

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Modification of Parts 2 and 15 of the)	ET Docket No. 03-201
Commission’s Rules for Unlicensed Devices)	
and Equipment Approval)	

**COMMENTS OF THE WIRELESS COMMUNICATIONS ASSOCIATION
INTERNATIONAL, INC.**

The Wireless Communications Association International, Inc. (“WCA”), pursuant to Section 1.415 of the Commission’s Rules, hereby submits its comments in response to the Commission’s *Further Notice of Proposed Rulemaking* in the above-captioned proceeding (“*FNPRM*”).¹

WCA is the trade association of the wireless broadband industry. Its membership includes service providers, equipment vendors and consultants that provide or support the provision of wireless broadband service in licensed and unlicensed spectrum, including, *inter alia*, the unlicensed 902-928 MHz, 2.4 GHz and 5 GHz bands.² As the Commission is aware, WCA’s members and others have used or manufactured equipment for the use of unlicensed spectrum to deliver wireless broadband service to areas of the country that have little or no broadband service at all.³ WCA thus has a direct interest in the Commission’s proposal to

¹ See *Modification of Parts 2 and 15 of the Commission’s Rules for Unlicensed Devices and Equipment Approval*, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 11383 (2007) [“*FNPRM*”].

² See, e.g., Reply Comments of Wireless Communications Ass’n Int’l, ET Docket No. 03-201, at 1 (filed Feb. 9, 2004).

³ See, e.g., Remarks of Commissioner Jonathan S. Adelstein, PCIA – Wireless Infrastructure Show, Orlando, FL (Oct. 2, 2007), available at http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-277059A1.doc. (“Unlicensed broadband services can help many underserved communities because unlicensed spectrum is free and, in most rural areas, lightly used. It is immediately accessible, and the equipment is relatively cheap because it is so widely

impose a mandatory spectrum etiquette on users of the unlicensed 902-928 MHz band and, perhaps, the unlicensed 2.4 GHz and 5.8 GHz bands.⁴

Unlicensed spectrum has been a success story due to Commission policies that promote flexibility. Indeed, as the Commission observes in the *FNPRM*, “design flexibility has helped industry to develop efficient sharing and modulation schemes,” and “the existing regulations with no etiquette requirements have resulted in very efficient use of available unlicensed spectrum.”⁵ Thus, WCA applauds the Commission’s commitment “to ensure that the different types of unlicensed devices that operate in a band have an opportunity for spectrum access.”⁶ To that end, WCA continues to support voluntary frequency coordination and other “best practices” among unlicensed users, approaches that do not undermine the flexibility and technological innovation that has been critical to the success of unlicensed services over the past decade.⁷ The Commission, however, has already explicitly refused in this proceeding to adopt a mandatory spectrum etiquette for unlicensed spectrum.⁸ Hence, while WCA certainly does not oppose further efforts to promote usage of the unlicensed bands, the Commission’s own findings raise

available. I have also worked closely with the Wireless Internet Service Provider (WISP) community, which has been particularly focused on providing wireless broadband connectivity in rural and underserved areas.”).

⁴ See *FNPRM*, 22 FCC Rcd at 11390-11392. The *FNPRM*’s proposal would require digitally modulated spread spectrum transmitters operating in the 902-928 MHz band to operate at less than the 1 Watt maximum power if they are continuously silent less than 90% of the time within a 0.4 second interval. This etiquette would require that the maximum permitted power level decrease in accordance with a specified formula as the silent interval between transmissions decreases. *Id.* at 11389-90.

⁵ *Id.* at 11390.

⁶ *Id.* at 11391.

⁷ See *Connected & On The Go – Broadband Goes Wireless*, Report by the Wireless Broadband Access Task Force, Federal Communications Commission, GN Docket No. 04-163, at 5-6 (rel. Mar. 8, 2005) [“WABTF Report”]; Comments of Wireless Communications Ass’n Int’l, GN Docket No. 04-163, at 5 (filed April 22, 2005).

⁸ See *Modification of Parts 2 and 15 of the Commission’s Rules for Unlicensed Devices and Equipment Approval*, Report and Order, 19 FCC Rcd 13539, 13551 (2004) (“[M]ost parties commenting on this issue believe that a spectrum etiquette would be undesirable in the unlicensed bands because it would tend to limit development.”).

substantial questions as to whether *any* form of mandatory spectrum etiquette (much less the specific model proposed in the *FNPRM*) is necessary in the unlicensed bands.

The comments filed thus far on the *FNPRM* express similar concerns – unlicensed wireless broadband service providers and equipment vendors have either firmly opposed mandatory spectrum etiquette outright or recommended that the Commission adopt a spectrum etiquette model different than that proposed in the *FNPRM*.⁹ WCA likewise does not support the *FNPRM* proposal, since the tying of power reductions to duty cycle would limit geographic coverage and system throughput to the point where it would be very difficult or impossible for system operators to offer reliable broadband service in rural or underserved areas.¹⁰ Moreover, the concept of trading power for duty cycle overlooks the fact that “real world” unlicensed wireless networks have built-in duty cycles and “quiet times” that are tied to how the networks are actually used.¹¹ Any spectrum etiquette that ignores those usage patterns creates a significant risk of limiting an unlicensed wireless broadband system’s power and throughput at peak periods when they are needed the most. While these concerns may not be troublesome for the narrowband services offered by the proponent of the approach advanced in the *FNPRM* (Cellnet

⁹ See Comments of IEEE 802.18, ET Docket No. 03-201, at 3-6 (filed Oct. 4, 2007) [“IEEE Comments”]; Comments of Wireless ISP Ass’n (WISPA), ET Docket No. 03-201, at 8 (filed Sept. 13, 2007) (“With regard to Cellnet’s suggested spectrum etiquette proposal, WISPA again recognizes the benefits that spectrum etiquette can bring but respectfully disagrees with Cellnet’s proposed requirements.”); Comments of Proxim Wireless Corporation, ET Docket No. 03-201, at 1 (filed Sept. 10, 2007) (“We, Proxim Wireless Corporation, believe there is a need to require unlicensed transmitters operating in the 915 MHz band under Sections 15.247 of the rules to comply with a spectrum etiquette requirement. . . Our opinion to [sic] Cellnet’s proposal (reduce TX power from 30 dBm to 0 dBm with duty cycle increasing from 10% to 100%) is that this type of spectrum etiquette is unusable for a large group of commercial users of license free spectrum, the WISPs and other providers of [I]nternet access.”).

¹⁰ See, e.g., Opposition of Motorola, Inc. to Cellnet Petition for Reconsideration, ET Docket No. 03-201, at 2-3 (filed Dec. 6, 2004); IEEE Comments at 4 (“The net result is less time for a data network to actually send or receive data for a given power level/duty cycle constraint determined by the rule. . . So, a high data throughput network at peak load interval becomes constrained to a smaller coverage area because of the reduced output power requirement, since it may not, for some period of time, meet the duty cycle limitation imposed by the rule.”).

¹¹ *Id.*

Technology, Inc.), they are potentially devastating for unlicensed wireless broadband service providers and their customers.

The simple fact, in other words, is that the Commission will not achieve its objectives for the unlicensed spectrum by forcing users and their equipment vendors into a particular spectrum etiquette where there is no agreement in the record as to whether any such etiquette is necessary, or as to whether it is possible to implement a mandatory spectrum etiquette without diminishing the technological flexibility that has been critical to the success of the unlicensed bands. WCA therefore submits that the interests of all parties in this proceeding would be best served by the formation of a joint advisory committee or other open forum that includes, among others, Commission staff, service providers, equipment vendors, trade associations (including WCA), consumer groups, industrial users and the public safety community, who could study all the relevant issues in depth and make specific recommendations for further Commission action. In addition to avoiding the risk of premature or unnecessary regulation, an inclusive industry forum will help to ensure that the strengths and weaknesses of the various spectrum etiquette models are fully vetted before the Commission, with appropriate opportunity for comment by interested parties.

Furthermore, reliance on industry dialog will keep the Commission pointed squarely towards solutions that are properly tailored for the wide variety of devices and services that are or will soon be offered in the unlicensed bands. WCA recognizes that, as recently highlighted by IEEE, a “one size fits all” spectrum etiquette may not be feasible: “Given the wide variety of applications and technologies currently deployed for unlicensed operation . . . , it is our opinion that no single set of regulations could be sufficiently flexible to permit the extant applications (unlicensed devices operating in a network environment) to continue operation, while supporting

new, unanticipated applications, and simultaneously offering sufficiently robust protocols to assure effective sharing of spectrum among unlicensed devices operating in the same spectrum space.”¹² Again, an industry forum is the optimal means of identifying all available options and evaluating whether they will accommodate diverse and evolving services and devices in the unlicensed bands.

Finally, the need for industry dialog is especially compelling given the pace of technological development in the unlicensed bands – it makes little sense to bind unlicensed service providers and equipment vendors to a particular spectrum etiquette that the marketplace could render inefficient or even obsolete within a relatively short period of time. In fact, there already is evidence in the record indicating that industry has been working through the relevant technical issues via its standards-setting processes, and intends to continue doing so.¹³ Conversely, a rush to judgment will compromise those efforts and leave users of unlicensed spectrum with little confidence that the right solution has been identified. As the WBATF succinctly put it, “it is important that best practices be developed and governed by private industry, without regulatory intervention.”¹⁴

¹² *Id.* at 3.

¹³ *See id.* at 2, 3 (stating that “IEEE 802 has been and continues to be committed to developing standards which take into account the need for coexistence between unlicensed and licensed devices, and between various kinds of unlicensed devices,” and that “IEEE has developed and continues to develop significant expertise in incorporating coexistence into the design of network standards”).

¹⁴ WBATF Report at 58-59.

WHEREFORE, for the reasons set forth above, WCA requests that any Commission action on the *FNPRM* be taken in accordance with WCA's recommendations in these comments.

Respectfully submitted,

**THE WIRELESS COMMUNICATIONS
ASSOCIATION INTERNATIONAL, INC.**

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