

**Before the
FEDERAL COMMUNICATIONS COMMISSION**

In the Matter of

Request by Progeny LMS, LLC for Waiver of
Certain Multilateration Location and
Monitoring Service Rules

Progeny LMS, LLC Demonstration of
Compliance with Section 90.353(d) of the
Commission's Rules

WT Docket No. 11-49

PETITION FOR RECONSIDERATION OF SILVER SPRING NETWORKS, INC.

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Pursuant to Section 1.429 of the Commission's Rules, 47 C.F.R. § 1.429, Silver Spring Networks, Inc. ("Silver Spring Networks") respectfully petitions for reconsideration of the Commission's June 6, 2013 Order in the above-captioned proceeding.¹ The *Order* authorized Progeny LMS, LLC to commence commercial operation of a multilateration location monitoring service ("M-LMS") network, even though Progeny's network concededly fails to comply with certain technical rules on which Progeny's license has long been conditioned.²

I. INTRODUCTION AND SUMMARY

Before authorizing Progeny to commence commercial operations, the Commission was required to find, based on actual field tests, that Progeny could operate without causing "unacceptable levels of interference" to the countless millions of unlicensed devices already operating in the 902-928 MHz band pursuant to Part 15 of the Commission's rules. The

¹ *Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules; Progeny LMS, LLC Demonstration of Compliance with Section 90.353(d) of the Commission's Rules*, Order, WT Docket No. 11-49 (June 6, 2013) ("*Order*").

² *Order* ¶ 1.

Commission should have based its answer on close scrutiny of the data Progeny submitted and the various weaknesses in the testing protocol noted by commenters. The question did not call for any re-examination of the Commission's long-established policies that protect Part 15 operations in the band.

But instead of focusing on Progeny and its actual test results, the Commission substantially rebalanced the policies that should have governed the outcome, and disregarded important concerns raised by the testing—both the testing that did occur, and the testing that did not occur. The resulting *Order* stubbornly resists classification in any previously known category of administrative action. If we view it as an outgrowth of a licensee-specific waiver request, its conclusions cannot be reconciled with the existing factual record, nor with long-established spectrum policies in the 902-928 MHz band. Yet if we view it instead as a more general and more radical alteration of those same spectrum policies, the *Order* runs afoul of the Administrative Procedure Act, as a rulemaking conducted without the necessary notice and comment.

To make matters worse, the Commission's substantive rebalancing of the governing policies was peculiarly myopic, preferring a disappointingly modest improvement in E-911 services to a number of other important public policies, such as the reliability of critical infrastructure, amelioration of anthropogenic climate change, enormous current and prospective investment in unlicensed devices, and even the integrity of the FCC's own spectrum auctions. Because of these shortcomings, both procedural and substantive, the FCC should:

- Vacate the *Order* of June 6, 2013, and deny the requested relief without prejudice to Progeny's ability to renew its request after additional testing;

- Confirm that the M-LMS rules adopted in 1995 continue to govern operation of M-LMS devices in the 902-928 MHz band;
- Reaffirm that M-LMS licensees in the 902-928 MHz band are required “to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to 47 CFR part 15 devices”³; and
- Mandate that Progeny satisfactorily demonstrate that its system can coexist with other reoccupants in the 902-928 MHz band.

In the alternative, the Commission should adopt further interference-prevention measures suggested by the Part 15 Coalition,⁴ and should expressly limit the scope of the *Order* to situations covered by the “actual field tests,” so as to avoid any prejudgment of other deployments not before the Commission.

II. BACKGROUND

A. About Silver Spring Networks

Silver Spring Networks is a leading smart grid networking platform technology and solutions provider. Our technologies have connected over 16 million homes and businesses throughout the world with the goal of achieving greater energy efficiency for the planet.⁵ Our innovative products empower customers to monitor and manage energy consumption, and enable

³ 47 C.F.R. § 90.353.

⁴ Letter from Laura Stefani and Henry Goldberg, Counsel for the Part 15 Coalition, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49 (May 30, 2013) (“May 30, 2013 Part 15 Coalition Ex Parte”).

⁵ As of today smart meter deployments in the U.S. exceed 35 million. *See* U.S. Energy Information Administration, Frequently Asked Questions, <http://www.eia.gov/tools/faqs/faq.cfm?id=108&t=3> (noting that as of January 2013, AMI installations totaled more than 37 million).

utilities to gain efficiencies, integrate renewable energy sources, and deploy a broad set of smart grid initiatives rapidly and cost-effectively.

The Silver Spring Smart Energy Platform incorporates standards-based network infrastructure, software, and services, tailored to a utility's particular project goals, service territory and terrain requirements, regulatory model, and operational structure. The smart grid network consists of intelligent endpoints and network infrastructure that connect utilities to their smart meters and remote distribution automation equipment. These devices, in many cases and most commonly operating over unlicensed 900 MHz spectrum, work in concert to create a self-configuring, highly redundant mesh network with ubiquitous coverage, strong security, and the scale and performance required by utilities.

B. Establishment of Multilateration Location Monitoring Service in 902-928 MHz.

The Commission's recitation of the procedural history is accurate, with one important caveat: It fails to place the field testing rule in its proper context. Notably, when the Commission authorized M-LMS use of the 902-928 MHz band, it recognized that unlicensed devices had relied on the availability and stability of that spectrum over the preceding decade, and thus that its M-LMS rules would need to ensure that such devices could continue to rely on that spectrum. It therefore implemented rules intended to "balance the equities and value of each use without undermining the established relationship between unlicensed operations and licensed services."⁶ In particular, the Commission adopted section 90.353(d), which requires applicants for M-LMS licenses "to demonstrate through actual field tests that their systems do not cause

⁶ *Amendment Of Part 90 Of The Commission's Rules To Adopt Regulations For Automatic Vehicle Monitoring Systems*, Report and Order, 10 FCC Rcd. 4695, ¶ 35 (1995) ("LMS Order").

unacceptable levels of interference to 47 CFR part 15 devices,”⁷ noting on reconsideration that the field testing rule was intended to ensure that “LMS systems are not operated in such a manner as to degrade, obstruct or interrupt Part 15 devices to such an extent that Part 15 devices will be negatively affected.”⁸

When Progeny initially requested and was granted waiver of certain of the M-LMS rules,⁹ the Wireless Telecommunications Bureau (“WTB”) and the Office of Engineering and Technology (“OET”) recognized the importance of the field testing rule to Part 15 devices and reminded Progeny that it was not relieved of its obligation “to *demonstrate* through actual field tests that its systems do not cause unacceptable levels of interference” to Part 15 devices.¹⁰ Progeny proceeded to conduct unilateral testing of its proposed system against no more than 18 Part 15 devices and submitted its results to the Commission within a month of the initial waiver grant.¹¹ Several parties objected to the initial test results, commenting that Progeny had not met its burden under section 90.353(d) because it did not test a truly representative sample of devices nor were its tests adequate to determine the scope of the potential impact of its system on Part 15 devices.¹² The Commission therefore directed Progeny to collaborate with concerned parties to

⁷ *LMS Order* ¶ 87. *See also* 47 C.F.R. 90.353(d).

⁸ *Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicular Monitoring Systems*, Order on Reconsideration, 11 FCC Rcd. 22462, ¶ 15 (1996) (“*LMS Recon Order*”).

⁹ Petition for Waiver of the Rules and Request for Expedited Treatment, Progeny, WT Docket No. 11-49 (Mar. 8, 2011) (“Progeny Petition”).

¹⁰ *See Order* ¶ 25 (emphasis added).

¹¹ *See* Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49 (Jan. 27, 2012).

¹² *See* Comments of WISPA, WT Docket No. 11-49 (Mar. 15, 2012). *See also* Comments of Itron, Inc. on Progeny’s Test Report, WT Docket No. 11-49 (Mar. 15, 2012); Comments of

conduct further testing.¹³ Progeny conducted joint testing with WISPA, Landis+Gyr, and Itron in the summer of 2012 and submitted the results of those tests at the end of October 2012.¹⁴ Progeny's reports showed significant potential for interference to Part 15 devices, leading several other manufacturers and operators of Part 15 devices to request additional joint testing.¹⁵ Progeny, however, did not respond to those requests. On June 6, 2013, despite evidence of "unacceptable levels of interference" to Part 15 devices caused by Progeny's system, the Commission granted Progeny authority to construct its commercial system.¹⁶

III. ARGUMENT

A. **The Commission Improperly Converted Progeny's Waiver Request into an Unannounced Rulemaking to Reduce Interference Protection for Part 15 Devices in the 902-928 MHz Band.**

Because the June 6 *Order* represents a continuation of Progeny's request for a waiver of two specific technical rules, Progeny continues to bear the burden of showing either (i) that the underlying purposes of the M-LMS rules would not be served by their strict application here, and that the departure requested by Progeny would be in the public interest; or (ii) that there are unique or unusual factual circumstances that make the M-LMS rules peculiarly burdensome or

Cellnet Technology, Inc., a Landis + Gyr Company (Mar. 15, 2012); Comments of Kapsch TrafficCom IVHS Inc., WT Docket No. 11-49 (Mar. 15, 2012).

¹³ See Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49, at 2 (Oct. 31, 2012) (noting that Progeny is submitting the result of joint testing requested by the Commission).

¹⁴ See *id.*

¹⁵ *Order* ¶ 22 n.65.

¹⁶ See generally *Order*.

inequitable for Progeny.¹⁷ It is telling that the *Order* neither cites this standard nor frames its analysis accordingly.

Here, as in most proceedings on waiver requests, it is the policies *behind* the rules in question that dictate the standard for whether the rules can be waived. Thus, in the *2011 Waiver Order*, WTB and OET found the purposes behind two highly prescriptive service rules would be better served by Progeny’s proposal than by the Commission’s original requirements.¹⁸

Importantly, however, WTB and OET very pointedly did *not* waive any interference-related M-LMS rules:

It is well established that Part 15 devices are not entitled to protection from interference. In this band, however, the Commission adopted *specific interference rules designed to maintain coexistence of many varied users in the band, including Part 15 users*. This order does not waive any of those rules. Included in these rules is the obligation, set forth in Section 90.353(d), that *Progeny demonstrate through actual field tests that its M-LMS system will not cause unacceptable levels of interference to Part 15 devices*. As the Commission noted, the purpose of the testing condition “is to insure that multilateration LMS 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.”¹⁹

These policies—maintaining coexistence with co-frequency Part 15 users, and giving those users the guarantee that future operations in the band will be *field-tested* to ensure that they do not experience “unacceptable levels of interference” in the real world—are the keys to

¹⁷ 47 C.F.R. § 1.925(b)(3).

¹⁸ *Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Order, WT Docket No. 11-49, ¶¶ 13, 19, 22-23 (Dec. 20, 2011) (“*2011 Waiver Order*”).

¹⁹ *2011 Waiver Order* ¶ 25 (citing *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, PR Docket No. 93-61, 12 FCC Rcd. 13968, ¶ 69 (Aug. 28, 1997)).

determining whether Progeny’s test results satisfy section 90.353(d). Indeed, just to make sure the point was not lost in the *2011 Waiver Order*, WTB and OET repeated in the very next paragraph that “the testing requirement will require Progeny to take the goal of *minimizing interference to existing users, including Part 15 users*, into consideration *and to verify through cooperative testing that this goal is being served.*”²⁰ Progeny’s burden, therefore, was not simply to conduct tests, or to take interference “into consideration,” but to conduct tests that would *verify that unlicensed users of the 902-928 MHz band are protected from unacceptable interference.*

Progeny has failed to make this showing; the problems with its test results will be discussed below in section II.C below. What is more disappointing, however, and ultimately more threatening to the future of unlicensed operations in this band, is that the Commission’s June 6 *Order* barely even mentioned the results of Progeny’s “actual field tests.” Instead of inquiring whether Progeny’s test results *verify* that interference to Part 15 operations will remain within acceptable levels, the *Order* systematically minimizes protection of Part 15 users. Instead of evaluating whether Progeny’s test results demonstrate the degree of coexistence promised by the M-LMS rules governing Progeny’s service, the *Order* re-evaluates the Commission’s past promises to Part 15 users in the 902-928 MHz band. Instead of analyzing whether Progeny’s test results protect Part 15 operations to the degree required by section 90.353(d), the *Order* waters that standard down by importing frequent reminders that “unlicensed devices in the 902-928 MHz band operate under Part 15 rules that offer no protection from harmful interference.”²¹

²⁰ *2011 Waiver Order* at ¶ 26 (emphasis added).

²¹ *Order* ¶ 19.

This mode of analysis is wrong for a host of reasons. To begin with, the Commission focuses its analytical lens on the wrong rules. Part 15 does not govern Progeny, and section 1.925 does not require Progeny to show that its requested waiver is consistent with Part 15. Instead, Progeny must show that its waiver is consistent with *the purposes behind the M-LMS rules*, which (as the *2011 Waiver Order* clearly stated) “were designed to enable co-existence of different services in the band and prevent unacceptable levels of interference to Part 15 users.”²² Although the *Order* discusses the policy rationale for requiring M-LMS licensees to undertake field testing with Part 15 users in order to avoid causing “unacceptable levels of interference,”²³ it does not apply that rationale to its analysis of Progeny’s test results. On the contrary, the *Order* uses the most remarkable and useful feature of Part 15 devices—their incredible ability to operate efficiently and opportunistically without precluding co-frequency operations of other Part 15 devices—as a reason to give these users *even less protection* than they were promised when the M-LMS rules in Part 90 were adopted.

Instead of laboring to answer a Part 90 question from a reading of the Part 15 rules, the Commission should have paid closer attention to its own prior statements about the interference prevention measures in Part 90. The field testing requirement was not implemented to give M-LMS licensees a safe harbor so that they could demonstrate compliance by showing they had conducted tests. It was adopted to ensure that 902-928 MHz would remain a viable and sustainable home for unlicensed operations.²⁴ Moreover, the Commission has explicitly stated

²² *2011 Waiver Order* ¶ 25 n.82.

²³ *See Order* ¶ 11.

²⁴ *See LMS Order* ¶ 32-34.

that the field testing rule was intended to “balance the equities and value of each use,”²⁵ and “ensure that the coexistence of the various services in the band is as successful as possible.”²⁶ If we honor these policy commitments, then we must accord central importance to a fact the Commission practically ignored: there is a very real possibility that Progeny’s service will force many Part 15 users out of the band entirely.²⁷ This will result in great economic harm to the United States, and significant loss of services to the general public. In failing to “balance the equities” between Progeny’s service and that of Part 15 devices, the Commission has failed to hold Progeny to the requirements of section 1.925 to demonstrate that its service does not undermine the policy objectives of the field testing requirement.

In addition, the Commission’s focus on the unprotected status of Part 15 devices, rather than the specific protection that was supposed to be provided by section 90.353(d), violates fundamental notions of administrative fairness and procedural regularity. One of the most important features of any waiver analysis is that the policies underlying the rules in question are never to be considered “in play”; if an agency wishes to alter the policy choices made in past proceedings (and the rights and obligations that flow from those choices), it must do so in a rulemaking proceeding, with the notice and comment required by the Administrative Procedure Act.²⁸ Yet here, the Commission has turned its back on literally decades of specific

²⁵ *LMS Order* ¶ 35.

²⁶ *LMS Order* ¶ 82.

²⁷ *See, e.g.*, Letter from Stephen E. Coran, Lerman Senter PLLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49 (Mar. 4, 2013) (“Mar. 4, 2013 WISPA Ex Parte”).

²⁸ *See CBS Inc. Petition for Special Relief*, 87 F.C.C.2d 587, 593, ¶ 22 (1981) (“[A] waiver petition which challenges the basis for a rule rather than assuming its validity and seeking an exception from it generally ought to be considered through a rulemaking process which permits the rule in question to be directly reevaluated.”) (citing *WAIT Radio v. F.C.C.*, 418

commitments to Part 15 users regarding co-frequency sharing in the 902-928 MHz band. Indeed, in 2006 the Commission published an NPRM that proposed to relax or even eliminate the testing requirement of section 90.353(d), to make it as meaningless on the books as it has proven to be in the recent *Order*.²⁹ That rulemaking proposal was abandoned, apparently having been deemed unwise. But to reach the same result through an ostensibly adjudicatory ruling on a waiver petition would be not only unwise, but illegal.

A waiver petition is not an invitation for the Commission to engage in standardless decisionmaking. The rules are still the rules, not only for the waiver applicant but for the Commission itself. Because section 90.353(d) exists for the express protection of Part 15 users, that policy of protectiveness must inform the Commission's reconsideration of Progeny's field-test results.

B. The Commission's "Hierarchy of Rights" Analysis of the 902-928 MHz Band Confuses Protection of Individual Devices with Protection of Part 15 Operations as a Whole

The *Order* repeatedly implies that its toothless and perfunctory application of section 90.353(d) is logically necessary in light of the fact that individual unlicensed users enjoy no interference protection from licensed co-frequency operations.³⁰ This argument contains at least two serious lapses in legal and logical reasoning.

F.2d 1153, 1158 (D.C. Cir. 1969) ("The very essence of waiver is the assumed validity of the general rule, and also the applicant's violation unless waiver is granted.").

²⁹ *Amendment of the Commissions Part 90 Rules in the 904-909.75 & 919.75-928 MHz Bands*, Notice of Proposed Rulemaking, 21 FCC Rcd. 2809 (2006).

³⁰ *See, e.g., Order* ¶¶ 7, 11, 18-20.

First, while it is true that unlicensed users must accept interference “that may be caused by the operation of an authorized radio station,”³¹ it does not follow that unlicensed users must accept interference from operators who are *exceeding the scope of their authorizations*. On the contrary, even non-licensees—including the public at large—are entitled to impartial enforcement of section 301 of the Communications Act, which forbids radio transmissions *except in accordance with federal authorizations*.³² Indeed, even within its assigned frequencies, Progeny may not intentionally transmit at all, *except* in accordance with the terms of its license. Thus, the question in this proceeding is not whether any Part 15 user has the right to force Progeny to cease its licensed operations; it is whether Progeny’s new design, *which does not comply with the terms of Progeny’s license*, should nonetheless be permitted in a band that is already occupied by tens of millions of users who may suffer as a result.

It is no answer to observe that licensed operations take priority over unlicensed operations; that is not the question. The question—arising under Part 90 rather than under Part 15—is whether Progeny is causing more interference to Part 15 users than it is licensed to cause. The *Order* holds that Progeny may cause the additional interference because Part 15 users have no right to complain about anything a licensee does. But if this chain of reasoning were valid, there would be literally *no waiver Progeny could possibly seek* that the Commission would not be bound to approve by exactly the same faulty logic: If Part 15 users enjoy no protection from Progeny’s operations, *no matter how those operations are defined*, then Progeny may operate in whatever manner it pleases. That, of course, is not the way the Commission’s radio licenses are supposed to work.

³¹ 47 C.F.R. § 15.5(b).

³² 47 U.S.C. § 301.

The correct analysis is that while Part 15 devices are generally not entitled to protection from each other or from licensed users, Progeny's own authorization is nonetheless subject to defined limits—limits that come not from Part 15 but from Part 90. One of those limits is that Progeny *must demonstrate, through actual field testing*, that its operations will not cause unacceptable levels of interference to Part 15 operations in the 902-928 MHz band. That condition cannot be held satisfied merely because Part 15 devices enjoy no *other* protection against interference from M-LMS; the fact that Part 15 users have only one safeguard against Progeny's interference is a poor excuse for nullifying even that one.

The second logical fallacy in the Commission's "hierarchy of rights" analysis is the fallacy of composition—in this context, the fallacy of assuming that if something is true for one Part 15 user, then it is equally true of all Part 15 users taken together. Even though each individual Part 15 user must operate without interference protection from other Part 15 devices or other licensed services, it is plainly not true that *Part 15 operations in general* can be effectively evicted by a waiver order that permits a licensee to ignore one of the crucial sharing conditions on which it was admitted into the band.

The field-testing requirement of section 90.353(d) does not represent an enforceable promise to any individual Part 15 device, but it does represent a policy choice that the Commission made long ago respecting co-frequency use of the 902-928 MHz band. It exists not for any private interest, but for the public interest in preserving what has been an incredibly fruitful source of innovation and efficiency. It exists not to protect a single cordless phone, but to protect an entire industry sector that has assumed a place of incalculable importance in our national communications infrastructure. Treating the entire Part 15 industry as entirely

unprotected simply because each individual device is unprotected is like treating a cat as invisible simply because each of the atoms that compose the cat is too small to be seen.

This is not, of course, an argument about why the Commission *should* protect Part 15 operations in the 902-928 MHz band; the Commission has *already promised* to protect Part 15 operations in the 902-928 MHz band, by requiring M-LMS licensees to demonstrate through actual field tests that their operations will not cause unacceptable levels of interference to Part 15 devices. Both the law and the public interest require the Commission to keep that promise.

C. The Commission Failed to Ensure Progeny Met Its Requirement to Conduct “Actual Field Tests”

Although the Commission evidently paid almost no attention to the test data submitted by Progeny, we note that Progeny’s tests can scarcely be considered “actual field tests.” The flaws in Progeny’s tests are well-documented in the record. They include its refusal to test under real-world conditions and in an adequate testing location, choosing poor test parameters such as limiting the number and type of Part 15 devices tested, failing to address potential “worst case” scenarios, and providing interpretation of the test results that does not reflect the actual interference experienced by the tested devices.³³

The *Order* itself notes that the tests on which it bases its waiver were limited both as to scope and as to operational conditions. Indeed, Progeny’s tests were extraordinarily limited, looking at approximately 20 devices, tested under highly controlled conditions that do not replicate actual operating conditions.³⁴ Of the devices Progeny tested, 18 were tested

³³ See, e.g., Reply Comments of the Utilities Telecom Council, WT Docket No. 11-49 (Jan. 11, 2013) (collecting comments pointing out the flaws in Progeny’s test protocol, results, and conclusions).

³⁴ See *Order* ¶ 21.

unilaterally by Progeny alone, without cooperation from Part 15 operators.³⁵ Furthermore, in all of the testing conducted by Progeny, including the joint testing with Itron, Landis+Gyr, and WISPA, only one Advanced Metering Infrastructure (“AMI”) device was tested, and none of the testing accounted for a realistic volume of such devices operating at a given time in a given location.³⁶

The *Order* justifies its grant despite these limited conditions by noting that “it is sufficient that a representative cross-section of the various types of devices that may be authorized for operation under the Part 15 rules for this band are evaluated.”³⁷ But while testing of representative devices may be sufficient to meet the field testing requirement, the selection of devices cannot be so limited as to be essentially useless in determining whether the M-LMS system will “degrade, obstruct or interrupt Part 15 devices to such an extent that Part 15 operations will be negatively affected.”³⁸ More concerning, the Commission also allowed Progeny to unilaterally select its “representative devices” as well as set the terms of its testing and determine what those tests demonstrated. In short, the Commission allowed Progeny—the

³⁵ See Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49, Attachment 2 at Table 1 (Jan. 27, 2012) (“Progeny Test Report”).

³⁶ See *id.*

³⁷ *Order* ¶ 20.

³⁸ *LMS Recon Order* ¶ 15. Tellingly, the Commission itself avoided specific discussion of the test results, neglecting to acknowledge that even Progeny recognizes that some Part 15 devices might experience severely degraded service. See, e.g., Mar. 4, 2013 WISPA Ex Parte at 3 (noting that “the Joint Test Report shows that WISP customers would experience a 47.9 percent throughput loss in the downstream direction and *simultaneously* a 41.5 percent throughput loss in the upstream direction, for a total throughput loss of 89.4 percent”); Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, and Stephen E. Coran, Counsel to WISPA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49, Progeny LMS, LLC & Wireless Internet Service Providers Association Part 15 Joint Test Report (Oct. 31, 2012) (“Progeny/WISPA Joint Test Report”).

entity requesting a waiver—to have the final word on the testing parameters that would determine whether that waiver would be permitted. That runs a strong risk of rendering the testing pointless.

The reliability of Progeny’s test results is particularly unclear with respect to Part 15 devices used for energy network services, given that Progeny tested only one AMI device and no Supervisory Control and Data Acquisition (“SCADA”) devices. SCADA devices, used for critical infrastructure services, are very different from meter-reading devices, and are widely used in the control and operation of utility systems, yet Progeny did not test a single SCADA device.³⁹ Moreover, when it became clear just how limited Progeny’s testing had been, affected Part 15 manufacturers and operators requested that Progeny engage in additional testing,⁴⁰ Progeny simply failed to respond.⁴¹ Three joint tests, covering limited devices in controlled situations that do not represent actual operations, are not sufficient to meet the requirement to conduct actual field testing in “close cooperation”⁴² with Part 15 users. The Commission must reconsider the *Order* in light of Progeny’s failure to cooperate in any meaningful way with operators of Part 15 systems.

D. The Commission’s June 6 *Order* Undermines Important Public Policies, Including the Public Interest in Ensuring Continued Viability of 902-928 MHz for Energy Network Operations.

The Commission has effectively supplanted the policy rationales underlying the M-LMS rules with the public interest in improved location services for E-911. Location improvement is

³⁹ See Letter from James Bradford Ramsey, NARUC General Counsel, to Hon. Julius Genachowski, Chairman, FCC, WT Docket No. 11-49, at 1 (Feb. 21, 2013).

⁴⁰ See *Order* ¶ 22 n.65 (listing some of the parties seeking additional testing).

⁴¹ Letter from Brett Kilbourne, Utilities Telecom Council, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-49, at 2 (March 5, 2013).

⁴² *LMS Order* ¶ 82.

certainly a laudable goal—indeed, in a world without tradeoffs, everyone would want the best possible technology for providing E-911 location services. But we do not live in a world without tradeoffs, and the Commission cannot ignore the numerous other public policies implicated by the requested waiver.

We should note at the outset that even if improved position location were the only relevant goal, Progeny’s system is far from the “best possible technology.” The same Communications Security, Reliability and Interoperability (“CSRIC”) Report on which the Commission relies for this public interest rationale itself notes that none of the location services tested—including Progeny’s—are capable of providing sufficiently accurate location information to emergency services at this time, and that further development is needed before any emergency positioning service can be realistically deployed on a widespread basis.⁴³ That is an extraordinarily tepid basis on which to jeopardize unlicensed operations in the 902-928 MHz band, which have been an engine of innovation for more than 25 years.⁴⁴ The Commission’s decision to open this band up for unlicensed activity has enabled the flourishing of a dynamic, creative, and profitable economic infrastructure. And the unlicensed ecosystem has been successful in large part because of the Part 15 rules that allow spectrum to be shared compatibly among all users, licensed and unlicensed. Indeed, as spectrum has grown more scarce, shared use has become increasingly important, to the point that today’s spectrum policy is heavily focused on enabling and facilitating shared use.⁴⁵ The innovations and efficiencies developed by

⁴³ See, e.g., CSRIC Working Group 3 E9-1-1 Location Accuracy, Indoor Location Test Bed Report at 45, 54-55 (Mar. 14, 2013) (“CSRIC Report”).

⁴⁴ *Authorization of Spread Spectrum & Other Wideband Emissions Not Presently Provided for in the FCC Rules & Regulations*, First Report and Order, 101 F.C.C.2d 419 (1985).

⁴⁵ See, e.g., Presidential Memorandum, Expanding America's Leadership in Wireless Innovation, Memorandum for the Heads of Executive Departments and Agencies, (June 14,

Part 15 device manufacturers and users will play a central role in enabling more and greater shared use—a role encouraged by the Administration.⁴⁶

Unlicensed activities in the 902-928 MHz band create enormous economic value. The Department of Energy has estimated that smart grid deployments in the United States have contributed \$4.2 billion to the nation's gross domestic product as well as supported 47,000 jobs.⁴⁷ The availability of sub-1 GHz unlicensed spectrum plays a large role in maximizing that value. As noted in a 2012 economic study, the lack of such spectrum in Europe for smart grid deployments may result in a cost of up to \$241 billion for delays in developing, permitting, and deploying replacement technologies.⁴⁸ That estimate does not include the potential costs if such

2013), <http://www.whitehouse.gov/the-press-office/2013/06/14/presidential-memorandum-expanding-americas-leadership-wireless-innovatio>.

⁴⁶ See, e.g., *id.* (“The FCC is strongly encouraged, in consultation with NTIA, where appropriate, the industry, and other stakeholders, to develop to the fullest extent of its legal authority a program of performance criteria, ratings, and other measures, including standards, to encourage the design, manufacture, and sale of radio receivers such that emission levels resulting from reasonable use of adjacent spectrum will not endanger the functioning of the receiver or seriously degrade, obstruct, or repeatedly interrupt the operations of the receiver.”).

⁴⁷ Department of Energy, *Economic Impact of Recovery Act Investments in the Smart Grid* (April 2013), available at <http://energy.gov/sites/prod/files/2013/04/f0/Smart%20Grid%20Economic%20Impact%20Report%20-%20April%202013.pdf>.

⁴⁸ See Richard Thanki, *The Economic Impact of Licence-Exempt Spectrum*, 68-72 (June 2012), available at [http://download.microsoft.com/download/A/6/1/A61A8BE8-FD55-480B-A06F-F8AC65479C58/Economic Impact of License Exempt Spectrum - Richard Thanki.pdf](http://download.microsoft.com/download/A/6/1/A61A8BE8-FD55-480B-A06F-F8AC65479C58/Economic%20Impact%20of%20License%20Exempt%20Spectrum%20-%20Richard%20Thanki.pdf) (estimating that the lack of unlicensed spectrum in Europe for smart grid deployment could impose a cost of up to \$241 billion due to delays alone as replacement technologies are developed, permitted, and deployed).

replacement technologies are not capable of delivering the full benefit of smart grid deployments.⁴⁹

Unlicensed energy grid devices serve critical purposes in electrical and utility networks, including monitoring system performance, identifying problems, and responding to events like gas leaks and other emergencies.⁵⁰ Part 15 device manufacturers, along with companies like Silver Spring Networks, and state and local governments, have invested heavily in these systems. Indeed, for more than two decades, utility commissions across the United States have approved billions of dollars of rate-recoverable utility assets based on unlicensed spectrum.⁵¹ And these systems rely on the Commission’s rules to guarantee their peaceful coexistence with M-LMS systems, as set forth in the *LMS Order*. This economically valuable and critical use will be jeopardized if licensed networks are permitted to operate outside the bounds of their licenses in ways that preclude continued unlicensed access.

The Commission, in granting Progeny permission to begin commercial deployment of its system, has failed to take the competing public interest issues into consideration. The Commission expressly adopted various protections for Part 15 devices in the M-LMS rules to ensure that existing unlicensed operations—including “valuable services such as automated

⁴⁹ See *id.* at 71-72 (noting that replacement technologies like power line carrier and cellular systems lack the flexibility and scalability of unlicensed smart grid systems).

⁵⁰ See, e.g., Press Release, *Miami proposes to lead the nation in energy efficiency with \$200 million Smart Grid initiative* (Apr. 20, 2009), <http://www.silverspringnet.com/article/miami-proposes-to-lead-the-nation-in-energy-efficiency-with-200-million-smart-grid-initiative/#.UdobdBZqtSU> (noting that the Miami project will enable utilities to “continuously monitor status, identify and automatically fix or dispatch teams to outages and provide useful information to improve reliability, efficiency and productivity from power generation through consumption”).

⁵¹ See Silver Spring Networks, *Why Unlicensed Spectrum Dominates the Smart Grid*, White Paper, at 7 (Feb. 6, 2012).

meter reading”—were not forced out of that spectrum by the new M-LMS service. Thus, it established a safe harbor for Part 15 devices relative to M-LMS, defining the parameters of unlicensed use that would *not* be considered to create harmful interference to LMS systems.⁵² It also adopted the field testing requirement to ensure that M-LMS systems would not cause unacceptable levels of interference to Part 15 devices. In this manner, the Commission sought to ensure the continued value of the investments made by unlicensed device manufacturers and operators as well as to allow critical unlicensed systems to continue to flourish, which they have. If the Commission allows Progeny to go forward without further testing that *actually demonstrates* that unacceptable levels of interference will not result, the Commission will be reneging on its commitments to Part 15 users and placing important critical infrastructure at risk.

E. Progeny’s Operations Must Be Subject to Sufficient Safeguards to Ensure Shared Use of 902-928 MHz.

If the Commission determines, upon reconsideration, that Progeny has met its burden under section 1.925, it still must ensure that Progeny is subject to appropriate safeguards that accommodate and facilitate shared use of 902-928 MHz with Part 15 devices. The waiver as it stands not only permits Progeny to operate with greater potential interference to Part 15 devices; it also fails to require Progeny to take any affirmative steps to minimize detrimental effects on Part 15 devices. The Commission can require several simple conditions that formalize basic “shared spectrum etiquette” that will greatly improve the ability of Part 15 devices to coexist with Progeny’s system.

Most critically, the Commission should require Progeny to “turn down” its transmitters when no terminal requires active positioning. Progeny has stated on the record that its system, as deployed, will transmit via its high power beacons *whether or not there are terminals requiring*

⁵² LMS Order ¶ 36.

indoor location. This “always-on” transmission means that Progeny’s system will act as an intentional interferer at essentially all times. This kind of operation is unnecessary, particularly given the effect it is likely to have on unlicensed operation in 902-928 MHz. Instead, the Progeny system should be operated only upon demand—*e.g.*, when a Progeny customer requires indoor positioning. This would eliminate the clearly unintended operation as an *intentional* interferer to others in this highly shared and economically invaluable spectrum.

In addition, the Commission should immediately accept the conditions proposed by the Part 15 Coalition on May 30, 2013.⁵³ The Part 15 Coalition requested a handful of easily implemented conditions, including regular reporting by Progeny, advance notice of deployment of new beacons, cooperation with affected parties in mitigating potential interference, and provision of information about beacon location and operations. These conditions are not burdensome and are a simple step that the Commission can take to dramatically improve the success of future sharing between Progeny’s modified system and existing Part 15 users. It is unfortunate that the Commission did not include these proposed conditions in the *Order*; indeed, the Commission appears to have ignored them entirely. On reconsideration, it should promptly incorporate these conditions into any future grant.

F. The Commission Should Clearly Limit the *Order* to Reach Only Progeny’s Operations.

Progeny did not request a waiver of the M-LMS rules on behalf of all M-LMS licensees. Rather, its waiver was specific to its development of new technology that would allow it to provide “highly accurate position location information.”⁵⁴ As such, the Commission must

⁵³ May 30, 2013 Part 15 Coalition Ex Parte.

⁵⁴ Progeny Petition at 3; *see also* 2011 Waiver Order ¶ 7.

confine its review to the specific facts and circumstances presented by Progeny that warrant a waiver. It is not clear that it has done so.

As noted by the Commission in the *2011 Waiver Order*, six entities hold 614 M-LMS licenses, only 228 of which are held by Progeny.⁵⁵ Progeny's licenses are in the M-LMS B and C blocks in 113 Economic Areas ("EAs") across much of the country; the other licensees hold authorizations for the M-LMS A block in many of the same EAs.⁵⁶ Without clarification by the Commission that the *Order* applies only to Progeny's licenses, and not to other M-LMS licensees that may wish to operate a similar modified service, those A block licensees could commence operations that would further crowd the already crowded 902-928 MHz band.

The Commission therefore must reconsider the *Order* to clarify that other M-LMS licensees remain constrained by *all* of the applicable M-LMS rules. To permit other M-LMS licensees to operate under the same waiver conditions as Progeny without requiring those licensees to conduct testing of their systems to ensure that they will not cause "unacceptable levels of interference" to Part 15 devices would be to effectively change the rule without an appropriate rulemaking proceeding and undermine the entire framework under which Part 15 devices are able to coexist with M-LMS systems. If the Commission's intention was to modify sections 90.155(e) and 90.353(g) to permit all M-LMS licensees to undertake the kind of operations Progeny has proposed, it must do so through notice and comment rulemaking, not through a licensee-specific waiver.

⁵⁵ *2011 Waiver Order* ¶ 5.

⁵⁶ One licensee holds B and C block licenses in 24 markets where Progeny has no authorizations. *2011 Waiver Order* ¶ 5.

IV. CONCLUSION

In moving forward to grant Progeny permission to begin commercial deployment of its proposed location monitoring service, the Commission has failed to properly consider whether Progeny has met its burden under section 1.925, and whether Progeny's test results adequately demonstrate that its system will not cause "unacceptable levels of interference" to Part 15 devices. Moreover, the Commission has framed its analysis of Progeny's waiver and test results under the wrong rule, looking to Part 15 instead of to the applicable Part 90 rules, including those Part 90 rules that are designed to give some measure of protection to long-standing unlicensed use of 902-928 MHz. The Commission should vacate the *Order* immediately, reaffirm that M-LMS licensees are required "to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to 47 CFR part 15 devices," and require Progeny to conduct additional testing compliant with the Part 90 rules as a condition of renewing its waiver request. In the alternative, the Commission must at least ensure that any waiver granted to Progeny is subject to additional safeguards designed to minimize the interference potential of its system on Part 15 users, and that any such waiver is limited to situations covered by such "actual field tests."

Respectfully submitted,

/s/

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