

May 17, 2012

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

In the Matter of

Service Rules for Advanced Wireless Services
in the 2000-2020 MHz and 2180-2200 MHz
Bands

WT Docket No. 12-70

Fixed and Mobile Services in the Mobile
Satellite Service Bands at 1525-1559 MHz and
1626.5-1660.5 MHz, 1610-1626.5 MHz and
2483.5-2500 MHz, and 2000-2020 MHz and
2180-2200 MHz

ET Docket No. 10-142

Service Rules for Advanced Wireless Services
in the 1915-1920 MHz, 1995-2000 MHz,
2020-2025 MHz and 2175-2180 MHz Bands

WT Docket No. 04-356

**COMMENTS OF THE NATIONAL RURAL TELECOMMUNICATIONS
COOPERATIVE**

I. INTRODUCTION AND SUMMARY

The National Rural Telecommunications Cooperative (“NRTC”) submits these comments in response to the *Notice of Proposed Rulemaking* (“NPRM”) and *Notice of Inquiry* (“NOI”) in the above-captioned proceeding.¹ NRTC supports the Federal Communications Commission’s (“Commission” or “FCC”) proposal to modify DISH’s MSS/ATC authority to enable DISH to

¹ Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands, WT Docket No. 12-70, Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz, ET Docket No. 10-142, Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands, WT Docket No. 04-356, *Notice of Proposed Rulemaking and Notice of Inquiry*, FCC 12-32 (rel. Mar. 21, 2012) (“2 GHz NPRM”).

provide terrestrial AWS-4 services. Additional wireless entrants such as DISH are essential to spur nationwide competition in the domestic wireless industry, which has been slow (at best) to serve rural interests directly or to enter into appropriate roaming or other types of commercial agreements to allow rural telephone, electric, and wireless providers to serve their own populations. In doing so, the Commission should provide appropriate incentives to encourage DISH to directly deploy, or partner to deploy, its new AWS-4 network to provide much-needed wireless service to rural areas. The rules for AWS-4 spectrum should also encourage maximum regulatory flexibility so that DISH or any subsequent license holder can use the licenses efficiently to serve rural needs. In addition, the Commission should ensure that AWS-4 spectrum is harmonized with other spectrum bands and global wireless technology standards to promote maximum interoperability, and should set clear interference rules.

NRTC represents the advanced telecommunications and information technology interests of 1,500 rural utilities and affiliates in 48 states. NRTC provides products and services developed specifically to meet the needs of rural telephone and electric utilities and their customers: examples include satellite broadband, full service Internet access and support, integrated smart grid technologies and energy efficiency solutions, wireless technologies, long distance programs, wholesale 2G/3G mobile voice and data services, IP backbone services, network monitoring, and programming distribution rights for video providers.

NRTC is driven by our members' commitment to provide their communities with innovative telecommunications solutions and a vision for continued viability. Our organization helps ensure our members' success by aggregating their individual buying power, negotiating national contracts, and supporting business solutions which expand their service offerings. NRTC was founded in 1986 by the National Rural Electric Cooperative Association and the

National Rural Utilities Cooperative Finance Corporation, and operates today with board members representing both the rural telephone and rural electric communities.

NRTC remains focused on bringing advanced telecommunications solutions to rural America. As particularly relevant to this docket, NRTC is increasingly focused on solving the shortage of competitive wireless services that afflicts rural America. The lack of both wholesale and retail wireless services that are otherwise available in urban and suburban areas continues to undermine job creation, competitiveness, and quality of life for NRTC's members and the consumers that they serve.

II. ARGUMENT

A. The Commission Should Modify the Current 2 GHz MSS/ATC Licenses to Permit DISH to Provide Terrestrial AWS-4 Service

The Commission should expeditiously implement its 2 GHz proposal in order to spur competition and innovative services for consumers. Both the FCC and the wireless industry have repeatedly called for freeing up more spectrum to satisfy the explosion in mobile data usage. As the NPRM notes, “the spectrum currently allocated to wireless is not sufficient to handle the projected growth in demand, even with the technological improvements allowing for more efficient use of existing spectrum and significant investment in new facilities.”² The NPRM is an important step to address this spectrum crunch.

The Commission's proposal for the 2 GHz band could not come at a more critical time. Rural areas lack adequate wireless service and competition in large part because of the dominance of a few large wireless operators, which have shown little interest in serving rural America, either directly or through partnerships with rural carriers. The numbers tell a disturbing story. For example, in denying AT&T's recent bid to merge with T-Mobile, the

² 2 GHz NPRM, at ¶10 (quoting the Council of Economic Advisors).

Commission pointed out that AT&T and Verizon together account for over 60% of total nationwide subscribers and over 60% of total industry revenues.³ These two carriers reap 80% of total industry EBITDA, even more starkly demonstrating their market power.⁴ In light of these and other statistics, many commenters have argued that the U.S. industry is either already effectively a duopoly or fast on its way to becoming one.⁵

Once the Commission creates AWS-4, we agree that the licenses should be assigned to the incumbent MSS licensee.⁶ While considerable technological advances have been made over the last decade, these particular advances do not suggest that same-band, separate-operator sharing of the 2 GHz band is any more technologically or economically feasible than it was in 2003 when the Commission last analyzed this scenario. The technology necessary to implement such a solution, such as dynamic spectrum access and cognitive radios, is neither market-proven nor addressed in relevant technical standards for commercialization.⁷ The same licensee must

³ *Applications of AT&T Inc. and Cellco Partnership D/B/A Verizon Wireless for Consent to Assign or Transfer Control of Licenses and Authorizations and Modify a Spectrum Leasing Arrangement*, Memorandum Opinion and Order, 25 FCC Rcd 8704 (2010).

⁴ *Id.*

⁵ *Petition to Deny of Rural Telecommunications Group, Inc.*, WT Docket No. 09-104, at 5 (filed July 20, 2009); *Reply to Joint Opposition to Petitions to Deny and Reply to Comments of MetroPCS Communications, Inc. and NTELOS Inc.*, WT Docket No. 11-65, at 3 n. 4 (filed Jun. 20, 2011); *Petition to Deny of the National Association of Black Owned Broadcasters, Inc.*, WT Docket No. 09-104, at 1 (filed July 20, 2009); see also S. Woolley, “AT&T-Verizon: The inevitable duopoly?” *Fortune*, December 21, 2011, online at <http://tech.fortune.cnn.com/2011/12/21/att-verizon-the-inevitable-duopoly/> (last visited May 8, 2012) (“The cell phone industry is imperiled by a duopoly, according to the antitrust watchdogs at the Department of Justice”).

⁶ *2 GHz NRPM*, at ¶ 71.

⁷ See *The Effects of a Dynamic Spectrum Access Overlay in LTE-Advanced Networks*, Juan D. Deaton, Ryan E. Irwin, and Luiz DaSilva, International Dynamic Spectrum Access Networks Symposium, May 2011 (stating that “the affects of a DSA [Dynamic Spectrum Access] overlay have not been fully considered into the existing LTE+ standards” and “while a DAS overlay can increase spectral capacity, it also brings significant challenges”).

therefore hold the terrestrial and satellite rights in order to provide the robust terrestrial services that the Commission seeks.

This approach will also preserve the capability of the current licensee to provide MSS services, as the market dictates. More powerful satellites with larger satellite reflectors, advanced modulation and signal coding technology, and ground based beam forming has led to substantial improvements in the current capability of MSS satellites. These improvements, along with the development of multi-mode ASIC technology, suggest that MSS service may be viable for certain applications of particular interest to NRTC's rural utility members and the consumers they serve, such as emergency voice and data communications. The promise of these MSS services, like the terrestrial services discussed above, will be possible only if the terrestrial and MSS rights are held by the same licensee.

B. The Commission Should Encourage Deployment of AWS-4 to Rural Areas

The AWS-4 band is particularly relevant for serving rural areas because of the generally favorable propagation characteristics of the 2 GHz band, its ability to support both fixed and mobile uses, and the potential for both terrestrial and satellite services. Yet the Commission in the NPRM recognizes some key challenges—including the appropriate geographic scope of any licensing scheme and performance requirements—in fostering such development in rural America.⁸ In order to address these challenges, the AWS-4 rules should consider incentives to promote service and spectrum access in rural areas if they include any performance requirements.

⁸ 2 GHz NPRM, at ¶ 26 and ¶ 90.

Casting any build-out requirements based on either population or broad geographic benchmarks will not foster deployment of services in rural areas.⁹ Given the limited number of licenses to be created in AWS-4, we agree that Economic Area (“EA”) licensing scheme may best balance the Commission’s goals. But regardless of whether the benchmark is population or coverage based, or what thresholds are set, a licensee will begin its deployment in the most urbanized areas and build outward from the urban cores until the corresponding benchmark is met. If the Commission wants to foster deployment in rural areas, any performance requirements need to include distinct objectives for rural areas and more suburban and urbanized ones.

While NRTC is neutral on the application of build-out milestones, it encourages the Commission to adopt, as part of any construction milestone provisions, an enhanced milestone provision for providing service (directly or through partners) in acknowledged rural areas of the country. For example, providing service to a certain portion of the rural population might extend the timeline for providing service to other urban or suburban populations contained in any such milestone. Alternatively, providing service to rural populations could have a disproportionate effect on the milestone calculation—e.g., each rural “pop” covered could count as two “pops” covered in the overall definition of population covered in any such construction milestone.

Further, to promote deployment of services in rural areas, the Commission should consider performance requirements that encourage licensees to establish partnerships with organizations (e.g., rural telephone and electric utilities) that have the social and economic incentives as well as the existing infrastructure to provide services to rural communities. To that end, the Commission should develop a scheme whereby the licensee receives some form of

⁹ If the Commission does opt to apply population or geographic coverage measures in a performance requirement for the licensee, the Commission’s policy objectives would be best met if both measures are employed. Geographic coverage measures are best applied in populated areas whereas population coverage measures are best applied to rural areas.

credit toward its performance obligation for bona fide relationships it establishes with rural entities. For example, when spectrum is leased to a rural entity, the population and/or geography associated with that lease could be applied toward satisfying the performance requirement. Without imposing additional requirements, these types of incentives would encourage the licensee to provide service to the rural areas currently least served by wireless services.

C. The Commission Should Adopt a Regulatory Framework that Provides Flexibility, Encourages Investment and Competition, and Ensures the Highest and Best Use for the Spectrum

The Commission should implement AWS-4 rules that encourage the development of potential solutions, including ones beneficial to rural areas, by promoting maximum flexibility. By implementing rules that are both business plan and technology neutral, the Commission will maximize the chances of success for the new services to be provided over this spectrum. This flexibility will be critical in adapting to changing technology, market conditions and potential partnerships and business opportunities.

On a technical level, the FCC should license the spectrum under Part 27 of its rules, as the NPRM proposes, to take advantage of the flexibility of those rules. The new AWS-4 rules should also allow a licensee that holds both A and B Blocks in a given area the flexibility to combine those licenses into a single block. The current capabilities of 3G Partnership Project (“3GPP”) Long Term Evolution (“LTE”) technology and planned improvements with LTE Advanced illustrate the benefits of allowing the licensee to combine spectrum to form larger channel bandwidths. Such benefits apply to both the network operator (increased spectral efficiency, greater network capacity, and more economical use of radio access network

infrastructure) as well as the subscriber (increased data speeds, less network congestion), thereby improving the overall quality of service.¹⁰

The Commission should also extend its secondary markets leasing policy to the AWS-4 band. Considering the potential technical complications of spectrum partitioning or disaggregation, leasing is perhaps the only option available to encourage investment in and competition through the AWS-4 band. By retaining *de jure* control, the licensee can ensure that any subsequent uses of the spectrum are technically consistent with the uses of the primary licensee.

In addition, AWS-4 should be subject to the same general spectrum aggregation policies it applies to other Commercial Mobile Radio Service (“CMRS”) bands. While we recognize that the partitioning and disaggregation of the AWS-4 band is technically complex, we encourage the Commission to establish the greatest flexibility possible for the AWS-4 licenses to contemplate such arrangements. These arrangements may be infeasible given current technology limitations, but solutions may exist in the future in light of technological advances.

D. AWS-4 Spectrum Should Be Harmonized with Other Bands and Protected from Interference

The Commission should place the AWS-4 band on equal footing with other CMRS bands in order to encourage the efficient development of equipment and services across both the spectrum band and the world. To do so, the Commission should harmonize the 2 GHz band with the technical rules for other bands as well as with the standards and practices of relevant

¹⁰See, e.g., Application of TerreStar Networks Inc., Debtor-In-Possession; and TerreStar License Inc., Debtor-In-Possession and DISH Networks Corporation and Gamma Acquisition L.L.C., pp. 27-78; *The Broadband Availability Gap* OBI Technical Paper No 1. (April 2010).

organizations. Clear rules on interference will also provide the certainty necessary for investment and innovation.

To ensure harmonization, the 2 GHz rules should be made consistent with the rules for CMRS, such as the 1.9 GHz Personal Communications Service and 1.7/2.1 GHz and 700 MHz AWS. These rules must include out-of-band emission limits, power limits, receiver performance, field strength limit, standardized downlink and uplink frequency pairings, and duplex spacing. The Commission should also harmonize AWS-4 with the International Telecommunications Union and 3GPP LTE technical standards and frequency coordination practices. Both are important to facilitate rapid deployment of new technologies in the AWS-4 band and investment in the band based on global economies of scale.

Recent experience with the 2.3 GHz WCS band—which is either being used or developed for mobile broadband use around the world—illustrates the importance of harmonizing rules with global standards. In amending the rules, the Commission imposed technical requirements on WCS licensees that are unique to that band in order to provide protection to adjacent bands. Meanwhile, the 3GPP ratified a set of technical requirements for 2.3 GHz TD-LTE, and infrastructure and device vendors are actively commercializing products that comply with this standard. However, due to the unique technical requirements imposed on WCS licensees, U.S. licensees cannot participate in this developing global market for 2.3 GHz LTE technology. Instead, the WCS community must attempt to develop a standard and equipment ecosystem that is specific to the U.S. market and that will generally not benefit from the economies of scale and interoperability that would otherwise exist.¹¹

¹¹ Letter from the WCS Coalition to Ruth Milkman, Chief, Wireless Telecommunications Bureau, *Amendment of Part 27 of The Commission's Rules to Govern Operation of Wireless*

In terms of interference protection, the Commission should establish, *ab initio*, the obligations of licensees in adjacent bands to design receivers that can tolerate the predictable levels of interference as defined in the rules. Licensees should not be permitted to seek recourse or additional protections from failure to take steps necessary to protect them from permitted AWS-4 use. There is no question that incumbent services that are deployed and in current operation must be protected as new services are devised and come on line. The Commission's open and transparent rulemaking process is the vehicle by which necessary protection criteria can be vetted and corresponding technical rules set. Once set, however, every licensee should be able to reasonably rely on these rules and operate under the presumption that affected licensees carefully consider and develop equipment that complies with these rules.

III. CONCLUSION

This proceeding presents the opportunity for the Commission to bring much-needed wireless competition and service to rural America while driving innovation, investment and job creation throughout the nation. Therefore, the Commission should expeditiously modify DISH's MSS/ATC authority, with modifications suggested in these comments, to enable DISH to provide terrestrial AWS-4 services to accomplish these goals.

Respectfully Submitted,

**NATIONAL RURAL
TELECOMMUNICATIONS
COOPERATIVE**

A handwritten signature in black ink, appearing to read 'J. Timothy Bryan', written over a circular stamp or mark.

By:

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