determination of license winner with determination of the performance requirement, and would allow requirements to vary license-by-license depending on individual circumstances. It may enhance the competitiveness of the auction by encouraging bidders with construction advantages in a particular unserved market(s) to compete more aggressively against better funded rivals. It might help avoid uneconomic construction resulting from poorly defined requirements. On the other hand, it might provide a significant bidding advantage to incumbent service providers in a market that can fulfill a construction commitment by relying on existing infrastructure and facilities; an advantage that new entrants that lack these capital resources might find difficult to overcome. We invite comment on all aspects of this approach, and in particular on what scoring formula the Commission might adopt to determine highest bids. We also invite comment on how to enforce build out commitments made by winning bidders, and thus ensure that bidding on those commitments is sincere. In addition, we seek comment on whether any element of this approach would be inconsistent with any applicable statutory provisions. Finally, we seek comment on whether any of our Part 1 rules governing competitive bidding should be modified to implement an auction approach to establishing performance requirements. For example, in addition to any rules needed to outline the general parameters of such an auction approach, should we establish new rules regarding payment, license grant, denial, default or disqualification as a means to enforce performance commitments, ensure sincere bidding, and safeguard the fairness and integrity of the auction process?²⁵⁰

10. Disaggregation and Partitioning of Spectrum; Secondary Markets

127. *Disaggregation and Partitioning.* We propose to apply the provisions of section 27.15 regarding the partitioning and disaggregation to licensees in the 2155-2175 MHz band. Geographic partitioning and spectrum disaggregation is a tool utilized by the Commission that is

²⁴⁹ 47 C.F.R. § 1.946(c).

²⁵⁰ See *supra* paragraphs 39-46, in which we seek comment on the possibility of using an auction format to select among band plan options and also seek comment on the compatibility of such an auction with an auction that would establish performance requirements as suggested here.

intended to promote efficient spectrum use and economic opportunity for a wide variety of applicants, including small business, rural telephone, minority-owned, and women-owned applicants.²⁵¹ We seek comment on allowing licensees in the 2155-2175 MHz band to partition their service areas and to disaggregate their spectrum. We believe that section 27.15 of the Commission's rules²⁵² should apply if we allow partitioning and disaggregation. Section 27.15 provides that licensees may apply to partition their licensed geographic service areas or disaggregate their licensed spectrum at any time following the grant of their licenses.²⁵³ We seek comment on the benefits and costs of this approach, and whether it promotes the public interest.

128. In addition, pursuant to section 27.15, the partitioning licensee must include with its request a description of the partitioned service area and a calculation of the population of the partitioned service area and the licensed geographic service area.²⁵⁴ Section 27.15 also contains provisions against unjust enrichment.²⁵⁵ We propose to adopt these provisions, as well as the remaining provisions governing partitioning and disaggregation set forth in section 27.15, if we allow partitioning and disaggregation. We seek comment on our proposal.

129. We also seek comment on whether the Commission should adopt additional mechanisms to encourage partitioning and/or disaggregation of 2155-2175 MHz band spectrum and the extent to which such policies ultimately may promote more service, especially in rural areas.

130. *Secondary Markets.* In our *Secondary Markets Report and Order*, the Commission took action to remove unnecessary regulatory barriers to the development of secondary markets.²⁵⁶ The Commission adopted new policies and procedures that enable most wireless licensees, including Part 27 licensees, to lease some or all of their spectrum usage rights to third-party spectrum lessees.²⁵⁷ We propose that the spectrum leasing policies established in that proceeding be applied to the services established in this proceeding in the same manner that those policies apply to other Part 27 services (with the exception of Guard Band Manager licensing which has its own set of spectrum leasing policies and rules), including AWS-1

²⁵¹ See 47 U.S.C. § 309(j)(4)(C).

²⁵² 47 C.F.R. § 27.15. These rules apply to licensees in the 700 MHz bands and the 2.3 GHz band. See also Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, WT Docket No. 02-08, *Notice of Proposed Rule Making*, 17 FCC Rcd 2500, 2535 ¶¶ 89-90 (2002).

²⁵³ See *Part 27 Report and Order*, 12 FCC Rcd at 10836-39 ¶¶ 96-103.

²⁵⁴ 47 C.F.R. § 27.15(b)(1).

²⁵⁵ 47 C.F.R. § 27.15(c)(1)(2); see also 47 C.F.R. § 1.2111.

²⁵⁶ Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 20604 (2003) (*Secondary Markets Report and Order*), *Erratum*, 18 FCC Rcd 24817 (2003).

²⁵⁷ *Id.* at 20643-44 ¶ 84.

licenses, and all other exclusive use Wireless Radio Services.²⁵⁸ We seek comment on this proposal.

131. In the *Rural Report and Order* issued in 2004, the Commission determined that it was premature to evaluate its secondary markets policies in comparison to other spectrum access mechanisms. In particular, it noted that more time was needed for an efficient secondary market to develop and for its impact to be seen.²⁵⁹ At that time, some commenters suggested that secondary market policies are insufficient when it comes to enabling access to spectrum.²⁶⁰ Given the passage of time, we now seek comment on whether there are additional mechanisms relating to our secondary market policies that should be adopted so as to help move spectrum from licensees to other entities that place a higher value on its use. For instance, we seek comment on whether requiring licensees to make “good faith” efforts to negotiate with potential spectrum lessees could help increase access to spectrum, including in rural areas, and thus promote the development of these markets.²⁶¹ Potential “good faith” requirements could take one of several forms. At a minimal level, licensees could be required to establish a contact point for potential lessees, *e.g.*, providing the name and contact information of a designated representative in the licensee’s organization who would accept inquiries from potential spectrum lessees. Under an alternative approach, licensees could be required to engage in “good faith” negotiations with potential spectrum lessees, with the Commission determining the minimum steps necessary to meet this requirement. For example, 2155-2175 MHz band licensees could be required to have a minimum number of meetings with potential spectrum lessees and/or provide their terms for an acceptable spectrum leasing arrangement. Would the use of such requirements for licensees in the 2155-2175 MHz band encourage licensees to more seriously consider the opportunity cost of the spectrum they hold but do not use? On the other hand, we seek comment on whether a requirement to, *e.g.*, establish contact and/or communicate with all interested parties would be unduly burdensome or subject to abuse.

132. In addition, we seek comment on whether the Commission could use its existing oversight role during the license renewal process to review a 2155-2175 MHz band licensee’s actions during its license term, including its participation in secondary market transactions, and

²⁵⁸ *Id.* (Note 181 contains a complete listing of services that were included in the *Secondary Markets Report and Order*.)

²⁵⁹ *Id.* at 19099-19100 ¶ 40.

²⁶⁰ We note that some commenters in the rural proceeding, especially those representing rural interests, argued that existing secondary market mechanisms are insufficient to promote access to spectrum. *See, e.g., Rural Further Notice*, 19 FCC Rcd at 19153-56 ¶¶ 147-50.

²⁶¹ We note that, in our proceeding adopting service rules to govern licenses in the 700 MHz band, we declined to adopt rules that would have required 700 MHz Commercial Services Band licensees to make “good faith” efforts to negotiate with potential spectrum lessees because such changes were unnecessary given the other measures adopted to promote access to spectrum in that band. *See 700 MHz First Report and Order*, 22 FCC Rcd 8064, 8086-87. In that proceeding, although a few commenters had proposed considering a licensee’s secondary markets participation as part of its license renewal process, the Commission’s spectrum leasing rules already provided a licensee with significant incentives to enter into spectrum leasing arrangements because licensees may rely on the activities of its spectrum lessee(s) for purposes of complying with the licensee’s construction requirements. This factor, in addition to the adoption of a mix of geographic license area sizes, was determined to be sufficient to promote access to spectrum in the 700 MHz band. *Id.* at 8087.

evaluate issues related to spectrum access, service to rural areas, or both. As we discuss below,²⁶² under this approach, licensees of 2155-2175 MHz band spectrum would be subject to greater informational filings and Commission review at renewal even if they are not “involved in a comparative renewal proceeding.”²⁶³ We seek comment on the advantages and disadvantages of this approach in promoting service to rural areas, and we ask commenters to compare it to “keep what you use” and other mechanisms designed to promote access to spectrum during the license term.

133. We note that in its previously pending application, NetfreeUS had proposed an “obligation to lease spectrum, on a location-by-location basis, to entrepreneurs, new entrants, municipalities and other independent entities.”²⁶⁴ We seek comment on this proposal from NetfreeUS.

134. Additionally, to the extent that we adopt rules for the 2155-2175 MHz band that differ from the rules that we adopted for the AWS-1 Band and proposed for AWS-2 Band, we seek comment on whether we should apply any differences to the AWS-1 and AWS-2 Bands.

11. Facilitating Access to Spectrum and the Provision of Service to Tribal Lands

135. Ensuring that qualifying tribal lands have access to affordable, quality telecommunications services continues to be a goal of the Commission.²⁶⁵ Promoting access to spectrum and the provision of service on tribal lands is an important means to meet that goal. Accordingly, we seek comment on what steps we can take with regard to the 2155-2175 MHz band to further facilitate access to spectrum and the provision of service to tribal lands.

136. The Commission’s rules currently promote deployment of wireless services on tribal lands through its Tribal Lands Bidding Credit.²⁶⁶ Pursuant to this program, the Commission grants bidding credits to winning bidders who deploy wireless facilities and provide service to federally-recognized tribal areas that have a wireline telephone subscription or penetration rate equal to or below 85 percent. The credit provides qualifying winning bidders \$500,000 for the first two hundred square miles of qualifying tribal land and \$2,500 for each

²⁶² See *infra* section IV.E.11.

²⁶³ See 47 C.F.R. § 27.14(b).

²⁶⁴ See NetfreeUS Application at 11.

²⁶⁵ Section 1.2110(f)(3)(i) of the Commission’s rules provide that a qualifying tribal land is any federally recognized Indian tribe’s reservation, Pueblo, or Colony, including former reservations in Oklahoma, Alaskan Native regions established pursuant to the Alaskan Native Claims Settlement Act (85 Stat. 688), and Indian allotments, that has a wireline telephone subscription rate equal to or less than 85 percent, based on the most recently available U.S. Census Data. 47 C.F.R. § 1.2110(f)(3)(i) (2005).

²⁶⁶ See 47 C.F.R. § 1.2110(f)(3). See *Extending Wireless Telecommunications Services to Tribal Lands*, WT Docket No. 99-266, *Report and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 11794 (2000) (*Tribal Lands Bidding Credit Report and Order*); *Extending Wireless Telecommunications Services to Tribal Lands*, WT Docket No. 99-266, *Second Report and Order and Second Further Notice of Proposed Rulemaking*, 18 FCC Rcd 4775 (2003) (*Tribal Lands Bidding Credit Second Report and Order*); *Extending Wireless Telecommunications Services to Tribal Lands*, WT Docket No. 99-266, *Third Report and Order*, 19 FCC Rcd 17652 (2004) (*Tribal Lands Bidding Credit Third Report and Order*).

additional square mile. Within 180 days after the filing deadline for long-form applications, a winning bidder that wishes to receive this credit must certify to the Commission that it has complied with various requirements, which include obtaining certification from the tribal government to provide service on its tribal land. Following satisfactory completion of this process, the amount of the bidding credit is subtracted from the gross bid amount,²⁶⁷ and once this amount is paid, the license is issued.

137. We propose to apply the Tribal Land Bidding Credit rules to the 2155-2175 MHz band and seek comment on whether any potential adjustments to the rules should be made as applied to the 2155-2175 MHz band licenses in order to further the deployment of wireless services to tribal lands. We seek comment as well on whether there are other steps the Commission should take to promote service in tribal lands. In particular, we seek comment on whether the policies to facilitate access to spectrum, or the performance requirements discussed in Section 9 above, should be specifically tailored for tribal lands. For example, should the Commission consider applying a “keep what you use” performance requirement to the tribal lands portion of geographic license areas, even if it decides to apply some other standard, such as substantial service, to all other areas of a license that are not tribal lands? We seek comment on whether such an approach would promote access to spectrum and the provision of service on tribal lands. In addition, we seek comment on whether any policies designed to facilitate access to spectrum, such as requiring “good faith” negotiations or other efforts by licensees in response to a request for a spectrum lease, should be applied specifically to tribal lands, even if the Commission decides not to apply these policies to non-tribal license areas. Similarly, are there other steps we could take to revise our partitioning and disaggregation rules in order to better facilitate access to spectrum on tribal lands? Commenters also should consider whether the provision of service to tribal lands could be codified as a criteria or factor relevant to a licensee’s demonstration that renewal is in the public interest.

138. To the extent the Commission should revise its performance requirements and/or policies to facilitate access to spectrum and apply these policies only to tribal lands, we seek comment generally on how such a process should be implemented. For instance, we seek comment on how a “keep what you use” approach for tribal lands would operate in the event all other license areas were subject to different performance requirements. Similarly, we seek comment on the feasibility of applying one set of secondary markets rules to those portions of a license that cover tribal lands while applying different rules to the rest of a licensee’s geographic area.

139. We also seek comment on whether it would facilitate access to spectrum and promote service to tribal lands to create license areas based on the contours of a reservation or any tribal boundary line. We note that, in creating the Tribal Lands Bidding Credit program, the Commission considered and declined to adopt this policy in the *Tribal Lands Bidding Credit Report and Order*.²⁶⁸ We seek comment on whether adopting this policy would have the

²⁶⁷ See 47 C.F.R. §1.2110(f).

²⁶⁸ *Tribal Lands Bidding Credit Report and Order*, 15 FCC Red at 11816 ¶ 64. In this order, the Commission stated: “[W]e do not favor creating small license areas comprised exclusively or primarily of tribal lands. We find that tribal lands should generally be included in a larger licensing area to enable licensees to use profits derived from serving lower cost areas to provide service to typically high cost, tribal areas.” *Id.*

unintended consequence of partitioning off licenses covering tribal lands such that the newly created license areas will remain unbuilt, because companies will bid only for the licenses not covering the tribal lands. For instance, would it generally be economically feasible to provide service only within a tribal land service area? We note that, unlike other service areas, many tribal land service areas would result in licensed areas wholly contained within the larger geographic area of other licensees. We ask whether: (1) interference issues would be more significant because of the greater number of borders between licensed service areas; and (2) limitations of system design may make it difficult to engineer solutions around multiple small areas. Could any of these technical obstacles be mitigated by limiting tribal land license areas to tribal lands of a particular size or greater, or to those not contained wholly within another license area? We also ask commenters to address possible auction-related difficulties caused by this approach, especially those for potential bidders. For instance, if we were to implement this approach for a single spectrum block for which the basic geographic area was Cellular Market Areas (CMAs), the 585 federally recognized tribal lands, combined with the 734 CMAs, would result in 1319 separate licenses being offered for that one block.

140. In addition, to the extent that we adopt rules for the 2155-2175 MHz band that differ from the rules that we adopted for the AWS-1 band and proposed for AWS-2 band, we seek comment on whether we should apply any differences to the AWS-1 and AWS-2 bands.

141. While we seek comment from the public in general concerning the matters set forth in this Notice, we specifically seek comment from Indian Tribal governments on the effect various options may have on the deployment of services to tribal lands. As detailed in the Tribal Government Policy Statement, the Commission is committed to (1) working with Indian tribes on a government-to-government basis to ensure that Indian tribes have adequate access to communications services, and (2) consulting with Tribal governments prior to implementing any regulatory action or policy that will significantly affect Tribal governments, their land, and resources.²⁶⁹ We believe the matters set forth in this Notice have the potential to foster the development and, ultimately, the deployment of new technologies and services to many communities, including tribal communities. In keeping with the principles of the Tribal Government Policy Statement, we welcome the opportunity to consult with Tribal governments on the issues raised by this Notice, and we seek comment from both Tribal governments and other interested parties on the potential for the spectrum considerations set forth herein to serve the communications needs of tribal communities.

12. Conditional Licenses

142. In the event we decide to condition license grant in the 2155-2175 MHz band upon one or more of the conditions that had been proposed in the previously pending applications, such as the licensee's provision of broadband service free of charge as described in

²⁶⁹ See Statement of Policy on Establishing a Government-to-Government Relationship with Indian Tribes, Policy Statement, 16 FCC Rcd 4078 (2000) (Tribal Government Policy Statement). In furtherance of this commitment, we recently released an order providing incentives for wireless telecommunications carriers to serve individuals living on tribal lands. See *Extending Wireless Telecommunications Services to Tribal Lands, Third Report and Order*, 19 FCC Rcd 17652 (2004). Specifically, the item raises the wireline telephone penetration rate at which tribal lands are eligible for a bidding credit from 70 percent or less, to 85 percent or less, and increases the amount of the bidding credit available to carriers that pledge to deploy on and serve qualifying tribal lands.

Section IV.E.1, we seek comment on whether we should adopt specific performance requirements for the provision of that service.²⁷⁰ We seek comment on what, if any, restrictions on assignment, transfer, partitioning, or lease of the spectrum would be appropriate in the event conditions are imposed on the licenses. Similarly, we seek input on what sanctions or enforcement mechanisms should exist to address failures to meet a condition. We seek comment on these issues, and on other issues we should consider in our public interest analysis of conditional licenses.

13. Other Operating Requirements

143. As noted in paragraph 96 above, even though licenses in the 2155-2175 MHz band may be issued pursuant to one rule part, licensees in this band may be required to comply with rules contained in other parts of the Commission's rules by virtue of the particular services they provide. For example:

- Applicants and licensees would be subject to the application filing procedures for the Universal Licensing System, set forth in Part 1 of our rules.²⁷¹
- Licensees would be required to comply with the practices and procedures listed in Part 1 of our rules for license applications, adjudicatory proceedings, etc.
- Licensees would be required to comply with the Commission's environmental provisions, including section 1.1307.²⁷²
- Licensees would be required to comply with the antenna structure provisions of Part 17 of our rules.
- To the extent a licensee provides a Commercial Mobile Radio Service, such service would be subject to the provisions of Part 20 of the Commission's rules, including 911/E911 and hearing aid-compatibility (HAC) requirements, along with the provisions in the rule part under which the license was issued.²⁷³ Part 20 applies to all CMRS providers, even though the stations may be licensed under other parts of our rules.²⁷⁴
- The application of general provisions of Parts 22, 24, 27, or 101 would include rules related to equal employment opportunity, *etc.*

144. We seek comment generally on any provisions in existing service-specific rules that may require specific recognition or adjustment to comport with the supervening application of another rule part, as well as any provisions that may be necessary in this other rule part to fully

²⁷⁰ See *supra* paragraph 94.

²⁷¹ See 47 C.F.R. Part 1, Subpart F.

²⁷² 47 C.F.R. § 1.1307.

²⁷³ 47 C.F.R. Part 20; see also 47 C.F.R. § 27.3(g).

²⁷⁴ See, e.g., 700 MHz *Second Report and Order* at section III.C.4.c.iii.

describe the scope of covered services and technologies. We seek comment on applying these rules to the spectrum that is the subject of this Notice, and specifically on any rules that would be affected by our proposal to apply elements of the framework of these parts, whether separately or in conjunction with other requirements.

F. Other Technical Rules

1. Radio Frequency (RF) Safety

145. Our rules implementing the National Environmental Policy Act of 1969 are intended to prevent human exposure to potentially unsafe levels of radiofrequency (RF) radiation.²⁷⁵ In this regard, we note that section 1.1307(b) of our rules requires preparation of routine environmental evaluations when licensees propose to construct fixed transmission facilities that exceed specified parameters.²⁷⁶ The Commission recently adopted a 1000-Watt effective radiated power (ERP) threshold for routine environmental evaluation for licensees operating in the 1710-1755 MHz and 2110-2155 MHz bands, determining that this power limit was appropriate to ensure compliance with the Commission's RF exposure standards for most situations.²⁷⁷ Given that the exposure guidelines for the 2110-2155 MHz band are the same as those for spectrum at 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz, and 2175-2180 MHz,²⁷⁸ we propose that the threshold for environmental review of fixed transmission facilities should, as a result, be an ERP greater than 1000 Watts, and that we should make any necessary modifications to sections 1.1307(b), 2.1091, and 2.1093 of our rules²⁷⁹ to include services and devices applicable to the 2155-2175 MHz band.²⁸⁰ Evaluation of mobile and portable devices in these bands will follow the rules adopted in sections 2.1091 and 2.1093, respectively. We seek comment on this proposal.

²⁷⁵ See Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 02-353, *Notice of Proposed Rulemaking*, 17 FCC Rcd 24135, 24161 ¶ 68 (2002) (“*AWS-1 Service Rules NPRM*”); see also 47 C.F.R. §§ 1.1310, 2.1093.

²⁷⁶ 47 C.F.R. § 1.1307(b). Similarly, sections 2.1091 and 2.1093 require environmental evaluation of certain mobile and portable transmitters prior to equipment authorization or use. See 47 C.F.R. §§ 2.1091, 2.1093. The Commission provides guidance on acceptable methods of evaluating compliance with exposure limits in Office of Engineering and Technology (OET) Bulletin No. 65. OET Bulletin No. 65 (Edition 97-01) was issued on August 25, 1997, and is available for downloading at the FCC Web Site: <<http://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. Other circumstances may also trigger an Environmental Assessment. See generally 47 C.F.R. § 1.1307(a).

²⁷⁷ See *AWS-1 Service Rules Report and Order*, 18 FCC Rcd at 25213 ¶ 133.

²⁷⁸ See 47 C.F.R. § 1.1310.

²⁷⁹ 47 C.F.R. §§ 1.1307(b), 2.1091, 2.1093.

²⁸⁰ 47 C.F.R. §§ 1.1307(b), 27.52; see also 47 C.F.R. § 24.52 (PCS). We note that with the pending NPRM in ET Docket No. 03-137, this standard could change. See Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields, ET Docket No. 03-137, *Notice of Proposed Rulemaking*, 18 FCC Rcd 13187 (2003).

2. Other Technical Rules; Canadian and Mexican Coordination

146. *Other Technical Rules:* The application of general provisions of Part 27²⁸¹ would include rules related to equipment authorization, frequency stability, antenna structures and air navigation, environmental requirements, quiet zones, and disturbance of AM broadcast antenna patterns.²⁸² We seek comment on applying these provisions to the spectrum that is the subject of this Notice. We propose that all of these technical rules would apply to all licensees in these bands, including licensees who acquire their licenses through partitioning or disaggregation.

147. *Canadian and Mexican Coordination:* At this time, changes to international agreements between and among the United States, Mexico and Canada concerning the spectrum at issue in this proceeding are not complete. In the meantime, until such time as adjusted agreements between the United States, Mexico and/or Canada become effective, operations must not cause harmful interference across the border based on the terms of the agreements currently in force.²⁸³ We note that further modification (of the proposed rules) might be necessary in order to comply with future agreements with Canada and Mexico regarding the use of these bands. We seek comments on this issue.

G. Competitive Bidding Procedures

148. If we adopt a geographic area licensing scheme for the 2155-2175 MHz band and permit the filing of mutually exclusive applications, if accepted, we will be required to resolve such applications through competitive bidding, consistent with our statutory mandate.²⁸⁴ Accordingly, in this Notice, we request comment on a number of issues relating to competitive bidding for initial licenses in the 2155-2175 MHz band.

1. Incorporation by Reference of the Part 1 Standardized Auction Rules

149. We propose to conduct any auction of initial licenses in the 2155-2175 MHz band 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 competitive bidding procedures that have been employed in previous auctions.²⁸⁵ Specifically, we propose to employ the Part 1 rules governing competitive bidding design, designated entities, application and payment procedures, reporting requirements, collusion issues, and unjust enrichment.²⁸⁶ Under this proposal, such

²⁸¹ See *supra* paragraph 92.

²⁸² See, e.g., 47 C.F.R. §§ 27.50-27.66.

²⁸³ The AWS-3 spectrum band is covered by a U.S.-Canada agreement on spectrum above 30 MHz, see "Above 30 MHz Arrangement" at <http://www.fcc.gov/ib/sand/agree/files/can-nb/above30.pdf>, but there is no equivalent U.S.-Mexico agreement at this time.

²⁸⁴ See *supra* paragraph 95; 47 U.S.C. § 309(j); *BBA Report and Order*, 15 FCC Rcd 22709 (2000).

²⁸⁵ See 47 C.F.R. §§ 1.2101-1.2114.

²⁸⁶ See, e.g., Amendment of Part 1 of the Commission's Rules—Competitive Bidding Procedures, WT Docket No. 97-82, Order, Memorandum Opinion and Order and Notice of Proposed Rule Making, 12 FCC Rcd 5686 (1997); Third Report and Order and Second Further Notice of Proposed Rule Making, 13 FCC Rcd 374 (1997) (Part 1 Third Report and Order); Order on Reconsideration of the Third Report and Order, Fifth Report and Order, and Fourth Further Notice of Proposed Rule Making, 15 FCC Rcd 15293 (2000), *aff'd* in part and modified in part, (continued....)

rules would be subject to any modifications that the Commission may adopt for its Part 1 general competitive bidding rules.²⁸⁷ We seek comment on whether any of our Part 1 rules would be inappropriate or should be modified for an auction of licenses in these bands.²⁸⁸

2. Provisions for Designated Entities

150. In authorizing the Commission to use competitive bidding, Congress mandated that the Commission “ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women (sometimes referred to as “designated entities”) are given the opportunity to participate in the provision of spectrum-based services.”²⁸⁹ In addition, section 309(j)(3)(B) of the Act provides that in establishing eligibility criteria and bidding methodologies, the Commission shall promote “economic opportunity and competition . . . by avoiding excessive concentration of licenses and 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.”²⁹⁰ One of the principal means by which the Commission fulfills this mandate is through the award of bidding credits to small businesses.

151. In the *Competitive Bidding Second Memorandum Opinion and Order*, the Commission stated that it would define eligibility requirements for small businesses on a service-specific basis, taking into account the capital requirements and other characteristics of each particular service in establishing the appropriate threshold.²⁹¹ The *Part 1 Third Report and*

(Continued from previous page) _____

Second Order on Reconsideration of the Third Report and Order, and Order on Reconsideration of the Fifth Report and Order, 18 FCC Rcd 10180 (2003); Seventh Report and Order, 16 FCC Rcd 17546 (2001); Eighth Report and Order, 17 FCC Rcd 2962 (2002); Second Order on Reconsideration of the Part 1 Fifth Report and Order, 20 FCC Rcd 1942 (2005); Implementation of the Commercial Spectrum Enhancement Act and Modernization of the Commission’s Competitive Bidding Rules and Procedures, WT Docket 05-211, Report and Order, 21 FCC Rcd 891 (2006) (CSEA/Part 1 Report and Order), petitions for reconsideration pending; Second Report and Order and Second Further Notice of Proposed Rule Making, 21 FCC Rcd 4753 (2006) (CSEA/Part 1 Designated Entity Second Report and Order and Second FNPRM), petitions for reconsideration pending; Order on Reconsideration of the Second Report and Order, FCC 06-78 (rel. June 2, 2006) (DE Order on Reconsideration); Erratum and Notice of Office of Management and Budget Approval of Information Collections, DA 06-1280 (rel. June 16, 2006); Memorandum Opinion and Order, DA 06-1281 (rel. June 16, 2006). As discussed below, we seek comment on whether, in the event we adopt a nationwide licensing scheme, designated entity bidding credits would be inappropriate. If bidding credits are ultimately adopted, we will employ the Part 1 rules governing designated entities.

²⁸⁷ See, e.g., CSEA/Part 1 Designated Entity Second Report and Order and Second FNPRM, petitions for reconsideration pending.

²⁸⁸ See also paragraphs 39-46 and 126 *supra* in which we seek comment on whether we should adopt a rule for purposes of offering AWS-3 licenses at auction that would provide us with auction format choices not presently available to the Commission under its Part 1 rules.

²⁸⁹ 47 U.S.C. § 309(j)(4)(D).

²⁹⁰ 47 U.S.C. § 309(j)(3)(B).

²⁹¹ Implementation of Section 309(j) of the Communications Act—Competitive Bidding, PP Docket No. 93-253, *Second Memorandum Opinion and Order*, 9 FCC Rcd 7245, 7269 ¶ 145 (1994) (*Competitive Bidding Second Memorandum Opinion and Order*); 47 C.F.R. § 1.2110(c)(1).

Order, while it standardizes many auction rules, provides that the Commission will continue a service-by-service approach to defining small businesses.²⁹²

152. We do not know precisely the type of services that a licensee may seek to provide in the 2155-2175 MHz band or the best geographic service areas. However, if we decide to issue licenses on a non-nationwide basis, licensees in the 2155-2175 MHz band may be presented with issues and capital and other cost requirements comparable to broadband PCS licensees and licensees in the AWS-1 bands, including issues and costs involved in relocating incumbents, and developing markets, technologies, and services. In light of these anticipated similarities, in the event that we adopt a licensing scheme based on non-nationwide geographic licensing areas, we propose to establish the same small business size standards and associated bidding credits for the 2155-2175 MHz band as the Commission adopted for broadband PCS and the AWS-1 bands and as the Commission has proposed for the AWS-2 bands.²⁹³ Thus, we propose to define a small business as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a very small business as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million.²⁹⁴ We seek comment on this proposal.

153. In addition, in the event we establish non-nationwide service areas, we propose to provide small businesses with a bidding credit of 15 percent and very small businesses with a bidding credit of 25 percent, as set forth in the standardized schedule in Part 1 of our Rules.²⁹⁵ We seek comment on the use of these standards and associated bidding credits, with particular focus on the appropriate definitions of small businesses, very small businesses and entrepreneurs as they may relate to the size of the geographic area to be served and the spectrum allocated to each license. In discussing these issues, commenters are requested to address the expected capital requirements for services in these bands and other characteristics of the service. Commenters are also invited to use comparisons with other services for which the Commission has already established auction procedures as a basis for their comments regarding the appropriate small business size standards.

154. If, on the other hand, we decide to adopt a nationwide licensing scheme for the 2155-2175 MHz band, we anticipate that the costs of implementing service may be very high. In the past, the Commission has declined to adopt designated entity provisions for certain services, such as the direct broadcast satellite service and the digital audio radio service, which have

²⁹² *Part 1 Third Report and Order*, 13 FCC Rcd at 388 ¶ 18; 47 C.F.R. § 1.2110 (c)(1).

²⁹³ See Implementation of Section 309(j) of the Communications Act—Competitive Bidding, PP Docket No. 93-253, *Order on Reconsideration*, 15 FCC Rcd 17384, 17394 ¶ 21 (2000) (summarizing the bidding credits offered in broadband PCS C and F Block auctions); 47 C.F.R. § 24.720 (1994); *AWS-1 Report and Order*, 18 FCC Rcd at 25221 ¶ 149; *AWS-2 Service Rules NPRM*, 19 FCC Rcd at ¶ 122 (2004). The Commission also adopted the broadband PCS standards for WCS in the 2.3 GHz band. *Part 27 Report and Order*, 12 FCC Rcd at 10879 ¶ 194.

²⁹⁴ We are coordinating these proposed small business size standards with the U.S. Small Business Administration.

²⁹⁵ In the *Part 1 Third Report and Order*, the Commission adopted a standard schedule of bidding credits, the levels of which were developed based on our auction experience. *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04 ¶ 47; see also 47 C.F.R. § 1.2110(f)(2).

extremely high implementation costs.²⁹⁶ The Commission reached this conclusion in large part because it was unclear whether small businesses could attract the capital necessary to implement and provide a nationwide service.²⁹⁷ We also note that in previous auctions of nationwide licenses in which the Commission offered bidding credits to designated entities, none of the licenses was won by a designated entity.²⁹⁸ In our recent order addressing the 700 MHz Band, however, we provided applications that are eligible to be licensed as designated entities with bidding credits in the auction of a nationwide license that will be part of the 700 MHz Public/Private Partnership based on the unique conditions imposed on that nationwide license.²⁹⁹

We seek comment on whether, if we decide to license the 2155-2175 MHz band on a nationwide basis, small business credits would be appropriate for this band.

155. Finally, we acknowledge the difficulty in accurately predicting the market forces that will exist at the time these frequencies are licensed. Thus, our forecasts of types of services that will be offered over these bands may require adjustment depending upon ongoing technological developments and changes in market conditions. To the extent commenters support a different approach to bidding credits than those discussed here, they should support their proposals with relevant information on the types of system architecture that are likely to be deployed in these bands, the availability of equipment, market conditions, and other factors that may affect the capital requirements of the types of services that may be provided.

V. PROCEDURAL MATTERS

A. *Ex Parte* Rules – Permit-But-Disclose

156. This is a permit-but-disclose notice and comment rulemaking proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed pursuant to the Commission's rules.³⁰⁰

²⁹⁶ Revision of Rules and Policies for the Direct Broadcast Satellite Service, *Report and Order*, 11 FCC Rcd 9712 (1995) (*DBS Auction Order*); Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Band, *Report and Order, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, IB Docket No. 95-91, 12 FCC Rcd 5745 (1997) (*DARS Auction Order*); cf. *700 MHz Second Report and Order* at ¶¶ 536-537 (where the Commission decided to offer bidding credits in connection with a nationwide license based on the specific service rules applicable to that license).

²⁹⁷ See *DBS Auction Order* at ¶ 217; *DARS Auction Order* at ¶¶ 174-176.

²⁹⁸ See *Announcing the High Bidders in the Auction of Ten Nationwide Narrowband PCS Licenses, Public Notice*, PNWL 94-4 (rel. August 2, 1994). In the nationwide narrowband PCS auction (Auction No. 1), bidding credits on ten nationwide licenses were offered to women- and minority-owned businesses. See also *1670-1675 MHz Band Auction Closes, Winning Bidder Announced, Public Notice*, 18 FCC Rcd 9089 (2003). In the 1670-1675 MHz Band auction (Auction No. 46), the Commission offered a bidding credit on a nationwide license in the 1670-1675 MHz band to small businesses with average annual revenues not exceeding \$40 million and very small businesses with average annual revenues not exceeding \$15 million.

²⁹⁹ See *700 MHz Second Report and Order* at ¶¶ 535-37.

³⁰⁰ See generally 47 C.F.R. §§ 1.1202, 1.1203, 1.1206.

B. Comment Period and Procedures

157. Pursuant to applicable procedures set forth in sections 1.415 and 1.419 of the Commission's rules,³⁰¹ interested parties may file comments on this Notice on or before the dates indicated on the first page of this document. Comments and reply comments should be filed in WT Docket No. 07-195, and may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.³⁰² All relevant and timely comments will be considered by the Commission before final action is taken in this proceeding.

158. Comments filed through the ECFS can be sent as an electronic file via the Internet to <<http://www.fcc.gov/e-file/ecfs.html>>. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket number. Parties may also submit an electronic comment by e-mail via the Internet. To obtain filing instructions for e-mail comments, commenters should send an e-mail to <ecfs@fcc.gov>, and should include the following words in the body of the message: "get form <your e-mail address>." A sample form and directions will be sent in reply.

159. Parties who choose to file by paper must file an original and four copies of each filing. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

160. Parties who choose to file by paper should also submit their comments on diskette. These diskettes should be attached to the original paper filing submitted to the Office of the Secretary. Such a submission should be on a 3.5 inch diskette formatted in an IBM compatible format using MicrosoftTM Word 97 for Windows or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labeled with the commenter's name, proceeding, type of pleading (comment or reply comment), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy – Not an Original." Each diskette should contain only one party's pleadings, preferably in a single electronic file. In addition, commenters should send diskette copies to the Commission's copy contractor, Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC, 20554, 202-863-2893.

³⁰¹ See 47 C.F.R. §§ 1.415, 1.419.

³⁰² Electronic Filing of Documents in Rulemaking Proceedings, *Report and Order*, 13 FCC Rcd 11322 (1998).

161. The public may view the documents filed in this proceeding during regular business hours in the FCC Reference Information Center, Federal Communications Commission, 445 12th Street, S.W., Room CY-A257, Washington, D. C. 20554, and on the Commission's Internet Home Page: <<http://www.fcc.gov>>. Copies of comments and reply comments are also available through the Commission's duplicating contractor: Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC, 20554, (202) 863-2893. Accessible formats (computer diskettes, large print, audio recording and Braille) are available to persons with disabilities by contacting Brian Millin, of the Consumer & Governmental Affairs Bureau, at (202) 418-7426, TTY (202) 418-7365, or at <bmillin@fcc.gov>.

C. Initial Regulatory Flexibility Analysis

162. As required by the Regulatory Flexibility Act of 1980 (RFA),³⁰³ the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in the Notice. The analysis is found in the attached Appendix. We request written public comment on the analysis. Comments must be filed by the same dates as listed in paragraph 157, and must have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this Notice, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

D. Initial Paperwork Reduction Analysis

163. This document contains proposed new or modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due 60 days after date of publication in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. In addition, pursuant to the Small Business Paperwork Relief Act of 2002,³⁰⁴ we seek specific comment on how we might "further reduce the information collection burden for small business concerns with fewer than 25 employees."

164. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judith Boley Herman, Federal Communications Commission, 445 12th Street, S.W., Room 1-B441, Washington, D.C. 20554, or via the Internet to <Judith-B.Herman@fcc.gov>, and to Nicholas A. Fraser, Policy Analyst, Office of Management and Budget (OMB), Room 10236, New Executive Office Building

³⁰³ 5 U.S.C. § 603.

³⁰⁴ Pub. L. 107-198, *see* 44 U.S.C. 3506(c)(4).

(NEOB), 725 17th Street, N.W., Washington, D.C. 20503, 202-395-5887, via the Internet at <nfraser@omb.eop.gov> or via fax at 202-395-5167.

E. Further Information

165. For further information concerning this rulemaking proceeding, contact Peter Daronco, Broadband Division, at (202) 418-2487, Wireless Telecommunications Bureau, Federal Communications Commission, 445 12th Street, S.W., Room 3-C124, Washington, D.C. 20554; or via the Internet to <peter.daronco@fcc.gov>.

VI. ORDERING CLAUSES

166. Accordingly, IT IS ORDERED, pursuant to sections 1, 2, 4(i), 7, 10, 201, 214, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332 and 333 of the Communications Act of 1934, 47 U.S.C. §§ 151, 152, 154(i), 157, 160, 201, 214, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, 333, that this Notice of Proposed Rulemaking is hereby ADOPTED.

167. IT IS FURTHER ORDERED that NOTICE IS HEREBY GIVEN of the proposed regulatory changes described in this Notice, and that comment is sought on these proposals.

168. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Notice, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),³⁰⁵ the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this Notice of Proposed Rulemaking (NPRM). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadline for comments provided in paragraph 157 of this NPRM. The Commission will send a copy of this NPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).³⁰⁶ In addition, the NPRM and IRFA (or summaries thereof) will be published in the *Federal Register*.³⁰⁷

A. Need for, and Objectives of, the Proposed Rules

2. The NPRM contemplates service rules for licensed fixed and mobile services, including advanced wireless services (AWS), in the 2155-2175 MHz band. These service rules include application, licensing, operating and technical rules and competitive bidding provisions for the AWS-3 spectrum band.³⁰⁸ Consistent with the Commission's policy objective of affording licensees the flexibility to deploy new technologies, to implement service innovations, and to respond to market forces, the NPRM proposes service rules that provide AWS-3 licensees with the flexibility to provide any fixed or mobile service, including advanced wireless services, that is consistent with the allocations³⁰⁹ for this spectrum. To promote flexibility, the NPRM also proposes to license this spectrum under the Commission's market-oriented Part 27 rules. The substantial flexibility provided by the Part 27 rules would encourage the deployment of a wide variety of fixed and mobile services. The market-oriented licensing framework for these bands would ensure that this spectrum is efficiently utilized and will foster the development of new and innovative technologies and services, as well as encourage the growth and development of broadband services, ultimately leading to greater benefits to consumers.

3. The NPRM seeks to adopt rules that will reduce regulatory burdens, promote innovative services, and encourage flexible use of this spectrum. Such an approach opens up economic opportunities to a variety of spectrum users, which could include small businesses. The NPRM considers various proposals and alternatives partly because the Commission seeks to minimize, to the extent possible, the economic impact on small businesses.

³⁰⁵ See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

³⁰⁶ See 5 U.S.C. § 603(a).

³⁰⁷ See *id.*

³⁰⁸ See NPRM, Section IV, *supra*.

³⁰⁹ See NPRM, note 13, *supra*.

4. The NPRM contemplates three different technological approaches. First, the NPRM contemplates an approach that would allow uplink/downlink in the band, possibly resulting in an unpaired 20-megahertz spectrum band that could be used for Time Division Duplexing (TDD) or Half-Duplex Frequency Division Duplexing (HFDD) based technology. Second, the Commission could also adopt a structured uplink/downlink approach where a mix of both base-transmit and mobile-and-base transmit services would be utilized in the band. Under this approach, some or portions of the 2155-2175 MHz band could be asymmetrically paired with other base- and mobile-transmit spectrum blocks with pairings composed of different bandwidths. Alternatively, the NPRM seeks comment on an approach that would permit only base transmissions in the band. Under this approach, some or portions of the 2155-2175 MHz band could be asymmetrically paired with other base- and mobile-transmit spectrum blocks with pairings composed of different bandwidths. The Commission contemplates rules which will determine the appropriate approach to utilize.

5. Prior to the adoption of the NPRM, the Commission adopted an *Eighth Report and Order*, in ET Docket No. 00-258, allocating 2155-2160 MHz for fixed and mobile services, including AWS, and designated the entire 2155-2175 MHz band as AWS spectrum.³¹⁰ The Commission's goal is to enable service providers to maximize the use of this spectrum with minimal transaction costs. Within the limits of the licensed fixed and mobile allocation, the marketplace and not the Commission will determine how this spectrum is used. Thus, the NPRM's proposals allow flexibility for licensees to provide third generation (3G) and other advanced wireless services in the near term, while fostering innovation and agility so they can quickly adapt to changes in technological capabilities and marketplace conditions into the future. It is the Commission's belief that the licensing and service rules proposed in the NPRM will benefit consumers by giving them the services and value that they demand, and thereby provide the new business opportunities necessary to support continued service enhancements by licensees.

6. The Commission also contemplates rules which will have the effect of setting performance requirements. An issue we frame is whether licensees in the 2155-2175 MHz band should be subject to any performance requirements in addition to a substantial service requirement at license renewal. The NPRM notes that in some services the Commission has imposed minimum coverage requirements on licensees to ensure that spectrum is used effectively and service is implemented promptly. A related issue is whether the Commission should establish any specific coverage requirements in the 2155-2175 MHz band, or whether coverage criteria should be adopted as one means, but not the exclusive means, of meeting a substantial service requirement. We propose for consideration the issue of whether licensees should be subject to interim performance requirements prior to the end of the license term.

7. The NPRM also contemplates rules that will allow licensees in the 2155-2175 MHz band to partition their service areas and to disaggregate their spectrum. If the Commission permits partitioning, then the partitioning licensee would have to include with its request a

³¹⁰ See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ET Docket No. 00-258, *Eighth Report and Order and Fifth Notice of Proposed Rulemaking and Order*, FCC 05-172, released Sept. 29, 2005 (*AWS Allocation Eighth Report and Order and Fifth NPRM*).

description of the partitioned service area, a calculation of the population of the partitioned service area, and the licensed geographic service area.

8. The NPRM also contemplates rules on a number of technical issues and licensing obligations. A major concern in this context is about how best to control in-band and out-of-band interference, appropriate power limits, RF safety limits, and Canadian and Mexican coordination.³¹¹ The NPRM also proposes to permit applicants to request common carrier status as well as non-common carrier status for authorization in a single license, rather than to require the applicant to choose between common carrier and non-common services.³¹²

9. In addition, the NPRM contemplates options for licensing the new services. For example, the FCC is considering whether to license the AWS-3 spectrum using geographic licensing, as opposed to site-by-site licensing.

10. The Commission contemplates the appropriate size(s) of the geographic service area or areas on which licenses should be based. The Commission also contemplates the benefits and costs of establishing an unlicensed regime, either in lieu of a licensed regime or as a complement to a licensed regime, and/or non-exclusive licensing approach.³¹³

11. Although the Commission does not know precisely what types of services may be developed in the 2155-2175 MHz band, the Commission anticipates that the services that will be deployed in the band may have capital requirements comparable to those in the broadband PCS service and AWS-1 in the 1710-1755 MHz and 2110-2155 MHz bands because of their adjacency, or close proximity, to the AWS-3 spectrum band and the record in related proceedings suggest similar services are being contemplated for all these bands. In particular, the Commission anticipates that licensees in the 2155-2175 MHz band will be presented with issues and capital and other cost requirements similar to those presented to broadband PCS licensees and licensees in the 1710-1755 MHz and 2110-2155 MHz bands, including issues and costs involved in relocating incumbents, and developing markets, technologies, and services. Because of those anticipated similarities and other technical and spectral benefits, the Commission is considering the possibility of uplink/downlink use, or structured uplink/downlink and or downlink use, involving asymmetrically pairing AWS-3 spectrum with adjacent AWS or PCS spectrum bands.

12. In light of these similarities, the NPRM concurrently contemplates the adoption of the same small business size standards for the 2155-2175 MHz band as the Commission adopted for broadband PCS and AWS-1 in the 1710-1755 MHz and 2110-2155 MHz bands. Accordingly, if the Commission adopts bidding credits, the NPRM proposes to define a small business as an entity with average annual gross revenues for the preceding three years not

³¹¹ See NPRM, Sections IV.D and IV.F, *supra*.

³¹² See NPRM, para. 97, *supra*.

³¹³ See NPRM para. 95, *supra*.

exceeding \$40 million, and a very small business as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million.³¹⁴

13. The Commission also proposes, in the event that it establishes non-nationwide service areas, to provide small businesses with a bidding credit of 15 percent and very small businesses with a bidding credit of 25 percent, as set forth in the standardized schedule in Part 1 of the Commission's rules. Accordingly, we frame the issue of the use of these standards and associated bidding credits for applicants to be licensed in the 2155-2175 MHz band, with particular focus on the appropriate definitions of small and very small businesses as they may relate to the size of the geographic area to be covered and the spectrum allocated to each license.

In discussing these issues, commenters are requested to address the expected capital requirements for services in these bands and other characteristics of the service. Commenters are also invited to use comparisons with other services for which the Commission has already established auction procedures as a basis for their comments regarding the appropriate small business size standards.

14. The FCC seeks comment on all the rules contemplated above and on optional ways of implementing such contemplated rules, and on any other possible rules which commenters wish to suggest and discuss relative to the Regulatory Flexibility Act.

B. Legal Basis

15. The proposed action is authorized pursuant to sections 1, 2, 4(i), 7, 10, 201, 214, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332 and 333 of the Communications Act of 1934, 47 U.S.C. §§ 151, 152, 154(i), 157, 160, 201, 214, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, 333.

C. Description and Estimate of the Number of Small Entities To Which the Proposed Rules Will Apply

16. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.³¹⁵

The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small government jurisdiction."³¹⁶ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.³¹⁷ A small business is one which: (1) is independently owned and operated;

³¹⁴ We are coordinating these proposed small business size standards with the U.S. Small Business Administration.

³¹⁵ 5 U.S.C. § 603(b)(3).

³¹⁶ 5 U.S.C. § 601(6).

³¹⁷ 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

(2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.³¹⁸

17. The Commission has not yet determined how many licenses will be awarded in the 2155-2175 MHz bands. Moreover, the Commission does not yet know how many applicants or licensees in these bands will be small entities. Thus, the Commission assumes, for purposes of this IRFA, that all prospective licensees are small entities as that term is defined by the SBA or by our proposed small business definitions for these bands. though the Commission does not know for certain which entities are likely to apply for these frequencies, we note that the 2155-2175 MHz bands are comparable to cellular service and personal communications service.³¹⁹ Accordingly, we believe the following regulated entities will be directly affected by our contemplated rules.

18. *Wireless Service Providers.* The SBA has developed a small business size standard for wireless firms within the two broad economic census categories of "Paging"³²⁰ and "Cellular and Other Wireless Telecommunications."³²¹ Under both categories, the SBA deems a wireless business to be small if it has 1,500 or fewer employees.

Paging. For the census category of Paging, Census Bureau data for 2002 show that there were 807 firms in this category that operated for the entire year.³²² Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.³²³ Thus, under this category and associated small business size standard, the majority of firms can be considered small.

Cellular and Other Wireless Telecommunications. For the census category of Cellular and Other Wireless Telecommunications, Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.³²⁴ Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.³²⁵ Thus, under this second category and size standard, the majority of firms can, again, be considered small.

³¹⁸ Small Business Act, 15 U.S.C. § 632 (1996).

³¹⁹ See IRFA at para. 14, *supra*.

³²⁰ 13 C.F.R. § 121.201, NAICS code 517211.

³²¹ 13 C.F.R. § 121.201, NAICS code 517212.

³²² U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517211 (issued Nov. 2005).

³²³ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

³²⁴ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517212 (issued Nov. 2005).

³²⁵ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

D. Description of Projected Reporting, Recordkeeping, and other Compliance Requirements

19. New recordkeeping or reporting requirements are contemplated in the NPRM. However, until the FCC resolves how to assign license(s) for the band, *e.g.*, unlicensed vs. licensed approach, these requirements are difficult to describe with great specificity because the Commission does not know precisely what types of services may be developed in the 2155-2175 MHz band.

20. Nonetheless, the following recordkeeping or reporting requirements seem applicable under a licensed approach. Entities interested in acquiring an initial license to use the spectrum in the 2155-2175 MHz band will be required to file license applications using the Commission's automated Universal Licensing System (ULS). ULS is an online electronic filing system that also serves as a powerful information tool that enables potential licensees to research applications, licenses, and antenna structures. It also keeps the public informed with weekly public notices, FCC rulemakings, processing utilities, and a telecommunications glossary. ULS also features a Geographic Information System (GIS), a digital mapping technology that identifies spectrum use in relation to geographical areas. As in other services, licensees in these bands would be allowed to provide all allowable services anywhere within their licensed area. The Commission's current mobile service license application requires an applicant for mobile services to identify the regulatory status of the service(s) they intend to provide, since service offerings may bear on eligibility and other statutory and regulatory requirements.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

21. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its adopted approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.³²⁶

22. Specifically to assist small businesses, the NPRM proposes to establish small business size standards and associated small business bidding credits for the 2155-2175 MHz band in the event that licenses are assigned by competitive bidding and licensing is based on non-nationwide geographic areas.³²⁷ The NPRM proposes a bidding credit of 15 percent for small businesses and a bidding credit of 25 percent for very small businesses. The NPRM seeks comment on whether small business bidding credits would be appropriate if a nationwide licensing scheme is adopted for the 2155-2175 MHz band. The NPRM notes that the implementation costs associated with a nationwide license in these bands is presumed to be very high, and it is not clear whether small businesses could attract the capital necessary to implement and provide nationwide service. Accordingly, we ask commenters to address the expected

³²⁶ See 5 U.S.C. § 603(c)(1)-(4).

³²⁷ See IRFA para. 14, *supra*.

capital requirements for services in these bands and other characteristics of the service. The Commission invites commenters to use comparisons with other services for which the Commission has already established auction procedures as a basis for their comments regarding the appropriate small business size standards and associated small business bidding credits. The Commission requests comment on any other alternatives to minimize significant economic impact on small entities.

23. The NPRM solicits comment on various alternatives regarding the service rules for the 2155-2175 MHz band.³²⁸ The NPRM seeks to adopt rules that will reduce regulatory burdens, promote innovative services and encourage flexible use of this spectrum. The NPRM also seeks to open up economic opportunities to a variety of spectrum users, which could include small businesses. The NPRM considers various proposals and alternatives partly because the Commission seeks to minimize, to the extent possible, the economic impact on small businesses.³²⁹ The Commission requests comment on any other alternatives to minimize significant economic impact on small entities.

24. The NPRM invites comment on various alternative licensing and service rules and on a number of issues relating to how the Commission should craft service rules for the AWS-3 spectrum that could have an impact on small entities. For example, the Commission seeks comment on the size of spectrum blocks for these frequencies and how the size of spectrum blocks would impact small entities. The NPRM proposes a geographic area approach to service areas, as opposed to a station-defined licensing approach, and seeks comment on the appropriate size of service areas. Specifically, the NPRM asks for comment on whether smaller geographic areas would better serve the needs of small entities. The NPRM explains that the Commission's approach to determining optimum geographic area license size(s) attempts to accommodate the likely range of applicant desires by balancing efficiency with the policy goal of disseminating licenses among a wide variety of applicants. The NPRM notes that the Commission wishes to foster service to rural areas and tribal lands, and to promote investment in and rapid deployment of new technologies and services. The NPRM also notes that small license areas may favor smaller entities with regional business plans and no interest in providing large-area service. In summary, the NPRM seeks comment on the advantages and disadvantages to small entities of a large geographic licensing scheme over a small one in terms of impact on rural and small entities. The Commission requests comment on any other alternatives to minimize significant economic impact on small entities.

25. As noted earlier, the NPRM seeks comment on permitting geographic partitioning and spectrum disaggregation. The NPRM notes that geographic partitioning and spectrum disaggregation is a tool utilized by the Commission to promote efficient spectrum use and economic opportunity for a wide variety of applicants, including small business, rural telephone, minority-owned, and women-owned applicants. The NPRM seeks comment on the benefits and costs of partitioning and disaggregation, and whether it promotes the public interest. Finally, the NPRM, seeks comment on whether any band-specific limits on spectrum aggregation are necessary or appropriate in this case, and how this would impact the marketplace, including

³²⁸ See, e.g., NPRM, paras. 86-91, *supra*.

³²⁹ See, e.g., NPRM, paras. 150-155 (competitive bidding provisions for designated entities), *supra*.

small entities. The Commission requests comment on any other alternatives to minimize significant economic impact on small entities.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

26. None.

**STATEMENT OF
CHAIRMAN KEVIN J. MARTIN**

Re: *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Notice of Proposed Rulemaking.

Today's Notice of Proposed Rulemaking ("NPRM") will give due consideration to the variety of proposals for the use of the 2155-2175 megahertz band. Opening this proceeding will allow the Commission to take full consideration of the many suggestions for use of this band, and facilitate full input by all parties and the public as to the best use of this spectrum. For example, many have suggested that we should auction this spectrum band, while still others suggest that due to the high demand for this spectrum we should consider unlicensed use of the band. Some have also suggested that we should condition this band on requirements including openness to devices and/or with the winner being required to provide 384 kbps downstream and 128 kbps upstream of access for free. This NPRM will enable us and the public to give full attention to each of these suggestions, and enable the Commission to adopt flexible rules that will encourage the innovative use of this unique piece of spectrum.

Promoting broadband deployment and increasing penetration continues to be one of the Commission's highest priorities. This spectrum has the potential to encourage the provision of a variety of broadband services in support of this goal, and I am pleased that the Commission has committed to address these issues in a prompt manner. I look forward to working with my colleagues to bring this spectrum's potential to the public quickly.

**STATEMENT OF
COMMISSIONER MICHAEL J. COPPS**

Re: *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Notice of Proposed Rulemaking.

Today's NPRM seeks comment on a variety of options for how the Commission can license the AWS-3 spectrum band to best serve the public interest. These options include: (1) opening this spectrum to unlicensed use, as has proved so productive in other bands; (2) designating it for an open access model that would combine wholesale broadband access and a *Carterfone* mandate; (3) using it to provide free, advertiser-supported broadband service (as initially proposed by M2Z and then by NetfreeUS) as well as a fee-based premium broadband service; or (4) allocating it through a traditional, largely unconditioned auction.

I believe a general rulemaking—in which interested parties from industry and the public interest community, as well as members of the public, are free to comment—is plainly the right way for the Commission to decide among these various models. I am especially pleased that my colleagues have agreed to commit to issuing service rules for the AWS-3 band within 9 months from the date this item is published in the Federal Register. The one outcome that would plainly *not* serve the public interest is for this spectrum to remain unavailable for advanced wireless services.

**STATEMENT OF
COMMISSIONER JONATHAN S. ADELSTEIN**

Re: *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Notice of Proposed Rulemaking.

Today, the Commission finally is initiating a Notice of Proposed Rulemaking that seeks comment on service rules for the 2155-2175 MHz band. It has been several years since the Commission designated this spectrum for use by advanced wireless services and over a year since parties first expressed specific interest in seeking authority to operate in the band. As we have heard over the past 18 months, this band holds great promise for operators to introduce new offerings of innovative wireless broadband services to American consumers.

But unused spectrum is a lost opportunity. While I would have preferred that we address the keen interest carriers already have demonstrated in the 2155-2175 MHz band much sooner than today, I nevertheless am pleased that we are finally moving forward to put into place the framework for the innovative and efficient use of this spectrum.

I have talked many times in the past about my belief that wireless broadband is one of the keys to economic growth in this digital information age. It is a key that can open the door to educational and economic opportunities to communities across America, enriching people's lives. So I cannot emphasize enough the important responsibility we have to make vibrant, spectrum-based communications opportunities, like those presented by the 2155-2175 MHz band, available to more consumers and companies. The Commission has to do what it can to promote opportunities to expand wireless connectivity and to ensure that available and desired spectrum is put to use in a timely fashion. In this regard, I am pleased that we are committing to conclude this proceeding and make this spectrum available in a fixed timeframe, although I would have preferred to do it sooner.

**STATEMENT OF
COMMISSIONER DEBORAH TAYLOR TATE**

Re: *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Notice of Proposed Rulemaking.

The rules we adopt today for the 2155-2175 MHz band represent our continuing commitment to ensure the availability of spectrum for innovative and advanced services, especially broadband services. This band is the third piece of the Advanced Wireless Services (AWS) spectrum, and thus also known as the AWS-3 band. As the name indicates, this AWS spectrum may enable advanced services like gaming, live video, rapid surfing of the Internet, and the downloading of massive data files for shared research – all wirelessly. In short, this spectrum is an important national resource which will serve providers and customers that need and want such advanced services, no matter where they may be.

A number of extremely creative proposals to use this spectrum have been submitted to the Commission. I have found many of these proposals to be very intriguing, not least because they demonstrate the incredible variety of ways in which diverse business interests consider using the AWS-3 band. Precisely because there are so many creative ideas about how to use such valuable spectrum, I support today's Notice of Proposed Rulemaking to move the Commission forward in determining the most appropriate service rules for the band.

I appreciate discussions about how our policy choices may lower the cost of broadband service to consumers. I also appreciate the value of a "family friendly" provider of broadband services and encourage input as to how the Commission should balance the needs of families in protecting their children with constitutional and statutory requirements. In addition, I wish to encourage a healthy discussion of other potential obligations, which could include performance requirements to help promote service in rural areas and more opportunities for services to enhance public safety. For all of these potential obligations, I intend to consider such policies in light of the decisions the Commission already has made for rules pertaining to other valuable spectrum, especially the other AWS bands and the 700 MHz band.

I agree with my colleagues who urge that the rules for this band be established as quickly as possible in order to launch new services that may benefit consumers. The sooner we establish appropriate rules and make this spectrum available, the sooner providers may be able to make available advanced services that enable consumers to be more productive in their jobs, acquire information they need to benefit their health or quality of life, and educate and entertain themselves and their families.

Accordingly, I support today's Notice and look forward to prompt yet thorough consideration of the important issues in this proceeding. I also thank the staff of the Wireless Bureau for all their work on this item.