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July 23, 2002

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Reply Comments, *Spectrum Policy Taskforce Request for Comment*, ET Docket No. 02-135

Dear Ms. Dortch:

Attached hereto are the Reply Comments of Loea Communications Corporation in the above-captioned docket. Please do not hesitate to contact me with any questions or concerns regarding this filing: 202.955.9890.

Sincerely,

Stephanie A. Joyce
Counsel for Loea Communications Corporation

Attachment

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

In the Matter of	)	
	)	ET Docket No. 02-135
Spectrum Policy Taskforce	)	
Request for Comment	)	

REPLY COMMENTS OF LOEA COMMUNICATIONS CORPORATION

Loea Communications Corporation ("Loea"), by its attorneys, hereby responds to comments filed with the Spectrum Task Force of the Office of Engineering and Technology ("OET").[1] Specifically, Loea highlights that the record in this proceeding includes broad agreement on the fact that the Commission should foster the deployment of innovative technologies by permitting flexible spectrum use and increased development of unlicensed technologies. Loea further notes that many of OET's concerns with respect to congestion and interference, which received significant attention of commenting parties, are inapplicable to Upper Millimeter Wave ("UMW") spectrum,[2] and thus, as some parties recognize, a "one-size-fits-all" approach to spectrum regulation would be an unwise regime for the Commission to adopt.

I. APPLICATION OF A UNIFORM REGULATORY REGIME TO UMW SPECTRUM IS UNNECESSARY AND MAY HINDER DEVELOPMENT OF INNOVATIVE PENCIL-BEAM TECHNOLOGIES

As OET digests the many policy recommendations submitted by parties in this inquiry, it should remain mindful that not all spectrum, or all technologies, behave the same way, and thus

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1 DA 02-1311, *Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commission's Spectrum Policies*, ET Docket No. 02-135 (June 6, 2002) ("*Notice*").

2 "UMW" refers to the spectrum bands at 71.0-76.0 GHz and 81.0-86.0 GHz collectively.

all spectrum should not be regulated the same way. Contrary to the suggestion of some parties,[3] it would be counterproductive for the Commission to adopt a "one-size-fits-all" regulatory regime for all spectrum,[4] especially spectrum that demonstrates a low risk of interference and, accordingly, service congestion.[5]

As Loea explains in its initial comments and further discusses below, the pencil-beam technologies that it has developed for UMW spectrum do not have the same technical characteristics as lower-frequency spectrum.[6] This technology employs highly-directional transmitters, using only 5 milliwatts of power, to transmit data signals to a receiver 1.7 miles away.[7] After 1.7 miles, this technology has a radial footprint of only 28 feet. If another UMW receiver, which closely resembles a small satellite dish, were placed within that 28-foot area and incurred harmful interference from those signals, a slight change of placement would resolve it. Thus, this technology has, as Media Access Project predicted of wireless technology generally, largely quashed "assumptions about scarcity and interference that underlie today's exclusive licensing model."[8]

Loea therefore urges OET to consider these technical characteristics when considering not only the appropriate wireless licensing model, but all wireless-related regulations for which it has received input. Notions of interference, congestion, and incumbency simply do not apply to UMW spectrum, and thus these technologies need not be encumbered by regulations designed to

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3 *E.g.*, AT&T Wireless Comments at 11.

4 Motorola Comments at 8. *See also* Cingular Wireless Comments at 16.

5 *See* Loea Comments at 3-4.

6 *See generally* Loea Comments at 3-7.

7 Loea Comments at 2.

8 Media Access Project Comments at 36.

address such issues.[9] Were a uniform, stringent regulatory regime applied to Loea and other UMW carriers, it would hinder their ability to deploy their innovative technologies in an efficient manner.[10]

The delay and transactional costs associated with requirements that are properly imposed on other wireless services would only diminish the attention that Loea can devote to service deployment, and would have little or no ameliorative effect on interference or other similar concerns. That is, pencil-beam technology raises only *de minimis* risks of interference within the UMW band or with other spectrum, and thus regulations designed to decrease these risks would be largely superfluous.

II. UMW SPECTRUM REQUIRES ONLY MINIMAL REGULATION, INCLUDING ADOPTION OF FLEXIBLE USE RULES AND A STREAMLINED AUTHORIZATION PROCESS

As Loea explained in its initial comments, the "pencil-beam" technology that it has developed for services over the UMW spectrum "carries at most a *de minimis* risk of congestion and interference" due to its particular propagation characteristics.[11] In addition, Loea discussed how any inadvertent instance of interference, which would occur only if two transceivers and receivers were placed on the same transmission path, may be easily corrected with a simply

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9 Loea notes that its testing of pencil-beam technology was designed for terrestrial use only, and that the Commission seeks comment on potential interference within the 71.0-76.0 MHz and 81.0-86.0 MHz bands between satellite and terrestrial services. *Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands*, WT Docket No. 02-146, Notice of Proposed Rulemaking, FCC 02-180 ¶¶ 22, 33 (rel. June 28, 2002) ("*Allocation NPRM*").

10 Loea Petition for Rulemaking, WT Docket No. 02-146, at 9-10 (filed Sept. 10, 2001) (advocating adoption of Part 101 technical rules for UMW spectrum, to "facilitate the rapid deployment of applications in this spectrum, and conserve valuable Commission resources").

11 Loea Comments at 3.

adjustment of equipment.[12] These characteristics make this pencil-beam UMW service a rare, if not unique, wireless technology. Thus, the concerns that OET has raised in the *Notice* regarding appropriate interference protection do not apply to UMW spectrum in the same manner or degree as they do to conventional, widely-used spectrum bands.

The record reflects broad agreement that the Commission should permit flexible use of wireless spectrum in order to encourage the development of innovative technologies and services.[13] Yet this permissive approach should be limited in order to prevent interference with incumbent services, according to several parties.[14] For example, AT&T Wireless advises OET that "'flexible' uses that would interfere with or otherwise hinder other licensees' use of their spectrum should not be permitted."[15] Loea agrees that this cautious tack may be warranted with respect to lower-frequency bands having technical characteristics that cause co-channel or adjacent channel interference. Because pencil-beam UMW technology has been demonstrated to propagate in such a way that interference is highly unlikely, however, this caution is not appropriate. This technology may be put to several concurrent uses, by a virtually unlimited number of carriers in any market, and will not interfere with other services.

For this reason, the shared approach to spectrum, which is advocated by parties such as Media Access Project and the Satellite Industry Association,[16] is a viable model for the regulation of UMW spectrum. This approach is similar to that discussed in Loea's initial

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12 *Id.* at 4.

13 Media Access Project Comments at 17; SkyTower Comments at 3-4; Satellite Industry Association Comments at 5; Cisco Systems Comments at 8-9; Motorola Comments at 3; Cingular Wireless Comments at 9-11; Cellular Telecommunications & Internet Association ("CTIA") Comments at 8.

14 *E.g.*, CTIA Comments at 8; Cingular Wireless Comments at 9-10; AT&T Wireless Comments at 3.

15 AT&T Wireless Comments at 3.

16 Media Access Project Comments at 37; Satellite Industry Association Comments at 4.

comments, in that the *de minimis* risk of interference associated with UMW spectrum removes the need for exclusive licenses and channelization.[17] These regulatory mechanisms are necessary only where spectrum is demonstrably scarce,[18] an attribute that also is not characteristic of UMW spectrum.[19] Loea therefore supports the concept of shared use of this band, because there is little danger that carriers will hinder each other's services through concurrent use of UMW spectrum.

Loea is pleased that the record supports the Commission's greater allocation of unlicensed spectrum as a means of encouraging the development and deployment of new technologies and services.[20] As Cisco Systems predicts, these technologies "have the potential to create an entirely new broadband network for all Americans."[21] Loea's tests of its pencil-beam data transmission technology – the "Hawaii experiment"[22] – demonstrate that UMW spectrum is among the forerunners of this movement.[23] Not only is this technology capable of impressive data throughput, it can support several services and carriers without need for licenses, especially traditional exclusive-use licenses.[24] The Commission's pending rulemaking proceeding on this

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17 Loea Comments at 4-7.

18 Thus, UMW spectrum stands in sharp contrast to lower-frequency bands, such as PCS spectrum, that require exclusivity in order to avoid interference among services. *E.g*, Cingular Comments at 8 ("[A] license that lacks exclusivity does not facilitate market-based spectrum management.").

19 *Id.* at 6.

20 Cisco Systems Comments at ii, 3-5; Wireless Ethernet Compatibility Alliance Comments at 3-5; Motorola Comments at 13-14.

21 Cisco Systems Comments at ii.

22 Loea Comments at 2.

23 The deployment of these technologies is also extremely cost-effective and operationally practicable, as their reach extends upward of one mile. Loea Comments at 2. Thus, UMW spectrum may address in large part continuing concerns regarding a relative lack of deployment in rural areas. *See* Rural Cellular Association Comments at 2 (noting that the Commission was instructed by Congress to encourage the wide dissemination of wireless technology "'for the benefit of the public, including those in rural areas.'") (quoting 47 U.S.C. § 309(j)(3)(A)).

24 Loea's tested pencil-beam technology therefore stands as evidence to rebut Motorola's contention that "there are no identified blocks of spectrum large enough upon which to

spectrum thus appropriately includes consideration of proposed rules for unlicensed operations over UMW spectrum.[25]

Unlicensed use is not, however, appropriate for all uses of UMW spectrum. Loea has explained that a streamlined authorization process should be adopted for carriers seeking to provide UMW-based services in keeping with the Commission's mandate to monitor the use of public radio spectrum.[26] It has proposed that these authorizations operate as a non-exclusive license on a site-by-site basis,[27] and would require applicants to state their proposed use of the UMW band(s) and make a quality-of-service showing.[28] This authorization process would provide assurances to potential investors and end users that that the technologies to be deployed over UMW spectrum, such as Loea's pencil-beam technology, are reliable according to Commission standards. Thus, Loea agrees that the Commission should indeed assume a regulatory role – though a minimal one – over new, unused spectrum bands, in order to ensure that carriers use them in manners that benefit the public.[29]

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build a profitable business, even if the technology was fully developed." Motorola Comments at 16. To the contrary, UMW spectrum has been shown to be capable of supporting not only Loea's proposed high-speed data services, but several other services as well, and with little risk of harmful interference.

25 *Allocation NPRM* ¶¶ 62-63.

26 Loea Comments at 6-7.

27 *Allocation NPRM* ¶ 65 (citing Loea Petition for Rulemaking at 19).

28 Loea Comments at 6.

29 *See* Motorola Comments at 14-15 (proposing that the Commission adopt rules for "accessing unlicensed frequencies" insofar as they do not "limit innovation").

CONCLUSION

Loea reiterates the unique characteristics of "pencil-beam" Upper Millimeter Wave communications and technology, and urges the Office of Engineering and Technology to reject adoption of a uniform, stringent regulatory regime for this spectrum that would impede development of UMW services. Specifically, OET should consider adoption of a permissive flexible-use regime for this spectrum, imposing a streamlined non-exclusive licensing or authorization process to ensure the viability of services provided over UMW spectrum.

Respectfully submitted,

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Dated: July 23, 2002