

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 2 of the Commission's)	ET Docket No. 00-258
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)	

REPLY COMMENTS OF T-MOBILE USA, INC.

T-Mobile USA, Inc. (“T-Mobile”) submits these Reply Comments in response to the Petition for Reconsideration (“Petition”) filed by the Wireless Communications Association International, Inc. (“WCA”)¹ and the comments submitted in response to the Petition. In that Petition, WCA urges the Commission to reconsider the careful balance it established between incumbents’ rights and new entrant burdens in the relocation of Broadband Radio Service (“BRS”) operations from the 2150-2160/62 MHz band.² Because the Commission struck the correct balance by allowing Advanced Wireless Services (“AWS”) new entrants to deploy service in this band in a timely and efficient manner while also ensuring incumbents’ operations and finances are not adversely impacted, T-Mobile urges the Commission to reject WCA’s Petition and reaffirm the *Ninth R&O* in this proceeding.

¹ Petition for Reconsideration of Ninth Report and Order, The Wireless Communications Association International, Inc., ET Docket No. 00-258 (filed June 23, 2006).

² *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*, Ninth Report and Order and Order, 21 FCC Rcd 4473 (2006) (“*Ninth R&O*”).

First, the *Ninth R&O* properly requires AWS entrants to relocate incumbents only in the event of actual or likely interference. As U.S. Cellular Corporation (“U.S. Cellular”) demonstrated in its opposition, there is no evidence documenting that an interference problem exists with respect to non-co-channel AWS operations.³ The Commission’s rules with regard to non-co-channel interference adequately address the practical and realistic potential for interference based on real-world deployment scenarios. WCA, by contrast, argues for a worst-case analysis based on extreme scenarios “where AWS licensees utilize equipment that only marginally complies with the Section 27.53(g) OOB limits, operates near maximum authorized power, or is in close physical proximity to a BRS receiver.”⁴ This excessively conservative approach does not reflect the realities of current equipment, engineering design, and operating practice that would apply to AWS.

It is common practice in the wireless industry to manage non-co-channel interference, including inter-modulation and cross-modulation, as part of normal network deployment and operations. The potential for non-co-channel interference exists between numerous adjacent services in virtually all portions of the wireless spectrum, particularly when sites are collocated. As both T-Mobile⁵ and U.S. Cellular⁶ have pointed out, a number of alternatives are available to mitigate non-co-channel interference, including filtering, antenna model selection, antenna orientation, geographical separation, and replacement of degraded equipment. These options

³ U.S. Cellular Corp. Opposition at 2-4, Attachment A – Wireless Systems Engineering Comments. Indeed, while WCA may take issue with the interference analyses conducted previously by the Commission and others, the BRS industry has provided no technically rigorous descriptions of potential interference.

⁴ Petition at 3.

⁵ See Letter from Kathleen O’Brien Ham, T-Mobile USA, Inc., to Marlene H. Dortch, FCC, WT Docket No. 00-258, Attachment 1 – Micronet Communication Comments (filed Apr. 5, 2006).

⁶ See U.S. Cellular Corp. Opposition at Attachment A.

provide flexibility to resolve any interference issues on a case-by-case basis without the need for broad and burdensome prophylactic rules.

Although T-Mobile does not make use of the CDMA2000 1X air interface technology used in U.S. Cellular's analysis, it agrees with the general conclusions regarding the low potential for non-co-channel AWS interference to BRS as presented in U.S. Cellular's filing based on the Wireless Systems Engineering ("WSE") study. More specifically, T-Mobile fully supports WSE's methodology of using PCS transmitter characteristics as a surrogate for the characteristics of AWS transmitters.⁷ Manufacturer quoted specifications for AWS transmitters are similar to those quoted for PCS transmitters using the same air interface technology.

In addition, T-Mobile agrees with the WSE observation that AWS transmitters typically will be operated at transmit powers below the maximum allowable by Commission rules.⁸ From a link budget perspective, other air interface technologies such as UMTS are also fundamentally uplink-limited due to practical handset transmit power limitations. UMTS equipment proposed for the AWS band typically has maximum transmit power classes ranging from about 20 to 40 Watts per sector-carrier (without including cable losses between the base station output port and the antenna input port). Because each UMTS carrier occupies a 5 MHz channel compared to 1.25 MHz for CDMA2000 1X, the result is fewer UMTS carriers aggregated in a given bandwidth. For example, one UMTS carrier would occupy roughly the same bandwidth as the three CDMA2000 1X carriers modeled in the WSE analysis. This places the aggregate UMTS sector power (one carrier with total power of 20 to 40 Watts) even lower than those noted by WSE for CDMA2000 1X (three carriers with total power of 45 to 60 Watts).

⁷ *Id.*, Attachment A at 1, 6.

⁸ *Id.*, Attachment A at 6-11.

Similarly, T-Mobile finds that, while manufacturer reported OOB measurements for UMTS PCS transmitters vary from one manufacturer to another, they are not significantly different than those reported and analyzed by U.S. Cellular and WSE for CDMA2000 equipment.⁹ There is typically considerable margin between the Commission's OOB emissions limits and the actual performance of the transmitters to account for manufacturing variations and other factors. A realistic interference analysis, therefore, should not be based on equipment that only marginally complies with the emissions limits.

Further, CDMA transmit carriers (either UMTS or CDMA2000 1X) operate with dynamic power control for downlink traffic channels. This means that when traffic loads are less than peak or when subscribers are in good conditions, corresponding transmit powers are less than the maximum. Only at full traffic load is the sector transmit power at the maximum level used in WCA's interference analysis. As a practical matter, therefore, in many—if not most—cases, the actual transmit powers will be considerably lower than those assumed by WCA in its interference analysis.

Accordingly, the Commission should reject WCA's request that it reconsider its determination that BRS incumbents need not be relocated by non-co-channel AWS deployments.¹⁰ Likewise, WCA's proposed prior coordination procedures are technically unjustifiable and provide BRS incumbents—who will also compete with new AWS entrants—with the substantial ability to delay initiation of service by, or impose costs on, AWS licensees.

Second, the Commission's rules, as adopted in the *Ninth R&O*, adequately compensate BRS licensees for their reasonable costs of relocation, without allowing them to impose

⁹ *Id.*, Attachment A at 6-7.

¹⁰ Petition at 2-7.

unreasonable costs on AWS competitors. In particular, the Commission properly declines to require AWS licensees to be responsible for system modifications to increase capacity undertaken with respect to systems that licensees know must be relocated.¹¹ Given that BRS incumbents have been on notice for several years that spectrum in this band will be relocated, and that there is nothing in the Commission's rules precluding BRS incumbents from adding new customers to already deployed facilities,¹² there is no basis for WCA's request that the incumbents be compensated for increases in system throughput implemented *after* the issuance of the *Ninth R&O*.¹³ Permitting BRS incumbents to increase throughput at the expense of an AWS entrant would encourage incumbents to deploy such capabilities simply to increase the costs of a competitor.

WCA and other commenters also assert that BRS incumbents should be reimbursed for certain internal relocation costs.¹⁴ Internal costs, however, are difficult to determine and verify, and thus could be subject to significant manipulation. Indeed, the Commission has long rejected the reimbursement of internal costs for precisely this reason.¹⁵ Although several commenters rely on the 800 MHz band rebanding as support for making internal costs reimbursable here, that proceeding is inapplicable.¹⁶ The 800 MHz entities being relocated are generally public safety

¹¹ *Ninth R&O* at ¶ 33.

¹² *Id.* (“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”). In the event a BRS incumbent ultimately is required to add capacity in order to meet normal growth, the incumbent has the opportunity to negotiate reimbursement with AWS licensees.

¹³ Petition at 7-11. *See also* W.A.T.C.H. TV Comments at 2-3; Sioux Valley Wireless Comments at 5-6.

¹⁴ Petition at 16-18; W.A.T.C.H. TV Comments at 3-4; Sioux Valley Wireless Comments at 2-4.

¹⁵ *Ninth R&O* at ¶ 24 (referencing the FCC's similar policy in the *Emerging Technologies* proceeding).

¹⁶ Petition at 18; Sioux Valley Wireless Comments at 4.

licensees with no incentive to manipulate costs so as to disadvantage competitors. Moreover, in that proceeding, the Commission established extensive procedures by which relocation costs are reviewed by a neutral third party (*i.e.*, the Transition Administrator) and ultimately by the Commission. None of these circumstances are present in the BRS relocation. As the BRS incumbents are fond of noting, BRS incumbents will be competitors of new AWS entrants, and thus have every incentive to delay relocation and drive up the costs of relocation. The Commission should reaffirm its finding that internal costs are not subject to reimbursement.

Similarly, WCA and other commenters argue that BRS incumbents should be reimbursed for certain other costs associated with the BRS transition plan and unrelated to the AWS spectrum band.¹⁷ But BRS licensees, not AWS licensees, are the beneficiaries of the restructuring of BRS channels pursuant to a transition proponent's plan. As such, AWS licensees should not be responsible for costs associated with clearing the BAS band, which is necessary to conform to the new BRS band plan. Likewise, AWS licensees should not be required to relocate facilities operating on BRS channel 2/2A unless such facilities are operated in conjunction with a BRS channel 1 facility.¹⁸ BRS incumbents would be responsible for these costs even if the 2150-2156 MHz band was not re-allocated for AWS. These costs properly lie with the BRS incumbents, not with AWS entrants.

In addition to reaffirming that these types of costs are not reimbursable, the Commission should emphasize again that BRS incumbents may not be "reimbursed" for relocating facilities

¹⁷ Petition at 23-25; Ad Hoc MDS Alliance Comments at 6.

¹⁸ T-Mobile also notes that the Ad Hoc MDS Alliance's ("Ad Hoc") arguments that the Commission should reconsider its decision to require AWS licensees to relocate facilities operating on BRS channel 2/2A even if it is not operated in conjunction with a BRS 1 facility should be rejected. AdHoc MDS Alliance Comments at 3-4. As Ad Hoc admits, WCA did not request reconsideration of this issue in its Petition. In addition, no other entity sought reconsideration of this issue in a timely filed petition for reconsideration. As such, Ad Hoc's untimely request for reconsideration should be summarily dismissed.

that have been deconstructed. In response to the Commission’s Second Public Notice (“*Second Notice*”) seeking data from BRS incumbents on their stations,¹⁹ several BRS licensees indicated that they have deconstructed their facilities. According to the licensees, they filed responses to the *Second Notice* to preserve their right to be relocated at the expense of AWS new entrants. Under the *Ninth R&O*, however, major modifications made after the effective date of the order are not eligible for relocation and, in any event, there is no argument that facilities deployed by AWS licensees will interfere with deconstructed systems.²⁰

Finally, there is no basis for WCA’s and other commenters’ contentions that BRS incumbents must be allowed to self relocate voluntarily and then demand reimbursement for that self-relocation from AWS entrants.²¹ As the Commission notes, permitting self relocation is sound policy only if relocation expenses can be capped.²² But caps are not workable in the BRS context given the diversity of facilities and services. Thus, as the Commission properly determined, BRS incumbents should not be allowed to decide unilaterally when to relocate and then require reimbursement from AWS entrants for the cost of comparable facilities that were selected and deployed at the discretion of the incumbent without the involvement of—or negotiation with—the AWS licensee.

In the *Ninth R&O*, the Commission properly balanced the interests of AWS new entrants with those of BRS incumbents. WCA has raised no new issues that warrant a reconsideration of this decision. Accordingly, for the reasons stated above, the Commission should reject WCA’s

¹⁹ Licensees of Broadband Radio Service Channels 1 and/or 2/2A Must File Supplemental Data by July 14, 2006, Public Notice, DA 06-1272 (June 14, 2006).

²⁰ *Ninth R&O* at ¶¶ 32-33.

²¹ Petition at 12-15; W.A.T.C.H. TV Comments at 3; Sioux Valley Wireless Comments at 6.

²² *Ninth R&O* at ¶ 20.

Petition.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Patrick Welsh, do hereby certify that on this 14th day of August 2006, I caused copies of the foregoing "Reply Comments of T-Mobile USA, Inc." to be delivered to the following via First Class U.S. mail:

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