Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

COMMENTS OF THE WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.

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EXECUTIVE SUMMARY

The Wireless Communications Association International, Inc. ("WCA") applauds the Commission's issuance of its *Notice of Proposed Rulemaking* ("*NPRM*") proposing rules to allow the 2155-2175 MHz band to be "fully and promptly utilized to bring advanced wireless services to American consumers." However, the Commission cannot ignore that a portion of the band is currently occupied by approximately 30 to 50 systems that use Broadband Radio Service ("BRS") channels 1 (2150-2156 MHz) and 2 (2156-2162 MHz) to provide competitive wireless broadband and multichannel video services to consumers in markets across the country. As important as it is for the Commission to assure that the 2155-2175 MHz band is made available for wireless broadband usage, it is equally imperative that the operators of these incumbent BRS-based systems be made whole as they are relocated from the 2155-2175 MHz band for the benefit of Advanced Wireless Service ("AWS") newcomers to that spectrum.

WCA believes that the Commission's objectives for the 2155-2175 MHz band will be best achieved by licensing the band via competitive bidding as a single unpaired 20 MHz block on an Economic Area basis. The Commission is seeking to maximize use of the 2155-2175 MHz band for AWS by "permit[ting] as many types of technologies in the band as possible that are consistent with [its] fixed and mobile allocation," subject to appropriate interference protection rules. WCA thus supports the "uplink/downlink" approach advanced in the *NPRM*. This approach promotes a competitive environment, as competition is facilitated where regulators give service providers maximum flexibility to select and deploy the technologies and services that are most responsive to customer demand at any given time. A 2155-2175 MHz licensee therefore should be permitted to use any portion of the band for mobile transmissions, base station transmissions, or both. The Commission can readily craft service rules that permit such flexibility while still providing reasonable interference protection. Indeed, the Commission has already adopted this model for BRS and Educational Broadband Service ("EBS") licensees in the 2496-2690 MHz band, introducing the concepts of height-benchmarking and specialized spectrum masks to control interference between co-channel and adjacent channel systems, respectively.

The Commission should *not* condition 2155-2175 MHz licenses on licensee compliance with "free service" obligations, minimum data speed or other requirements advocated by previous applicants for the spectrum. No such conditions have been imposed on AWS licensees before, and with good reason: as highlighted throughout the *NPRM*, the "highest and best use" of spectrum is realized by reliance on market forces and regulation grounded in the principles of service and technological neutrality.

To protect BRS channel 1 and 2 incumbents in the band, the Commission must modify the BRS relocation rules it adopted in its *Ninth Report and Order* in ET Docket No. 00-258, in accordance with the WCA petition for reconsideration that is currently pending before the Commission in that docket. This is essential, as the rules do not adequately protect BRS incumbents from non-co-channel AWS interference prior to relocation, and fail to ensure that existing BRS operations will be made whole by the relocation process itself. Moreover, if the Commission pursues an unlicensed model for the 2155-2175 MHz band (which it should not), it must assure that all BRS channel 1 and 2 operations in the band are relocated to the 2496-2690 MHz band by unlicensed equipment manufacturers before such unlicensed use commences.

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The Wireless Communications Association International, Inc. ("WCA"), pursuant to Section 1.415 of the Commission's Rules, hereby submits its comments in response to the Commission's *Notice of Proposed Rulemaking* ("*NPRM*") in the above-captioned proceeding.[1]

I. INTRODUCTION.

WCA is the trade association of the wireless broadband industry. Its members include, among others, a wide variety of service providers, equipment vendors, engineers and consultants interested in using or supporting the use of licensed spectrum to deliver wireless broadband service to consumers. WCA's constituency also includes Broadband Radio Service ("BRS") licensees that use BRS channels 1 (2150-2156 MHz) and 2 (2156-2162 MHz) to deliver competitive wireless broadband and multichannel video services in approximately 30-50 markets throughout the United States.[2] Because BRS channels 1 and 2 overlap the bottom 7 MHz of the 2155-2175 MHz band ("AWS-3"), users of BRS channels 1 and 2 ultimately will be forced to

[1] *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Notice of Proposed Rulemaking, 22 FCC Rcd 17035 (2007) ["*NPRM*"].

[2] *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*, Ninth Report and Order and Order, 21 FCC Rcd 4473, 4481 (2006) ["*Ninth Report and Order*"].

vacate their spectrum to make room for AWS-3 operations.[3] WCA therefore has a substantial interest in the Commission's proposed rules for the 2155-2175 MHz band, both because of the spectrum's potential as a vehicle for wireless broadband and because of the need to protect incumbent BRS channel 1 and 2 operations that already provide service to thousands of consumers.

The Commission long ago identified the 2155-2175 MHz band as one in which Time Division Duplex ("TDD") technologies could find a home,[4] and the *NPRM* clearly states the Commission's desire to accomplish that objective here: "Our intention is to develop an approach for 2155-2175 MHz that will enable service providers to maximize use of this spectrum to provide advanced wireless services, while providing the necessary protections against interference. Our plan for achieving that objective is to permit as many types of technologies in the band as possible that are consistent with our fixed and mobile allocation, and with the need to protect against interference."[5] WCA endorses this model and urges the Commission to do the following:

- License the 2155-2175 MHz band as a single unpaired 20 MHz block on a Economic Area ("EA") basis, with licenses assigned via competitive bidding;
- Permit mobile and base station transmissions anywhere in the band via any TDD or Frequency Division Duplex ("FDD") technology (referred to in the *NPRM* as the "uplink/downlink approach"), subject to technical rules that allow 2155-2175 MHz licensees and surrounding AWS-1 (2110-2155 MHz)

[3] *See NPRM*, 22 FCC Rcd at 17069.

[4] *See Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, Report and Order, 18 FCC Rcd 25162, 25179 (2003) ["*AWS-1 Report and Order*"] ("In the meantime, we will make every effort to provide spectrum opportunities for TDD systems in future allocation and spectrum proceedings, such as in the *AWS Allocation* proceeding [which specifically targeted the 2155-2175 MHz band].").

[5] *See NPRM*, 22 FCC Rcd at 17042.

and AWS-2 (2175-2180 MHz) licensees to coexist despite the possible lack of synchronization between systems;[6]

- To facilitate coexistence both among AWS-3 licensees and between AWS-3 licensees and adjacent channel licensees where systems are not synchronized, incorporate the interference protection requirements (particularly the specialized spectral mask and height benchmarking rules) it has already adopted for BRS and Educational Broadband Service ("EBS") licensees in the flexible use 2496-2590 MHz ("2.5 GHz") band; and

- Reject calls for imposition of service obligations on 2155-2175 MHz licensees that undermine licensee flexibility and prohibit the band from being used for its highest and best use.[7]

While these steps will promote the Commission's objective of driving the AWS-3 spectrum to its highest and best use, that objective cannot take precedence over assuring that BRS channel 1 and 2 licensees are made whole as they are involuntarily relocated to the 2.5 GHz band. WCA is troubled that the Commission is proposing to apply to AWS-3 licensees the same BRS relocation rules adopted in its *Ninth Report and Order* in ET Docket No. 00-258.[8] WCA has filed a petition for reconsideration enumerating the substantial flaws in those rules which, if not corrected, will expose incumbent BRS channel 1 and 2 operations to debilitating interference from nearby AWS operations, preclude them from increasing system throughput in response to customer demand, and otherwise leave BRS relocation almost entirely to the discretion and

[6] Two systems are considered synchronized if they always transmit in the same direction (*i.e.*, uplink or downlink) at the same time. They are not synchronized, however, if one system can transmit in the uplink direction when the other is transmitting in the downlink direction. For example, since the AWS-1 licensee immediately below the 2155-2175 MHz band is required to utilize its spectrum solely for downstream transmission (*see* 47 C.F.R. § 27.50(d)), that system will only be synchronized with an AWS-3 system that utilizes its spectrum solely for downlink transmission. It will not be synchronized with an AWS-3 system that is utilizing adjacent spectrum for upstream transmissions, either full-time as part of an FDD system paired with spectrum in some other band or part-time because that system is using a TDD technology. Similarly, two TDD systems will also be non-synchronized unless the system operators take steps to assure that their systems are always transmitting in the same direction at the same moment in time.

[7] WCA also applauds the Commission's commitment to issuing its new rules for the 2155-2175 MHz band on an expedited basis. *See NPRM*, 22 FCC Rcd at 17037-38 ("We commit to issuing an order adopting rules in this proceeding within nine months following the publication of this Notice in the Federal Register.").

[8] *See Ninth Report and Order*, n.2 *supra*.

control of AWS licensees who will be competing directly with BRS operators for customers.[9] This plainly cannot be squared with the Commission's previous assurances that relocated BRS operators will be made whole and that their services to consumers will not be disrupted by the relocation process. And, if the Commission decides (which it should not) to allocate the 2155-2175 MHz band for unlicensed use, it is essential that the Commission develop a mechanism that will provide for relocation of incumbent BRS channel 1 and 2 licensees to the 2.5 GHz band at the expense of the manufacturers of unlicensed devices, with such relocation completed before unlicensed equipment enters the marketplace.

II. DISCUSSION.

A. *The Commission Should Utilize Competitive Bidding To License The 2155-2175 MHz Band Using Economic Area Geographic Areas.*

At the outset, WCA recommends that the Commission utilize competitive bidding to license the 2155-2175 MHz band as a single 20 MHz block on an EA basis.[10] Combined with the

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[9] *See* Wireless Communications Ass'n Int'l Petition for Reconsideration of Ninth Report and Order, ET Docket No. 00-258 (filed June 23, 2006) ["WCA Ninth Report and Order Petition"]. Oddly, the *NPRM* omits any discussion of the WCA Ninth Report and Order Petition. Instead, the *NPRM* references WCA's Petition for Reconsideration with regard to the Commission's *Report and Order* in WT Docket No. 02-353, an entirely separate proceeding in which the Commission adopted service rules for AWS-1 licensees. *See NPRM*, 22 FCC Rcd at 17068 n.130 (discussing Wireless Communications Ass'n Int'l Petition for Reconsideration, WT Docket No. 02-353 (filed Mar. 8, 2004) ["WCA 02-353 Petition"]). The WCA 02-353 Petition preceded the release of the *Ninth Report and Order* by over two years, and, obviously, could not and did not address the BRS relocation rules the Commission eventually adopted in that decision. Moreover, the Commission dismissed the WCA 02-353 Petition as moot simply because the Commission chose to address that filing (albeit unsuccessfully) in the *Ninth Report and Order* rather than in an order on reconsideration in WT Docket 02-353. *See Ninth Report and Order*, 21 FCC Rcd at 4533-34. Nothing in the *Ninth Report and Order* moots or resolves any of the concerns raised in the WCA Ninth Report and Order Petition.

[10] *See NPRM*, 22 FCC Rcd at 17043 (requesting comment on "an approach featuring an unpaired, stand-alone 20-megahertz block available for technologies that would allow the use of both mobile and base station transmissions in the 2155-2175 MHz band.") (footnote omitted). Subject to the comments set forth herein, WCA supports the Commission's proposal to license the 2155-2175 MHz band under Part 27 and to require 2155-2175 MHz licensees to comply with the Part 27 requirements that generally apply to wireless licensees thereunder (*e.g.*, identification of regulatory status, license term, renewal expectancy, foreign ownership, partitioning and disaggregation, etc.). *See generally id*. at 17075 *et seq*. WCA also agrees that the Commission should not impose a spectrum aggregation limit or eligibility restrictions in the 2155-2175 MHz band, and that the spectrum leasing policies established in the Commission's *Secondary Markets* proceeding should apply to 2155-2175 MHz services in the same manner that they apply to other Part 27 services (excluding Guard Band Manager licensing). *See id*. at 17079, 17089-90.

flexible use rights advocated by WCA, this approach will give 2155-2175 MHz licensees maximum latitude to deploy the technologies and services that satisfy customer demand.

Providing licensees with a 20 MHz flexible use license will afford wireless broadband operators a substantial opportunity to deploy robust TDD systems using technologies compliant with the IEEE 802.16e-2005 standard, a critical consideration given the projected domestic and international growth of WiMAX-based services in the near future.[11] As the Commission has found in other proceedings "20-megahertz (or larger) spectrum blocks enable a broader range of broadband services (including Internet access at faster speeds), accommodate future high data rates, and provide operators with additional capacity and, importantly, flexibility."[12] Further, because some spectrum will be devoted to guardband to meet the specialized spectrum masks that WCA is proposing to protect adjacent channel operations (at least until technology improves and permits those masks to be met with little or no guardband), the 2155-2175 MHz band is only wide enough to support one viable broadband system per market.

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[11] *See id*. at 17044 ("Allowing both mobile and base [station] transmissions in the 2155-2175 MHz band to support applications such as Wireless Interoperability for Microwave Access (WiMax) could also foster more competition among emerging broadband technologies.") (footnote omitted). It is well known, for example, that Clearwire has already launched wireless broadband systems with proprietary equipment in various markets and has announced plans to migrate those systems to mobile WiMAX once certified IEEE 802.16e-2005 equipment is available. *See, e.g.*, Clearwire Corporation Quarterly Report Pursuant To Section 13 Or 15(d) Of The Securities Exchange Act Of 1934 For The Quarterly Period Ended March 31, 2007 (SEC Form 10-Q), at 15 (May 15, 2007) ("Our [existing Expedience] network currently relies on network infrastructure equipment that is based on proprietary non-line-of-sight, or NLOS, Orthogonal Frequency Division Multiplexing, or OFDM, technologies. We have committed to deploy networks based on the IEEE mobile Worldwide Interoperability of Microwave Access 802.16e-2005, or mobile WiMAX, standard once mobile WiMAX equipment is commercially available and meets our requirements."); Fabbri, "Telcos Eager for WiMAX, DoJ Conference Told," Communications Daily, at 3 (Nov. 30, 2007) ("Sprint Nextel is counting on WiMAX to realize its dreams of offering Internet access everywhere to various devices, said Bin Shen, Sprint Nextel vice president, broadband product management. . . . The company wants WiMAX chips in everything from DVD and multimedia players to cameras and cars, he said. . . . The company envisions a day when 'anything you carry, anything you touch, can connect to the Internet,' he said.").

[12] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289, 15318 (2007) (footnote omitted) ["*700 MHz Second Report and Order*"]; *id*. n.154, *citing Service Rules for Advanced Wireless Services in the 1.7 and 2.1 GHz Bands*, Order on Reconsideration, 20 FCC Rcd 14058, 14066-67 (finding that larger 20-megahertz blocks should enable a broader range of broadband services, and accommodate future higher data rates).

WCA recommends that the AWS-3 spectrum be licensed on the basis of EA geographic areas.[13] The Commission has ample experience with EA-based licensing, having adopted that model for a variety of other wireless services.[14] Indeed, as the Commission has noted elsewhere, EA licenses "provide potential applicants additional flexibility to implement their business plans by allowing . . . the option of bidding on a geographic license area based on a size that is between smaller CMAs and larger REAGs."[15] Further, "EA . . . licenses can be combined to form larger service territories or larger spectrum holdings," and "[e]xisting service providers also can acquire EA license areas to supplement their existing spectrum capacity."[16] Indeed, EA-based 2155-2175 MHz licenses are optimal because they are small enough to be used by, for example, BRS/EBS or AWS-1 operators seeking to supplement their existing spectrum holdings by acquiring spectrum where they either have none, or need more.[17] EA-based licensing at 2155-2175 MHz thus is an appropriate middle ground that will accelerate broadband deployment while facilitating the participation of smaller players in the 2155-2175 MHz auction.

B. *The Commission Should Permit Uplink And/Or Downlink Transmissions Anywhere In The 2155-2175 MHz Band, Subject To Interference Protection Requirements Modeled On Those Adopted For BRS/EBS Operations In The 2.5 GHz Band.*

The Commission lays the foundation for a 2155-2175 MHz regulatory regime when it recognizes in the *NPRM* that:

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[13] *See NPRM*, 22 FCC Rcd at 17050.

[14] *See id*. at 17051-52 (listing wireless services already licensed on EA basis).

[15] *700 MHz Second Report and Order*, 22 FCC Rcd at 15324 (footnote omitted).

[16] *Id*. at 15325 (footnote omitted).

[17] *See NPRM*, 22 FCC Rcd at 17053 (noting that the 2155-2175 MHz band "may be used in conjunction with other AWS spectrum, including the bands allocated as part of AWS-1") (footnote omitted).

> Giving licensees the flexibility to determine which technology they will use would help ensure that the AWS-3 spectrum is put to its highest valued uses, subject to any constraints placed by the interference protection standards that we adopt. Moreover, with flexible service rules, licensees should be able to adjust their choice of technology in response to evolving consumer demands so that the band will continue to reflect market pressures without further regulatory action.[18]

This comes as no surprise – in fact, the Commission has long held to the view that consumers are served best by a regulatory paradigm that gives wireless operators maximum flexibility to select and deploy the technologies and services that they believe are optimally suited for satisfying market demand.[19] Conversely, substitution of government intervention for marketplace judgments is a recipe for failure – operators cannot be expected to sustain billions of dollars of investment in providing wireless broadband and other advanced services if regulators force them to deploy technologies and services that the market cannot or will not support.

The Commission reaffirmed these principles in its 2004 overhaul of the bandplan and associated service rules for BRS/EBS operations in the 2.5 GHz band (WT Docket No. 03-66).[20] Much like the case here, the Commission's core objective at 2.5 GHz was to "provide both incumbent licensees and potential new entrants in the 2495-2690 MHz band with greatly enhanced flexibility to encourage the efficient and effective use of spectrum domestically and internationally," and, to that end, "provide the opportunity for operators using different

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[18] *Id*. at 17045.

[19] *See, e.g.*, Report of the Wireless Broadband Access Task Force, Federal Communications Commission, GEN Docket No. 04-163, at 64 (February 2005) ["[A] more flexible and market-oriented approach to spectrum policy is the better course to provide incentives for users to migrate to more technologically innovative and efficient use of the spectrum, and to provide the services that markets determine are most valued, including broadband services."].

[20] *See Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165 (2004) ["*BRS/EBS Report and Order*"]; *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Order on Reconsideration and Fifth Memorandum Opinion and Order and Third Memorandum Opinion and Order and Second Report and Order, 21 FCC Rcd 5606 (2006) ["*BRS/EBS Reconsideration Order*"].

technologies and/or services to have access to the same spectrum."[21] Most significantly, the revised 2.5 GHz rules give BRS/EBS operators the flexibility to deploy their technology of choice, whether TDD or FDD, by permitting uplink transmissions, downlink transmissions or both anywhere in the segments of the band designated for broadband usage.[22] At the same time, the rules also include unique technical requirements specifically designed to minimize the likelihood of interference between non-synchronized uses.[23] As such, the Commission's new paradigm for the 2.5 GHz band proves that it is possible to achieve a workable, pro-competitive compromise between technical flexibility and reasonable protection against interference, even among adjacent users of supposedly irreconcilable technologies.

The Commission can and should implement the same regulatory regime to provide flexibility for licensees in the 2155-2175 MHz band. As is recognized in the *NPRM*, TDD technologies have a variety of characteristics that can provide substantial public interest benefits, including the capability to maximize spectral efficiency by modifying the time slots used by a base station and its subscriber units to dynamically balance an asymmetric data flow.[24] Indeed, in response to criticism when the Commission reserved the AWS-1 band for FDD use only, the Commission made a clear commitment to allocate additional spectrum for TDD usage, and specifically cited to the 2155-2175 MHz band as a target for TDD use.[25]

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[21] *BRS/EBS Reconsideration Order*, 21 FCC Rcd at 5609-10.

[22] *See BRS/EBS Report and Order*, 19 FCC Rcd at 14184 ("[T]he plan we adopt is also technologically neutral, affording licensees the flexibility to deploy either FDD or TDD technology anywhere in the 2.5 GHz band."). The Commission reconfigured the 2.5 GHz band to create two band segments (the Lower Band Segment ("LBS") and Upper Band Segment ("UBS"), respectively) for low power, cellularized use, with a segment in between the two (the Middle Band Segment, or "MBS") available for incumbent high-power BRS/EBS operations. *Id*. at 14183-84. Low power operations are permitted in the MBS subject to the consent of neighboring licensees. *Id*. at 14198.

[23] *See id*. at 14212-15 (discussion of height benchmarking rule and spectral mask); *BRS/EBS Reconsideration Order*, 21 FCC Rcd at 5689-91 (discussion of spectral mask).

[24] *See NPRM*, 22 FCC Rcd at 17043.

[25] *See AWS-1 Report and Order*, 18 FCC Rcd at 25179.

Appropriately, the *NPRM* recognizes that affording 2155-2175 MHz licensees the flexible use rights discussed above can pose a heightened risk of interference between AWS-3 licensees operating co-channel systems and between AWS-3 and adjacent AWS systems at 2110-2155 MHz and 2175-2180 MHz.[26] By applying the rules and policies adopted in WT Docket No. 03-66, however, the Commission can reasonably control the potential for interference. Unlike situations where the Commission has considered the possible deployment of TDD adjacent to a mature existing service, here the services at issue are all new – the newly-minted AWS-1 licensees were on notice long before the AWS-1 auction that the 2155-2175 MHz band could be used for TDD technologies and presumably have been planning accordingly, and AWS-2 and AWS-3 have yet to be licensed. Thus, all the potentially impacted licensees can deploy state-of-the-art techniques for mitigating potential interference between non-synchronized technologies.

1. The Dual Mask Set Forth In Section 27.53(l)(2) Can Be Applied To AWS-1, AWS-2 And AWS-3 Licensees To Control Potential Interference Due To Non-Synchronized Adjacent Channel Operations.

One of the more difficult tasks faced by the Commission in developing technical rules that support flexibility for the 2.5 GHz band was the establishment of out-of-band emission ("OOBE") limits. In proposing the solution ultimately adopted by the Commission, the BRS/EBS industry recognized that relatively loose OOBE base station limits along the lines of those imposed on AWS-1 licensees are appropriate when adjacent licensees are operating synchronized systems. However, it also recognized that substantially more stringent OOBE

[26] *See NPRM*, 22 FCC Rcd at 17042.

limits are required to provide licensees with reasonable levels of interference protection when licensees exercise their flexibility and choose to deploy non-synchronized systems.[27]

Since the need for more stringent adjacent channel interference protection may or may not exist in a particular situation, the Commission recognized in WT Docket No. 03-66 that a "one size fits all" OOBE emission limit would not be appropriate. If faced with a more stringent OOBE limit that was universally applicable, licensees would be forced to use transmission equipment with additional filtering and/or back off their signals from the channel edge to allow a guardband to comply with the tighter OOBE limit at the channel edge. On the other hand, if the Commission adopted only a relatively loose spectral mask, interference would be likely in those cases where non-synchronized technologies are deployed. In other words, the problem the Commission faced in crafting the BRS/EBS rules, and which it faces here again, is that while a comparatively loose OOBE limit provides perfectly acceptable adjacent channel interference protection when adjacent licensees are operating synchronized systems, a more stringent OOBE limit (which requires more expensive equipment and/or the devotion of spectrum to guardband) is necessary to provide that same protection when adjacent channel licensees are operating non-synchronized systems.

To solve this problem in the 2.5 GHz band, the industry proposed, and the Commission adopted, what is known as the "dual mask." Under Section 27.53(l)(2), while base station transmissions generally must be attenuated outside the authorized frequencies by the traditional and relatively loose $43 + 10 \log(P)$ mask, under certain circumstances licensees will be required

[27] *See* "Second Supplement to 'A Proposal For Revising The MDS And ITFS Regulatory Regime,'" Wireless Communications Ass'n Int'l, Nat'l ITFS Ass'n and Catholic Television Network, RM-10586, at 1-2 n.3 (filed Feb. 7, 2003) ["Second Coalition Supplement"].

to further attenuate their base station OOBE.[28] In adopting this dual spectral mask, the Commission recognized that "loose out-of-band emission limits provide perfectly acceptable adjacent channel interference protection when adjacent channel licensees are operating compatible systems, but when adjacent channel systems are not compatible, a more stringent out of band emission limit is necessary to provide an appropriate level of interference protection."[29] The Commission concluded that the dual mask "reasonably limits adjacent channel interference and maximizes spectral efficiency while remaining technology neutral."[30]

To control the potential for adjacent channel interference recognized in the *NPRM*, the Commission should do as it did for BRS and EBS and require AWS-3 licensees, as well as adjacent AWS-1 and AWS-2 licensees,[31] to observe the dual spectral mask for base stations set forth in Section 27.53(l)(2), subject to certain relatively minor revisions that are the subject of an unopposed petition for reconsideration WCA presently has pending before the Commission.[32] This will afford those licensees that utilize synchronized technologies the benefit of less stringent OOBE requirements, while assuring all licensees a reasonable opportunity to operate free of

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[28] *See* 47 C.F.R. § 27.53(l)(2). Specifically, where one base station causes harmful interference to another under delineated circumstances, it must attenuate its emissions by at least 67 + 10 log(P) measured at 3 MHz and beyond inside the frequency block of the victim licensee where the two base stations are at least 1.5 km apart. If the victim base station is located less than 1.5 km away, the interfering base station must attenuate its emissions by at least 67 + 10 log(P) – 20 log(Dkm/1.5) measured at 3 MHz and beyond inside the frequency block of the complaining licensee, or if both base stations are colocated, limit its undesired signal level at the other base station receivers to no more than -107 dBm measured in a 5.5 MHz bandwidth.

[29] *BRS/EBS Report and Order*, 19 FCC Rcd at 14214.

[30] *Id*. (footnote omitted).

[31] WCA is not suggesting that the Commission revisit its decision to limit the 2110-2155 MHz AWS-1 band to downlink transmissions, and thus the dual mask has no bearing on adjacent channel interference between AWS-1 licensees. Rather, WCA is only suggesting that a dual mask based on Section 27.53(l)(2) be imposed on AWS-1 licenses with respect to their relationship with AWS-3 licensees.

[32] *See* Wireless Communications Ass'n Int'l Petition for Partial Reconsideration, WT Docket No. 03-66, at 3-9 and Appendix A (filed July 19, 2006) ["WCA 03-66 Petition"]. In that filing, WCA has asked for additional modifications to Section 27.53(l) to minimize delays in resolving interference and to otherwise strengthen or clarify the protections provided under Section 27.53(l)(2) as it applies to BRS/EBS licensees.

OOBE interference regardless of their chosen technology. Of course, in many cases even non-synchronized systems can share an adjacent channel edge without interference if available coordination techniques, such as frequency reuse planning and coordinated tower site selection, are employed on a voluntary basis, without the need for additional filtering or guardbands. Because operators will be required to provide additional attenuation of OOBE in the absence of a voluntary agreement, the dual mask proposal creates natural incentives for operators to coordinate. By doing so, operators will be able to minimize the need for guardbands (and thus maximize their available usable spectrum) and/or the need for additional filtering at their base stations (thus minimizing capital costs). In the absence of voluntary coordination, however, the more restrictive element of the dual mask provides regulatory certainty and allows deployments that provide reasonable levels of protection to well-designed adjacent channel operations.

2. The Commission Can Control Mobile-to-Mobile Interference By Applying The Mobile Spectral Mask Adopted For The 2.5 GHz Band.

Recognizing that its proposal for technical flexibility in the 2.5 GHz band could lead to interference in those relatively rare situations in which a mobile unit's transmission causes interference when made in close proximity to a mobile on a different system that is actually receiving base station transmissions on adjacent spectrum, the BRS/EBS industry proposed that mobile units be subject to a stricter mask than the Commission had traditionally applied to mobile units. Specifically, it was suggested that any emission by a mobile unit should be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, measured in watts, from the edge of the applicable frequency block to 5.5 MHz from that edge, and should thereafter be

attenuated by at least 55 + 10 log(P) dB.[33] The Commission agreed with that proposal, and Section 27.53(l)(3) now mandates that "[f]or mobile digital stations, the attenuation factor shall be not less than 43 + 10 log(P) dB at the channel edge and 55 + 10 log(P) dB at 5.5 MHz from the channel edges."[34]

Applying this more stringent mask to AWS-3 mobile devices will serve to mitigate the potential for interference in those relatively limited circumstances where an AWS-3 device is transmitting when in close proximity to a well-designed AWS-1 or AWS-2 mobile device that is receiving.[35] While meeting this mask in an economical manner has been challenging for the 2.5 GHz vendor community, it appears to be an achievable goal that appropriately balances the competing interests. To the extent that AWS-2 licensees are permitted to operate in the uplink direction in the 2175-2180 MHz band, the Commission should apply the same requirement to them to mitigate interference to AWS-3 mobile operations.

3. The Commission Should Adopt A Height Benchmarking Requirement Similar To That Of Section 27.1221 To Protect Non-Synchronized Operations From Co-channel Interference.

Similarly, the Commission should apply to AWS-3 the same two-prong approach to the regulation of co-channel interference as it has applied in the 2.5 GHz band: (1) a maximum signal strength at the border of each licensee's EA; and (2) further restrictions on signal level outside a licensee's EA when a base station constructed in proximity to the EA border with its transmission antennas in excess of a "safe harbor" height causes interference to a non-

[33] *See* "First Supplement to 'A Proposal For Revising The MDS And ITFS Regulatory Regime,'" Wireless Communications Ass'n Int'l, Nat'l ITFS Ass'n and Catholic Television Network, RM-10586, at 2-3 (filed Nov. 14, 2002).

[34] 47 C.F.R. § 27.53(l)(3).

[35] As the *NPRM* recognizes, "AWS-1 licensees have not begun to operate in the adjacent 2110-2155 MHz band and licensing has not yet begun in the adjacent 2175-2180 MHz (AWS-2) band." *NPRM*, 22 FCC Rcd at 17060.

synchronized base station on the other side of the EA border that has been constructed with its reception antennas below a "safe harbor" height. Both of these proposed prongs are essential if AWS-3 licensees are to enjoy the flexibility to use non-synchronized technologies as envisioned by WCA.

The imposition of a maximum signal strength at a licensee's service area boundary is a tried and true mechanism for controlling co-channel interference.[36] WCA proposes that the Commission utilize the same 47 dBμV/m standard employed for broadband PCS,[37] for Part 27 services in the 2305-2320 and 2345-2360 MHz bands, for Part 27 services in the 1390-1395 and 1432-1435 MHz bands,[38] and for Part 27 services in the 2.5 GHz band.[39] This field strength level appears to strike an appropriate balance between limiting potentially disruptive signals into an adjoining service area and permitting a licensee to substantially serve its EA, including areas near the border, at least where synchronized technologies are deployed or the systems otherwise are coordinated.[40]

However, as the record in WT Docket No. 03-66 established and the Commission implicitly recognized when it restructured the 2.5 GHz regulatory regime, a field strength limit alone does not provide adequate interference protection when non-synchronized systems are

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[36] *See, e.g., Amendments to Parts 1, 2, 27 and 90 of the Commission's Rules to License Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands*, Report and Order, 17 FCC Rcd 9980, 10030 (2002).

[37] 47 C.F.R. § 24.236.

[38] *Id*. § 27.55(a)(1) and (3).

[39] *Id*. § 27.55(a)(4).

[40] In applying this 47 dBμV/m field strength limit, WCA recommends that compliance with the 47 dBμV/m field strength limit be measured 1.5 meters above ground. *See id*., § 27.55(a)(4)(ii). In addition, to avoid confusion and inconsistent application of the field strength limit, the Commission should specify that this 47 dBμV/m field strength limit is to be measured over a 5.5 MHz bandwidth and that operations over different sized channels should be adjusted by applying a factor of 10 log [(actual bandwidth MHz)/(5.5 MHz)]. The need for this clarification is illustrated by a simple example – the difference between a field strength measurement made at 5.5 MHz and one made at 1 MHz is -7.4 dB.

operating co-channel on opposite sides of a border. In other words, while the 47 dBµV/m standard alone is appropriate when synchronized systems are involved on both sides of a border (as, for example, is the case with AWS-1 or PCS), more is needed to accommodate the flexible uplink/downlink approach adopted for the 2.5 GHz band and advocated here.

The problem, in a nutshell, is that where line-of-sight exists between two base stations, downlink transmissions from a base station in a given service area where a given channel is used for downstream transmissions can cause interference to uplink reception at a base station in a nearby service area if the same channel is used. This occurs because the receivers at the base station must be sensitive enough to receive low power signals from subscriber units, and is true even if the 47 dBµV/m benchmark is met by the downstream transmissions at the service area border. Indeed, base station receivers are so sensitive that this potential for interference exists almost without regard to the signal level at the border. Thus, line of sight between non-synchronized base stations will always be problematic.

It would be unduly harsh to address this risk of interference by barring licensees from transmitting any signal whatsoever into the neighboring service area. As a practical matter, such a requirement would preclude licensees from providing a viable service towards the outer portions of their own service areas, since it is for all intents and purposes impossible to serve up to, but not beyond, a geographic boundary. Similarly, the Commission should not adopt the simple expedient of precluding licensees from constructing base stations that would have line-of-sight to the reception antennas of a previously constructed base station in a neighboring EA. To do so would unfairly preclude adjacent market co-channel licensees from providing ubiquitous coverage within their own service areas, and give those licensees that deploy their systems first an incentive to construct base station antennas high above ground in order to take advantage of

the first mover interference protection. Banning all tall base stations near the border would be overkill, since base stations are problematic only if the antennas are oriented towards the service area boundary, or if other voluntary coordination steps, such as coordinated frequency planning, are not employed.

Thus, the Commission settled upon a novel approach for the 2.5 GHz band, but one that is directly targeted at the problem. It allows licensees to construct base stations without any height restriction, but only extends additional interference protection (beyond the 47 dBμV/m received signal level limit) to those base station receive antennas that are not unduly tall relative to the distance of the base station to the border. Further, it requires the licensee of those base station transmission antennas that are unduly tall relative to their distance to the border to make modifications to protect only those on the opposite side of the border that are not unduly tall. In other words, it provides "safe harbors" that promote, but do not require, the use of low-site base stations close to service area borders to facilitate interference-free service.

The net result of this approach is to provide a mechanism by which licensees can shield themselves from regulatory uncertainty, while encouraging licensees to engage in voluntary coordination. WCA believes the best approach to the problem of co-channel interference is for the affected licensees to enter into coordination agreements that are more narrowly tailored to their markets and business plans. Voluntary coordination should permit co-channel licensees to provide service close to the border of their service areas, even utilizing facilities outside of safe harbors. Since both co-channel licensees will desire to provide service as close as possible to the border, and both will desire the flexibility to utilize facilities in excess of safe harbor heights, the safe harbor regime will create powerful incentives for voluntary coordination, without the need for regulatory fiat. Where such voluntary agreements are not forthcoming, however, a licensee

that constructs its base stations near boundaries at or below its safe harbor height will have certainty that it will not have to make future modifications to protect a neighboring co-channel base station, no matter how that neighboring co-channel base station is designed. And, a licensee that has constructed its base station at or below its safe harbor height has certainty that it will be protected should a neighboring co-channel base station be constructed above its safe harbor height and cause actual interference. While the safe harbor regime creates some additional level of complexity in the rules, this complexity is necessary to achieve a balance of positive incentives for coordination with regulatory certainty, where, for whatever reason, parties cannot reach agreement.

Pursuant to the Section 27.1221, a station is deemed within its safe harbor if the height in meters of the antenna's centerline above the average elevation along the radial directly towards the base station receiving the interference is equal to or less than $D^2/17$ (where D is the distance in kilometers between the base station causing the interference and the point on that radial that intersects the boundary of the service area of the station receiving the interference).[41] This formula determines, based on average elevation (which is more easily applied than requiring specific terrain studies and is less open to dispute), whether the station is of sufficient height that it will have line-of-sight to the border. This is an appropriate approach – a station that is tall enough that it just has line-of-sight to the border should be protected and should not have special obligations, since base stations require line of sight to the border if the system is to provide ubiquitous coverage of the service area. Where a station is built within its safe harbor, and suffers co-channel interference from a station built in excess of its height benchmark, Section 27.1221 generally requires the operator of an interfering base station to either reduce the height

[41] *See* Second Coalition Supplement at 5.

above average elevation of the base station transmission antenna height to no greater than the benchmark or to otherwise limit the receive signal at the victim base station to no more than -107 dBm/5.5 MHz.[42] Since the technical principles supporting Section 27.1221 are equally germane here, WCA urges that the Commission require AWS-3 licensees to comply with the rule as an additional safeguard for ensuring coexistence among co-channel systems with non-synchronized operations.[43]

4. None Of The Obligations Proposed By Prior Applicants For The 2155-2175 MHz Band Should Be Adopted.

Consistent with the fundamental purposes of flexible use, the Commission should *not* adopt any proposal to impose "free service" obligations, minimum data rate, content filtering, or the "other license conditions" proposed by prior applicants for the 2155-2175 MHz band.[44] Simply put, it makes no sense for the Commission to endorse a flexible use model for the spectrum but then countenance license conditions that would force 2155-2175 MHz licensees into predetermined services or business models not of their choosing. Not coincidentally, the Commission has deemed it unnecessary to impose such conditions on AWS licensees in other spectrum, and the speculative arguments of disaffected prior applicants for the 2155-2175 MHz band is hardly a basis for the Commission to do otherwise here. The highest and best use of the spectrum will be determined by market forces and the ability of 2155-2175 MHz operators to adapt to the needs of their customers via innovation and development of new services.

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[42] *See* 47 C.F.R. § 27.1221; *BRS/EBS Report and Order*, 19 FCC Rcd at 14212-13.

[43] The WCA 03-66 Petition also requests that the Commission modify Section 27.1221 to add much-needed deadlines by which licensees must act where it is documented that interference from a base station operating outside its height benchmark harms a base station operating within its height benchmark. *See* WCA 03-66 Petition at 2-3 and Appendix A. In addition, WCA has sought clarification of the mathematics for calculating the height benchmark for any given base station and the obligations of licensees when co-channel interference occurs. *See* Letter from Paul J. Sinderbrand, Counsel for Wireless Communications Ass'n Int'l, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 03-66 (filed May 29, 2007).

Predetermined license conditions of the sort proposed in the *NPRM* will do nothing to further that process.

C. *The Commission Must Eliminate Serious Flaws In Its BRS Relocation Rules Before Awarding AWS-3 Authorizations.*

The *NPRM* recognizes that AWS licensees in the 2155-2175 MHz band will be governed by the BRS relocation rules adopted in the *Ninth Report and Order* in ET Docket No. 00-258.[45] Those rules, however, are seriously flawed, and thus WCA has filed a petition for reconsideration of the *Ninth Report and Order*.[46] WCA's arguments therein are incorporated here by reference. However, to reemphasize the importance of this matter to its constituents, WCA offers the following summary of its position.

From the time the Commission established its microwave relocation policies in its *Emerging Technologies* proceeding, the Commission has promised incumbents that it will "protect operations of incumbent licensees from harmful interference caused by operations of emerging technology licensees."[47] To the Commission's credit, the *Ninth Report and Order* accomplished that objective with respect to AWS operations that will be co-channel to incumbent BRS channel 1 or 2 operations, requiring that a co-channel AWS licensee relocate an incumbent BRS channel 1 or 2 licensee operating a base station that has line-of-sight to the BRS

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[44] *See NPRM*, 22 FCC Rcd at 17072-75.

[45] *See id*. at 17068.

[46] *See* WCA Ninth Report and Order Petition, n.9 *supra*.

[47] *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, First Report and Order and Third Notice of Proposed Rule Making, 7 FCC Rcd 6886, 6890 (1992) (footnote omitted). *See also Amendment of the Commission's Rules to Establish New Personal Communications Service*, Second Report and Order, 8 FCC Rcd 7700, 7757 (1993). ("A principal concern in the authorization of PCS in the 2 GHz band is that existing fixed microwave operations be protected."); *Amendment of the Commission's Rules to Establish New Personal Communications Services*, Memorandum Opinion and Order, 9 FCC Rcd 4957, 5026 (1994).

incumbent's receiver(s).[48] Inexplicably, however, the Commission failed to adopt the same requirement for non-co-channel AWS licensees, permitting them to postpone any remedial action until *after* they cause interference to incumbent BRS channel 1 or 2 operations (and, in the process, disrupted service to the BRS operator's subscribers).[49] This despite the Commission's admission that non-co-channel interference is a serious concern (a finding supported by substantial record evidence),[50] and the fact that the Commission has afforded non-co-channel point-to-point microwave incumbents the very same prior coordination rights it now denies to BRS channel 1 and 2 incumbents.[51]

Equally damaging is the *Ninth Report and Order*'s denial of any recompense for pre-relocation BRS system modifications that increase system throughput.[52] Over the 15 year period that AWS auction winners have to involuntarily relocate BRS incumbents, it is inevitable that consumers will be demanding ever increasing bandwidth. If BRS system operators cannot meet that demand by increasing their present throughput, consumers will abandon them in favor of alternative suppliers that have no restrictions on their ability to provide the bandwidth demanded by the marketplace. Hence, as a practical matter, the Commission's decision to exclude modifications that expand throughput from its definition of "comparable facilities" renders it impossible for a BRS operator to expand its throughput prior to relocation.[53] This can hardly

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[48] *See Ninth Report and Order*, 21 FCC Rcd at 4534 n.408 (stating that the Commission is "requiring AWS licensees in the 2110-2155 band, *prior to operating a base station that would cause harmful interference to incumbent BRS operations in the 2150-2160/62 MHz band*, to either relocate the BRS operations or undertake system modifications[].") (emphasis added).

[49] *See* 47 C.F.R. § 27.1255(b); WCA Ninth Report and Order Petition at 4-5.

[50] *See* WCA Ninth Report and Order Petition at 2-4.

[51] *See* i*d*. at 5-6.

[52] *See Ninth Report and Order*, 21 FCC Rcd at 4492-93; WCA Ninth Report and Order Petition at 7.

[53] The equipment that likely would be deployed by a BRS operator to expand the throughput of its 2.1 GHz band system would be band-specific and not be of utility once the BRS operator is involuntarily relocated from that band.

squared with the Commission's duty to "minimize the economic impact on licensees" of incumbent services facing involuntary relocation.[54] Indeed, from the BRS operator's perspective, any Commission restrictions on increasing system throughput are a recipe for extinction.

The draconian impact of the Commission's failure to permit compensation for throughput increases is exacerbated by the Commission's failure to permit 2.1 GHz band licensees to self-relocate, notwithstanding the fact that self-relocation by point-to-point microwave systems is an essential component of the Commission's *Emerging Technologies* policies.[55] A point-to-point microwave operator that faces a need to increase throughput has always had the ability to self-relocate and expand capacity in the process. While it would not secure compensation for the costs of expanding capacity, the expansion investment made at the time of self-relocation is not at risk of being stranded. By contrast, a BRS licensee cannot self-relocate, upgrade throughput in the process and avoid the risk of stranded investment. Thus, the *Ninth Report and Order* is simply wrong when it suggests that by allowing BRS incumbents to add customers prior to involuntary relocation, the Commission has obviated the need for self-relocation.[56] Compounding the problem, the Commission takes no notice of the fact that BRS self-relocation

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As a result, investment dollars simply will not flow to 2.1 GHz system modifications that are destined to become stranded investment once the BRS system is migrated off the 2.1 GHz band. Since an incumbent has no means of determining when, if ever, it will be relocated, it has no assurance that it will remain at 2.1 GHz long enough to realize a reasonable return on its investment to expand throughput. In turn, that means investment dollars will not flow to BRS system modifications. *See* WCA Ninth Report and Order Petition at 8-9.

[54] *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 Services*, Eighth Report and Order, Fifth Notice of Proposed Rule Making and Order, 20 FCC Rcd 15866, 15875 (2005).

[55] *See Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation*, Second Report and Order, 12 FCC Rcd 2705, 2717 (1997) ("[I]ncumbent participation will accelerate the relocation process by promoting system-wide relocations. Incumbent participation will also give microwave incumbents the option of avoiding time-consuming negotiations, allowing for faster clearing of the 2 GHz band in some instances. We believe that promoting system-wide relocation in this way may even reduce the overall cost of clearing the 2 GHz band.") (citations omitted).

[56] *See Ninth Report and Order*, 21 FCC Rcd at 4485.

has the additional benefit of reducing the inevitable inconvenience to the public from the first-ever forced migration of a subscription consumer service.[57]

The *Ninth Report and Order* also fails to adequately recognize that the relocation of BRS will be the first time the Commission has relocated one competitor that provides wireless services directly to subscribers to clear the spectrum for another competitor. In fact, the rules adopted in the *Ninth Report and Order* are largely carbon copies of those adopted in the mid-1990s to govern the clearing of point-to-point microwave links from spectrum reallocated for PCS, and fail to sufficiently address the unique risks (not present in other *Emerging Technologies* situations) that AWS licensees will abuse the involuntary relocation process to the detriment of BRS incumbents and their subscribers. In a similar vein, the *Ninth Report and Order* denies BRS operators any reimbursement of their substantial internal costs associated with relocation. Yet, in crafting its cost-recovery policies for the 800 MHz band rebanding project, the Commission has permitted incumbents to recover their documented internal costs attributable to their involuntary relocation.[58] The *Ninth Report and Order* offers no compelling explanation for why BRS incumbents should be treated any differently.

Accordingly, WCA urges the Commission to grant the WCA Ninth Report and Order Petition and modify its BRS relocation rules as follows:

- Provide incumbent BRS licensees with the same protection against non-co-channel interference that AWS must afford to incumbent point-to-point microwave licensees – prior coordination utilizing the notice and response system embodied in Section 101.103(d) of the Commission's Rules. To that end, WCA proposes that the Commission amend Section 27.1132 of the Rules as set forth in Attachment A of the WCA Ninth Report and Order Petition.

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[57] *See* WCA Ninth Report and Order Petition at 12-15.

[58] *See Improving Public Safety Communications in the 800 MHz Band*, Supplemental Order and Order on Reconsideration, 19 FCC Rcd 25120, 25150-51 (2004).

- In the context of BRS relocation, amend its definition of "comparable facilities" to include pre-relocation BRS facilities modifications designed to increase system throughput.

- Afford incumbent BRS channel 1 and 2 licensees a right of self-relocation subject to WCA's recommended safeguards to protect against overcompensation of incumbents who choose to self-relocate.[59]

- Consistent with the Commission's treatment of involuntarily relocated 800 MHz incumbents, require that relocated BRS incumbents be fully compensated for their internal relocation costs, and that they receive payment of those costs in advance.[60]

- Specify that where an involuntary relocation is to occur, the BRS incumbent will be responsible for taking all steps necessary to complete deployment of comparable facilities (including any required changeouts of customer equipment), subject to the procedures recommended by WCA.[61]

- Require each relevant AWS auction winner to: (i) reimburse the entity that serves as the 2.5 GHz band transition Proponent for the *pro rata* transition costs associated with BRS channels 1 and 2 in accordance with Section 27.1233(c) of the Commission's Rules; and (ii) fund the migration of Broadband Auxiliary Service licensees from the 2496-2500 MHz band to clear that spectrum for BRS channel 1 relocation.[62]

Finally, the Commission requests comment on how its rules on reimbursement of relocated BRS licensees should apply in the event that the 2155-2175 MHz band is made available on an unlicensed basis.[63] While the unlicensed model will not yield the "highest and best use" of the 2155-2175 MHz band and should not be adopted, any potential unlicensed use should be subject to the requirement that vendors of unlicensed equipment migrate all operators on BRS channels 1 and 2 pursuant to the modified relocation procedures proposed in the WCA Ninth Report and Order Petition, and that such migration must occur prior to the marketing of

[59] *See* WCA Ninth Report and Order Petition at 14.

[60] *See id*. at 16-19.

[61] *See id*. at 19-22.

[62] *See* i*d*. at 23-25.

[63] *See NPRM*, 22 FCC Rcd at 17069.

any unlicensed equipment. In furtherance of that objective, WCA would not object to the creation of a third party to oversee the process of BRS relocation (including payment of BRS relocation costs) on behalf of prospective unlicensed users of the 2155-2175 MHz band, similar in concept to UTAM, Inc. ("UTAM").[64]

As noted in the *NPRM*, UTAM served as the coordinator for clearing fixed point-to-point microwave links from the 1910-1930 MHz band upon that spectrum's designation for use by unlicensed personal communications service ("UPCS") devices.[65] More specifically, UTAM assumed responsibility for clearing the spectrum and was reimbursed for its efforts by manufacturers of devices designed to operate in the band.[66] More problematic, however, is the fact that UTAM was permitted to create "coordination zones" in which UPCS devices could be deployed prior to actual relocation of point-to-point microwave incumbents, provided that those devices observed a specified power limit in the aggregate.[67] That approach will not work for a consumer-based service such as BRS/EBS, where even the smallest degradation of service due to interference can alienate customers and drive them to other service providers. Hence, in the case of the 2155-2175 MHz band, any UTAM-like coordinator should be prohibited from permitting any marketing of unlicensed devices in the spectrum until it has been fully cleared.

III. CONCLUSION.

As in the case of BRS/EBS, the 2155-2175 MHz band presents the Commission with a significant opportunity to give full effect to its flexible use paradigm and deliver the benefits

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[64] *See id*. n.136.

[65] *Id.*

[66] *Id.*

[67] *See Amendment of the Commission's Rules to Establish Personal Communications Services*, Fourth Memorandum Opinion and Order, 10 FCC Rcd 7955, 7958-59 (1995).

thereof to consumers. Admittedly, fashioning rules that support flexibility creates some incremental complexity. This complexity, however, is well worth the price. The net result is that deployment and technology decisions can be driven by market forces and technological innovation, not regulatory dictates, while at the same time the Commission can protect well-designed AWS-1, AWS-2 and AWS-3 systems from interference through a stable, predictable set of rules.

By the same token, the Commission must assure that the manifest flaws in its BRS relocation rules not disrupt existing services to BRS subscribers during relocation. WCA believes that the proposals set forth in these comments strike the correct balance, and thus urges the Commission to issue a *Report and Order* in this proceeding that incorporates WCA's recommendations.

Respectfully submitted,

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