

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Request for Declaratory Ruling By) WT Docket No. 07-121
Wireless Strategies, Inc. Regarding)
Coordination of Microwave Links)
Under Part 101 of the Commission's Rules)

**REPLY COMMENTS OF
UNITED STATES CELLULAR CORPORATION**

United States Cellular Corporation ("USCC") respectfully submits these reply comments in opposition to the Request for Declaratory Ruling submitted by Wireless Strategies, Inc. ("WSI")¹ and placed on public notice on June 19, 2007 in the above-captioned proceeding. USCC holds over 2,000 point-to-point ("PTP") microwave licenses. Its microwave facilities perform a vital function in interconnecting its cellular and PCS base stations and connecting those base stations to its switches and the PSTN. USCC thus has a strong interest in this proceeding, in which WSI proposes crucial changes in the current system of microwave frequency coordination.

I. INTRODUCTION AND SUMMARY

In its Request, WSI asked the Commission to issue a declaratory ruling confirming that a Fixed Service licensee is permitted simultaneously to coordinate multiple links whose transmitter elements collectively comply with the Commission's antenna standards and frequency coordination procedures.² WSI's proposal would permit terrestrial PTP licensees to deploy

¹ Wireless Strategies, Inc., Request for Declaratory Ruling on Compliance of Fixed Microwave Antennas Having Distributed Radiating Elements, WT Docket No. 07-121, p. 1 (filed Feb. 27, 2007)("Request" or "WSI Request").

² WSI Request, p. 1.

additional links within the maximum allowed radiation power envelope (“RPE”) of a licensed link without prior coordination or authorization.³

As detailed below, USCC agrees with the majority of commenters in this proceeding and strongly opposes this request. Contrary to WSI’s contentions, Fixed Service licensees frequently utilize the spectrum located within a transmitter’s side lobes. In addition, WSI has not, and cannot, demonstrate that its proposed approach would comply with the Part 101 frequency coordination rules. Implementation of the WSI proposal would in fact greatly increase the risk of harmful interference to other fixed microwave facilities, such as those owned by USCC.⁴ If WSI’s Request is granted, WSI will also push the outer limits of the Part 101 antenna performance and power level requirements to create area-wide licenses in violation of both the letter and spirit of the Commission’s rules and licensing policies. For these reasons, the Commission should dismiss the Request and find that WSI’s proposal violates the Fixed Services rules.

II. DISCUSSION

A. Licensees Frequently Utilize Spectrum Located Within Transmitters’ Side Lobes.

WSI’s primary justification for its Request is that the spectrum in the areas represented by a transmitter’s side lobes is currently unused, or “wasted.”⁵ WSI, however, fails to supply any data to support this broad claim.

Contrary to WSI’s contentions, the Commission has routinely allowed fixed PTP stations to be coordinated in the side lobes of existing stations sharing the same frequencies.⁶ For

³ See Comments of Mobile Satellite Ventures Subsidiary LLC and TerreStar Networks, Inc., Wt Docket No. 07-121, p. 1 (filed July 19, 2007).

⁴ As noted above, USCC has over 2,000 microwave licenses in the Fixed Service bands which are located in 189 markets in 26 states.

⁵ See WSI Request, p. 5.

⁶ See Comments of Verizon, WT Docket No. 07-121, p. 7 (filed July 19, 2007).

instance, a licensee may add additional links to an existing PTP authorization so long as the beamwidth for each transmitting antenna complies with FCC rules and prior coordination is feasible.⁷ In addition, advances in antenna technology and, in particular, side lobe suppression, have enabled the coordination of microwave systems that previously would not have been feasible to coordinate.⁸ The additional usable spectrum created by these advances does not constitute “unused” spectrum. Rather, it permits the more efficient use of the spectrum in a manner consistent with the intended use and expansion of the Fixed Service bands.

B. WSI’s Proposal Violates the Frequency Coordination Rules.

Under Section 101.103(d)(1) of the Commission’s rules, “[p]roposed frequency usage must be prior coordinated with existing licensees [etc.] . . . whose facilities could affect or be affected by the new proposal in terms of frequency interference . . .” The frequency coordination rules require that an applicant provide notification to these potentially affected parties of certain technical details concerning its proposed transmitting and receive facilities, including the coordinates of the transmitting station, the type of transmitting equipment and its actual output power, the type(s) of the transmitting antenna and its center line height(s), and the path azimuth and distance.⁹ In addition, the position location of antenna sites must be determined within an accuracy of +/- 100 feet.¹⁰

In its Request, WSI describes its Distributed Radiating Elements (“DREs”) as transceivers. The DREs would both receive communications *and* create new return microwave paths not described by the main lobe of the transmitter. Similar to any other radiating source,

⁷ See Comments of Harris Stratex Networks, Inc., WT Docket No. 07-121, ¶ B.1. (filed July 19, 2007).

⁸ *Id.*

⁹ 47 C.F.R. § 101.103(d)(2)(ii).

¹⁰ *Id.*

transmissions from the DREs have the potential to produce harmful interference and, therefore, must be evaluated.¹¹ In other words, each DRE requires individual coordination and licensing.¹²

WSI's Request, however, fails to include any operating parameters for the individual DREs, and it appears as if WSI does not intend to supply this information in the future. In fact, the individual and independent nature of the DREs likely would make it impossible for WSI to supply all of the required operating parameters for each of these antennas. This failure to provide the requisite information clearly violates the Commission's frequency coordination rules.

In addition, Part 101 frequency coordination is a bilateral process – it “involves two separate elements: notification and response.”¹³ A neighboring licensee can provide a meaningful “response” (*i.e.*, whether or not its system would sustain interference from the proposed use) only after it has had the opportunity to analyze a specific proposal. If WSI fails to supply licensees with the above-referenced operating parameters for each DRE, these licensees cannot provide the “response” required by the Commission's rules.

David Popkin's comments clearly illustrate the potential hazards and consequences associated with WSI's proposal. The frequency coordination process, in general, evaluates whether the transmission and receipt of communications between two fixed points (“Point A” and “Point B”) cause interference to the existing environment. WSI proposes to place one or more remote transceivers at some unknown point (“Point C”) to provide communications between Point A and Point C. A transceiver located at Point C and transmitting towards Point A

¹¹ See Comments of National Spectrum Managers Association, WT Docket No. 07-121, p. 6 (filed July 19, 2007).

¹² 47 C.F.R. § 101.21(e) (“Each application in the Private Operational Fixed Point-to-Point Microwave Service and the Common Carrier Fixed Point-to-Point Microwave Service must include the following information . . .”).

¹³ 47 C.F.R. § 101.103(d)(2)(i).

must be evaluated in the same way as any other radiating source of energy.¹⁴ Otherwise, the potential for interference from this transmitter cannot be evaluated by the existing microwave community. Under WSI's proposal, however, Point C's location, as well as the operating parameters of the transmitter at Point C, would not be known by other licensees, making it impossible to evaluate the potential for interference into their existing systems.¹⁵

C. WSI Seeks to Create Excessive Interference to Create an Exclusive Service Area.

Section 101.113(a) of the Commission's rules mandates that "the average power delivered to an antenna . . . must be the *minimum amount of power necessary* to carry out the communications desired." (emphasis added). In its recent license applications, WSI requested EIRPs of 84.2 dBm. This power level far exceeds both the median EIRP¹⁶ and the power necessary for predictable path availability.¹⁷ In addition, the equipment WSI proposes to use cannot operate for its intended PTP use at this level.¹⁸ WSI's requested EIRPs, therefore, are excessive and violate Section 101.113(a).¹⁹

WSI's license applications requested the maximum permissible, and likely excessive, transmit output power, along with the lowest allowable antenna main beam gain and minimum side lobe suppression characteristics. The combination of these parameters creates the maximum

¹⁴ See Comments of David B. Popkin, WT Docket No. 07-121, p. 4 (filed July 19, 2007).

¹⁵ *Id.*

¹⁶ See Comments of Comsearch, WT Docket No. 07-121, p. 7 (filed July 19, 2007) ("The median EIRP used by 27.5 to 30 MHz bandwidth digital microwave transmitters in the 5925-6425 MHz band on links in the 20 to 50 km range (comparable to WSI's links) is 68.1 dBm.").

¹⁷ See Comments of Society of Broadcast Engineers, Inc., WT Docket No. 07-121, p. 5 (filed July 19, 2007) ("Applying the Bell & Vigants multipath model for this fade margin gives a predicted path availability of better than 99.9999%. Thus, the requested EIRP is clearly excessive by two orders of magnitude (*i.e.*, 20 dB).").

¹⁸ See Comments of Alcatel-Lucent, WT Docket No. 07-121, p. 10 (filed July 19, 2007) ("... WSI's recently granted application . . . specified radio model 'MDR-8606-135 & PA' manufactured by 'Alcatel-Lucent.' In fact, however, ALU has not built or verified for FCC equipment compliance such a model. ALU has manufactured Model MDR-8606-135, but that radio was not designed for – and cannot successfully operate at – the maximum power levels proposed in WSI's application.").

¹⁹ We note that, although Verizon filed Petitions to Deny these WSI applications, the FCC granted the applications subject to a special condition on each grant explicitly prohibiting the use of DRE antennas. Nevertheless, WSI's proposed power limits remain relevant to this proceeding.

interference permitted under FCC rules and maximizes WSI's RPE. Since these parameters are unnecessary for PTP operation, it appears as if WSI is attempting to create a buffer, or placeholder, into which it will then add one or more DREs. Licensing the maximum power level and poorest antenna performance would allow the DREs to operate with as much power as possible, while still allowing WSI to claim that the interference caused is the same or less than that caused by its main antenna. This type of operating authority, if approved, would encourage other operators to expand their "service areas" by specifying maximum power levels and utilizing low performance antennas.²⁰

More importantly, by maximizing, and arguably exaggerating, its RPE to create as much interference as possible, WSI could preclude stations seeking to expand their systems by building new microwave links.²¹ In doing so, WSI would be converting spectrum intended for PTP links into a geographic exclusion zone that would allow unlimited deployment of additional links anywhere within the maximum allowed RPE of a licensed link.²²

To the extent that the WSI system may be seen as creating mutual exclusivity, it triggers the Commission's obligation to auction the spectrum. The competitive bidding requirement applies when there are "mutually exclusive applications . . . for any initial license or construction permit."²³ An application is "'mutually exclusive' if the grant of one application would effectively preclude the grant of one or more of the other applications."²⁴ In the past, when the

²⁰ See Comments of Verizon, WT Docket No. 07-121, p. 7 (filed July 19, 2007).

²¹ 47 C.F.R. § 101.103(d)(1) states, in part: "Applicants should make every reasonable effort to avoid blocking the growth of systems as prior coordinated."

²² See Comments of Mobile Satellite Ventures Subsidiary LLC and TerreStar Networks, Inc., Wt Docket No. 07-121, p. 2 (filed July 19, 2007).

²³ 47 U.S.C. § 309(j)(1).

²⁴ *Implementation of Section 309(j) and 337 of the Communications Act of 1934 as amended*, 15 FCC Rcd 22709, 22713-14 (2000).

Commission has moved from a site-based to a geographic licensing regime in other services, it has adopted auction procedures for assigning new initial licenses.²⁵

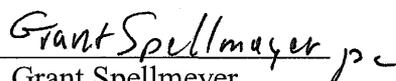
The completion of the AWS Auction in September 2006 provides further support for the denial of WSI's Request. Currently, the industry is attempting to accommodate the relocation of several thousand 2 GHz microwave paths into alternative bands. The creation of operational exclusion zones if WSI's proposal were adopted could delay and disrupt the deployment of AWS systems.²⁶ Licensed and unlicensed bands already exist for point-to-multipoint ("PMP") service. If WSI intends to deploy a PMP service, it has failed to explain why it cannot use the current allocations and existing rules created for PMP use.

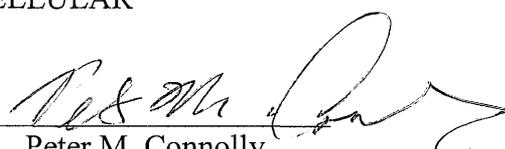
III. CONCLUSION

USCC strongly opposes the grant of the WSI Request. It clearly violates FCC rules and policies, and would likely cause substantial interference in an already congested operating environment, without the public interest benefits claimed by WSI.

Respectfully submitted,

UNITED STATES CELLULAR
CORPORATION

By Grant Spellmeyer 
Grant Spellmeyer
Director – Regulatory Affairs
United States Cellular Corporation
8410 Bryn Mawr
Chicago, IL 60631
Phone: (773) 399-4280
Fax: (773) 864-3133
Email: grant.spellmeyer@uscellular.com

By Peter M. Connolly 
Peter M. Connolly
Leighton T. Brown
Holland & Knight LLP
2099 Pennsylvania Avenue, N.W.
Washington, DC 20006
Phone: (202) 955-3000
Fax: (202) 955-5564
Email: peter.connolly@hkllaw.com
Email: leighton.brown@hkllaw.com
Its Attorneys

August 20, 2007

4713310_v3

²⁵ See Comments of Alcatel-Lucent, WT Docket No. 07-121, p. 8 (filed July 19, 2007).

²⁶ See Comments of National Spectrum Managers Association, WT Docket No. 07-121, p. 7 (filed July 19, 2007).