Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Petitions Regarding the Use of Signal Boosters	)	WT Docket No. 10-4
and Other Signal Amplification Techniques	)	
Used with Wireless Services	)	
	)	

REPLY COMMENTS OF THE DAS FORUM (A MEMBERSHIP SECTION OF PCIA—THE WIRELESS INFRASTRUCTURE ASSOCIATION)

I. INTRODUCTION

The DAS Forum (the "Forum"),[1] a membership section of PCIA-The Wireless Infrastructure Association ("PCIA"), hereby submits these reply comments on the Federal Communications Commission's ("Commission") *Public Notice*[2] in the above-captioned proceeding.

The comments submitted in the initial round of this proceeding demonstrate there is a definitive need to ensure wireless coverage in certain buildings and outdoor settings where traditional macro-site infrastructure is either not feasible or is not the desired technical solution for network improvements.[3] Equally evident is that boosters that are poorly made or not

[1] The DAS Forum membership includes virtually every major neutral host outdoor and indoor distributed antenna system ("DAS") provider, as well as manufacturers of equipment used in the wireless service sectors, several commercial mobile radio service ("CMRS") carriers currently deploying DAS as part of their networks and many wireless industry infrastructure representatives.
[2] Wireless Telecommunications Bureau Seeks Comment on Petitions Regarding the Use of Signal Boosters and Other Signal Amplification Techniques Used with Wireless Services, *Public Notice*, WT Dkt. No. 10-4, DA 10-14 (Jan. 6, 2010).
[3] *See, e.g.*, Comments of Wayne Klingelsmith, WT Dkt. No. 10-4 (Feb. 5, 2010).

properly installed can create large problems for licensees due to problems with interference.[4] The DAS Forum's proposed Code of Conduct[5] effectively allows for the sale and operation of licensee-approved and professionally-installed boosters that will minimize the potential for interference without unnecessarily stifling the DAS industry. Accordingly, the DAS Forum urges the Commission to expeditiously commence a rulemaking proceeding to ensure that the Commission's rules will provide effective protection against interference while ensuring a vibrant marketplace for DAS installations.

II. THE DAS FORUM'S PROPOSED CODE OF CONDUCT AVOIDS INTERFERENCE WITHOUT UNDULY RESTRICTING THE SALE OF PROFESSIONALLY INSTALLED REPEATERS

A. Commenters Fail to Recognize the Compulsory Nature of the DAS Forum's Code of Conduct

The DAS Forum's proposed Code of Conduct is not, as some commenters insinuate, a suggestion for end-users to coordinate with licensees; instead it is a compulsory set of obligations for the end-user. CTIA, for example, uses the DAS Forum's quote that a "notice requirement would serve ultimately as a reminder to installers of repeaters of all sizes as to their responsibilities."[6] CTIA emphasized the word "reminder" in their quotation, following with a statement that "[a] mere reminder of one's responsibilities would be no guarantee that the owner or installer will abide by such a requirement nor would the wireless licensee maintain any operational control over the device."[7] CTIA's emphasis is misplaced—the most important element of the quotation cited is that the installer has legal *responsibilities* under the Code of

[4] *See, e.g.*, Comments of Verizon Wireless, WT Dkt. No. 10-4 (Feb. 4, 2010) at 6-8; Comments of AT&T Inc., WT Dkt. No. 10-4 (Feb. 5, 2010) at 24-31.
[5] Attached as Appendix A.
[6] Comments of CTIA—The Wireless Association, WT Dkt. No. 10-4 (Feb. 5, 2010) at 27.
[7] *Id.*

Conduct. Because of these responsibilities the installer *must* coordinate with the licensee to avoid harmful interference, as is spelled out in parts B and C of the code of conduct.

APCO's comments on the DAS Forum Code of Conduct demonstrate an even greater misunderstanding about the requirements the Code would place on the installer. APCO states that it cannot support the Code because it "oppose[s] requirements that boosters only be installed with licensee consent. The equipment certifications and *voluntary industry standards* they propose are insufficient to prevent the improper use of signal boosters . . . ."[8] These assertions are incorrect as the DAS Forum Code of Conduct neither opposes licensee consent nor is it voluntary—instead it *affirmatively requires* the installer to coordinate with the licensee. The DAS Forum has asked that the Commission implement the Code into its rules, thereby making it a mandatory practice for all equipment installers.[9]

B. Pre-sale Licensee Approval is both Impractical and Damaging to the DAS Industry

The DAS Forum does not agree with those commenters who would attempt to squelch the marketing and sale of DAS equipment to professional installers; to do so would jeopardize the viability of the nascent industry and ultimately affect network deployments. As the Commission recognized in its *Notice of Inquiry* related to wireless investment and innovation, "DAS antennas may lend themselves to collocation due to their smaller size and weight" and inquired "whether there are steps [the Commission] could take to promote their utility."[10] Yet to require that the Commission declare that "the marketing and sale of a signal booster for use on a

[8] Comments of APCO, WT Dkt. No. 10-4 (Feb. 12, 2010) at 3 (emphasis added).
[9] The DAS Forum proposed Code of Conduct, as suggested in the DAS Forum's original petition, would be codified in § 2.815 of the Commission's rules. Petition for Rulemaking of the DAS Forum (A Membership Section of PCIA—The Wireless Infrastructure Association), WT Dkt. 10-4 (Oct. 23, 2009) at Appendix A.
[10] *Fostering Innovation and Investment in the Wireless Communications Market*; *A National Broadband Plan for Our Future*; GN Docket Nos. 09-157; 09-51, *Notice of Inquiry*, 24 FCC Rcd.11322 at ¶ 53 (rel. Aug. 27, 2009) ("*Wireless Innovation and Investment NOI*").

licensee's network that has not been approved for use on that network by the licensee is unlawful"[11] would create an undue burden on DAS providers.

The DAS Forum recognizes non-professional installations of personal use boosters and repeaters can cause harmful interference to both CMRS and public safety licensees[12] and advocates that the Commission take steps to curb this problem. However, the Commission should not create overbroad regulations that would prevent the sale and installation of professional equipment. DAS providers buy equipment directly from manufacturers and frequently serve as "neutral hosts" in that they provide their systems for use by numerous licensees who, in the CMRS context, are competitors. To require that *every* licensee consent to the sale of such equipment, as others have suggested,[13] would not only be impractical from an approval perspective,[14] it would also be anti-competitive because every licensee would then be aware of the infrastructure particular licensees are utilizing to improve their network reliability, which are usually confidential details. As a result, licensees, which are often the customers of neutral host DAS providers, may be less inclined to utilize these providers in infrastructure deployment.

The overall effect of requiring all licensees to consent to the sale of all DAS equipment would be less collocation and shared use of facilities, to the detriment of both communities that encourage collocation and also the licensees who would have to invest substantially more in infrastructure deployment. A recent article on DAS notes that licensees "consider[] the location's geography and topography, the size of the area, and whether the company needs to build the

[11] Comments of Wireless Communications Association International, Inc. ("WCAI"), WT Dkt. 10-4 (Feb. 5, 2010) at 13.
[12] *See supra* note 4.
[13] Petition for Declaratory Ruling of CTIA-The Wireless Association, WT Dkt. No. 10-4 (Nov. 2, 2007) at 12; WCAI Comments at 12.
[14] *See* DAS Forum Comments at 5; *see also* Comments of Smart Booster, WT Dkt. No. 10-4 (Feb. 4, 2010) at 19 ("[O]btaining carrier authorization prior to installation is impractical for many situations, especially if the actual carrier cannot be specified in advance.").

system from scratch or can hop onto an existing, neutrally hosted DAS system"[15] when deciding whether to utilize DAS. The Commission has recognized that collocation is one of the most effective means of network deployment as it reduces the overall costs of a particular installation thereby allowing the saved resources to be utilized in either more deployments or investments in innovation.[16] Requiring pre-approval for all DAS equipment sales would damage the Commission's collocation policy goals.

C. The DAS Forum's Code of Conduct Provides a Balanced Solution to Ensure the Viability of Professional DAS Installations

The DAS Forum's proposed Code of Conduct effectively balances the needs of both infrastructure providers and licensees by requiring licensee coordination. As the DAS Forum noted in its initial comments, the Jack Daniel and Bird Technologies petitions both also require licensee consent prior to operation.[17] Numerous commenters have agreed that this is an essential element of responsible use of signal boosting equipment.[18] As described above, licensee coordination is a mandatory component of the Code of Conduct.

The DAS Forum also agrees that labeling requirements and marketing materials should inform the purchaser of such equipment of the necessity of licensee coordination prior to use. WCAI submits that equipment labels "should also indicate that it is the responsibility of the subscriber to obtain an FCC license or ensure that the device is approved by an FCC licensee for operation."[19] CTIA similarly notes that problems arise when equipment is "sold without warnings about required authorization from licensees."[20] The DAS Forum's Code of Conduct solves this problem by requiring that "[t]he sale of a booster/repeater ("equipment") shall be

[15] Phil Goldstein, *Distributed antenna systems: From niche to necessity*, FIERCE WIRELESS (Mar. 4, 2010) *available at* http://www.fiercewireless.com/story/distributed-antenna-systems-niche-necessity/2010-03-04.
[16] *Wireless Innovation and Investment NOI* at ¶ 52.
[17] DAS Forum Comments at 4-5.
[18] WCAI Comments at 13; CTIA Comments at 12.
[19] WCAI at 13-14
[20] CTIA Comments at 4.

accompanied by a notice stating that it is the responsibility of the owner/installer to coordinate with the appropriate local carrier(s) prior to operation in order to avoid harmful interference."[21] In doing so, it effectively advises the purchaser of such equipment of his or her legal responsibilities and will therefore lead to coordination and interference prevention, which is the ultimate goal of this proceeding.

III. CONCLUSION

The DAS Forum believes that the problem of booster interference is one that needs to be solved through a rulemaking proceeding that implements the DAS Forum's Code of Conduct. It is only in this context that the Commission can effectively protect the interests of wireless licensees, neutral host DAS providers, equipment manufacturers and retailers, interests that would otherwise be curtailed by other overbroad petitions in this proceeding.

Respectfully Submitted

_____/s/_____

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[21] Appendix A: Code of Conduct Proposed Section 2.815(c)(A).

Appendix A

Part 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. Amend § 2.815 by adding new paragraph (c) to read as follows:

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(c) Every grant of equipment certification for a booster/repeater to be used in any of the wireless radio services must contain the following condition for operation stated on the face of the grant: "This device may not be operated until the user/installer has coordinated with the licensee of the radio service on which the device is designed to operate in accordance with the Code of Conduct set forth in Section 2.815(c) of the Commission's rules." The Code of Conduct required for such coordination is set forth as follows:

A. The sale of a booster/repeater ("equipment") shall be accompanied by a notice stating that it is the responsibility of the owner/installer to coordinate with the appropriate local carrier(s) prior to operation in order to avoid harmful interference.

B. As part of the coordination process, the owner/installer of the equipment shall provide the carrier(s) with the FCC certification number or other information concerning the technical characteristics of the equipment and its location sufficient to demonstrate, by testing or otherwise, that it is unlikely to cause interference.

C. Coordination with the carrier(s) showing no likelihood of harmful interference shall be considered licensee consent to operate the equipment. The carrier(s) shall notify the owner/installer of the equipment in writing or by e-mail that the

coordination has been successfully concluded. Such notification shall not be unreasonably withheld.

D. If at any time, the equipment is found to cause harmful interference, it shall be the responsibility of the owner to take whatever steps are required to eliminate the interference.