

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

In the Matter of )  
 )  
Amendment of the Commission's Rules with ) GN Docket No. 12-354  
Regard to Commercial Operations in the 3550- )  
3650 MHz Band )

**COMMENTS OF PCIA – THE WIRELESS INFRASTRUCTURE ASSOCIATION  
AND THE HETNET FORUM, A MEMBERSHIP SECTION OF PCIA**

Jonathan M. Campbell  
Director, Government Affairs

D. Zachary Champ  
Government Affairs Counsel

D. Van Fleet Bloys  
Government Affairs Counsel

500 Montgomery St, Suite 500  
Alexandria, VA 22314

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**I. INTRODUCTION AND SUMMARY**

PCIA – The Wireless Infrastructure Association and The HetNet Forum, a membership section of PCIA (collectively “PCIA”),<sup>1</sup> submit these comments in response to the above-captioned Public Notice (“PN”) seeking comment on licensing models and technical requirements in the 3550-3650 MHz band (“3.5 GHz Band”).<sup>2</sup> PCIA urges the FCC to open the Priority Access tier to a broader class of users and exercise caution in deciding which geographic data-set to utilize. Furthermore, the Commission should remain committed to technology neutrality and allow for the deployment of microtargeted indoor networks.

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<sup>1</sup> PCIA is the national trade association representing the wireless infrastructure industry. PCIA’s members develop, own, manage, and operate towers, rooftop wireless sites, and other facilities for the provision of all types of wireless, telecommunications, and broadcasting services. PCIA and its members partner with communities across the nation to effect solutions for wireless infrastructure deployment that are responsive to the unique sensitivities and concerns of each community. The HetNet Forum is a broad-based PCIA membership section dedicated to the development of distributed antenna systems and other small cell technologies that make up the Heterogeneous Network (“HetNet”), which enables wireless broadband connectivity and added capacity throughout the nation.

<sup>2</sup> *In re* Commission Seeks Comment on Licensing Models and Technical Requirements in the 3550-3650 MHz Band, *Public Notice*, 28 FCC Rcd 15300 (2013) (“PN”).

PCIA applauds the Federal Communications Commission's ("FCC" or "Commission") continued work toward securing additional spectrum to meet Americans' growing appetite for mobile data. While clearing additional spectrum below 3 GHz is preferred, opening up the 3.5 GHz Band with the help of new technology and licensing schemes can achieve the important goals of alleviating network congestion, increasing broadband coverage, and fostering innovation.

The novel work the FCC has undertaken in the 3.5 GHz Band is inherently complicated, and we applaud the creative thinking put forth. However, we urge the Commission to not overly complicate an already intricate system and utilize, when possible, existing licensing theories to minimize delay in the buildout and adoption in the band.

We appreciate the Commission's willingness find ways to open the Priority Access tier to a wider class of users by using Authorized Shared Access or Spectrum Access System ("SAS") in the *PN* ("Revised Framework").<sup>3</sup> Use of the SAS will provide users of the 3.5 GHz Band with a predictable quality of service. Further, the SAS can reduce certain complexities in network operation as the core network would provide information out to the infrastructure layer.

The measured and thoughtful approach the FCC has taken thus far is appropriate as parties seek to maximize the potential of the band. PCIA urges the Commission to adopt flexible, technology-neutral rules to give innovators the opportunity to determine the best applications and equipment for this band. As with any nascent technology, prescriptive regulation or limited-use categories early on could stifle innovation and permanently harm the 3.5 GHz Band's promise of success.

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<sup>3</sup> See *PN* at 2.

The likelihood of successful buildout, adoption, and high spectral efficiency in the 3.5 GHz Band can be aided in several distinct ways as discussed below. PCIA is encouraged by the FCC's attention and commitment to discussion in the use of the 3.5 GHz Band and looks forward to continuing this important work.

## **II. THE PRIORITY ACCESS TIER SHOULD BE OPENED TO A BROADER CLASS OF USERS**

PCIA supports a framework allowing for open eligibility in the Priority Access tier. PCIA commends the FCC for its close examination of the alternative licensing concepts and for the caution exercised in matching policy to a still-developing area of technology. Limiting the Priority Access tier to a specific class of industry or service provider would be inefficient. Commercial wireless providers are, today, providing a high level of service across industries, including those with critical quality-of-service needs. Additionally, new entities could require the specific interference protections of Priority Access in order to effectively provide their services. If a limited eligibility class is established and the Commission should wish to expand access to the tier in the future, it would likely require a burdensome administrative review. Rather, wireless service providers should be able to service their customers as the market dictates rather than based on a static establishment of priority.

Prematurely and artificially rationing access to a scarce spectrum resource would effectively limit the number of actors able to make use of the tier and consequently result in suppressing the market. Further, the limit on potential customers would heighten the risk to manufacturers looking to develop products for the band and may result in less competition and higher costs and lower quality.

### **III. THE COMMISSION SHOULD EXERCISE CAUTION IN DECIDING ON WHICH GEOGRAPHIC DATA-SET IT UTILIZES**

The Census tract may present a good starting point, but PCIA asks that the Commission consider whether tying to Census data, which is only updated every ten years, is an appropriate data-set for use in administering the Priority Access Licenses (“PALs”). Census data may also be susceptible to over and under inclusion and may be complicated in dense urban settings. Further, a licensing framework tied to a fluid set of over 74,000 census tracts may prove challenging as populations shift.<sup>4</sup> PCIA would encourage the Commission examine existing Cellular Market Areas or other established zones to see if they may be tailored to fit the 3.5 GHz Band, which may benefit from additional specificity.

### **IV. RULES FOR THE 3.5 GHZ BAND SHOULD REMAIN TECHNOLOGY NEUTRAL TO ALLOW FOR THE DEVELOPMENT OF MULTIPLE INNOVATIVE APPLICATIONS AND SERVICES**

Consistent with comments made during the FCC’s Workshop on the 3.5 GHz Notice of Proposed Rulemaking,<sup>5</sup> PCIA continues to stress that any regulatory framework for the 3.5 GHz Band be technology neutral. The Commission rightfully raises license “flexibility and fungibility” regarding the technologies and applications utilizing the 3.5 GHz Band.<sup>6</sup> Because the technology in this area is still rapidly evolving, adopting a technology-neutral framework will allow industry

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<sup>4</sup> See *PN* at ¶ 15.

<sup>5</sup> See *3.5 GHz Workshop*, FCC (Mar. 13, 2013), <http://www.fcc.gov/events/35-ghz-workshop> (providing the video archive and workshop presentations).

<sup>6</sup> See *PN* at ¶ 18 (“Such applications could include not only small cell commercial broadband use, but private networks, non-line of sight backhaul, and other innovative uses.”).

players the opportunity to develop various innovative applications and services for the band—unleashing the potential of the 3.5 GHz Band for new users without interfering with incumbents. For example, PCIA supports using the band for, among other things, offloading and non-line-of-site wireless backhaul. Wireless backhaul and a number of wireless offloading techniques, including Wi-Fi, are already utilized throughout the United States, and PCIA and others noted that the 3.5 GHz Band “holds promise as a vehicle to help address the nation’s spectrum shortage if it is modified to be more broadly available for traffic offload.”<sup>7</sup>

Additionally, utilizing the 3.5 GHz Band at higher power levels in rural areas should be encouraged so long as interference is effectively mitigated.<sup>8</sup> It is important that the FCC closely examine any potential opportunity to bring broadband service to rural America. The 3.5 GHz Band may provide some relief to communities looking to better compete in the global economy with the aid of the services broadband can provide.

We urge the FCC to draw from its experience in promoting technology-neutral, market-driven policy as it forms the regulatory framework for the 3.5 GHz Band.<sup>9</sup>

## **V. THE REVISED FRAMEWORK SHOULD ALLOW FOR THE DEPLOYMENT OF MICROTARGETED INDOOR NETWORKS**

The Revised Framework should provide for the deployment of microtargeted indoor small cell networks within geographic areas potentially licensed to other priority access users.

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<sup>7</sup> Comments of Mobile Future, GN Docket 12-354 at 4 (Feb. 20, 2013).

<sup>8</sup> See *PN* at ¶ 46.

<sup>9</sup> See, e.g., *In re Promoting More Efficient use of Spectrum Through Dynamic Spectrum Use Technologies*, Notice of Inquiry, 25 FCC Rcd 16,632, ¶¶ 3-4 (2010) (discussing how the Commission’s flexible policies led to “opportunities for new technologies,” such as the 802.11 Wi-Fi standards, femto-cells, and smart antennas).

Localized facilities are already utilized by both critical users, such as hospitals, and by other property owners and lessees. As noted in the FCC’s signal booster proceeding, building owners and neutral host providers have a history of standardized interference mitigation with licensees in both indoor and outdoor applications.<sup>10</sup>

As with the use of signal boosters, networks that utilize the 3.5 GHz Band provide much needed connectivity to indoor environments where radiofrequency (“RF”) propagation may be difficult. As the FCC indicated, new building materials that may assist in increasing energy efficiency may have the effect providing RF shielding, keeping RF originating within the building from interfering with external users, and conversely keeping external RF from entering into the building.<sup>11</sup> This energy efficiency “side-effect” happens to be a useful method for mitigating interference. Additionally, modern software-based RF design systems are assisting in deploying wireless networks that minimize interference and maximize spectrum efficiency.<sup>12</sup>

To the extent that microtargeted indoor networks can be effectively managed through the SAS and various other techniques, they can be leveraged by critical and non-critical users alike for services in places where a PAL may not have penetration. Therefore, the Revised Framework should provide for this efficient use of the 3.5 GHz Band.

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<sup>10</sup> 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, *Report & Order*, 28 FCC Rcd 1663 (2013).

<sup>11</sup> *See PN* at ¶ 38.

<sup>12</sup> *See generally* <http://www.ibwave.com/Products/iBwaveDesign.aspx> (explaining iBwave Design suite of software which is used to automate in-building network design planning activities).

## **VI. CONCLUSION**

For the foregoing reasons, PCIA urges the FCC to open the Priority Access tier to a broader class of users, exercise caution in deciding which geographic data-set to utilize, and remain committed to technology neutrality while allowing for the deployment of microtargeted indoor network deployments. We look forward to participating in the next stage of this process.

Respectfully submitted,

PCIA – THE WIRELESS  
INFRASTRUCTURE ASSOCIATION & THE  
HETNET FORUM

By:

Jonathan M. Campbell  
Director, Government Affairs

D. Zachary Champ  
Government Affairs Counsel

D. Van Fleet Bloys  
Government Affairs Counsel

PCIA – THE WIRELESS  
INFRASTRUCTURE ASSOCIATION  
500 Montgomery Street, Suite 500  
Alexandria, VA 22314  
(703) 739-0300

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