

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

In the Matter of)	
)	
Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules)	WT Docket No. 11-49
)	
Progeny LMS, LLC Demonstration of Compliance with Section 90.353(d) of the Commission's Rules)	

To: The Commission

**REPLY TO OPPOSITION TO
PETITION FOR RECONSIDERATION**

The Wireless Internet Service Providers Association (“WISPA”), pursuant to Section 1.106(h) of the Commission’s Rules, hereby replies to certain of the arguments presented in the July 19, 2013 Opposition (“Opposition”) of Progeny LMS, LLC (“Progeny”).¹ Contrary to Progeny’s assertions, WISPA’s Petition for Reconsideration (“Petition”) of the Commission’s *Order*² showed that the Commission made “material error[s]” of law and fact in concluding that Progeny had satisfied its burden of demonstrating that its licensed high-power operations would not cause “unacceptable levels of interference” to Part 15 devices. The Commission’s failure to articulate a clear standard for what constitutes “unacceptable levels of interference” is a material legal error that Progeny cannot sidestep with twisted logic and *post hoc* rationalizations of the *Order*. The Commission’s factual errors arise in its failure to properly analyze and interpret the test results and the impact Progeny’s operations cause. Progeny’s failure to accept additional

¹ Progeny filed its Opposition on July 19, 2013, in advance of the July 23, 2013 filing deadline. Accordingly, pursuant to Section 1.4, this Reply is timely filed. Further, WISPA does not object to Progeny’s request for waiver of the page limitation set out in Section 1.106(g). See Progeny LMS, LLC Petition for Waiver of Section 1.106(g) of the Commission’s Rules, WT Docket No. 11-49 (July 19, 2013).

² *Order*, WT Docket No. 11-49, FCC 13-78 (rel. June 6, 2013) (“*Order*”).

license conditions unfairly shift the burden to existing Part 15 users and show a lack of responsibility to those wireless Internet service providers (“WISPs”) that use the 900 MHz band in suburban and urban areas. The record demonstrates that the *Order* is founded on “material error” and it thus should be overturned on reconsideration.

Discussion

I. WISPA’S PETITION IS NOT REPETITIOUS AND NOT SUBJECT TO DISMISSAL OR DENIAL.

Progeny argues that the petitions for reconsideration repeat arguments that were previously considered and rejected, and therefore are subject to denial.³ This claim is not specific to WISPA and is entirely false. First, as discussed below, the definition of “unacceptable levels of interference” has never been clearly articulated, or if it was articulated, the Commission abandoned its definition in favor of something else. Second, the Commission had not previously interpreted the test results, and WISPA’s Petition is the first opportunity for it to address certain defects in the Commission’s analysis. Third, the *Order* contains no reference to the additional license conditions proposed by the Part 15 Coalition, so there is no evidence that the Commission actually considered them. These three examples demonstrate that there is no basis to deny WISPA’s Petition on grounds that it is repetitious.

II. THE COMMISSION’S FAILURE TO ADEQUATELY DEFINE “UNACCEPTABLE LEVELS OF INTERFERENCE” CONSTITUTES MATERIAL ERROR.

Undertaking the unenviable challenge of defending a legally flawed *Order*, Progeny contends that the numerous and varied potential definitions of “unacceptable levels of interference” scattered throughout the *Order* are actually “multiple explanations regarding why

³ Opposition at 2.

Progeny satisfied its requirement.”⁴ As creative as this argument may be, it is also contrary to a fair and clear reading of the *Order*.

Progeny distances itself from the standard of “unacceptable levels of interference” that the Commission established in 1996 and which Progeny previously endorsed – to ensure that M-LMS networks “are not operated in such a manner as to degrade, obstruct or interrupt Part 15 devices to such an extent that Part 15 operations will be negatively affected.”⁵ Progeny appears unwilling either to continue to accept this definition or to disagree with the Commission, when other parties had the right to rely on the Commission’s long-standing definition as the only possible standard that existed *prior to* adoption of the *Order*. But if that definition does not hold, and there thus was no pre-existing definition of “unacceptable levels of interference,” the search for a definition leads only to the *Order* itself – a document where WISPA found up to *seven* additional phrases that could possibly shed light on what Progeny was required to prove.

If Progeny’s argument is correct, Progeny “satisfied” its requirement not to cause unacceptable levels of interference because, according to the Commission’s interpretation of the test results, Part 15 devices, when operated in the presence of Progeny’s M-LMS system:

1. Did not experience a “significant detrimental impact.”
2. Did not experience a “significant detrimental effect overall.”
3. “Continue[d] to function.”
4. “Continue[d] to function in most cases.”
5. “Continue[d] to work as intended.”
6. “Continue[d] to be able to operate in the band.”
7. “Generally coexist[ed] with” the M-LMS system.⁶

There are obvious, substantial differences in what these “explanations” denote. For example, for a device to “continue[s] to work *as intended*” indicates something entirely different than having a

⁴ *Id.* at 7.

⁵ Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicular Monitoring Systems, *Order on Reconsideration*, 11 FCC Rcd 16905, 16912 (1996) (“*LMS Recon Order*”). See Response of Progeny, WT Docket No. 11-49 (Jan. 11, 2013) at 9.

⁶ WISPA does not accept the veracity of any of these statements.

device merely “continue[s] to function” (in *any* capacity). The addition, deletion, and substitution of key words (“significant detrimental *impact*” versus “significant detrimental *effect overall*”; “continue to function” versus “continue to function *in most cases*”) at different points in the *Order* seems to indicate confusion at best, and obfuscation at worst. In any event, given the inconsistencies among these various “explanations,” surely not *each* of these “examples” can serve as the same definitional standard – whatever that standard may be.

Layering deception on top of this incoherence, Progeny also recites language from Commission orders that discusses the purpose of the testing requirement – to ensure that licensees “when designing and constructing their systems, take into consideration a goal of minimizing interference to existing deployments or systems of Part 15 devices in their area, and to verify through cooperative testing that this goal has been served.”⁷ This obligation, however, addresses only the *first* requirement of Progeny’s two-pronged license condition, namely the obligation to test so the Commission can determine the *adequacy* of the testing. But like the *Order*, Progeny unconvincingly refuses to define the *second* element of the license condition, which is the standard by which the test results will be evaluated. Progeny nowhere states what “unacceptable levels of interference” *actually means*, instead merely reciting Section 90.353(d), which simply restates Progeny’s obligation and does nothing to explain what constitutes “unacceptable levels of interference.”⁸ Without any such definition, neither Progeny nor the

⁷ Opposition at 10, *quoting* Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 13942, ¶ 69 (1997). WISPA disputes the Commission’s conclusion that Progeny’s network is designed to minimize interference. *See Order* ¶ 23. *See also* Opposition at 14-15. The presence of high power transmitters at high sites will increase interference to fixed wireless broadband devices and Progeny’s stated plans for “low density” deployment may not hold true as new buildings are constructed and coverage “holes” are revealed. Moreover, there are no limits on Progeny’s duty cycle, thereby ensuring that interference levels will not decrease.

⁸ *Id.* at 7.

Commission can legitimately claim that Progeny satisfied its license condition or has complied with Section 90.353(d).⁹

To accept the conclusions of the Commission and the arguments of Progeny would necessarily mean that the phrase “unacceptable levels of interference” has no meaning whatsoever. In adopting Section 90.353(d), the Commission could simply have omitted that phrase, in which case Part 15 interests would have no protection from interference from licensed operations. But, in recognition of the large number of Part 15 devices and the benefits they provide, the Commission required Progeny to both test and to demonstrate that interference levels would not be “unacceptable.” Neither the Commission nor Progeny attempts to explain in any comprehensible way why the definition in the *LMS Recon Order* no longer applies. Instead, the Commission focuses on Progeny’s alleged efforts to “minimize” interference and offers an assortment of various statements that conflict with the Commission’s long-established definition.

In the end, the Commission and Progeny must either live with the definition adopted in the *LMS Recon Order*, or adopt a new definition following notice and comment rulemaking procedures. There is no third choice that is without material error. The Commission’s failure to rely on the existing definition, its obvious difficulty in devising a properly promulgated alternative and Progeny’s creativity in trying vainly to provide clarity and meaning to the *Order* speak volumes about the lack of any identifiable standard. In light of these legal deficiencies, the Commission should reconsider and overturn the *Order*.¹⁰

⁹ Progeny infers that WISPA has sought specific interference protection criteria. *See id.* at 11-12. This is not the case. WISPA has never asked the Commission to adopt a “bright line” technical test and appreciates the difficulty in doing so given the wide variety of Part 15 devices. WISPA merely seeks a clear understanding of what “unacceptable levels of interference” means, if the definition adopted in the *LMS Recon Order* is invalid.

¹⁰ In addition to incorrectly inferring that WISPA seeks specific technical criteria as part of standard for “unacceptable levels of interference,” the Opposition also contains other irrelevant claims. For instance, this is not a case about the amount of deference that a court would afford the Commission, and WISPA has not claimed that the Commission acted outside its “role as the nation’s designated communications regulator.” Opposition at 6. Also, the question of interference *from* Part 15 devices *to* licensed operations is not at issue here. *See id.* at 10.

III. THE COMMISSION’S FAILURE TO ADEQUATELY INTERPRET TEST RESULTS CONSTITUTES MATERIAL ERROR.

Progeny attempts to discount the results of the Joint Test Report indicating, among other findings, that the two most commonly used fixed wireless broadband equipment both *experienced reductions in throughput of 50 percent*. Progeny’s defense seems to be that “*most of the other*”¹¹ results were not quite as severe, and that some results, in Progeny’s words, demonstrated only “relatively modest throughput reductions.”¹² Progeny then echoes the Commission’s statement that, despite this clear evidence of significant throughput reductions, the broadband equipment that was tested continued to “function.” According to Progeny, this is all that is necessary to demonstrate that its network did not cause unacceptable levels of interference to the tested Part 15 devices.¹³

Despite the Commission’s, and Progeny’s, great confusion over what constitutes unacceptable levels of interference, it is nonsensical to quibble over whether a 50 percent reduction in throughput is “unacceptable.” Under *any* reasonable, defensible, standard, it is.¹⁴ Complete cessation of equipment functionality simply *cannot* be the applicable yardstick by which to determine if interference is “unacceptable.” For the Commission to disregard such stark results constituted a clear error in judgment.

Progeny attempts to divert the Commission’s attention from this obvious factual conclusion and re-frame the question as “whether the operator, using the normal operational and

¹¹ *Id.* at 30 (emphasis added).

¹² *Id.*

¹³ *Id.* at 32.

¹⁴ Progeny once again accuses WISPA of using “fictitious statistics.” Opposition at 30. This, however, is untrue. For purposes of demonstrating “unacceptable levels of interference,” in its Petition WISPA relied solely on the throughput reductions that would result in *one direction* when the Progeny system was operated co-frequency. The Joint Test Report shows that in Test Set #3, the throughput reduction using the Cambium Canopy equipment was 49 percent in the Access Point (AP) to Subscriber Module (SM) direction, and that in Test Set #5, the throughput reduction using the Ubiquiti Rocket equipment was 47.9 percent in the Access Point (AP) to Consumer Premise Equipment (CPE) direction. See Petition at 6; Joint Test Report at 17, 18. The “fiction” is Progeny’s attempt to put words in WISPA’s mouth.

technical interference mitigation techniques it uses to avoid other Part 15 interference sources, can reasonably configure its technology in a manner to avoid or minimize interference potential.”¹⁵ In its attempt to escape the truth, Progeny’s arguments fail here as well.

First, contrary to Progeny’s suggestions, WISPs simply cannot “avoid” such substantial interference by selecting different frequencies. WISPA did not, as Progeny claims, “ignore[] the numerous tests that showed that broadband wireless networks can routinely operate in spectrum that overlaps directly and partially with Progeny’s network.”¹⁶ Rather, WISPA specifically accounted for these test results in stating that the remaining one-third of the 902-928 MHz band would remain available for WISPs, even with some loss in throughput.

Second, Progeny’s claim that the Cambium and Ubiquiti equipment can operate with different channelization options misses the point. If forced to abandon certain frequencies and use different channelization schemes, WISPA and other Part 15 users would cause and receive more interference because of the unavailability of useable spectrum. Even if Progeny is right and that “at least half” of the channelization options do not explicitly overlap Progeny’s frequencies,¹⁷ this does not resolve the preclusive effect of Progeny’s operations on four megahertz of 900 MHz band spectrum. Under any scenario, this dramatically reduces the amount of spectrum that remains available for effective use by Part 15 users. The only question is whether the spectrum reduction is two-thirds or one-half, neither of which is “acceptable” under any reasonable interpretation.

¹⁵ Opposition at 30.

¹⁶ *Id.* at 31. WISPA strongly disputes Progeny’s assertion that there were “numerous” test results showing “routine[]” co-frequency operations. The only tests with fixed wireless broadband devices that should be given any credence were the six tests that were the specific subject of the Joint Test Report.

¹⁷ *Id.* at 32.

Third, Progeny attempts to justify the Commission’s conclusion that “the worst-case scenarios occurred when WISP antennas were in close proximity to Progeny’s beacons.”¹⁸ As discussed in WISPA’s Petition, no test considered the interference impact of any *single* Progeny transmitter, but rather measured interference from all Progeny transmitters in the *aggregate*.¹⁹ The reasons behind the throughput reductions cannot be reduced to a single data point, as Progeny would have the Commission believe.

The Commission cannot conclude that WISPs can “add additional links” and “alter deployments” to avoid the devastating effects of such throughput reduction, and Progeny cannot simply argue that WISPA’s arguments “were demonstrated as false” when the record clearly shows the opposite result.²⁰ WISPs cannot operate co-frequency with Progeny’s networks, and re-locating to other channels – either through the existing channelization scheme or other options – are not “manageable” solutions to possible interference problems. Further, contrary to Progeny’s suggestion, mitigation techniques suitable for other low-power unlicensed “noise sources” are wholly inadequate to address interference from Progeny’s high-power 48 Watt transmitters placed at high elevations with no restrictions on transmitter density or duty cycle.²¹ Like an accordion, the 902-928 MHz will be squeezed to a far lesser amount of useable spectrum. This is not a “manageable” situation, as the *Order* surmises,²² but a “tragedy of the commons” waiting to happen.

¹⁸ *Order* at ¶ 26. See Petition at 17-18.

¹⁹ Progeny also argues that the “single worst test result” involved the Canopy link, which was closer to Progeny’s beacon cluster. Opposition at 32, n.108. This statement is misleading. First, the difference in the Cambium and Ubiquiti throughput reductions was only 1.1 percent – 49 percent for Cambium and 47.9 percent for Ubiquiti. Second, merely relying on the proximity of an access point to the Progeny network ignores a number of other variables that may affect throughput and interference such as the distance of test links and the angle of the test links in relation to the Progeny transmitters.

²⁰ *Id.* at 33.

²¹ *Id.* at 50.

²² *Order* ¶ 26.

IV. THE COMMISSION SHOULD REQUIRE PROGENY TO WORK DIRECTLY WITH ALL WISPS TO RESOLVE INTERFERENCE ISSUES.

In its Opposition, Progeny continues its dogged refusal to pledge to cooperate with WISPs to reduce the impacts of Progeny's LMS service on WISPs operating in urban and suburban areas. Progeny's anemic excuse for refusing to make such a pledge is that "WISPA has never provided any evidence that WISP operators use the 900 MHz band extensively outside of *very rural areas*."²³ This justification is entirely disingenuous.

Under Section 90.353(d) and its license condition, Progeny has the obligation of ensuring that Progeny's operations do not cause "unacceptable levels of interference." It is not the obligation of WISPA or every WISP to disclose where it provides service. Suffice to say, there are WISPs that use the 900 MHz band in rural areas, suburban areas and urban areas. Why Progeny insists on limiting its commitment to all WISPs remains a mystery. If it believes that WISPs use the 902-928 MHz band in "rural" or "very rural" areas, then why would it be so difficult for Progeny to accept a condition to work with WISPs in suburban and urban areas? Is it because Progeny would not honor such a commitment? Progeny fails to address these questions in its Opposition.²⁴

Progeny also attempts to explain that the presence of alternative fixed wireless broadband providers in suburban and urban areas limited its cooperation commitment only to WISPs in "very rural" areas.²⁵ While this reasoning may appeal to Progeny, it demonstrates the actual harm that suburban and urban WISPs would suffer – if there is unacceptable interference and impairment of service from Progeny's operations in suburban and urban areas, the consumer can

²³ Opposition at 50 (emphasis added). Progeny's inclusion of the "very" modifier contravenes its own proposed "spectrum etiquette measures" as well as the Commission's recitation of that commitment in the *Order*. See *Order* ¶ 31. If Progeny wanted to modify its obligation to work directly with WISPs in "rural" areas and instead work directly with WISPs only in "*very rural*" areas, it should have timely filed a petition for reconsideration of the *Order*.

²⁴ See Petition at 19.

²⁵ Opposition at 50.

simply terminate service with the WISP and sign up with another company. This strained interpretation acknowledges that some interference may not be “manageable” and that WISPs and their consumers may have no ways to maintain service, irrespective of the area of operation. Progeny exposes its commitment for what it truly is – a lame attempt to work with WISPs in “rural” or “very rural” areas where interference is less likely to occur, and to ignore any obligation to WISPs in suburban and urban areas that are likely to be most affected by Progeny’s operations. Requiring Progeny to expand its “spectrum etiquette measures” to WISPs in all areas of the country would resolve this imbalance at little cost to Progeny.

Conclusion

For the foregoing reasons, and for those discussed in WISPA’s Petition, the Commission should reconsider and overturn the *Order*. Progeny has not demonstrated under any definable standard that its operations will not cause “unacceptable levels of interference, and the Commission improperly interpreted the test results and made assumptions about co-existence of Progeny and Part 15 operations that are unsupported by the record.

Respectfully submitted,

August 2, 2013

**WIRELESS INTERNET SERVICE
PROVIDERS ASSOCIATION**

By: */s/ Elizabeth Bowles, President*
/s/ Matt Larsen, FCC Committee Chair
/s/ Alex Phillips, FCC Committee Co-Chair
/s/ Jack Unger, Technical Consultant

Stephen E. Coran
F. Scott Pippin
Lerman Senter PLLC
2000 K Street, NW, Suite 600
Washington, D.C. 20006-1809
(202) 416-6744
Counsel to the Wireless Internet Service Providers Association

CERTIFICATE OF SERVICE

I, Kenneth Wolin, a paralegal with the law firm of Lerman Senter PLLC, hereby certify that on this 2nd day of August, 2013, I served a true copy of the foregoing Reply to Opposition to Petition for Reconsideration by first-class mail, postage prepaid, addressed to the following:

The Honorable Mignon Clyburn*
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

The Honorable Jessica Rosenworcel*
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

The Honorable Ajit Pai*
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Julius P. Knapp*
Chief, Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Ruth Milkman*
Chief, Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Geraldine Matisse*
Chief, Policy and Rules Division
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Paul E. Murray*
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Bruce A. Olcott
Squire Sanders (US) LLP
1200 19th Street, NW
Suite 300
Washington, DC 20036
Counsel to Progeny LMS, LLC

/s/ Kenneth Wolin
Kenneth Wolin

*Indicates service by electronic mail only.