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

In the Matter of	)	
	)	
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
	)	
Service Rules for Advanced Wireless Services In the 1.7 GHz and 2.1 GHz Bands	)	WT Docket No. 02-353

NINTH REPORT AND ORDER AND ORDER

Adopted: April 12, 2006 **Released: April 21, 2006**

By the Commission: Commissioners Adelstein and Tate issuing separate statements.

TABLE OF CONTENTS

I. INTRODUCTION

1. In this *Ninth Report and Order* ("*Ninth R&O*") in ET Docket No. 00-258, we establish procedures for the relocation of Broadband Radio Service (BRS) operations from the 2150-2160/62 MHz band.[1] We also establish procedures for the relocation of Fixed Microwave Service (FS) operations from the 2160-2175 MHz band and modify existing relocation procedures for the 2110-2150 MHz and 2175-2180 MHz bands. In addition, we adopt cost-sharing rules to identify the reimbursement obligations for Advanced Wireless Service (AWS) and Mobile Satellite Service (MSS) entrants benefiting from the relocation of incumbent FS operations in the 2110-2150 MHz and 2160-2200 MHz bands and AWS entrants benefiting from the relocation of BRS incumbents in the 2150-2160/62 MHz band. The Commission, in earlier decisions in this docket, has allocated the spectrum in the 2150-2160/62 MHz and 2160-2175 MHz bands for AWS.[2] Advanced wireless systems could provide, for example, a wide range of voice, data, and broadband services over a variety of mobile and fixed networks. In establishing these relocation procedures, we facilitate the introduction of AWS in these bands, while also ensuring the continuation of BRS and FS service to the public. In the *Order* in WT Docket No. 02-353, we dismiss a petition for reconsideration filed by the Wireless Communications Association International, Inc. (WCA) as moot.

II. BACKGROUND

2. Over the course of this proceeding, we have considered whether various spectrum bands should be used for AWS and, if so, what relocation mechanisms would be appropriate to relocate existing services in the bands. This *Ninth R&O* looks primarily at relocation procedures for 25 megahertz of spectrum at 2150-2160/62 MHz and 2160-2175 MHz that has already been reallocated for AWS and that contains incumbent BRS and FS licensees.

3. BRS operations in the 2150-2160/62 MHz band consist of two channels – channel 1 (2150-2156 MHz) and channel 2A (2156-2160 MHz).[3] Licensees may also use channel 2 (2156-2162

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[1] The Multipoint Distribution Service (MDS) was renamed the Broadband Radio Service (BRS) in the *BRS R&O*. *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 MHz and 2500-2690 MHz Bands, WT Docket No. 03-66, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 14165 (2004) ("*BRS R&O and FNPRM*"); *Third Memorandum Opinion and Order and Second Report and Order*, FCC 06-46 (adopted April 12, 2006) ("*BRS Third MO&O and Second R&O*"). Therefore, all former MDS licensees are now referred to as BRS licensees. As noted in para. 3, *infra*, BRS uses 2160-2162 MHz only in the top 50 markets. In WT Docket 03-66, as part of an overall restructuring of the BRS spectrum, the Commission established a channel plan in the 2496-2690 MHz band that is designed to accommodate BRS licensees that currently operate in the 2150-2162 MHz band.

[2] Advanced Wireless Service (AWS) 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 success of such current-generation commercial wireless services as cellular and Broadband PCS, the services ultimately provided by AWS licensees are only limited by the fixed and mobile designation of the spectrum we allocate for AWS and the service rules we ultimately adopt for the bands.

[3] Historically, the 2150-2160/62 MHz and 2500-2690 MHz bands were predominantly used for one-way analog video transmission. Increasingly, BRS operators are using these bands for two-way digital broadband services. In October 1996, the Commission decided to allow high-speed digital data applications on BRS operations, including Internet access. Then, in 1998, the Commission approved the use of two-way transmissions by the BRS, effectively enabling the provision of voice, video, and data services. In 2001, a mobile, except aeronautical mobile, service allocation was added to the 2500-2690 MHz band. *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, *First Report and Order and Memorandum Opinion and Order*, 16 FCC Rcd 17222 (2001) ("*AWS First R&O and MO&O*"). Under an informal (continued....)

MHz) on a limited basis in 50 cities.[4] This spectrum was first identified for potential reallocation in the 2001 *AWS Further Notice*.[5] At that time, the Commission proposed that, in the event that it reallocated frequency bands used by BRS, it would look to the *Emerging Technologies* principles by which new entrants were obligated to provide incumbents with comparable facilities in order to obtain early access to the spectrum.[6] The BRS Channel 1 and 2A spectrum was reallocated in two subsequent proceedings: the *AWS Second R&O*, in which the Commission reallocated and designated a five megahertz portion of the BRS band at 2150-2155 MHz that is now part of the 90 megahertz of AWS spectrum that is part of the upcoming Auction No. 66;[7] and the *AWS Eighth R&O*, in which the 2155-2160 MHz portion of the band was reallocated.[8]

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agreement among BRS licensees, the principal use of the 2150-2160/62 MHz band is for response stations transmitting to hub stations, which are generally known as upstream communications. A response station in a two-way system is a customer-premises transceiver used for the reception of downstream and transmission of upstream signals as part of a large system of such stations licensed under the authority of a single license. A downstream maximum equivalent isotropic radiated power (e.i.r.p.) of 33 dBW (2000 Watts) per six megahertz is permitted. A hub station is a receive-only station licensed as part of a system of response stations in a two-way system and used for the purpose of receiving the upstream transmissions of those response stations. *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 Rule Making, and Second Memorandum Opinion and Order*, 18 FCC Rcd 2223 at 2253-54, ¶ 66, n.163 (2003) ("*AWS Third R&O, Third NPRM and Second MO&O*").

[4] The Commission provided the BRS service with an extra two megahertz in the 50 largest metropolitan areas so that there would be sufficient bandwidth (six megahertz) for a second analog television channel. The two megahertz at 2160-2162 MHz can only be assigned where there is evidence that no harmful interference would occur to any authorized co-frequency point-to-point facility. *See* 47 C.F.R. § 27.5(i)(1); 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).

[5] *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, *Memorandum Opinion and Order and Further Notice of Proposed Rule Making*, 16 FCC Rcd 16043 at 16060-61, ¶¶ 38-41 (2001) ("*AWS Further Notice*"). BRS operations in the 2160-2162 MHz band had previously been identified, as part of the 2160-2165 MHz band, as potential AWS spectrum in the underlying *Notice of Proposed Rulemaking* that initiated this docket. *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, *Notice of Proposed Rule Making and Order*, 16 FCC Rcd 596 (2001) ("*AWS Notice*").

[6] *See AWS Further Notice*, 16 FCC Rcd at 16061, ¶ 40.

[7] *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, 23212-13 at ¶¶ 40-41 (2002) ("*AWS Second R&O*"). In that decision, the Commission also recognized that the reallocation of the five megahertz spectrum block to AWS raised a number of issues, including the establishment of a relocation plan for incumbent licensees, but left these matters for future rulemaking decisions within the proceeding. *See also* FCC to Commence Spectrum Auction that will Provide American Consumers New Wireless Broadband Services, *News Release*, (rel. Dec. 29, 2004) (describing plans for Auction No. 66). We previously adopted service rules for this band. *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 Order*"); *Order on Reconsideration*, 20 FCC Rcd 14058 (2005).

[8] *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, Fifth Notice of Proposed Rule Making, and Order*, 20 FCC Rcd 15866 (2005) ("*AWS Eighth R&O and Fifth Notice*"). With respect to the 2155-2160/62 MHz band, (continued....)

4. BRS operations in the 2150-2160/62 MHz band are now regulated under Part 27 of our Rules.[9] In 1992, the Commission implemented a rule by which incumbent BRS licensees that were using the 2160-2162 MHz band would continue such use on a primary basis.[10] However, any BRS station that applied for use of this band after January 16, 1992, would be granted a license only on a secondary basis to emerging technology use.[11] In 1996, the Commission auctioned licenses for BRS channels on a Basic Trading Area (BTA) basis but noted that BRS channel 2 licenses using the 2160-2162 MHz band were secondary to emerging technology licenses.[12]

5. On July 29, 2004, the Commission released the *BRS R&O and FNPRM* in WT Docket No. 03-66 that initiated a fundamental restructuring of BRS operations, including those licensees operating on channels 1 and 2/2A.[13] This decision, which was intended to provide existing and new licensees with enhanced flexibility to provide high-value services in a newly expanded 2496-2690 MHz band, included a revised band plan designed to re-accommodate existing BRS licensees in the 2150-2160/62 MHz band to other frequencies in order to allow these licensees to be integrated with similar operations.[14] Specifically, the Commission adopted a band plan in which existing BRS channel 1 (2150-

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which consists of BRS channels 2 and 2A and the upper one megahertz of BRS channel 1, we have not yet established new service rules for this band.

[9] *See* 47 C.F.R. Part 27 – Miscellaneous Wireless Communications Services (2004); *BRS R&O and FNPRM*, 19 FCC Rcd 14165 (2004).

[10] The Commission took this action as part of the reallocation of the larger 2160-2165 MHz band to emerging technologies. *See* Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 at 6889-90, ¶ 21 (1992) ("*Emerging Technologies First R&O and Third NPRM*"). In the *AWS Third NPRM*, the Commission noted that there were 27 BRS licenses for the 2160-2162 MHz band on a primary basis. *See* Appendix E, attached to the *AWS Third NPRM*.

[11] *See* 47 C.F.R. § 2.106, footnote NG153.

[12] *See* http://wireless.fcc.gov/auctions/06/ for information on Auction No. 6. This auction made available a maximum of 78 megahertz of primary spectrum in each BTA, but with the caveat that BTA licensees would protect incumbent stations. In the MDS Bidder Information Package, the Commission noted: "In 1992, the 2160-2162 MHz frequency was reallocated to emerging technologies, and thus, any subsequent MDS use of these 2 MHz will be secondary." *See* FCC Auction [for] Multipoint and/or Multichannel Distribution Service (MDS) Authorizations for Basic Trading Areas, Bidder Information Package (1995), at 21 (available at http://wireless.fcc.gov/auctions/06/releases.html). In the *AWS Third NPRM*, the Commission noted that there were 16 BRS stations operating with secondary status. *See* Appendix E, attached to the *AWS Third NPRM*.

[13] *See BRS R&O and FNPRM*, 19 FCC Rcd at 14169-70, ¶ 6. The Commission had previously considered but rejected the use of the 2500-2690 MHz band for AWS. *See AWS First R&O and MO&O*, 16 FCC Rcd 17222 (2001). The Commission adopted a primary Fixed and Mobile (except aeronautical mobile) allocation for the 2495-2500 MHz band so that this spectrum could be integrated with the revised BRS band plan in the 2500-2690 MHz band. *See* Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands; Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Service to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, IB Docket No. 02-364, ET Docket No. 00-258, *Report and Order, Fourth Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 13386 (2004) ("*Big LEO Spectrum Sharing Order*"), *aff'd by Order on Reconsideration and Fifth Memorandum Opinion and Order*, FCC 06-46 (adopted April 12, 2006).

[14] *See BRS R&O*, 19 FCC Rcd at 14177-78, ¶¶ 23-24. There are other BRS channels in the 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz, and 2674-2680 MHz bands, as well as response channels in the 2686-2690 MHz band. *See AWS First R&O and MO&O*, 16 FCC Rcd 17222 (2001).

2156 MHz) would transition to the new BRS channel 1 at 2496-2502 MHz and existing BRS channel 2/2A (2156-2160/62 MHz) to the new BRS channel 2 at 2618-2624 MHz.[15]

6. The 2160-2165 MHz band is currently used in the United States for non-Federal Government fixed and mobile services licensed under the Miscellaneous Wireless Communications Services in Part 27 of the Rules (formerly licensed as the Domestic Public Fixed Radio Services in Part 21 of the Rules), the Public Mobile Services under Part 22 of the Rules, and the Fixed Microwave Services in Part 101 of the Rules.[16] The Commission originally identified the 2160-2165 MHz band for new advanced fixed and mobile services in the 1992 *Emerging Technologies* proceeding and adopted rules and procedures to permit new licensees to relocate existing fixed microwave services from this spectrum band.[17] This band was first identified as suitable AWS spectrum in 2001, as part of the *AWS Notice*.[18]

7. The 2165-2175 MHz band is currently used by commercial and private FS licensees. These licensees provide telephone communications, communications for industry, and public safety communications.[19] This spectrum had previously been reallocated for 2 GHz MSS operations, but, as part of the *AWS Third R&O*, was further reallocated to Fixed and Mobile services in order to promote the introduction of new advanced services, including AWS.[20] Because MSS operations had not commenced in the band at the time the spectrum was reallocated for AWS, and therefore no relocation proceedings had been initiated, the legacy FS licensees continue to operate in the band. The FS operations in these bands are typically configured to provide two-way microwave communications between paired links. In this case, the FS links in the 2160-2200 MHz band (of which the 2160-2175 MHz band at issue in this decision is a subset) are paired with the links in the 2110-2150 MHz band. We note that the 2110-2150 MHz band was part of the 90 megahertz reallocated for AWS in the *AWS Second R&O*.[21] In the *AWS Eighth R&O*, the Commission designated the 2155-2175 MHz band for AWS use and, as indicated above, allocated the 2155-2160 MHz band to Fixed and Mobile Services in order to allow the provision of AWS in this band.[22]

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[15] *See BRS R&O*, 19 FCC Rcd at 14183-84, ¶ 37-38.

[16] *See* 47 C.F.R. Parts 22, 27, and 101. As discussed above, the 2160-2162 MHz portion of this band also includes BRS Channel 2 licensees.

[17] *See Emerging Technologies First R&O and Third NPRM*, 7 FCC Rcd at 6889-90, ¶ 21.

[18] *See AWS Notice*, 16 FCC Rcd 596 (2001).

[19] *See* Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, ET Docket No. 95-18, *Third Report and Order and Third Memorandum Opinion and Order*, 18 FCC Rcd 23638 at ¶ 65 (2003) ("*MSS Third R&O*").

[20] *See AWS Third R&O*, 18 FCC Rcd 2223 at 2238, ¶ 28. The 2165-2175 MHz band was part of the larger 2165-2180 MHz band that was reallocated in the *AWS Third R&O* from MSS use. This reallocated MSS spectrum was originally part of a 2165-2200 MHz band designated for satellite downlink operations.

[21] *See AWS Second R&O*, 17 FCC Rcd 23193 (2002).

[22] *AWS Eighth R&O*, 20 FCC Rcd at 15872, ¶ 9. We note that we are not deciding here how to assign this new AWS spectrum at 2155-2175 MHz but will consider this issue in a separate service rules proceeding at a later date. We also note that a current bilateral agreement in the 2155-2160/62 MHz band between the United States and Canada provides for coordinated use of BRS and Educational Broadband Service (EBS) along the common border. The sharing of the 2160/62-2175 MHz band between the United States and Canada is covered by Arrangement A of the *Agreement Concerning the Coordination and Use of Radio Frequencies Above Thirty Megacycles per Second*, with Annex, as amended. There are no agreements with Mexico in the 2155-2175 MHz band. Accordingly, we note that there may be a need to negotiate new or modified agreements to provide for more flexible use of the spectrum with Canada and Mexico along the common international borders. *Id.* at 15872, ¶ 10.

8. Throughout the AWS proceedings, the Commission has examined the relocation needs for licensees that occupy reallocated spectrum bands and has previously sought comment on the use of the *Emerging Technologies* policies for the relocation of these licensees.[23] The relocation policy adopted in the *Emerging Technologies* proceeding was designed to allow early entry for new technology providers into reallocated spectrum by allowing providers of new services to negotiate financial arrangements for the reaccommodation of incumbent licensees.[24] Our relocation policy was also designed to allow gradual relocation of incumbents during which, as the new entrant deployed individual sites throughout its geographic licensed area over time, the new entrant was then obligated to relocate incumbent facilities on a link-by-link basis (in the case of microwave facilities), based on an interference analysis using specified interference criteria.[25] In addition, under our *Emerging Technologies* policy, new entrants were required to provide incumbents with comparable replacement facilities that would allow them to maintain the same service in terms of three factors: throughput, reliability, and operating costs.[26] Further, our policy provided for two stages of negotiations – a voluntary period, followed by a mandatory period – during which new entrants and incumbents were required to negotiate the terms for relocation in good faith.[27] Recent relocation decisions have forgone the voluntary stage and instead required only a mandatory negotiation period.[28] If no agreement was reached during negotiations, the new entrant was permitted to proceed to the involuntary relocation of the incumbent. During the involuntary relocation process, our *Emerging Technologies* procedures required new entrants to construct, test, and deliver replacement facilities comparable to facilities in use by the incumbent at the time of relocation, subject to a one year "right of return" (*i.e.*, if after a twelve month trial period the new facilities prove not to be comparable to the old facilities, the incumbent could return to the old frequency band or otherwise be relocated or reimbursed).[29] Finally, our *Emerging Technologies* policy applies a sunset rule to relocations, typically a ten year period, after which new entrants are no longer obligated to pay relocation expenses to incumbents and may require that the incumbent cease operations.[30]

9. Most recently, the *AWS Fifth Notice* sought comment on the use of the *Emerging Technologies* policies in establishing specific relocation procedures that are applicable to BRS operations

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[23] *See, e.g., AWS Third NPRM*, 18 FCC Rcd at 2256-57, ¶¶ 71-73 (exploring the relocation needs for the BRS licensees in the 2150-2160/62 MHz band).

[24] *See* Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 (1992); *Second Report and Order*, 8 FCC Rcd 6495 (1993); *Third Report and Order and Memorandum Opinion and Order*, 8 FCC Rcd 6589 (1993); *Memorandum Opinion and Order*, 9 FCC Rcd 1943 (1994); *Second Memorandum Opinion and Order*, 9 FCC Rcd 7797 (1994); *aff'd Association of Public Safety Communications Officials-International, Inc. v. FCC*, 76 F.3d 395 (D.C. Cir. 1996) (collectively, "*Emerging Technologies* proceeding"). *See also Teledesic, LLC v. FCC*, 275 F.3d 75 (D.C. Cir. 2001) (affirming modified relocation scheme for new satellite entrants to the 17.7 – 19.7 GHz band). *See also* Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation, WT Docket No. 95-157, *First Report and Order and Further Notice of Proposed Rule Making* , 11 FCC Rcd 8825 (1996); *Second Report and Order*, 12 FCC Rcd 2705 (1997); *Memorandum Opinion and Order on Reconsideration*, 15 FCC Rcd 13999 (2000) (collectively, "*Microwave Cost Sharing* proceeding").

[25] *Id.*

[26] *See Emerging Technologies Third R&O*, 8 FCC Rcd at 6591 & 6603, ¶¶ 5 & 36; *Microwave Cost Sharing First R&O*, 11 FCC Rcd 8825 at ¶¶ 27-34.

[27] *See Emerging Technologies Third R&O*, 8 FCC Rcd at 6595, ¶ 15.

[28] *See, e.g.*, Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, ET Docket No. 95-18, *Second Report and Order and Second Memorandum Opinion and Order*, 15 FCC Rcd 12315 (2000) ("*MSS Second R&O and Second MO&O*").

[29] *See Emerging Technologies First R&O*, 7 FCC Rcd 6886 at ¶ 24.

[30] *See Microwave Cost Sharing First R&O*, 11 FCC Rcd 8825 at ¶¶ 65-68.

in the 2150-2160/62 MHz band, as well as for the relocation of FS incumbents in the 2160-2175 MHz band. In the *Order* portion of the *AWS Eighth R&O, Fifth Notice and Order*, the Commission required that BRS licensees in the 2150-2160/62 MHz band provide information on the construction status and operational parameters of each incumbent BRS system that would be the subject of relocation.[31] The record developed in response to the *AWS Fifth Notice* and *Order*, as well as in the broader AWS docket, provides the basis for the relocation procedures we establish in this *Ninth R&O*.

III. NINTH REPORT AND ORDER

10. In this *Ninth R&O*, we discuss the specific relocation procedures that will apply to BRS and FS incumbents in the 2150-2160/62 MHz and 2160-2175 MHz bands, respectively.[32] We also discuss the cost-sharing rules that identify the reimbursement obligations for AWS and MSS entrants benefiting from the relocation of incumbent FS operations in the 2110-2150 MHz and 2160-2200 MHz bands and AWS entrants benefiting from the relocation of BRS incumbents in the 2150-2160/62 MHz band.

A. Relocation of BRS in the 2150-2160/62 MHz Band

11. In the *AWS Fifth Notice*, we proposed to generally apply our *Emerging Technologies* policies to the relocation procedures new AWS entrants should follow when relocating BRS incumbent licensees from the 2150-2160 MHz band.[33] Comments generally support our proposal to use *Emerging Technologies* policies for relocation, with modifications to accommodate the incumbents in the band at issue.[34] The Commission has used the *Emerging Technologies* policies in establishing relocation schemes for a variety of new entrants, such as Personal Communications Services (PCS) licensees, MSS licensees, 18 GHz Fixed Satellite Service (FSS) licensees, and Sprint Nextel, in frequency bands occupied by different types of incumbent operations.[35] In establishing these relocation schemes, the Commission

[31] *See AWS Eighth R&O, Fifth Notice and Order*, 20 FCC Rcd 15866, 15890 at ¶ 53. *See also* "Licensees of Broadband Radio Service Channels 1 and/or 2/2A Must File Site and Technical Data By December 27, 2005," *Public Notice*, DA 05-3126 (rel. November 30, 2005) ("*BRS Data Collection Public Notice*").

[32] Several parties commented on issues regarding the Commission's new BRS band plan at 2496-2690 MHz and its suitability as replacement spectrum for BRS incumbents currently occupying the 2150-2160/62 MHz band. *See, e.g.*, WCA Comments at 46-50; Polar/Northern Wireless Reply at 9-10; W.A.T.C.H. TV Reply at 8; Sprint Nextel Reply at 8-10; SpeedNet Reply at 3; C&W Reply at 3; BellSouth Reply at 7. These issues have been addressed in the *Big LEO Spectrum Sharing Order on Reconsideration and Fifth MO&O, BRS/EBS Third MO&O and Second R&O*, FCC 06-46 (adopted April 12, 2006).

[33] *See generally, AWS Fifth Notice*, 20 FCC Rcd at 15873-82, ¶¶ 13-29.

[34] *See, e.g.*, Verizon Comments at 2; CTIA Comments at 3-4; US Cellular Reply at 2; T-Mobile Reply at 1-2.

[35] *See, e.g., supra* note 24; Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for use by the Mobile-Satellite Service, ET Docket No. 95-18, *Second Report and Order and Second Memorandum Opinion and Order*, 15 FCC Rcd 12315 (2000) ("*MSS Second R&O*"); Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use, IB Docket No. 98-172, *Report and Order*, 15 FCC Rcd 13340 (2000) ("*18 GHz Relocation Proceeding*"), *aff'd sub nom., Teledesic LLC v. FCC*, 275 F.3d 75 (D.C. Cir. 2001); and Improving Public Safety Communications in the 800 MHz Band, Consolidating the 800 and 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket 02-55, 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, Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for use by the Mobile Satellite Service, ET Docket No. 95-18, *Report and Order, Fourth Report and Order, Fourth Memorandum Opinion and Order, and Order*, 19 FCC Rcd 14969 (2004) ("*800 MHz R&O*"). The Commission has made modifications to the relocation procedures, when warranted, to address unique characteristics of the new entrants, incumbent operations and/or nature of the reallocated spectrum.

has found that the *Emerging Technologies* relocation policies best balance the interest of new licensees seeking early entry into their respective bands in order to deploy new technologies and services with the need to minimize disruption to incumbent operations used to provide service to customers during the transition.

12. BRS operators are providing four categories of service offerings today: 1) downstream analog video; 2) downstream digital video; 3) downstream digital data; and 4) downstream/upstream digital data.[36] Licensees and lessees have deployed or sought to deploy these services via three types of system configurations: high-power video stations, high-power fixed two-way systems, and low-power, cellularized two-way systems.[37] Traditionally, BRS licensees were authorized to operate within a 35-mile-radius protected service area (PSA) and winners of the 1996 MDS auction were authorized to serve BTAs consisting of aggregations of counties.[38] In the proceeding that restructured the BRS band at 2496-2690 MHz, the Commission adopted a geographic service area (GSA) licensing scheme for existing BRS incumbents.[39] Therefore, BRS relocation procedures must take into account the unique circumstances faced by the various incumbent operations and the new AWS licensees.

13. As an initial matter, it appears that there are active BRS channel 1 and/or 2/2A operations throughout the United States, with many licensees serving a relatively small customer base of several thousand or fewer subscribers each. We draw this conclusion from a number of sources of information, including BRS operations data submitted to the Commission in response to the *Order* portion of the *AWS Eighth R&O, Fifth Notice and Order*, as well as pleadings in the record of this proceeding including representations made by WCA, an industry group that represents many BRS licensees. In response to our request for information to assist in determining the scope of AWS entrants' relocation obligations,

[36] *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 MHz Band, WT Docket No. 03-66, *Notice of Proposed Rule Making and Memorandum Opinion and Order*, 18 FCC Rcd 6722 at 6734, ¶ 23 (2003) ("*BRS NPRM*").

[37] *Id.*

[38] *BRS NPRM*, 18 FCC Rcd at 6734-35, ¶ 24.

[39] *See BRS R&O*, 19 FCC Rcd at 14189-94, ¶¶ 52-67. The GSA is based on the protected service area (PSA), generally the area within a 35 mile radius of the transmitter site, contained in the BRS licensee's site-based license. The PSA for a BRS BTA authorization holder is generally the area that is coterminous with the boundaries of the BTA (subject to the exclusion of the 35-mile PSAs of former MDS licensees). *Id.*, 19 FCC Rcd at 14190-91, ¶ 55.

69 BRS licensees provided information on 127 stations.[40] An examination of this data indicates that BRS operations can be found across the United States, in approximately 65 of the 176 U.S. Economic Areas.[41]

14. WCA has estimated that BRS channels 1 and/or 2 are used in 30-50 markets in the U.S., providing "tens of thousands" of subscribers in urban and rural areas with wireless broadband service, and in some cases, multichannel video programming service.[42] While Sprint Nextel appears to be the largest licensee with approximately 20,000 subscribers in 14 markets across the country,[43] many operators have described smaller operations in more discrete geographic areas. These include: C&W Enterprises, Inc., using BRS channel 1 and leased EBS channels to provide video and data services to approximately 1,500 subscribers in San Angelo, Texas; Evertek, Inc., using BRS channel 1 in Everly, Palmer, and Sioux City, Iowa to provide upstream broadband services to more than 1,000 subscribers; Northern Wireless Communications providing broadband services on BRS channels 1 and 2 to approximately 725 subscribers from hub sites located in Aberdeen and Redfield, South Dakota, and also providing multichannel video programming to approximately 950 subscribers; Polar Communications providing broadband services to more than 500 subscribers from its BRS channels 1 and 2 hub sites located in the Grand Forks, North Dakota BTA; Sioux Valley Wireless providing wireless broadband and multichannel video services to approximately 5,800 subscribers, 2,300 of which subscribe to wireless broadband, in rural areas in and around Sioux Valley, South Dakota, and surrounding communities in South Dakota, Iowa, Nebraska, and Minnesota; SpeedNet using BRS channels 1 and 2 for upstream Internet provision to approximately 4,000 customers in Alpena, Bad Axe, Mt. Pleasant, and Saginaw, Michigan; and W.A.T.C.H. TV providing over 200 channels of digital video and audio to over 12,000 subscribers in and around Lima, Ohio, with more than 5,000 subscribers using BRS channels 1 and 2 for upstream wireless broadband.[44]

15. As we discuss in detail below, we apply our *Emerging Technologies* relocation policies, with some modifications to accommodate the type of incumbent operations that are the subject of

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[40] *See AWS Eighth R&O, Fifth Notice and Order*, 20 FCC Rcd 15866, 15890 at ¶ 53. *See also BRS Data Collection Public Notice*, DA 05-3126 (2005). We note that subscriber information was not part of this technical data filing. Although our license records indicate there are approximately 565 active BRS licenses in the 2150-2160/62 MHz band, licensees that did not have constructed and/or operational facilities were not required to file system information in response to the *Order*. A logical conclusion that can be drawn from the disparity between licensed records and the data generated in response to the *Order* is that many licensees do not have constructed and operational facilities. This is also generally consistent with WCA's estimates of the number and scope of operating BRS Channel 1 and 2 facilities. The *BRS Data Collection Public Notice* also noted that the failure to timely file the mandatory data regarding the construction status and/or operational parameters of a BRS system could risk prejudicing any right to seek relocation or reimbursement for such constructed and operational facilities. Based on the information that we have collected and the text of the *BRS Data Collection Public Notice*, we conclude that BRS licensees who did not file under the mandatory data collection requirements contained in the *BRS Data Collection Public Notice*, and who subsequently claim that they are entitled to relocation or reimbursement, have the burden to demonstrate to an AWS entrant that they meet the relocation eligibility requirements provided in this *Ninth R&O*. Furthermore, an AWS entrant that does not engage in relocation negotiations with such BRS licensees, absent this showing, is not subject to a claim that it is failing to act in good faith.

[41] Economic Areas (EAs) are geographical regions that are defined by the Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce February 1995. EAs, as modified by the Commission to encompass all the geographic areas in which the Commission licenses radio spectrum, are used as one means of defining geographic service area licenses. *See* 62 FR 9636 (March 3, 1997). *See* 47 C.F.R. § 27.6 Note 2 to Paragraph (b)(2)(i).

[42] WCA Comments at 2-3. For example, WCA reports that CommSpeed is serving 2,000 subscribers in rural areas of Northern Arizona.

[43] *See* Sprint Nextel Comments at 1.

[44] *See* C&W Comments at 1; Evertek Reply at 1; Polar/Northern Wireless Reply at 2; Sioux Valley Wireless Reply at 2; SpeedNet Comments at 1; W.A.T.C.H. TV Company Reply at 2.

relocation, to BRS relocations in the 2150-2160 MHz band. The primary features of the relocation policies for BRS are as follows:

- BRS incumbents will be relocated on a system-by-system basis based on potential interference to any BRS receive station hub or any end user receiver, depending on system design. A system is comprised of a base station with its associated end user units. Interference potential will be based on line of sight for co-channel operations.
- The relocation schedule will be determined by the AWS entrant's build-out of its network. AWS licensees may not begin operations prior to relocating BRS facilities with which potential interference exists.
- BRS incumbents are entitled to comparable facilities, *i.e.*, facilities that maintain throughput, reliability, and operating costs of existing facilities, including end user equipment used to receive BRS service. Because AWS and BRS licensees are potential competitors, BRS licensees do not have to disclose customer identities or locations to AWS entrants. Leased facilities may be the basis for determining comparable facilities, and licensees may include a lessee in negotiations.
- BRS licensees with primary status are eligible for relocation, unless their facilities were not constructed and in use as of the effective date of this *Ninth R&O*. BRS facilities that are primary are eligible for relocation; however, major modifications made to existing facilities and new BRS facilities added after the effective date of this *Ninth R&O* are secondary and, although licensees may make these modifications, these modifications are not eligible for relocation. Major modifications to existing facilities include modifications that increase the size or coverage of the service area or interference potential and that would also increase the throughput of the existing system (*e.g.* sector splits in the antenna system); however, BRS licensees will be allowed to make changes to existing facilities to fully utilize existing system throughput (*i.e.*, to add customers) even if such changes would increase the size or coverage of the service area or interference potential and these changes will not be treated as major modifications.
- There will be a mandatory three year negotiation period for each BRS incumbent which commences when the AWS entrant informs the BRS licensee in writing of its intent to negotiate (*i.e.*, "rolling" negotiations). The BRS licensee can suspend the running of the negotiation period for up to one year if the licensee cannot be relocated to comparable facilities at the end of the negotiation period. The AWS licensee can trigger involuntary relocation at the end of the negotiation period if the parties have not agreed on a relocation plan, and for one year after an involuntary relocation, BRS licensees will have a "right of return" to the old frequency band or otherwise to be relocated or reimbursed.
- BRS incumbents' primary status will sunset, and licensees will not be eligible for relocation, 15 years after the first AWS license is issued in the 2150-2160/62 MHz band.

1. Relocation Process

16. *Transition Plan.* In the *AWS Fifth Notice,* we proposed to require the AWS entrant to relocate BRS operations on a link-by-link basis, based on interference potential.[45] We also proposed to

[45] *See AWS Fifth Notice*, 20 FCC Rcd at 15874, ¶ 14. In the *AWS Fifth Notice,* we sought comment on what criteria (*e.g.*, a rule similar to 47 C.F.R. § 24.237 or the use of Telecommunications Industry Association Technical Services Bulletin 10-F (TIA TSB 10-F)) an AWS licensee should use to determine whether its proposed operations would cause interference to incumbent BRS operations in the 2150-2160 MHz band, such that the relocation of those systems would be necessary before AWS operations could begin. *Id.* at 15881-82, ¶¶ 28-29. The test we adopt for determining the interference potential of AWS operations to BRS systems is discussed in further detail below. *See infra* ¶¶ 46-54.

allow the AWS entrant to determine its own schedule for relocating incumbent BRS operations so long as it relocates incumbent BRS licensees before beginning operation in a particular geographic area and subject to any other build-out requirements that may be imposed by the Commission on the AWS entrant.[46] We further proposed to require that the AWS licensee relocate all incumbent BRS operations that would be affected by the new AWS operations, in order to provide BRS operators with comparable facilities.[47]

17. Most commenters argue that because BRS incumbent systems are generally point-to-multipoint operations, as opposed to the point-to-point incumbent operations that were relocated by PCS licensees, relocation of BRS licensees should occur on a system-by-system basis, based on interference potential, rather than link-by-link (*e.g.*, the path from a base station to one customer), as the Commission proposed.[48] According to Verizon and CTIA, a "system" includes a radio base station, all end user units served by that base station, and the wireless facilities that connect each end user unit served by that base station, but does not include multiple base stations in a geographic area that comprise an entire network.[49] Other commenters argue that all BRS operations within the BRS licensee's GSA (*e.g.*, multiple base stations or networks) should be relocated, not just the base stations where a line-of-sight analysis shows interference potential.[50]

18. Commenters also note that unlike past relocation scenarios, the new AWS entrant is likely to be a competitor to the BRS incumbent.[51] The BRS parties therefore argue that an incumbent should not have to disclose proprietary information (*e.g.*, subscriber identities and locations) to its competitor or provide access to those subscriber locations for the installation of customer premises equipment (CPE); should not have to rely on the AWS entrants' timetables to deploy service and should be allowed to decide when relocation will occur; should be able to control relocation of its facilities by having the sole responsibility for selecting equipment and deploying comparable facilities; and should be allowed to voluntarily self relocate subject to reimbursement from new AWS licensees.[52] WCA and BellSouth argue that self relocation was permitted in the 1.9 GHz band microwave relocation to "accelerate the relocation process by promoting system-wide relocation [and] give microwave incumbents

[46] *See AWS Fifth Notice*, 20 FCC Rcd at 15874, ¶ 14.

[47] *See AWS Fifth Notice*, 20 FCC Rcd at 15874-75, ¶ 15. *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 Nos. 00-258 and 95-18, *Sixth Report and Order, Third Memorandum Opinion and Order, and Fifth Memorandum Opinion and Order*, 19 FCC Rcd 20720 at 20753, ¶ 71 (2004) ("*AWS Sixth R&O*") (requiring AWS licensees in the 1995-2000 MHz and 2020-2025 MHz bands to relocate incumbent Broadcast Auxiliary Service (BAS) operations in all affected BAS markets, including those markets where the AWS licensee provides partial, minimal, or no service).

[48] Verizon Comments at 4; CTIA Comments at 3-5; Sprint Nextel Comments at 26-28; WCA Comments at 33; Radiofone Reply at 2; BellSouth Reply at 7.

[49] Verizon Comments at 4; CTIA Comments at 3-5 & note 15.

[50] *See, e.g.*, C&W Comments at 3; SpeedNet Comments at 3; SpeedNet Reply at 4; Polar/Northern Wireless Reply at 8-9.

[51] *See, e.g.*, BellSouth Comments at 5-6; C&W Comments at 3-4; T-Mobile Comments at 3; Sprint Nextel Comments at 24-26; WCA Comments at 30; Sioux Valley Wireless Reply at 6-7.

[52] *See, e.g.*, SpeedNet Comments at 3-4; BellSouth Comments at 5; WCA Comments at 42-44; BellSouth Reply at 4; Sprint Nextel Reply at 6. Commenters generally refer to the self relocation process used for PCS entry into the 1.9 GHz band, noting in particular, the incumbent's ability to decide when to relocate. Unlike that proceeding, where the incumbent's relocation expenses were subject to a hard monetary cap established by rule, commenters here propose that the incumbent would negotiate reimbursement for what it deems to be comparable facilities.

the option of avoiding time-consuming negotiations, allowing for faster clearing" of the band[53] and that BRS licensees/lessees should similarly be permitted to self relocate subject to reimbursement from AWS licensees prior to the conclusion of the mandatory negotiation period, using the comparable facilities standard for involuntary relocations.[54] WCA further argues that self relocation reduces the disruption to customers because, for example, operators who have replacement spectrum available may choose to start migration to the new band whenever a routine service call is made to the home, without waiting for the completion of the mandatory negotiation or involuntary relocation periods.[55] CTIA and T-Mobile contend that, if self relocation is permitted, AWS licensees must be afforded protections similar to those provided in the PCS relocation process. These protections include limitations on the incumbent's reimbursable expenses, such as a cap on reimbursement costs and the requirement to obtain a third party estimate of relocation costs.[56] Verizon agrees with the Commission's proposal that an AWS licensee should have flexibility to determine its relocation schedule; otherwise, Verizon claims, there would be significant costs that could impede the introduction of AWS in the 2150-2160/62 MHz band.[57]

19. We anticipate that an AWS licensee will likely use a terrestrial network that is comprised of several discrete geographic areas served by multiple base stations.[58] Unlike satellite systems, for example, whose signals can blanket the whole country simultaneously, the terrestrial nature of an AWS licensee's service allows for the gradual relocation of incumbents during a geographically-based build-out period. We recognize that this build-out period may take time because of the large service areas to be built out for new AWS networks, but expect that the AWS licensees and the incumbent BRS licensees will work cooperatively to ensure a smooth transition for incumbent operations.[59] Upon review of the concerns raised in the record regarding our initial proposal for a link-by-link approach for relocation, we are convinced that adopting a "system-by-system" basis for relocation, based on potential interference to BRS, will better accommodate incumbent BRS operations.[60] If an analysis shows that a BRS incumbent's "system" needs to be relocated, we will require that the base station and all end user units served by that base station be relocated to comparable facilities.[61] The relocation schedule and criteria to determine interference potential are discussed in detail below.[62]

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[53] *See* BellSouth Comments at 5, citing *Microwave Cost Sharing Second R&O*, 12 FCC Rcd 2705, 2717. *See also* WCA Comments at 42-44.

[54] WCA proposed a plan for self relocation that was supported by some BRS parties. *See* WCA Comments at 14-16, 22-27, & 42-44; SpeedNet Reply at 2-3; Polar/Northern Wireless Reply at 7-8; Evertek Reply at 8-9; Radiofone Reply at 3; C&W Reply at 2-3; W.A.T.C.H. TV Reply at 7-8.

[55] WCA Comments at 43-44.

[56] T-Mobile Reply at 8-9; CTIA Reply at 5-6.

[57] Verizon Comments at 4.

[58] Many parties that have filed comments in this docket have proposed such systems, and, in many cases, operate similarly configured systems in the cellular and PCS bands that could be readily upgraded to incorporate new AWS spectrum.

[59] *See AWS-1 Service Rules Order*, 18 FCC Rcd 25162; *Order on Reconsideration*, 20 FCC Rcd 14058.

[60] We also modified the link-by-link approach for AWS relocations in the 1995-2000 MHz and 2020-2025 MHz bands in order to accommodate the integrated nature of the BAS incumbents. *See AWS Sixth R&O*, 19 FCC Rcd at 20752-53. However, we note that the unique circumstances that led to the requirement to clear the entire 1990-2025 MHz band of BAS incumbents, *i.e.*, the ubiquitous nature of the MSS and the assignment of five megahertz of spectrum in the 1.9 GHz band to Nextel as part of the 800 MHz band reconfiguration process designed to alleviate interference to public safety operations in the 800 MHz band, are not present here.

[61] Whether a new entrant is required to relocate multiple systems (*i.e.*, multiple base stations or networks) will depend on the interference analysis.

[62] *See infra* ¶ 20 (relocation schedule) and ¶¶ 46-54 (interference criteria).

20. For the reasons discussed below, we reject proposals that would allow BRS incumbents to voluntarily self relocate, *i.e.*, to unilaterally determine when relocation would occur and to require AWS entrants to reimburse BRS incumbents based on a cost estimate for comparable facilities that were selected and deployed at the discretion of the incumbent without the involvement of and negotiation with the AWS licensee.[63] In our relocation policies, we want to maintain a balance between the needs of new entrants and incumbent operations. In this case, new entrants and incumbents will likely be offering competitive services. Our decision to base BRS relocation on the AWS entry timetable and potential interference to BRS incumbents provides a bright line that should avoid disputes between prospective competitors, *e.g.*, that market entry is being unfairly delayed or that entry costs are imposed prematurely which could delay AWS build-out of service. We conclude that the diversity of incumbent BRS facilities and services makes it difficult to allow self relocation based on cost estimates and a cost cap, as some commenters suggest. BRS incumbents offer a wide variety of services and employ a wide variety of equipment, making it difficult to implement a self relocation scheme as was permitted when PCS relocated FS incumbents. In the latter case, FS incumbents were providing point-to-point service where system configuration and relocation costs were well understood and similar enough in each situation so as to make rational the types of generalizations that are necessary to set caps. Also, to the extent that BRS proponents seek self relocation because the transition of the 2.5 GHz band may delay relocation to that band, we are providing relief by allowing BRS incumbents to continue to add customers[64] and to suspend for up to one year the negotiation period.[65] As a practical matter, we expect a BRS incumbent to take an active role in the actual relocation of its facilities, including selecting and deploying comparable facilities, but we find that relocation should result from AWS-BRS negotiations or the involuntary relocation process discussed below. However, we recognize the legitimate concerns raised by BRS incumbents regarding the disclosure of their proprietary customer information to potential AWS competitors and we will not require that AWS entrants be permitted to approach the incumbents' customers directly for relocation purposes, whether relocation occurs as a result of a negotiated agreement or via involuntary relocation. To balance AWS interests with the need to minimize disruption to an incumbent's customers, we will not allow the AWS entrant to begin operations in a particular geographic area until the affected BRS incumbent is relocated (and subject to any other build-out requirements that may be imposed by the Commission on the AWS entrant).

21. *Comparable Facilities.* Under the *Emerging Technologies* policy, the Commission allows new entrants to provide incumbents with comparable facilities using any acceptable technology.[66] Incumbents must be provided with replacement facilities that allow them to maintain the same service in terms of: (1) throughput – the amount of information transferred within the system in a given amount of time; (2) reliability – the degree to which information is transferred accurately and dependably within the system; and (3) operating costs – the cost to operate and maintain the system.[67] Thus, the comparable facilities requirement does not guarantee incumbents superior systems at the expense of new entrants.[68]

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[63] In this context, "self relocation" is where the BRS incumbent, not the AWS entrant, has the sole discretion and control with respect to the relocation schedule, costs, and determination of comparable facilities, *i.e.*, "self relocation" refers to a unilateral, non-negotiated relocation by the BRS licensee. We note that "self relocation" may be defined differently in other proceedings. *See, e.g., BRS R&O*, 19 FCC Rcd 14165.

[64] *See infra* ¶ 33.

[65] *See infra* ¶ 39.

[66] *See Emerging Technologies Third R&O*, 8 FCC Rcd 6589 at 6591 & 6603, ¶¶ 5 & 36.

[67] *See Microwave Cost Sharing First Report and Order and Further Notice of Proposed Rule Making*, 11 FCC Rcd 8825 at ¶¶ 27-34 (2000) ("*Microwave Cost Sharing First R&O and FNPRM*"). *See also* 47 C.F.R. §§§ 101.73, 101.75, 101.91.

[68] Consistent with this purpose, the Commission's relocation procedures provide that during involuntary relocation, new entrants would only be required to provide incumbents with enough throughput to satisfy their system use at the time of relocation, not to match the overall capacity of the system. *See* 47 C.F.R. § 101.75.

We note that our relocation policies do not dictate that systems be relocated to spectrum-based facilities or even to the same amount of spectrum as they currently use, only that comparable facilities be provided.[69] Comparable facilities can be provided by upgrading equipment to digital technology and making use of efficient modulation and coding techniques that use less spectrum to provide the same communications capabilities. In the *AWS Fifth Notice*, the Commission proposed that if relocation were deemed necessary, BRS incumbents with primary status would be entitled to comparable facilities, as defined in the *Emerging Technologies* proceeding and discussed above, and sought comment on how to apply the comparable facilities requirement to unique situations faced by BRS licensees.[70] For example, we sought comment on whether replacement of CPE in use at the time of relocation (*e.g.*, customer equipment that is used and will continue to be used in the provision of two-way broadband operations) should be part of the comparable facilities requirement.

22. The majority of commenters support implementation of a comparable facilities requirement,[71] although some commenters request that additional criteria be added to the Commission's definition, such as costs to install new CPE, not merely the cost of the equipment, and internal costs of the incumbent.[72] In addition, some commenters argue that the Commission should use the expanded comparable facilities definition it has used when dealing with point-to-multipoint incumbent operations in other contexts, such as the *800 MHz R&O* (where the factors were: equivalent channel capacity; equivalent signal capability, baud rate, and access time; coextensive geographic coverage; and operating costs) and the *Upper 200 MHz Specialized Mobile Radio Second R&O* (where the factors were: system; capacity; quality of service; and operating costs).[73] Other commenters claim that comparable facilities

[69] For example, in ET Docket No. 95-18, the Commission adopted a policy in which new MSS entrants would relocate incumbent BAS systems operating in the 1990-2110 MHz band to the 2025-2110 MHz band – a reduction of 35 megahertz of spectrum. The Commission determined that BAS could achieve comparable facilities in the reduced spectrum because the relocation would entail an upgrade of equipment from analog to digital. *See MSS Second R&O*, 15 FCC Rcd 12315; *MSS Third R&O*, 18 FCC Rcd 23638.

[70] *See AWS Fifth Notice*, 20 FCC Rcd at 15875-76, ¶¶ 16-18. *See also AWS Third NPRM,* 18 FCC Rcd at 2256, ¶ 71. For example, we recognized that the incumbent BRS licensee may change the type of services it offers as it transitions to the new BRS band plan (*e.g.*, from one-way to two-way service or from fixed to mobile service), and we sought comment on how the comparable facilities policy would be satisfied in such a situation. We also sought comment on how the relocation obligation of comparable facilities should be applied to post-1992 licensees operating on a combination of BRS channels 1 and 2/2A (*e.g.*, integrated for downstream two-way broadband operations), considering these channels will likely transition to new channels in the restructured band at different times. *Id.* at ¶ 18.

[71] *See, e.g.*, Verizon Comments at 4; BellSouth Comments at 4

[72] *See, e.g.*, SpeedNet Comments at 4; C&W Comments at 4; SpeedNet Reply at 4; C&W Reply at 3-4. Examples of internal costs cited by the parties include: labor and transportation, the time expended by company employees to inform customers and arrange customer appointments, and the time of company personnel in planning and organizing the transition. *See id.*

[73] *See* Sprint Nextel Comments at 10-13; WCA Comments at 14-16, citing Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *Second Report and Order*, 12 FCC Rcd 19079 at 19112-13, ¶ 92 (1997) ("*Upper 200 MHz Specialized Mobile Radio Second R&O*") and the *800 MHz R&O*, 19 FCC Rcd at 15076-77, ¶ 202. We note that all of the factors, except for operating costs, listed in the *800 MHz R&O, i.e.*, equivalent channel capacity; equivalent signal capability, baud rate, and access time; and coextensive geographic coverage, are contained in the "capacity" factor listed in the *Upper 200 MHz Specialized Mobile Radio Second R&O. See Upper 200 MHz Specialized Mobile Radio Second R&O*, 12 FCC Rcd at 19112-13, ¶ 92.

requires only one acceptable technology solution – *i.e.*, a wireless, not wired solution.[74] Further, commenters support our proposal that only stations with primary status would be entitled to relocation.[75]

23. We continue to believe that the *Emerging Technologies* policy of comparable facilities is the best approach to minimize disruption to existing services and to minimize the economic impact on licensees of those services. Accordingly, we will require that AWS licensees provide BRS incumbents with replacement facilities that allow them to maintain the same service in terms of: (1) throughput – the amount of information transferred within the system in a given amount of time; (2) reliability – the degree to which information is transferred accurately and dependably within the system; and (3) operating costs – the cost to operate and maintain the system. However, we agree with commenters that an additional factor for the comparable facilities definition is necessary to deal with the point-to-multipoint operations of BRS licensees that provide service to customers. Thus, in order to minimize disruption to the incumbent's customers, we find that the replacement of CPE (*i.e.*, end user equipment) in use at the time of relocation and that is necessary for the provision of BRS service should be part of the comparable facilities requirement.[76] Further, consistent with our *Emerging Technologies* policy, during involuntary relocation, new AWS entrants will only be required to provide BRS incumbents with enough throughput to satisfy their system use at the time of relocation, not to match the overall capacity of the system.[77] Finally, we address the application of our comparable facilities requirement to post-1992 licensees operating on a combination of BRS channels 1 and 2/2A (*e.g.*, integrated for downstream two-way broadband operations), whose operations are likely to transition to new channels in the restructured band at different times. In order to accommodate these integrated operations with the least disruption to customers, we will require the relocation of operations on both BRS channels 1 and 2/2A where the BRS licensee is using the same facility for both channels in order to provide service to customers.[78]

24. However, for the reasons discussed below, we decline to further expand the comparable facilities definition as the parties request (*e.g.*, requiring only a wireless solution; using the *800 MHz proceeding* definition; and including internal administrative costs of the incumbent). We reject parties' suggestions that comparable facilities requires only a wireless solution. Given advances in technology, *e.g.*, changing from analog to digital modulation and the flexibility provided by our existing relocation procedures to make incumbents whole, we believe that these differences should be taken into account when providing comparable facilities. In the *800 MHz proceeding*, incumbents in the 800 MHz band were being relocated within the same band as part of an overall band reconfiguration process designed to resolve the interference concerns of public safety licensees in the band. Therefore, a comparable facilities definition based on equivalent capacity was the better approach in the *800 MHz proceeding*, because, for example, the services, equipment, and propagation characteristics were not likely to change significantly in the newly reconfigured band. Further, the level of detail in the comparable facilities definition in the *800 MHz proceeding* was necessary to ensure that the costs for relocation and reconfiguration were easy to compute and verify since these expenses were to be used to calculate the credit due to the U.S. Treasury at the end of the 800 MHz transition. In the instant case, BRS incumbents are to be relocated to

[74] *See, e.g.*, CTIA Comments at 9; Sprint Nextel Comments at 34-37; SpeedNet Reply at 5; C&W Reply at 6-7.

[75] *See* CTIA Comments at 11; Verizon Comments at 4-5.

[76] We note that including end user equipment in the definition of comparable facilities is similar to our use of the "system" factor in the *Upper 200 MHz Specialized Mobile Radio Second R&O*. In that proceeding, we stated that "the term 'system' should be defined functionally from the end user's point of view, *i.e.*, a system is comprised of base station facilities that operate on an integrated basis to provide service to a common end user, and all mobile units associated with those base stations." In this case, the term "system" includes the radio base station and all end user units served by that base station. *See supra* ¶ 19.

[77] *See infra* ¶ 40.

[78] Although it may be possible to relocate BRS operations on channels 1 and 2/2A separately, this could require the installation and operation of more than one device at either the base station or the end user's premises.

a new band where, for example, the equipment and propagation characteristics are different. In addition, BRS incumbents, while providing similar broadband services, use various technologies (*e.g.*, frequency division duplexing (FDD) or time division duplexing (TDD)) to deploy their services.[79] We therefore believe that a more flexible definition of comparable facilities is justified in this case. Accordingly, we find that the factors we have identified as most important for determining comparability (*i.e.*, throughput, reliability, operating costs, and now end user equipment) provide the degree of flexibility that will better serve the parties during negotiations. Finally, consistent with our *Emerging Technologies* policies, we will not require that new AWS licensees reimburse BRS incumbents for their internal costs for relocation because these costs are difficult to determine and verify.[80]

25. We further note that under our relocation policies only stations with primary status are entitled to relocation. Because secondary operations, by definition, cannot cause harmful interference to primary operations nor claim protection from harmful interference from primary operations at frequencies already assigned or assigned at a later date,[81] new entrants are not required to relocate secondary operations. As stated above, BRS stations licensed after 1992 to use the 2160-2162 MHz band operate on a secondary basis. Thus, in some cases, a portion of BRS channel 2 has secondary status, and this portion would not be entitled to relocation under existing *Emerging Technologies* policies. BRS stations licensed after 1992 to use the remaining portion of BRS channel 2 (2156-2160 MHz) operate on a primary basis and thus, would be entitled to relocation. Where a station is licensed to operate BRS channel 2 on both a primary (at 2156-2160 MHz) and secondary (at 2160-2162 MHz) basis, we expect the parties will work together in negotiating appropriate compensation for the costs to relocate four megahertz of a six megahertz block of spectrum. We note that stations licensed prior to 1992 for BRS channel 2 (2156-2162 MHz) operate on a primary basis over the entire channel and thus, would be entitled to relocation over the entire channel. We therefore adopt our relocation policies regarding stations with primary and secondary status for the BRS.

26. *Leasing.* Some BRS licensees of channel(s) 1 and/or 2/2A currently lease their spectrum capacity to other commercial operators,[82] and the Commission has determined that future leasing of BRS spectrum will be allowed under the Secondary Markets policy.[83] Because leasing is prevalent in the BRS bands, the application of our "comparable facilities" policy must also account for these arrangements. We recognize that leasing arrangements vary – some BRS licensees may continue to lease their spectrum to third parties when they relocate to the 2.5 GHz band, but other BRS licensees may discontinue leasing arrangements prior to relocation. In all cases, the BRS licensee retains *de jure* control of the license and is the party entitled to negotiate for "comparable facilities" in the relocation band. In the *AWS Fifth Notice,* we sought comment on proposals related to the leasing of BRS spectrum. In particular, we proposed to allow incumbent BRS licensees to rely on the lessee's facilities in negotiating comparable

[79] *See, e.g.,* SpeedNet Comments at 5-6.

[80] *Microwave Cost Sharing First R&O,* 11 FCC Rcd 8825 at ¶ 42.

[81] *See* 47 C.F.R. § 2.105(c).

[82] *See, e.g., Ex Parte* filing of Private Networks, Inc. (Nov. 6, 2003) (noting that some grandfathered BRS licensees have long-term leases with commercial operators for use of their spectrum).

[83] *See BRS R&O,* 19 FCC Rcd at 14232-34, ¶¶ 177-81. Under the Secondary Markets policy, licensees may engage in either "spectrum manager leasing" whereby they retain *de facto* control of the spectrum and *de jure* control of the license or "*de facto* transfer leasing" whereby they transfer *de facto* control of the spectrum to a lessee. *See* Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, WT Docket No. 00-230, *Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 20604 (2003) ("*Secondary Markets Order and Notice*"), *Erratum* 18 FCC Rcd 24817 (2003). This decision also affects EBS (formerly Instructional Television Fixed Service) licensees in the 2500-2690 MHz band. Because both EBS and BRS are channelized in this band, the Commission's comprehensive restructuring of BRS also encompassed EBS.

facilities and to include lessees in negotiations with the AWS entrant, but that the lessee would not be entitled to a separate right of recovery.[84]

27. While commenters generally support our leasing proposals that would allow licensees to include lessees in negotiations and to rely on the lessee's facilities in negotiations for comparable facilities, but not allow double recovery for licensees and lessees,[85] some commenters request that we provide lessees with additional standing independent of the licensee or lessor[86] or that we require the lessee to participate in negotiations.[87] We conclude that the approach we proposed in the *AWS Fifth Notice* is consistent with the purpose of the "comparable facilities" policy to provide new facilities in the relocation band so that the public continues to receive service, and we disagree with commenters who request additional protections for or requirements on the lessee. Disputes with respect to private leasing agreements between the licensee and lessee are best addressed using applicable contractual remedies outside the Commission's purview. As noted above, while we recognize the benefit of including the lessee in negotiations for comparable facilities, we do not believe a requirement for participation is necessary. Accordingly, we find that, in cases where the BRS licensees continue to lease their spectrum to third parties when they relocate to the 2.5 GHz band, the licensee may include the lessee in negotiations but lessees would not have a separate right of recovery – *i.e.*, the new entrant would not have to reimburse both the licensee and lessee for "comparable facilities."[88] We also adopt our proposal to allow incumbent BRS licensees to rely on the throughput, reliability, and operating costs of facilities operated by a lessee in negotiating "comparable facilities." BRS licensees may also use these same factors for determinations of "comparable facilities" during involuntary relocation, except that the BRS licensee may only rely on the facilities that are "in use" pursuant to 47 C.F.R. § 101.75 by the lessee at the time of relocation.[89] Finally, in cases where the BRS licensee discontinues leasing arrangements prior to relocation, the lessee is not entitled to recover lost investment from the new AWS entrant.[90]

28. *Licensee Eligibility*. In the *AWS Fifth Notice*, we proposed that a primary BRS licensee whose license, prior to relocation, is renewed or assigned, or whose control of the license is transferred, will continue to be eligible for relocation.[91] We also proposed that no new licenses would be issued in the 2150-2160/62 MHz band if a grandfathered BRS license is cancelled or forfeited and does not automatically revert to the BRS licensee that holds the corresponding BTA license.[92]

29. Our review of the record shows that commenters support our proposals on determining licensee eligibility for relocation.[93] Accordingly, and consistent with our findings in earlier proceedings, we now adopt our proposals to apply the relocation policies discussed herein to BRS incumbent primary

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[84] *See AWS Fifth Notice*, 20 FCC Rcd at 15877-78, ¶ 20.

[85] CTIA Comments at 10; WCA Comments at 45; Sprint Nextel Reply at 13-14.

[86] Radiofone Reply at 3.

[87] WCA Comments at 16 & 44-45; Sprint Nextel Reply at 13-14; SpeedNet Reply at 6; C&W Reply at 4-5; WCA Reply at 22.

[88] A private agreement between the licensee and lessee should address how new facilities or payment for "comparable facilities" will be shared between the parties.

[89] *See* 47 C.F.R. § 101.75. *See also infra* ¶ 40.

[90] This issue should be addressed in a private agreement between the licensee and lessee.

[91] *AWS Fifth Notice*, 20 FCC Rcd at 15878, ¶ 21.

[92] *Id.*

[93] *See, e.g.*, CTIA Comments at 11; C&W Comments at 3; Sprint Nextel Comments at 45-46; CTIA Reply at 5; WCA Reply at 22-23.

licensees who seek comparable facilities at the time of relocation.[94] Any incumbent licensee whose license is renewed before relocation would have the right to relocation. An assignment or transfer of control would not disqualify a BRS incumbent in the 2150-2160 MHz band from relocation eligibility unless, as a result of the assignment or transfer of control, the facility is rendered more expensive to relocate.[95] In addition, if a grandfathered BRS license (*i.e.*, authorized facilities operating with a 35-mile-radius PSA) is cancelled or forfeited, and the right to operate in that area has not automatically reverted to the BRS licensee that holds the corresponding BTA license, no new licenses would be issued for BTA service in the 2150-2160/62 MHz band.[96] Finally, in the *AWS Fifth Notice,* we did not propose, nor do we suggest here, that BRS licensees would be entitled to relocation compensation as a consequence of reallocating BRS spectrum for other services. We note, in particular, that the *Emerging Technologies* relocation policies were intended to prevent disruption of existing services and minimize the economic impact on licensees of those services. Thus, where authorized BRS licensees have not constructed facilities and are not operational, there is no need to prevent disruption to existing services.[97] We therefore conclude that BRS licensees whose facilities have not been constructed and are in use per Section 101.75 of the Commission's rules as of the effective date of this *Report and Order* are not eligible for relocation.

30. Under the *Emerging Technologies* policy, the Commission recognizes two divergent objectives when considering the types of modifications and expansions existing licensees could make to their existing, constructed facilities without affecting their status with respect to emerging technology licensees – on one hand, existing licensees must be allowed a certain amount of flexibility to operate without devaluing the usefulness of their facilities; on the other hand, the new entrants must be provided with a stable environment in which to plan and implement new services.[98] The Commission has decided that the best way to balance these divergent objectives is to establish procedures whereby existing licensees who choose to modify or expand their facilities, after a particular date set by the Commission, would do so on a secondary basis to new licensees.[99] In the *AWS Fifth Notice*, we proposed to adopt criteria for BRS licensees that would be the basis for determining what qualifies as a "major modification," *i.e.*, a modification that is relegated to secondary status for relocation purposes.[100] Adopting major modification criteria for the purposes of relocation is necessary because BRS licensees are now licensed on a geographic area basis, and thus are allowed to place transmitters anywhere within their defined service area without prior authorization so long as the licensee's operations comply with the applicable service rules, do not affect radio-frequency zones, or require environmental review or international coordination.[101] Specifically, we proposed to adopt criteria that, for example, would classify additions of new transmit sites or base stations and changes to existing facilities that would increase the

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[94] *See, e.g., MSS Second R&O,* 15 FCC Rcd at 12361-62, ¶ 134; *MSS Third R&O,* 18 FCC Rcd at 23675-76, ¶¶ 79-80; *18 GHz Relocation Proceeding*, 15 FCC Rcd at 13466, ¶ 75.

[95] In this case, the incumbent would not be entitled to the increased costs to relocate the facility that may result from the transfer or assignment.

[96] *See* 47 C.F.R. § 27.1209(c); *BRS R&O* at 14189-90, ¶ 54. Reversion upon cancellation or forfeiture of an existing license to the licensee that holds the corresponding BTA license is consistent with the approach the Commission has taken in other wireless services. *See, e.g.,* Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz bands, ET Docket No. 95-183, *Report and Order and Second Notice of Proposed Rulemaking,* 12 FCC Rcd 18600, 18637-38 ¶ 79 (1997).

[97] *See AWS Third R&O,* 18 FCC Rcd 2223 at n.104.

[98] *See Emerging Technologies First R&O and Third NPRM,* 7 FCC Rcd 6886 at ¶¶ 30-31.

[99] *See AWS Fifth Notice*, 20 FCC Rcd at 15878-79, ¶ 22. *See also, e.g.,* 47 C.F.R. §§ 101.81 and 101.83.

[100] *See AWS Fifth Notice,* 20 FCC Rcd at 15879, ¶ 23.

[101] *See BRS R&O,* 19 FCC Rcd at 14189-90, ¶ 54.

size or coverage of the service area or interference potential as types of modifications that are major, and thus not eligible for relocation.

31. CTIA and Verizon support our proposal to use the effective date of this *Report and Order* as a cut-off date after which major modifications to the BRS incumbent's facilities would not be eligible for relocation.[102] BRS commenters, on the other hand, argue that the cut-off date should be the date, or, alternately, ninety days after the date, the AWS entrant provides written notice to the BRS licensee of its desire to commence negotiations.[103] Some parties contend that the incumbent should be allowed to continue to add subscribers and modify its facilities (such as sector splits in the antenna system to increase frequency reuse and capacity) until relocation is completed.[104] Sprint Nextel argues that requiring a BRS licensee to discontinue its broadband service before new spectrum becomes available or prohibiting it from adding new customers to existing BRS service areas would have a material adverse effect on the national availability of broadband in the United States, and would be inconsistent with Section 706 of the Telecommunications Act, which seeks to promote the availability of advanced telecommunications services.[105] Sprint Nextel also argues that the Commission's proposed cut-offs for new BRS deployments follows the logic for point-to-point systems and not for point-to-multipoint systems, where subscribers are affected. It claims that in the 1.9 GHz band context, making operations secondary did not devalue the usefulness of the existing operations and did not unduly constrain operators that wanted to expand their networks, but rather excluded just one of the many facility-based deployments that operators could choose from.[106] WCA contends that a ban on system modifications or expansions comprises the rights obtained at auction of BRS BTA license holders.[107] With respect to the criteria for major modifications, CTIA, Sprint Nextel, and WCA suggest that: (1) BRS licensees should not be permitted to add or be compensated for the relocation of new hub station receivers (but can add customers to already deployed hub station receivers); (2) modifications should be permitted where replacement is required as a result of a natural disaster or some other event beyond the control of the BRS licensee; and (3) BRS licensees who are not actually operating systems as of the effective date of the *Report and Order* in this proceeding should be precluded from deploying new services in the 2150-2160/62 MHz band after that date.[108]

32. We disagree with commenters who suggest delaying the cut-off for relocation eligibility either until, or ninety days after, the date the AWS entrant provides written notice of its intent to commence negotiations with the BRS incumbent because as we noted above, new entrants must be provided with a stable environment in which to plan and implement new services. Consistent with our *Emerging Technologies* relocation policy and in order to provide some certainty to new AWS licensees on the scope of their relocation obligation, we generally adopt the proposals for major modifications

[102] *See* CTIA Comments at 12; Verizon Comments at 5-6. Verizon contends that secondary status alone is not sufficient and that the Commission should institute a freeze on the construction of new facilities and any other major modification to BRS systems. BRS parties disagreed and requested that the Commission reject Verizon's freeze proposal. *See* Polar/Northern Wireless Reply at 5; Evertek Reply at 2-3; WCA Reply at 4-7. We reject Verizon's freeze proposal for the reasons discussed below.

[103] *See, e.g.*, C&W Comments at 2-3; SpeedNet Comments at 2; Polar/Northern Wireless Reply at 5; Sioux Valley Wireless Reply at 708; Evertek Reply at 4-5; W.A.T.C.H. TV Reply at 3-5; Sprint Nextel Reply at 5.

[104] *Id.*

[105] Sprint Nextel Comments at 6-7.

[106] Sprint Nextel Comments at 21-23.

[107] WCA Comments at 40-41. We note that the Commission is not precluded from regulating spectrum licenses obtained at auction. Section 309(j)(6)(C) of the Communications Act provides that "[n]othing in this subsection or in the use of competitive bidding shall diminish the authority of the Commission under other provisions of this Act to regulate or reclaim spectrum licenses." *See* 47 U.S.C. § 309(j)(6)(C).

[108] CTIA Comments at 12; Sprint Nextel Comments at 23-24; WCA Comments at 48.

described in the *AWS Fifth Notice*.[109] Specifically, we find that major modifications to BRS systems that are in use, as discussed in the next paragraph, made by BRS licensees in the 2150-2160 MHz band after the effective date of this *Report and Order* will not be eligible for relocation. Further, major modifications and extensions to BRS systems that are in use, as discussed below, will be authorized on a secondary basis to AWS systems in the 2150-2160 MHz band after the effective date of this *Report and Order*.[110] In addition, BRS facilities newly authorized in the 2150-2160 MHz band after the effective date of this *Report and Order* would not be eligible for relocation.[111]

33. Based on our review of the record, and consistent with *Emerging Technologies* principles, we classify the following as types of modifications that are major, and thus not eligible for relocation: (1) additions of new transmit sites or base stations made after the effective date of this *Report and Order*; and (2) changes to existing facilities made after the effective date of this *Report and Order* that would increase the size or coverage of the service area or interference potential and that would also increase the throughput of an existing system (*e.g.*, sector splits in the antenna system). However, we will allow BRS incumbents to make changes to already deployed facilities to fully utilize existing system throughput, *i.e.*, to add customers, even if such changes would increase the size or coverage of the service area or interference potential, and not treat these changes as major modifications.[112] Because relocation of incumbent facilities depends on the availability of spectrum in the 2.5 GHz band, existing licensees must have some flexibility to continue to provide service in their communities, including adding new customers, until relocation occurs. On the other hand, new entrants should not be required to reimburse a potential competitor for the costs of its system expansion. We believe that this approach balances the needs of incumbents to continue to provide service with the needs of new entrants to have some certainty about relocation expenses.[113] All other modifications would be classified as major and their operations authorized on a secondary basis and thus not eligible for relocation.[114] We note that, where a BRS

[109] *See AWS Fifth Notice*, 20 FCC Rcd at 15878-79, ¶¶ 22-23.

[110] As noted above, after January 16, 1992, licensees in the 2160-2162 MHz band were already authorized on a secondary basis.

[111] It is unlikely that new BRS facilities will be authorized in this band since the Commission assigned this spectrum via a competitive bidding process in 1996. *See supra* note 12. Therefore, we do not believe a freeze, as proposed by Verizon, is necessary.

[112] For example, to fully utilize existing system throughput, the licensee may increase the height of an antenna or increase power at a base station in order to add additional customers up to its system capacity which, consequently, could increase the size or coverage of the service area or interference potential with AWS.

[113] In its comments, CTIA proposes that each BRS incumbent submit, pre-auction, an estimate of what it will cost to relocate the incumbent's systems, and further proposes that an AWS licensee relocating the incumbent be obligated to spend no more than 110 percent of this estimate. *See* CTIA Comments at 9-10; *see also* T-Mobile Comments at 3; T-Mobile Reply at 2-3 (claiming that a pre-auction estimate gives a BRS incumbent greater assurance that it will receive appropriate compensation). Several BRS commenters disagree with CTIA's proposals for a pre-auction cost estimate and 110 percent cap because relocations costs (*e.g.*, subscriber, labor, and equipment costs) are too difficult to predict at such an early stage in the process, particularly since replacement equipment is not yet available. *See, e.g.*, Sioux Valley Wireless Reply at 5; Radiofone Reply at 4-5; Evertek Reply at 6-7; W.A.T.C.H. TV Reply at 5; WCA Reply at 10-13. We decline to require a pre-auction estimate of relocation costs or a 110 percent cap on this estimate because, as discussed above, we are allowing BRS incumbents to add customers to fully utilize existing throughput until relocation occurs. Thus, requiring an estimate on relocation costs at this time would be premature and difficult to determine.

[114] We note that there may be circumstances where modifications may be necessary (*e.g.*, as a result of a natural disaster or some other emergency event beyond the BRS licensee's control) or where a BRS licensee that is operating in the 2150-2160/62 MHz band prior to effective date of this *Report and Order* "must file a new application pursuant to Section 27.1209 for a new or modified facility because of proximity to a quiet zone, environmental issues, etc." CTIA and WCA contend that these types of modifications should not disqualify the facility's eligibility for relocation. *See, e.g.*, CTIA Comments at 12, n.36; WCA Comments at 43, n.86. We will (continued....)

licensee who is otherwise eligible for relocation has modified its existing facilities in a manner that would be classified as "major" for purposes of relocation, that BRS licensee continues to maintain primary status (*e.g.*, unless it is classified as secondary for other reasons[115] or until the sunset date[116]); the major modifications themselves are considered secondary and not eligible for relocation. Thus, in such cases, the AWS licensee is only required to provide comparable facilities for the portions of the system that are primary and eligible for relocation.[117]

34. Because we have already identified relocation spectrum in the 2496-2690 MHz band (2.5 GHz band) for BRS licensees currently in the 2150-2160/62 MHz band (2.1 GHz band), we also sought comment in the *AWS Fifth Notice* on a proposal whereby the Commission would reassign 2.1 GHz BRS licensees, whose facilities have not been constructed and are not in use per Section 101.75 of the Commission's rules, to their corresponding frequency assignments in the 2.5 GHz band as part of the overall BRS transition.[118] Specifically, we proposed to modify the licenses of these 2.1 GHz BRS licensees to assign them 2.5 GHz spectrum in the same geographic areas covered by their licenses upon the effective date of the *Report and Order* in this proceeding.[119] Under this proposal, no subscribers would be harmed by immediately reassigning these licensees to the 2.5 GHz band, consistent with our policy. Further, these BRS licensees could become proponents in the transition of the 2.5 GHz band and avoid delay in initiating new service (they would be limited in initiating or expanding service in the 2.1 GHz band under other proposals put forth in the *AWS Fifth Notice*), and new AWS entrants in the 2.1 GHz band could focus their efforts on relocating the remaining BRS operations and their subscribers, facilitating their ability to clear the band quickly and provide new service.

35. Verizon and CTIA generally support the reassignment proposal while WCA objects on the basis that BRS licensees would be left in a "spectral no man's land" until the market has transitioned because they would not be able to use the 2.1 GHz band (since there is no longer any underlying license authorizing operation on those channels) or the 2.5 GHz band (since the spectrum is allocated to others pending transition to the new band plan).[120] WCA contends that offering BRS licensees the ability to act as proponents in the 2.5 GHz band does not alleviate the problem because the Commission has concluded that BRS licensees are authorized to use BRS spectrum under the existing 2.1 GHz band plan pending the

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address situations where modifications to BRS systems that are in use are necessary as a result of special circumstances, such as those described above, on a case-by-case basis. We note that, in general, an application for a new facility that is filed after the effective date of this *Report and Order* will render the new facility secondary and thus, not eligible for relocation. *See supra* ¶ 25.

[115] *See supra* ¶ 25; *see also* 47 C.F.R. § 2.106, footnote NG153.

[116] *See infra* ¶ 44.

[117] We note that where relocation-eligible major modifications are made to already deployed incumbent facilities, system-by-system relocation is still required, *i.e.*, each additional customer's equipment must be relocated to comparable facilities.

[118] *See AWS Fifth Notice*, 20 FCC Rcd at 15876-77, ¶ 19.

[119] *Id.* We proposed to undertake these license modifications pursuant to our authority under Section 316 of the Communications Act. *See* 47 U.S.C. § 316. Specifically, Section 316(a)(1) provides that "[a]ny station license . . . may be modified by the Commission . . . if in the judgment of the Commission such action will promote the public interest, convenience and necessity." *See* 47 U.S.C. § 316(a)(1). *See also California Metro Mobile Communications v. FCC*, 365 F.3d 38, 45 (D.C. Cir. 2004) ("*CMMC*"); *Peoples Broadcasting Co. v. United States*, 209 F.2d 286, 288 (D.C. Cir. 1953); *Community Television, Inc. v. FCC*, 216 F.3d 1133, 1140 (D.C. Cir. 2000); *Rainbow Broadcasting v. FCC*, 949 F.2d 405, 410 (D.C. Cir. 1991).

[120] *See* Verizon Comments at 5; CTIA Comments at 11-12; WCA Comments at 48-49.

transition to the new band plan at 2.5 GHz.[121] On the other hand, WCA "agrees that, as the FCC auctions new BRS geographic licenses for BTA authorizations that have been forfeited since the 1996 initial auction, the [BRS] auction winner should not have a right to relocation, but instead should have an immediate authority to operate at 2496-2500 MHz and 2686-2690 MHz pre-transition [WCA's proposed interim band plan] or 2496-2502 MHz and 2618-2623 MHz following transition [the designated channel plan for BRS 1 and 2/2A operations in the 2.5 GHz band]."[122]

36. Upon consideration of the record, we will not mandate reassignment of BRS licensees who have no facilities constructed and in use as of the effective date of this *Report and Order*, but we will not preclude these BRS incumbents from voluntarily seeking such reassignment from the Commission. Thus, these BRS licensees will not be forced to exchange their existing license in the 2.1 GHz band for an updated license authorizing operation in the 2.5 GHz band upon the effective date of this *Report and Order* because their corresponding channel assignments in the 2.5 GHz band may be unavailable for use pending the transition to the new band plan. We will instead afford these BRS licensees the flexibility to seek the reassignment of their licenses to their corresponding frequencies in the 2.5 GHz band at a time that is most convenient (*e.g.*, when the transition for their geographic area is complete). However, as noted above, BRS licensees who have no facilities constructed and in use as of the effective date of this *Report and Order* are not entitled to relocation to comparable facilities, regardless of whether they initiated operations under an existing (2.1 GHz band) or reassigned (2.5 GHz band) license.

2. Negotiation Periods/Relocation Schedule

37. Under our *Emerging Technologies* policies, there are two periods of negotiations – one voluntary and one mandatory – between new entrants and incumbents for the relocation of incumbent operations, followed by the involuntary relocation of incumbents by new entrants where no agreement is reached.[123] In the *AWS Fifth Notice*, we generally proposed to require that negotiations for relocation of BRS operations be conducted in accordance with our *Emerging Technologies* policies, except that we proposed to forego a voluntary negotiation period and instead require only a mandatory negotiation period that must expire before an emerging technology licensee could proceed to request involuntary relocation.[124] We recognized that the new band where the BRS incumbents are to be relocated is undergoing its own transition process that may not be completed until at least 2008.[125] In light of these considerations, we proposed to forego a voluntary negotiation period and institute "rolling" mandatory negotiation periods (*i.e.*, separate, individually triggered negotiation periods for each BRS licensee) of three years followed by the involuntary relocation of BRS incumbents.[126] We also proposed that the

[121] WCA Comments at 48-49. A proponent is generally a BRS or EBS licensee or EBS lessee that initiates a transition in the 2.5 GHz band by filing an Initiation Plan with the Commission. *See BRS R&O*, 19 FCC Rcd 14165 at 14200, ¶¶ 78-79.

[122] WCA Comments at 43, n. 86.

[123] *See* 47 C.F.R. § 101.71 (voluntary negotiations) and § 101.73 (mandatory negotiations); *see also Emerging Technologies Third R&O*, 8 FCC Rcd at 6595, ¶ 15; *Microwave Cost Sharing First R&O and FNPRM*, 11 FCC Rcd 8825.

[124] *See AWS Fifth Notice*, 20 FCC Rcd at 15879-80, ¶ 24.

[125] *See AWS Fifth Notice*, 20 FCC Rcd at 15879-80, ¶ 24. We noted that the BRS transition plan for the new band at 2496-2690 MHz has five stages: (1) the initiation of the transition process – when a proponent files an initiation plan for a geographic area with the Commission; (2) the transition planning period – where parties can file counterproposals and any disputes would go to arbitration; (3) the reimbursement of costs; (4) the termination of incumbent operations; and (5) the filing of post-transition notification of completion with the Commission. The approximate time needed for the re-banding process includes 3-3½ years for the initiation and planning stages and 1½ years for the actual relocation, for a total of approximately five years. *See BRS R&O and FNPRM*, 19 FCC Rcd at 14197-208, ¶¶ 72-103.

[126] We further noted that relocation of BRS operations by AWS licensees is more likely to take place in a relatively piecemeal fashion and over an extended period of time. Consequently, a uniform mandatory negotiation period (continued....)

mandatory negotiation period would be triggered for each BRS licensee when an AWS licensee informs the BRS licensee in writing of its desire to negotiate. If no agreement is reached during negotiations, the Commission proposed that an AWS licensee may proceed to involuntary relocation of the incumbent. In such a case, the new AWS licensee must guarantee payment of all relocation expenses, and must construct, test, and deliver to the incumbent comparable replacement facilities consistent with *Emerging Technologies* procedures.[127] We noted that under *Emerging Technologies* principles, an AWS licensee would not be required to pay incumbents for internal resources devoted to the relocation process or for fees that cannot be legitimately tied to the provision of comparable facilities, because such expenses are difficult to determine and verify.[128] Finally, we sought comment on whether to apply a "right of return" policy to AWS/BRS relocation negotiations similar to rule 47 C.F.R. § 101.75(d) (*i.e.*, if after a 12 month trial period, the new facilities prove not to be comparable to the old facilities, the BRS licensee could return to the old frequency band or otherwise be relocated or reimbursed).[129]

38. The record generally supports our negotiation proposals.[130] However, BellSouth argues that both AWS entrants and BRS incumbents should be able to trigger the three year mandatory negotiation period.[131] In addition, Sprint Nextel argues that a BRS incumbent should not be required to relocate until the 2.5 GHz band transition is completed in the market at issue.[132] Finally, commenters were split on whether to apply a "right of return."[133]

39. Based on our review of the record, we will continue to generally follow our *Emerging Technologies* policies for negotiations and adopt our proposal to forego a voluntary negotiation period and establish "rolling" mandatory negotiation periods (*i.e.*, separate, individually triggered negotiation periods for each BRS licensee) of three years followed by an involuntary relocation period during which the AWS entrant may involuntarily relocate the BRS incumbents. Under our *Emerging Technologies* policies, the mandatory negotiation period is intended as a period of negotiation between the parties on relocation terms resulting in a contractual relocation agreement.[134] The mandatory negotiation period ensures that an incumbent licensee will not be faced with a sudden or unexpected demand for involuntary relocation if an emerging technology provider initiates its relocation request to obtain early entry to the reallocated spectrum, and provides adequate time to prepare for relocation. During mandatory negotiations, the parties are afforded flexibility in the process except that an incumbent licensee may not refuse to negotiate and all parties are required to negotiate in good faith.[135] Each mandatory negotiation period would be triggered for each BRS licensee when an AWS licensee informs the BRS licensee in writing of its desire to negotiate. The new 2.5 GHz band where the BRS incumbents are to be relocated is

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applicable to all BRS licensees could possibly expire by the time that many BRS licensees were approached for relocation by an AWS entrant. *See AWS Fifth Notice*, 20 FCC Rcd at 15879-80, ¶ 24.

[127] *See* 47 C.F.R. § 101.75 for details on costs and the definition of comparable facilities.

[128] 47 C.F.R. § 101.75.

[129] *See AWS Fifth Notice*, 20 FCC Rcd at 15880-81, ¶ 25.

[130] *See, e.g.*, CTIA Comments at 7-8; T-Mobile Comments at 4-5; CTIA Reply at 3; Sprint Nextel Reply at 16.

[131] *See* BellSouth Comments at 6-7; *but see* CTIA Reply at 3.

[132] Sprint Nextel Comments at 37-39; Sprint Nextel Reply at 10.

[133] Commenters who opposed a right of return policy were Verizon, T-Mobile, and CTIA, who proposed that the BRS incumbent's license to operate in the 2.1 GHz band should be automatically cancelled once the incumbent has been relocated. *See* Verizon Comments at 6-7; T-Mobile Reply at 7-8; CTIA Comments at 13. WCA and C&W supported a right of return policy as a remedy of last resort, especially if the BRS incumbent is allowed to select and deploy its own comparable facilities. *See* WCA Comments at 16-18; C&W Comments 5-6.

[134] *See Emerging Technologies Third R&O*, 8 FCC Rcd at 6595, ¶ 15.

[135] 47 C.F.R. § 101.73.

undergoing its own transition process that may not be completed for several years. Thus, we will allow the BRS licensees to suspend the running of the three year negotiation period for up to one year if the BRS licensee cannot be relocated to comparable facilities at the time the AWS licensee seeks entry into the incumbent's GSA, *i.e.*, if the BRS licensee's spectrum in the 2.5 GHz band is not yet available because of the 2.5 GHz band transition. We find that, in this unique circumstance, providing the BRS incumbent with an additional year to negotiate before an AWS licensee can invoke involuntary relocation sufficiently accounts for any delay in the availability of the BRS licensee's designated relocation spectrum in the 2.5 GHz band, without unduly burdening the AWS licensee's entry into the 2.1 GHz band.

40. If no agreement is reached during negotiations, an AWS licensee may proceed to involuntary relocation of the incumbent. During involuntary relocation, the new AWS licensee must guarantee payment of all relocation expenses necessary to provide comparable replacement facilities. Consistent with our *Emerging Technologies* principles, an AWS licensee would not be required to pay incumbents for internal resources devoted to the relocation process or for fees that cannot be legitimately tied to the provision of comparable facilities, because such expenses are difficult to determine and verify.[136] In addition, an AWS entrant must ensure that the BRS incumbent's spectrum in the 2.5 GHz band is available for the market at issue (or an alternate location, *e.g.*, a temporary location in the 2.5 GHz band, for the provision of comparable facilities) prior to relocating that incumbent.[137] This approach is generally consistent with *Emerging Technologies* procedures for involuntary relocation, except that, because AWS entrants and BRS incumbents are potential competitors, we must include special provisions to protect the BRS licensees' legitimate commercial interests. Accordingly, BRS incumbents cannot be required to disclose subscriber location information so that AWS licensees would be able to construct, test, and deliver replacement facilities to the incumbent and will have to take a much more active role in the deployment of comparable facilities in an involuntary relocation than has typically been the case under previous applications of the *Emerging Technologies* policies.[138] In order to ensure that all parties are acting in good faith while simultaneously protecting BRS licensees' legitimate commercial interests, we will permit AWS licensees to request that the BRS incumbent verify the accuracy of its subscriber counts by, for example, requesting a one-to-one return or exchange of existing end user equipment.

41. Finally, we find that a "right of return" policy is appropriate here. Under *Emerging Technologies* policies, the purpose of a right of return is to ensure that incumbents have a full opportunity to operate their new systems under real-world operating conditions and to obtain redress from the AWS licensee if the new facilities are not comparable.[139] The right of return therefore resides with the incumbent as a function of our relocation rules, not with the AWS entrant, as alleged by some

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[136] Conversely, costs that are compensable include all engineering (*e.g.*, design/survey, installation, and testing), equipment, site, and FCC filing fees, as well as any legitimate and prudent transaction expenses incurred that are directly attributable to an involuntary relocation. BRS incumbents' costs directly associated with the actual relocation of end user equipment used to receive BRS service (*e.g.*, installation and testing) would likewise be compensable. We note that this list should be illustrative, not exhaustive, because some actual relocation expenses may not fit neatly into these categories. *See* 47 C.F.R. § 101.75; *Microwave Cost Sharing First R&O*, 11 FCC Rcd 8825, Appendix A.

[137] WCA references its proposal, found in its petition for reconsideration of the *BRS R&O and FNPRM* in WT Docket No. 03-66, for an interim band plan whereby BRS 1 and 2 licensees would be relocated to 2496-2500 MHz and 2686-2690 MHz, respectively, pending the completion of the 2.5 GHz band's transition. *See* WCA Comments at 46-47. This proposal for an interim band plan will be addressed in the *BRS/EBS Third MO&O* (FCC 06-46). In any event, we anticipate that equipment in the 2.5 GHz band is likely to be frequency agile across the band. Thus, retuning equipment to operate on the BRS channel 1 and 2 licensee's assigned frequencies upon completion of 2.5 GHz band's transition is likely to be all that is necessary for comparable facilities.

[138] *See* 47 C.F.R. § 101.75.

[139] *Microwave Cost Sharing First R&O*, 11 FCC Rcd 8825 at ¶¶ 44-50.

commenters. Accordingly, we will apply a "right of return" policy to AWS/BRS involuntary relocations only – if one year after relocation, the new facilities prove not to be comparable to the old facilities, the AWS licensee must remedy the defects by reimbursement or pay to relocate the BRS licensee to its former frequency band or other comparable facility (until the sunset date).[140]

42. *Sunset Date.* In the *AWS Fifth Notice,* we proposed to apply the sunset rule of 47 C.F.R. § 101.79 to BRS relocation negotiations.[141] This sunset rule provides that new licensees are not required to pay relocation expenses after ten years following the start of the negotiation period for relocation. We also proposed that the ten year sunset date commence from the date the first AWS license is issued in the 2150-2160 MHz band.[142] The *AWS Fifth Notice* then sought comment on how a sunset rule should be applied to take into account the nuances affecting the relocation of BRS incumbents from the 2150-2160 MHz band (*e.g.,* whether we should establish multiple sunset dates or a single sunset date for the entire band since portions of the band will be made available for auction at different times).[143]

43. CTIA contends that a single sunset date is more appropriate than multiple sunset periods.[144] Sprint Nextel and CTIA claim that a ten year sunset period is insufficient and instead argue that the sunset date should correspond to the initial license term, *i.e.*, fifteen years, of the AWS licensee.[145] BRS commenters argue that the AWS licensee's relocation obligation should not sunset, or alternately, the Commission should require that all BRS operations (channels 1 and 2/2A) in the 2150-2160/62 MHz band be relocated by AWS entrants to the 2.5 GHz band by a specific date, *i.e.,* a "relocation deadline" of either ten or fifteen years.[146] They argue that because AWS licensees have a fifteen year initial license term to demonstrate substantial service (*i.e.*, twenty percent of population in its service area served), it is likely that the AWS licensee may not deploy in many areas, especially rural areas, within a ten year or even a fifteen year sunset period.[147] Therefore, they propose that the Commission establish a relocation deadline, as it did in the *800 MHz proceeding*, and require AWS entrants to relocate all BRS incumbents in the 2.1 GHz band within ten years following the grant of the first AWS license.[148]

44. We disagree with commenters who argue that no sunset date should be applied or that a relocation deadline of either ten or fifteen years is more appropriate. Because our *Emerging Technologies* principles are intended to allow new licensees early entry into the band and are not designed as open-ended mechanisms for providing relocation compensation to displaced incumbents, it would be inconsistent with those principles to eliminate the sunset date. We continue to believe that the sunset date is a vital component of the *Emerging Technologies* relocation principles because it provides a measure of certainty for new technology licensees, while giving incumbents time to prepare for the eventuality of

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[140] The "right of return" is only automatic if involuntary relocation occurs. If the parties decide a trial period should be established for relocations that occur as a result of mandatory negotiations, they must provide for such a period in the relocation contract. *See Microwave Cost Sharing First R&O,* 11 FCC Rcd 8825. As a practical matter, we would expect the right of return to be used as a remedy of last resort in order to minimize disruption to the BRS incumbents' customers.

[141] *AWS Fifth Notice*, 20 FCC Rcd at 15881, ¶ 26.

[142] *Id.*

[143] *Id.*

[144] CTIA Comments at 12.

[145] *See* CTIA Comments at 12; Sprint Nextel Comments at 44-45.

[146] *See, e.g.,* BellSouth Comments at 9; C&W Comments at 6; SpeedNet Reply at 3; Polar/Northern Wireless Reply at 6-7; Evertek Reply at 3-4; Radiofone Reply at 3; W.A.T.C.H. TV Reply at 5-6.

[147] *See, e.g.,* WCA Comments at 28-32; BellSouth Reply at 5-6; Sioux Valley Wireless Reply at 4-5.

[148] *See* WCA Comments at 27-28; Sprint Nextel Reply at 14-16; C&W Reply at 3.

moving to another frequency band.[149] Further, the unique circumstances, *i.e.*, reconfiguring and transitioning the 800 MHz band to alleviate unacceptable interference to public safety operations in the band, that required setting a relocation deadline for clearing incumbent operations in the *800 MHz proceeding* are not present here. However, as noted above, we recognize that the 2.5 GHz band, where the BRS incumbents are to be relocated, is undergoing its own transition process and that relocation of existing 2.5 GHz operations may not be completed for several years. Also, because portions of the spectrum in the 2150-2160/62 MHz band will be made available for AWS auction at different times, *i.e.*, spectrum now occupied by part of BRS channel 1 (2150-2155 MHz) will be licensed in an upcoming auction of the 2110-2155 MHz band, while spectrum occupied by BRS channels 2 and 2A and the upper one megahertz of BRS channel 1 (2155-2160/62 MHz) will be licensed at a later date, the entry of AWS licensees into the entire band will occur at different times.[150] To account for these unique circumstances, we believe that additional time before the AWS entrant's relocation obligation ends may be warranted. We therefore adopt a single sunset date of fifteen years, commencing from the date the first AWS license is issued in the 2150-2160 MHz band, after which new AWS licensees are not required to pay for BRS relocation expenses.

45. *Good Faith Requirement.* We expect the parties involved in the replacement of BRS equipment to negotiate in good faith, that is, each party would be required to provide information to the other that is reasonably necessary to facilitate the relocation process. Among the factors relevant to a good-faith determination are: (1) whether the party responsible for paying the cost of band reconfiguration has made a *bona fide* offer to relocate the incumbent to comparable facilities; (2) the steps the parties have taken to determine the actual cost of relocation to comparable facilities; and (3) whether either party has unreasonably withheld information essential to the accurate estimation of relocation costs and procedures requested by the other party.[151] The record generally supports a good faith requirement[152] and we therefore adopt our proposal to apply the good faith guidelines of 47 C.F.R. § 101.73 to BRS negotiations. In addition, we note that our cost-sharing rules require the AWS relocator to obtain a third party appraisal of relocation costs, which, in turn, would require the appraiser to have access to the BRS incumbent's system prior to relocation. Accordingly, we will require that a BRS incumbent cooperate with an AWS licensee's request to provide access to the facilities to be relocated, other than subscribers' end user equipment, so that an independent third party can examine the system and prepare an appraisal of the costs to relocate the incumbent to comparable facilities.

3. Interference Issues/Technical Standards

46. Under Section 24.237 of our Rules, PCS licensees operating in the 1850-1990 MHz band and AWS licensees operating in the 2110-2155 MHz band must, prior to commencing operations, perform certain engineering analyses to ensure that their proposed operations do not cause interference to incumbent fixed microwave services. Part of that evaluation calls for the use of Telecommunications Industry Association Telecommunications Systems Bulletin 10-F (TIA TSB 10-F) or its successor standard.[153] In the *AWS Fifth Notice*, we sought comment on whether a rule comparable to Section 24.237 in our rules should be developed that could be used to determine whether proposed AWS

[149] *See MSS Third MO&O*, 18 FCC Rcd at 23661, ¶ 46.

[150] *See supra* ¶ 3 (describing how the Commission has set forth service rules and anticipated auction timing for the 2150-2155 MHz band, whereas development of the 2155-2160 MHz band is on a different timetable).

[151] *See Microwave Cost Sharing First R&O and FNPRM*, 11 FCC Rcd 8825, 8837-8838 ¶ 21.

[152] WCA Comments at 21; Sprint Nextel Reply at 7.

[153] *See* 47 C.F.R. § 24.237. *See also* Amendment of the Commission's Rules to Establish New Personal Communications Services, *Second Report and Order*, 8 FCC Rcd 7700, 7762 ¶ 150 (1993); *Memorandum Opinion and Order*, 9 FCC Rcd 4957, 5029 ¶ 186 (1994). TIA TSB 10-F, *inter alia*, sets forth the carrier-to-interference ratios for new entrants to use in determining whether a proposed station will cause interference to incumbent microwave stations. *See generally*, TIA TSB 10-F.