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

In the Matter of:	)	
	)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and 95	)	WT Docket No. 10-4
of the Commission's Rules to Improve Wireless	)	
Coverage Through the Use of Signal Boosters	)	

To: The Commission

PETITION FOR FURTHER RULEMAKING

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SUMMARY

The so-called "personal-use restriction" refers to the provisions of § 20.21 of the Commission's rules ("Rules") that provide that a CMRS subscriber may operate a Consumer Signal Booster ("consumer booster") "for personal use," 47 C.R.R. § 20.21(a), and that a consumer booster may be sold only to members of the general public "for their personal use." *Id.* § 20.21(g). A rulemaking is underway to eliminate the personal-use restriction only as it applies to Provider-Specific Consumer Signal Boosters ("provider-specific boosters"). Commenters unanimously supported the elimination of the restriction. Now, Wilson Electronics, LLC ("Wilson"), the leading manufacturer of consumer boosters, asks the Commission to issue a further notice of proposed rulemaking to eliminate the personal-use restriction entirely, replacing it with a multi-provider registration requirement for Wideband Consumer Signal Boosters ("wideband boosters"). In particular, Wilson proposes that § 20.21 of the Rules be amended by deleting the phrase "for personal use" from § 20.21(a), the second sentence of § 20.21(g), and by deleting § 20.21(b) and adding a new § 20.21(b) to read as follows:

> *Operation of Wideband Consumer Signal Boosters.* Third parties may use a subscriber's Wideband Consumer Signal Booster under the authorizations held by the licensees providing service to the third parties, provided that the subscriber has complied with paragraph (a) of this section and the device has been registered with the licensees providing service to the third parties.

The personal-use restriction should be amended or repealed in a notice-and-comment rulemaking for two basic reasons. First, the Commission has never entertained public comments on the fundamental question of whether wireless subscribers should be limited to operating consumer boosters for personal use. Second, and more problematic, the personal-use restriction does not provide clear and adequate notice of what conduct it prohibits. The restriction:

- Employs the ambiguous terms "personal use" and "general public," which are susceptible

to different interpretations;

- Is inconsistent with §§ 22.9, 24.9 and 27.9 of the Rules, which authorize non-individuals to operate consumer boosters; and,
- Can be construed to permit consumer boosters to be used by third parties who register the devices with their service providers.

The record compiled in the ongoing rulemaking is replete with evidence that consumer boosters offer small businesses, local governments and first responders a cost-effective option to improve wireless coverage. Commenters urged the Commission to get rid of the personal-use restriction in order to allow businesses and other enterprises to employ provider-specific boosters. Eliminating the restriction entirely will free them to use cost-efficient wideband boosters. The Commission should recognize the reality that consumer boosters are, and need to be, operated by non-individuals and individuals alike for non-personal uses. It should repeal the personal-use restriction, and it can do so without fear of adverse consequences.

The Network Protection Standard ("NPS") that the Commission adopted in 2014 for consumer boosters has eliminated the interference issues that had previously existed. None of the four nationwide service providers have reported that consumer boosters have had a significant negative impact on their networks. Since the NPS went into effect, Wilson has shipped more than 750,000 Commission-approved consumer boosters and received no reports that any of its boosters caused interference to a wireless network. In short, the NPS requirements have worked to protect network operations, and they will continue to do so after the personal-use restriction is totally eliminated.

There is no cause to believe that NPS-compliant, Commission-approved wideband boosters will cause interference if they are used by businesses, governmental agencies, first

responders, or other enterprises. In the unlikely event that interference does occur, a requirement that wideband boosters be registered with local wireless service providers will facilitate the rapid resolution of the interference issue.

Under the blanket licensing framework that the Commission adopted in 2014, a wideband booster can be purchased for regular use by subscribers of multiple serving providers on the condition that the booster is registered with the service providers. If the Commission requires that wideband boosters be registered with multiple local service providers prior to operation as a condition of authorization, there would be no need for the personal-use restriction to ensure that such boosters are not used in an unauthorized fashion. The use of a fully-registered wideband booster would be authorized under multiple provider licenses, thereby complying with § 301 of the Communications Act, and be under the operational control of the licensees. And, in the absence of the personal-use limitation, blanket licensing and the provider-based registration system would allow wideband boosters to be purchased and deployed by non-individuals to serve their own purposes – and the public interest.

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To: The Commission

PETITION FOR FURTHER RULEMAKING

Wilson Electronics, LLC ("Wilson"), by its attorney and pursuant to § 1.401(a) of the Commission's Rules ("Rules"), hereby petitions the Commission to issue a further notice of proposed rulemaking ("FNPRM") to amend §§ 20.21(a) and 20.21(g) of the Rules to eliminate the so-called "personal use" restriction on the operation and sale of all Consumer Signal Boosters ("consumer boosters").[1] In support thereof, the following is respectfully submitted:

INTRODUCTION

Wilson has been a leading advocate for signal boosters and was one of the industry architects of the regulatory framework of § 20.21 of the Rules.[2] Wilson filed one of the three petitions for rulemaking that led the Commission to open this docket.[3] Subsequently, it was among

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[1] *See* 47 C.F.R. §§ 20.21(a) ("A subscriber in good standing of a commercial mobile radio service system may operate a [consumer booster] for personal use under the authorization held by the licensee providing service to the subscriber provided that the subscriber complies with paragraphs (a)(1) through (6)") and 20.21(g) (consumer boosters "may only be sold to members of the general public for their personal use").

[2] Wilson and its subsidiaries, weBoost LLC and zBoost LLC, are leaders in the wireless communications industry, and have designed and manufactured cellular signal boosters, antennas and related components for more than 20 years.

[3] *See Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, 26 FCC Rcd 5490, 5492 (2011) ("*Signal Booster NPRM*"). *See also Wireless Telecommunications Bureau Seeks Comment on Petitions Regarding the Use of Signal Boosters and Other Signal Amplification Techniques Used with Wireless Services*, 25 FCC Rcd 68, 69 (2010).

the five industry stakeholders that proposed a set of rules that would apply to all consumer boosters – the so-called "Consolidated Proposal" – that included the two "safe harbors" that formed the basis of the Network Protection Standard ("NPS") codified at § 20.21(e) of the Rules.[4] Finally, Wilson was a party to two petitions for reconsideration – the so-called "Wi-Ex Petition" and the "Verizon Petition" – the grant of which resulted in technical rule changes to "ensure consumers have access to a wide variety of signal boosters while strengthening the technical protections for wireless networks."[5]

As its latest effort to "expand consumer access to signal boosters," the Commission is currently proposing to eliminate the personal-use restriction for Provider-Specific Consumer Signal Boosters ("provider-specific boosters"), but not Wideband Consumer Signal Boosters ("wideband boosters").[6] Nevertheless, ACUTA, The Association for College & University Technology Advancement filed comments in response to the *Signal Booster FNPRM* in which it urged the Commission to remove that restriction for wideband boosters as well.[7] Wilson wholeheartedly agrees, and it seeks the issuance of an FNPRM to ensure that the issue is properly before the Commission.[8]

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[4] *See Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, 28 FCC Rcd 1663, 1668 (¶ 11) (2013) ("*Signal Booster Order*"). *See also Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, 29 FCC Rcd 11563, 11568 (¶ 16) (2014) ("*Signal Booster FNPRM*").

[5] *Signal Booster FNPRM,* 29 FCC Rcd at 11563 (¶ 2).

[6] *See id.* at 11571 (¶ 28).

[7] *See* Comments of ACUTA, WT Docket No. 10-4, at 1 (Dec. 29, 2014) ("ACUTA Comments").

[8] The repeal of the personal-use restriction could be considered a logical outgrowth of the *Signal Booster FNPRM. See, e.g., Amendment of Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Area*, 29 FCC Rcd 14100, 14118 n.115 (2014) ("the final rule must be 'a logical outgrowth' of the rule proposed"). If not, the Commission should issue the requested FNPRM to ensure compliance with the notice requirements of the Administrative Procedure Act, *see* 5 U.S.C. § 553(b), and §§ 1.412 and 1.413 of the Rules. *See* 47 C.F.R. §§ 1.412, 1.413.

DISCUSSION

I. THE PERSONAL-USE RESTRICTION SHOULD BE REVISITED IN A NOTICE-AND-COMMENT RULEMAKING

A. The Personal-Use Restriction Was Adopted Without Notice and Comments

The Commission employed the term "personal use restriction" for the first time in its *Signal Booster FNPRM* to identify the following provisions of § 20.21:[9]

> A subscriber in good standing of a [CMRS] system may operate a [consumer booster] for *personal use* under the authorization held by the licensee providing service to the subscriber provided that the subscriber complies with paragraphs (a)(1) through (6).[10]
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> * * * * *
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> [Consumer boosters] may only be sold to members of the general public for their *personal use*.[11]

Interested parties did not get the opportunity to comment on the personal-use restriction before it was promulgated by the *Signal Booster Order*. The Commission did not propose the adoption of a personal-use restriction, and its *Signal Booster NPRM* did not alert interested parties that such a restriction was contemplated. None of the parties to the initial rulemaking filed comments on the subject. And a personal-use restriction was neither included in the Consolidated Proposal nor addressed in the public record.[12] Nor was it discussed in the text of the *Signal Booster Order*.

Wilson first learned that the Commission had specified that consumer boosters be used for personal use when it reviewed Appendix A to the *Signal Booster Order*, and read the terms of new § 20.21. It found the personal-use provisions of § 20.21 to be unclear and inconsistent with the

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[9] *See Signal Booster FNPRM*, 29 FCC Rcd at 11570 & n.49 (¶ 25).

[10] 47 C.F.R. § 20.21(a) (emphasis added).

[11] *Id.* § 20.21(g) (emphasis added).

[12] *See* Comments of T-Mobile USA, Inc., Docket No. 10-4, at 2 (Dec. 29, 2014) ("T-Mobile 2014 Comments").

signal booster rules in Parts 22, 24, and 27 of the Rules.[13] Those provisions remained unclear, because the Commission did not provide any guidance as to their meaning until the *Signal Booster FNPRM* was released.[14] Only then did the Commission offer the following for explanation for the personal-use provisions:

> By incorporating the restriction that [consumer boosters] may be operated only for "personal use," we also made it possible for consumers to seek consent from and register their devices only with the wireless carrier to which they subscribe. This restriction is particularly relevant for [wideband boosters], as they are capable of operating on spectrum licensed to multiple wireless providers.[15]
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> In the [*Signal Booster*] *Order*, we addressed a corollary to this matter in our discussion of *de minimis*, third-party use of [wideband boosters]. There, we recognized that [wideband booster] use will not necessarily be limited to the purchaser of the device, and the device therefore may be used on the spectrum of a wireless carrier for whom the device was not registered. We sought to maintain flexibility for consumers while mitigating the impact to wireless carriers by authorizing *de minimis*, *i.e.*, occasional, incidental use of a [consumer booster] by a third party under the license of the third party's wireless provider.[16]
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> If a consumer registers a [wideband booster] with her service provider and properly operates it in her home or car, the signal booster will only be operated on that provider's spectrum. In this way, the "personal use" restriction ensures that the signal booster is not normally used (in an unauthorized fashion) on other providers' spectrum.[17]

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[13] In retrospect, Wilson should have asked the Commission to reconsider the adoption of the personal-use restriction. However, at the time, Wilson did not fully appreciate the ramifications of limiting consumer boosters to personal use. In particular, Wilson was marketing its signal boosters to individuals, and it did not foresee the current, soaring business, institutional, and public-safety demand for cost-efficient consumer boosters.

[14] On the day that the *Signal Booster Order* was released, the Commission posted information about signal boosters on its website. *See Signal Boosters – Robust Wireless Service at Home, at Work, and on the Road* (visited Feb. 20, 2013) http://wireless.fcc.gov/signal-boosters/-index.html. In May 2013, the Commission issued a Small Entity Compliance Guide on the subject. *See Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, 28 FCC Rcd 7341 (2013). Neither publication addressed the personal-use restriction.

[15] *Signal Booster FNPRM*, 29 FCC Rcd at 11571 (¶ 26) (footnotes omitted).

[16] *Id.* at 1157 n.52 (citations omitted).

[17] *Id.* at 1157 n.53.

By virtue of the *Signal Booster FNPRM*, the Commission has had the benefit of public comments on the issue of whether the personal-use restriction should be eliminated for provider-specific boosters. And commenters were unanimously in favor of eliminating the restriction.[18] However, the Commission has never entertained public comments on the specific, fundamental question of whether wireless subscribers should be limited to operating consumer boosters for "personal use." It should entertain those comments now.

B. The Personal-Use Restriction Should Be Revised or Repealed

Because it was neither honed by public comments nor explained in the *Signal Booster Order*, the Commission's personal-use restriction suffers from vagueness and is subject to misinterpretation. Comments filed in this proceeding clearly show that the restriction has been misconstrued to flatly prohibit businesses, public institutions, and other enterprises from purchasing and using consumer boosters.[19] The source of that misconception appears to have been the use of the ambiguous term "personal use."

Uncertainty was introduced by the *Signal Booster Order* in which the Commission stated that it had defined consumer boosters as "devices that are marketed to and sold for personal use by individuals."[20] That was not the case. There is no personal-use restriction in the definition of

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[18] T-Mobile 2014 Comments at 2; Comments of Nextivity, Inc., WT Docket No. 10-4, at 1-8 (Dec. 29, 2014) ("Nextivity Comments"); Comments of CellAmerica Corp., WT Docket No. 10-4, at 3 (Dec. 29, 2014); Comments of the Enterprise Wireless Alliance., WT Docket No. 10-4, at 1-2 (Dec. 29, 2014); ACUTA Comments at 2.

[19] *See* Comments of T-Mobile USA, Inc., WT Docket No. 10-4, at 3 (Mar. 30, 2016) (allowing "consumer boosters to be used outside the personal-use context would allow usage by small businesses") ("T-Mobile 2016 Comments"); T-Mobile 2014 Comments at 3 ("If provider-specific … boosters are limited to personal use, small businesses would not be able to take advantage of them"); Nextivity Comments at 5-6 (the personal-use restriction is an "arbitrary and unnecessary prohibition on enterprise use" of consumer boosters).

[20] *Signal Booster Order*, 28 FCC Rcd at 1668 (¶ 13).

the term "Consumer Signal Booster" that the Commission added to § 20.3 of the Rules.[21] The term is simply defined as "[a] bi-directional signal booster that is marketed and sold to the general public for use without modification."[22] Therefore, a consumer booster is not by definition a booster that is sold for personal use.

The term "personal use" employed in § 20.21(a) is susceptible to different interpretations as shown by the decisions of the courts that have grappled with the meaning of the term.[23] Some courts have interpreted "personal use" based on the definition of the word "personal" as "[o]f or relating to a particular person; private."[24] Others have decided that "the term 'personal use' means, simply non-business use."[25] Thus, § 20.21(a) could be construed to limit a CMRS subscriber to operating a consumer signal booster for a "particular person" to use, or for a "private" use, or for a "non-business use." These constructions are all reasonable if the subscriber is an individual. But the service-specific signal booster rules allow partnerships, corporations, associations, state or local governments, and other legal entities to operate consumer boosters.

In the *Signal Booster Order*, the Commission authorized the use of consumer boosters "in the wireless radio service spectrum bands used for the provision of subscriber-based services under parts 22 (Cellular), 24 (Broadband PCS), 27 (AWS-1, 700 MHz Lower A-E Blocks, and 700 MHz

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[21] *Signal Booster Order*, 28 FCC Rcd at 1737.

[22] 47 C.F.R. § 20.3. There is a discrepancy between the "sold for personal use by individuals" language of the *Signal Booster Order* and the "sold to the general public for use without modification" language of § 20.3.

[23] There has been a significant number of bankruptcy court decisions construing the phrase "acquired for the personal use of the debtor" in 11 U.S.C. § 1325(a). *See In re Cross*, 376 B.R. 641, 645 (S.D. Ohio 2007). For a discussion of the case law attempting to interpret that "confusing" statutory language, *see In re Solis*, 356 B.R. 398, 406-08 (S.D. Tex. 2006).

[24] *E.g., In re Jackson*, 336 B.R. 923, 926 (M.D. Ga. 2006).

[25] *E.g., In re Grimine*, 371 B.R. 814, 816 (S.D. Ohio 2007).

Upper C Block), and 90 (Specialized Mobile Radio) of [the Rules]."[26] It also made "Non-individual" a defined term meaning "a partnership and each partner is eighteen years of age or older; a corporation; an association; a state, territorial, or local government unit; or a legal entity."[27] And it amended Parts 22, 24, and 27 by adding rules that all provided as follows:

> Individuals and non-individuals may operate certificated [consumer boosters] on frequencies regulated under this part provided that such operation complies with all applicable rules under this part and section 20.21 of this chapter. Failure to comply with all applicable rules voids the authority to operate a signal booster.[28]

At the same time it adopted the personal-use restriction, the Commission promulgated rules that expressly allow non-individual cellular, broadband PCS, AWS-1, and 700 MHz subscribers to operate certificated consumer boosters. That being the case, the phrase "a subscriber in good standing" in § 20.21(a) cannot be construed to mean an individual subscriber in good standing, and the phrase "for personal use" cannot be read to prohibit the operation of consumer boosters by a non-individual subscriber. Likewise, the phrase "for personal use" cannot be construed to mean for non-business use. Surely, the Commission could not have intended that certificated boosters be operated by non-individual CMRS subscribers only for the personal use of their partners, employees, or members.

Equally troublesome is the § 20.21(g) restriction that consumer boosters may only be marketed to "members of the general public for their personal use." The term "general public" is consider an "ill-defined phrase,"[29] but the noun "public" is defined as "the people constituting a community, state, or nation."[30] Thus, read in isolation, § 20.21(g) appears to limit the sale of

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[26] *Signal Booster Order*, 28 FCC Rcd at 1677 (¶ 36).

[27] *Id.* at 1737; 47 C.F.R. § 20.3.

[28] *Signal Booster Order*, 28 FCC Rcd at 1746; 47 C.F.R. §§ 22.9, 24.9, 27.9.

[29] *Dallas City Packing, Inc. v. Butz,* 411 F. Supp. 1338, 1345 (N.D. Texas 1976).

[30] Random House Webster's Unabridged Dictionary 1563 (2d ed. 2001).

consumer boosters to people in the United States - "members of the general public" - for their personal, private or non-business use. But the fact that non-individuals are allowed to operate consumer boosters renders the § 21.20(g) personal-use restriction senseless. If businesses are allowed to operate consumer boosters, they must be allowed to buy the devices.

The personal-use restriction also seems to conflict with the role the Commission envisioned for the signal booster operator.[31] If a consumer booster can only be sold to a member of the general public for her personal use, and if a subscriber can operate a consumer booster for personal use, then it would seem that the same person would be the owner, subscriber, and the signal booster operator. Yet, under § 20.21(h) of the Rules, the owner and operator of a consumer booster may be "different individuals."[32] Moreover, more than one individual can operate a consumer booster, insofar as the Commission defined the term "Signal booster operator" as follows:

> The signal booster operator is the person or *persons* with control over the functioning of the signal booster, or the person or *persons* with the ability to deactivate it in the event of technical malfunctioning or harmful interference to a primary radio service.[33]

When it authorized *de minimis*, third-party use of consumer boosters, the Commission clearly envisioned that wideband boosters would be operated by persons other than the purchasers of the devices.[34] To facilitate such use, the Commission authorized regular, third-party use of a consumer booster provided that such regular users register the device with their service provider.[35]

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[31] *See* 47 C.F.R. § 20.21(d)(2) ("Upon request of an FCC representative or a licensee experiencing harmful interference, a signal booster operator must: (i) [c]ooperate in determining the source of the interference, and (ii) [i]f necessary, deactivate the signal booster immediately, or as soon as practicable, if immediate deactivation is not possible").

[32] *Id.* § 20.21(h).

[33] *Id.* § 20.3 (emphasis added).

[34] *See Signal Booster Order*, 28 FCC Rcd at 1681 (¶ 48) (the Commission recognized that the use of wideband boosters would "not necessarily be limited to the purchaser of the device").

[35] *See infra* p. 17.

Thus, the personal-use restriction of § 20.21(g) can be construed to permit the sale of consumer boosters to members of the general public for their personal use and *for the use of others who register the devices with their service providers.*

The Commission cannot enforce a rule "without first providing advance, clear and adequate notice as to the conduct required or prohibited by the rule."[36] Because §§ 22.9, 24.9 and 27.9 of the Rules authorize non-individuals to operate consumer boosters, and since the Commission allows third-party use of such devices, the personal-use restriction does not provide clear and adequate notice of what conduct it prohibits. Currently unenforceable, the personal-use restriction must either be amended or, preferably, repealed.

II. THE PERSONAL-USE RESTRICTION SHOULD BE REPLACED WITH A REQUIREMENT THAT WIDEBAND BOOSTERS MUST BE REGISTERED WITH MULTIPLE LOCAL SERVICE PROVIDERS

A. The Personal-Use Restriction Should Be Eliminated for Both Wideband and Provider-Specific Boosters

In the *Signal Booster Order*, the Commission recognized that "[m]obile voice and mobile broadband services are increasingly important to consumers and to our nation's economy."[37] It found that the use of signal boosters can enhance mobile voice and broadband services "for many Americans at home, at work, and on the road."[38] In particular, the Commission found that signal boosters:

- "enhance wireless coverage, particularly in rural, underserved, and difficult-to-serve areas;"
- "are particularly useful in rural and difficult-to-serve indoor environments, such as

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[36] *Mercury PCS II, LLC*, 13 FCC Rcd 23755, 23759 (1998).

[37] *Signal Booster Order*, 28 FCC Rcd at 1664 (¶ 1).

[38] *Id.*

hospitals;"

- "improve public safety communications by enabling the public to connect to 911 in areas where wireless coverage is deficient or where an adequate communications signal is blocked or shielded;"
- "address coverage gaps in urban environments, such as buildings, tunnels, and garages;"[39]
- improve "wireless coverage in office buildings where [consumers] work, in health care facilities, where doctors and health care providers need reliable communications, and on educational campuses where students want access to the latest wireless applications.[40]
- "represent a cost-effective means of improving our nation's wireless infrastructure."[41]

When it adopted its signal booster rules, the Commission certainly knew that signal boosters were widely used by businesses, governmental agencies, and other organizations. Indeed, Wilson had given the Commission a list of over 750 governmental entities in all 50 states that relied on cellular signal boosters.[42] In its *Signal Booster Order*, the Commission found that rural and metropolitan police departments and other first responders, including emergency medical personnel, rely on mobile signal boosters to extend wireless coverage.[43] Surely, the Commission did not think that a police officer would operate a certified Mobile Consumer Signal Booster ("mobile booster") – a consumer booster "designed to operate in a moving vehicle where both

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[39] *Signal Booster Order*, 28 FCC Rcd at 1664 (¶ 1).

[40] *Id.* at 1666 (¶ 7).

[41] *Id* at 1664 (¶ 1).

[42] *See* Letter from Russell D. Lukas to Marlene H. Dortch, WT Docket No. 10-4, at Attach. 2 (Dec. 10, 2010). *See also* Letter from Russell D. Lukas to Marlene H. Dortch, WT Docket No. 10-4 (Nov. 24, 2010).

[43] *See Signal Booster Order*, 28 FCC Rcd at 1666-67 (¶ 8).

uplink and downlink transmitting antennas are at least 20 cm from the user or any other person"[44] – purchased by the police department only for personal use.

Despite finding that signal boosters are a cost-effective means to improve coverage in office buildings and hospitals and on educational campuses, and with knowledge that boosters were being used by first responders, the Commission adopted a personal-use restriction that has prevented or discouraged businesses, health care providers, police departments, and educational institutions from purchasing consumer boosters for use either by their employees, doctors, police officers, or students. Thus, the restriction has worked against the Commission's goal of facilitating "broader access to signal boosters,"[45] and has allowed the soaring business and public safety demand for cost-efficient and non-interfering wideband boosters to go unfulfilled.

The record compiled in response to the *Signal Booster FNPRM* is replete with evidence that consumer boosters offer small businesses, local governments and first responders a cost-effective option to improve wireless coverage. All of the commenters in that proceeding favored the elimination of the restriction with respect to provider-specific boosters,[46] and T-Mobile did so strongly.[47] Commenters urged the Commission to get rid of the restriction in order to allow businesses and other enterprises to employ provider-specific boosters. For example, Nextivity argued:

> Small businesses require access to mobile services to compete. Maintaining an arbitrary and unnecessary prohibition on enterprise use of [provider-specific boosters] denies a significant segment of the American business sector from fully participating in the nation's wireless transformation. Further, the prohibition

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[44] 47 C.F.R. § 20.3.

[45] *Signal Booster FNPRM*, 29 FCC Rcd at 11571 (¶ 26).

[46] *See* ACUTA Comments at 2-5; T-Mobile 2014 Comments at 3-4; CellAntenna Comments at 3; Nextivity Comments at 4-7; EWA Comments at 2.

[47] *See* T-Mobile 2016 Comments at 3 ("T-Mobile strongly supported removal of the personal use restriction, which it said 'appears to serve no purpose in the context of these [provider-specific] devices'").

> disproportionality penalizes small business users in rural and edge areas and dense urban environments where wireless coverage is especially challenged.[48]
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> Nextivity therefore supports the elimination of the "personal use" restriction as applied to [provider-specific boosters] to enable enterprises to take full advantage of the nation's wireless services and infrastructure.[49]

ACUTA urged the Commission to eliminate the personal-use restriction with respect to all consumer boosters so that colleges and universities can have access to devices that can improve wireless coverage throughout their campuses:

> Reliable access to wireless service on college and university campuses is critical for many reasons. Increasingly, students, faculty, and staff rely on wireless service as their primary means of communication, not just from person to person, but also to obtain access to the services and information on the Internet. Even more important, wireless services are becoming central to college and university efforts to maintain a safe campus environment.[50]
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> * * * * *
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> There are many locations where it is extremely difficult to obtain coverage. These locations include underground tunnels, basements, libraries, indoor locations where students congregate, residence halls and, most recently, LEED-certified buildings, which use low-E glass that limits the penetration of RF signals. In some locations, such as fraternity or sorority houses, high concentrations of users may make it advantageous to install boosters for common use. Signal boosters often are the ideal solution in these locations, particularly when the area to be covered is small or the number of users is limited.[51]

The very same benefits will be achieved if the Commission also frees businesses and universities to use wideband boosters. ACUTA pressed that point in its comments:

> … [W]hile the current rules technically forbid multiple users, in practice most consumer boosters are not designed to be limited to use by a single customer, and access is available to multiple users already. For this reason, a change in the rules likely will not have a significant effect on the actual usage and the potential for interference.

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[48] Nextivity Comments at 6-7 (footnote omitted).

[49] *Id.* at 7.

[50] ACUTA Comments at 2.

[51] *Id.* at 3.

> This analysis applies equally to both provider-specific … boosters and [wideband boosters]. As a consequence, the rationale that supports expanding the permitted use of provider-specific boosters supports broadening the permitted use of [wideband boosters] as well. In fact, in the campus context, the benefits of expanding permitted use of [wideband boosters] are even more significant than the benefits of expanded use of provider-specific boosters. Among other effects, allowing broader use of [wideband boosters] would reduce the costs of obtaining coverage in hard-to-reach areas because there would be no need to install separate boosters for each of the carriers serving a particular area.[52]

In many cases, it is simply not feasible for small businesses, local governments, and first responders to deploy Industrial Signal Boosters ("industrial boosters"). Like provider-specific boosters, wideband boosters are less expensive and more efficient than industrial boosters. And wideband boosters are preferable for the same practical reasons that provider-specific boosters are preferred by business and enterprise customers. T-Mobile set forth the reasons in its comments in response to the *Signal Booster FNPRM*:

> There are numerous practical considerations that favor the use of a provider-specific … booster in a non-personal use setting. For example, a small business may need to install a booster to improve signal strength within its office. If provider-specific … boosters are limited to personal use, small businesses would not be able to take advantage of them. The only options available to such businesses would be to deploy an industrial … booster, switch carriers, or continue to endure indoor coverage issues.
>
> Industrial … boosters, however, are intended to cover large areas, such as shopping malls and stadiums, and generally operate at much higher power than provider-specific …boosters. Industrial … boosters also require installation by the carrier or a professional installer. Accordingly, when compared to provider-specific … boosters, industrial … boosters involve a more time-consuming and expensive process, thus prohibiting their use in many cases.
>
> The better approach is to permit the use of provider-specific … boosters by small businesses and others that otherwise would be excluded by the current personal use restriction. Removing the personal use restriction on such devices would further the Commission's goal of safely improving wireless coverage in the most economic manner.[53]

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[52] ACUTA Comments at 4-5 (footnote omitted).

[53] T-Mobile 2014 Comments at 3-4 (footnotes omitted).

Business and public safety demand for cost-effective consumer boosters has increased substantially since October 2014, when comments were filed in response to the *Signal Booster FNPRM*. Wilson estimates that interest in wideband boosters for business or law enforcement purposes has doubled in the last two years.[54] Business demand for wideband boosters clearly reflects today's mobile workforce.

It is estimated that mobile workers will account for nearly three quarters (72.3%) of the total U.S. workforce in 2020.[55] Key drivers behind the growth in the U.S. mobile worker population include the increasing affordability of smartphones and tablets combined with the growing acceptance of corporate "bring your own device" ("BYOD") programs.[56] Research suggests that up to 30 million employees work from home at least one day a week,[57] including 3.7 million who work from home at least half of the time.[58] Moreover, it has been reported that 90% of full-time American workers use their personal smartphones for work purposes.[59] And Wilson estimates that 72% of wireless subscribers occasionally experience dropped calls, while 32% do so regularly.[60] Such demographics suggest that there is a substantial need for consumer boosters

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[54] Most recently, the Houston Police Department contacted Wilson with respect to deploying wideband boosters to improve its cellular coverage.

[55] International Data Corp., *IDC Forecasts U.S. Mobile Worker Population to Surpass 105 Million by 2020*, at *1 (June 23, 2015), *available at* https://www.idc.com/getdoc.jsp?containerid=pUS25705415.

[56] *Id.*

[57] Kenneth Rapoza, *One in Five Americans Work from Home, Numbers Seen Rising Over 60%*, at *2 (Feb. 18, 2013), *available at* http://www.forbes.com/sites/kenrapoza/2013/02/18/one-in-five-americans-work-from-home-numbers-seen-rising-over-60/#3a0d9b434768.

[58] *See* Global Workplace Analytics, *Latest Telecommuting Statistics*, at *2 (Oct. 19, 2016), *available at* http://globalworkplaceanalytics.com/telecommuting-statistics.

[59] Cisco mConcierge, *BYOD Insights 2013: A Cisco Partner Network Study*, at 4 (Mar. 2013), *available at* https://iapp.org/media/pdf/knowledge_center/Cisco_BYOD_Insights_2013.

[60] Wilson based its estimates of dropped calls on a combination of focus group interviews and research conducted by iGR.

to improve wireless coverage where Americans work, and that there are a substantial number of American workers that are currently using consumer boosters for work purposes. After all, if a subscriber uses her smartphone now for her work, then the consumer booster that she purchased to improve signal strength is also used for her work.

As noted by Nextivity and T-Mobile in response to the *Signal Booster FNPRM*, small businesses in rural areas and dense urban environments especially need consumer boosters to efficiently improve signal strength within their offices.[61] And there are approximately 28 million small businesses in the U.S., 52% of which are home-based.[62] Small businesses should be allowed to employ consumer boosters in their offices – or in their home offices – for business purposes.

Wilson has been approached by many small businesses that wish to use consumer boosters in innovative, beneficial ways. For example, restaurateurs and convenience store owners have wanted to purchase wideband boosters to install in walk-in freezers to safeguard employees who may become locked in subzero temperatures inadvertently or intentionally in the course of a crime.[63] Businesses must be free to purchase wideband boosters that can be used by their employees in emergencies.

The Commission should recognize the reality that consumer boosters are, and need to be, operated by non-individuals and individuals alike for non-personal uses. It should eliminate the

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[61] *See supra* notes 48 & 53 and accompanying text.

[62] *See* Jason Nazar, *16 Surprising Statistics about Small Businesses*, at *2-3 (Sept. 9, 2013), *available at* http://www.forbes.com/sites/jasonnazar/2013/09/09/16-surprising-statistics-about-small-businesses/#7c-7768013078.

[63] Workers have been found dead in walk-in freezers with subzero temperatures. Some had been trapped by broken doors and either froze to death or were overcome by lethal fumes. *See* Jeff Martin, *Trapped: Deaths Inside Freezers Can Be Prevented, but How?*, at *1 (Oct 30, 2016), *available at* https://www.yahoo.com/news/trapped-deaths-inside-freezers-prevented-130504588.html. Robbers have been known to lock employees in freezers. *See Workers Are Locked in Freezer in a Queens Fast-Food Robbery*, N.Y. Times, Aug. 15, 1995, *available at* http://www.nytimes.com/1995/08/15/nyregion/workers-are-locked-in-freezer-in-a-queens-fast-food-robbery.html.

personal-use restriction entirely, and it can do so without fear of adverse consequences.

B. The Elimination of the Personal-Use Restriction Will Not Adversely Affect Wireless Networks

The Commission's signal booster rules have succeeded in encouraging "technological advances and a robust, competitive market for booster technology."[64] As of February 9, 2016, there were 76 Commission-approved consumer boosters available for sale from 11 different manufacturers.[65] As of March 9, 2016, Verizon, AT&T, and Sprint had consented to the use of all 76 certified consumer boosters, while T-Mobile had approved all but the consumer booster operating on Band 12, which it was still reviewing.[66] On March 30, 2016, Verizon disclosed that it had over 10,000 registered consumer booster users, which more than doubled the number of users in the previous year.[67]

None of the four nationwide service providers have reported that consumer boosters were having a significant negative impact on their networks. According to Verizon, the NPS requirements have "all but eliminated the interference problems" caused by signal boosters manufactured prior to the effective date of those requirements.[68] Indeed, Verizon reported that it "ha[d] experienced no significant booster-related interference issues since 2014."[69] Sprint has done much the same.[70]

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[64] *Signal Booster Order*, 28 FCC Rcd at 1664 (¶ 2).

[65] *See Wireless Telecommunications Bureau Reminds Nationwide Wireless Service Providers of Obligation to Release Information Regarding Consumer Signal Boosters*, 31 FCC Rcd 967, 969-72 (2016) ("*Consumer Booster PN*").

[66] *See* Comments of Verizon, WT Docket No. 10-4, at 2 n.3 (March 30, 2016) ("Verizon Comments").

[67] *See id.* at 2.

[68] Verizon Comments at 2.

[69] *Id.*

[70] *See* Sprint Consumer Signal Booster Information, Docket No. WT 10-4, at 2 (Mar. 8, 2016) (consumer boosters certified as meeting the NPS are currently causing no "significant negative impact" on its network

Of the 76 consumer boosters that Commission has certified, 23 are manufactured by Wilson and zBoost.[71] They have shipped more than 750,000 of their Commission-approved consumer boosters and received no reports that any of their boosters caused interference to a wireless network. In April 2016, SureCall, formerly Cellphone-Mate Inc., reported that it was unaware of any interference complaints with respect to its 21 certified consumer boosters.[72] As far as Wilson is aware, operation of Commission-approved consumer boosters have not degraded performance on any commercial network. In short, the NPS requirements have worked to protect network operations, and they will continue to do so after the personal-use restriction is totally eliminated.

The potential for interference could be reduced by making wideband boosters available for business or enterprise use as an alternate to higher-powered industrial boosters. T-Mobile has shown that it is industrial boosters, not consumer boosters, which pose the threat of interference:

> Interference from boosters appears to be most common in dense urban areas, where businesses attempt to improve in-building coverage by using industrial … boosters – the only option due to the personal use limitation on consumer boosters. Although the elimination of the personal use restriction may ameliorate urban interference issues by making compliant consumer boosters available for business use, the fact remains that higher-powered industrial boosters will inherently have a greater potential for interference. For example, over the last nine months in T-Mobile's New York region, 24% of all interference cases were attributed to boosters, with a majority being industrial boosters. The most egregious cases involved industrial boosters used with external antennas.[73]

There is no reason to believe that NPS-compliant, Commission-approved wideband boosters will cause interference if they are used by businesses, governmental agencies, first

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operations).

[71] *See Consumer Booster PN*, 31 FCC Rcd at 971-72.

[72] *See Reply Comments of SureCall*, Docket No. 10-4, at 2 (Apr. 12, 2016). *See also Consumer Booster PN*, 31 FCC Rcd at 869-70.

[73] T-Mobile 2016 Comments at 5.

responders, or other enterprises. Professionally-trained installers will be used for non-personal applications ensuring that the wideband boosters will operate efficiently and effectively. Certainly, Wilson does not envision that wideband boosters will be deployed throughout large commercial spaces, such as airports or convention centers. In the unlikely event that interference does occur, a requirement that all wideband Fixed Consumer Signal Boosters ("fixed boosters") – consumer boosters "designed to be operated in a fixed location in a building"[74] – be registered with local wireless service providers will facilitate the rapid resolution of the interference issue.

C. The Personal-Use Restriction Is Not Necessary to Ensure that Consumer Boosters Are Operated under the Service Providers' Licenses and Control

In the *Signal Booster Order,* the Commission employed a "blanket licensing framework," under which it authorized consumer boosters "as subscriber equipment under provider licenses."[75] It found that blanket licensing satisfied the requirement of § 301 of the Communications Act of 1934 ("Act") that a Commission license was necessary to operate a consumer booster,[76] and "enable[d] wireless operators to maintain sufficient control of their networks."[77] Blanket licensing and the registration-prior-to-operation requirement[78] ensured that a wideband booster could be operated under the licenses and control of multiple wireless operators.

The Commission found that the public interest would be served by allowing a non-individual to purchase a wideband booster "for use in a location where subscribers of multiple serving providers will access the device regularly," provided that "each such subscriber must

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[74] 47 C.F.R. § 20.3.

[75] *Signal Booster Order*, 28 FCC Rcd at 1671 (¶ 22).

[76] *See id.* at 1672 (¶ 24).

[77] *Id.* at 1671 (¶ 22).

[78] *See* 47 C.F.R. § 20.21(a)(2).

register the device with their provider."[79] The Commission authorized such third-party use of a wideband booster "under the license of the third party's wireless provider."[80] And it "modif[ied] providers' licenses to permit such use."[81] Thus, under the blanket licensing framework, a wideband fixed booster can be purchased for regular use by subscribers of multiple serving providers on the condition that the booster is registered with the service providers. The same is true for wideband mobile boosters.[82]

If the Commission requires that wideband fixed boosters be registered with multiple local service providers "prior to operation and as a condition of authorization,"[83] there would be no need for the personal-use restriction to ensure that such Commission-approved boosters are not used "in an unauthorized fashion."[84] The use of a fully-registered wideband fixed booster would be authorized under multiple provider licenses, thereby complying with § 301 of the Act, and be under the operational control of the licensees, thereby facilitating "provider control of the devices, rapid interference resolution, [and] ease of consumer outreach."[85] And, in the absence of the personal-use limitation, blanket licensing and the provider-based registration system would allow wideband boosters to be purchased and deployed by non-individuals to serve their own purposes.

Eliminating the personal-use restriction in favor of multi-provider registration would

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[79] *Signal Booster Order*, 28 FCC Rcd at 1700 (¶ 104).

[80] *Id.* at 1681 (¶ 48).

[81] *Id.*

[82] The Commission modified provider licenses to authorize a "guest in a vehicle" to use a wideband mobile booster provided that the guest seeks her provider's consent to do so. *Signal Booster Order*, 28 FCC Rcd at 1681 (¶ 48). Insofar as the provider has already consented to the use of a Commission-approved mobile booster, the guest need only register the wideband mobile booster with her provider. *See id.* at 1682 (¶ 48), 1700 (¶ 104).

[83] *Id.* at 1677 (¶ 35).

[84] *Signal Booster FNPRM*, 29 FCC Rcd at 11571 n.53.

[85] *Signal Booster Order*, 28 FCC Rcd at 1677 (¶ 35).

enable entities of all kinds to use wideband boosters, thereby taking "full advantage of the nation's wireless services and infrastructure."[86] For example, access to wideband boosters will be provided by businesses to their employees and customers, by health care providers to their doctors and patients, and by institutions of higher education to their faculty and students. Such access can be provided by simple rule changes without appreciable harm to commercial wireless networks.

CONCLUSION

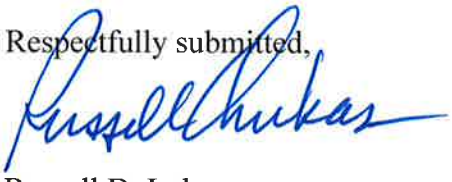
For all the foregoing reasons, Wilson respectfully requests the Commission grant this petition and issue a FNPRM in this proceeding to amend § 20.21 of the Rules by:

(1) deleting the phrase "for personal use" from § 20.21(a);

(2) deleting § 20.21(b) and adding a new § 20.21(b) to read as follows: "*Operation of Wideband Consumer Signal Boosters.* Third parties may use a subscriber's Wideband Consumer Signal Booster under the authorizations held by the licensees providing service to the third parties, provided that the subscriber has complied with paragraph (a) of this section and the device has been registered with the licensees providing service to the third parties;" and,

(3) deleting the second sentence of § 20.21(g).

Respectfully submitted,



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[86] Nextivity Comments at 8.