

February 23, 2009

VIA ELECTRONIC FILING

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, SW  
Washington DC 20554

**Re: WTB Docket No. 07-121, In the Matter of Request for Declaratory Ruling by Wireless Strategies, Inc. Regarding Coordination of Microwave Links under Part 101 of the Commission's Rules**

Dear Ms. Dortch:

Pursuant to Section 1.1206(b)(1) of the Commission's Rules, the National Spectrum Management Association<sup>1</sup>(NSMA) is electronically filing this written *ex parte* communication in regards to the aforementioned matter.<sup>2</sup>

**Introduction**

Wireless Strategies, Inc.'s (WSI) recent *ex parte* dated January 12, 2009, once again falls short of providing any new technical detail to support its oft-repeated, but unsupported claims that its point-to-multipoint proposal, wherein uncoordinated and unlicensed transmitters at multiple sites are misconstrued as a so-called "antenna with widely distributed radiating elements (DREs)" could meet the gain, beamwidth and suppression requirements of 47CFR Section 101.115. The whole concept of characterizing a group of widely distributed multipoint stations as "distributed radiating elements" of a single antenna is a ridiculous and transparent subterfuge. The Commission has allocated a number of bands for licensed, wide-area point-to-multipoint use, including the 24, 28, 31 and 38 GHz bands. There is no reason to consider a reallocation of the highly congested spectrum in the licensed point-to-point bands for this technically tenuous proposal, either via rule interpretation or rulemaking when adequate spectrum, well suited to the relatively short links proposed by WSI for its point-to-multipoint system, is available. The proposal is simply out of place in the licensed bands. The proposal may not work successfully even in the point-to-multipoint bands, but at least WSI's efforts there will not be foul the highly organized, heavily used and carefully coordinated critical services supported with licensed point-to-point spectrum. WSI's redundant *ex parte*'

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<sup>1</sup> Formerly known as the National Spectrum Managers Association

<sup>2</sup> 47 C.F.R. § 1.1206(b)(1)(2009).

presentations, filled with flashy slides of irrelevant marketing material, do not begin to explain in real terms how these disparately placed transmitters are automatically coordinated (without benefit of technical details), with the incumbent and proposed licensed links prior coordinated under Section 101.103.<sup>3</sup> WSI states that “A licensee who (by definition) complies with Rules 101.115 and 101.103 will not cause interference!” On the surface, we agree with this statement but we submit that WSI has never provided any technical data to prove how its concept can meet these rule sections. The issue here is not whether systems that comply with the Rules will cause interference – it is whether WSI’s proposal complies with the Rules.<sup>4</sup>

## **Summary**

Specifically, WSI’s proposal is flawed in the following areas:

- It proposes mixing point-to-(unlicensed) multipoint systems into a band heavily occupied with licensed point-to-point links.
- The prior coordination process for proposed transmitting stations is bypassed.
- WSI’s proposal lacks technical detail.
- WSI uses power far in excess of that necessary for reliable communications over its point-to-point links, thereby wasting significant spectrum.
- Point-to-multipoint spectrum is available for use with WSI’s proposal making reallocation of point-to-point spectrum unnecessary.
- An affirmative response by the FCC would affect every single fixed point-to-point frequency band and every single fixed frequency allocation under Part 101.
- WSI’s made-up terms used to describe its proposal are still undefined after two years.
- WSI proposes the use of non-compliant antennas.
- Should the Commission decide to continue consideration of WSI’s proposal, which the NSMA believes would be ill-advised, it should be in the context of a formal proceeding including an NPRM.
- WSI’s proposal is in conflict with the rules in a number of areas. Most pertinently:
  - It places existing licensed spectrum users in jeopardy without due process or proper notice and comment review as required through the Administrative Procedures Act (APA);
  - It attempts to alter or reconstitute numerous Part 101 sections, including, for example, 47 CFR Section 101.103(d), 47 CFR 101.21 and 47 CFR Section 101.115, without requesting a rule change through the proper Petition or other processes duly required in 47 CFR Parts 1 and 2.

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<sup>3</sup> Note that the coordination community not only protects coordinated licensed links and those for which applications have been filed, but also prior coordinations for links that have not yet reached the application stage.

<sup>4</sup> In addition, WSI’s application for experimental operation fails to comply with numerous requirements which have been delineated in letters to the Commission from other parties. We ask the Commission to take note of those issues, but have chosen not to repeat those concerns in this document.

WSI's *claim* that its antenna design concept meets the criteria of Section 101.115 "by definition" is not *evidence* that it does. In asking the FCC to declare its antenna concept to be in compliance *by definition* is a transparent attempt to circumvent the Rules. Furthermore, it is an insult to the established antenna manufacturers who follow the Rules for their production of highly directional antennas.

WSI's interpretation of Section 101.103(d) would place it solely in-charge of protecting all licensees from potential harmful interference from WSI's multipoint transmissions and would replace the bilateral, notification/response process with its self-determined, unilateral notification process. This is unacceptable and violates the requirements of Section 101.103(d).

WSI's Request for Declaratory Ruling lacks any technical detail or even a compelling reason to support a latent reallocation attempt based on an unwarranted major reinterpretation of the FCC's Rules under Part 101, Subparts C, H & I covering the Fixed, Point-to-Point microwave services. There are already several frequency bands allocated under Part 101 with service Rules that allow point-to-multipoint operation as envisioned by WSI. These include 24.25-24.45 GHz and 25.05-25.25 GHz bands, the LMDS bands, 27,500 – 28,350 MHz, 29,100 – 29,250 MHz, and 31,000 – 31,300 MHz, as well as the 38 GHz band, which includes fourteen 100 MHz wide channel pairs at 38,600 – 40,000 MHz.<sup>5</sup> Individual paths can be established in the 71,000 – 76,000 MHz, 81,000 – 86,000 MHz and 92,000 – 95,000 MHz bands, subject to the directional antenna requirements of Section 101.115. These bands are particularly suited for the relatively short point-to-multipoint links proposed by WSI. In addition, suitable equipment is already available for several of them. Note that all of the bands below 40 GHz were allocated by auction (which is the appropriate and required licensing method for wide area or point-to-multipoint usages), and most of the license holders will lease large portions of their allocated bands at attractive rates<sup>6</sup>. These bands are lightly used<sup>7</sup> and would seem to be the perfect place for the short path, unlicensed transmitter, non-conforming antenna, point-to-multipoint communications envisioned by WSI<sup>8</sup>. Just because use of the point-to-multipoint bands below 40 GHz may require compensation to the licensee from WSI is no reason for the Commission to reallocate point-to-point licensed bands for point-to-multipoint use.

It should not be lost on the Commission that WSI's request is not limited in scope in that it would affect every single fixed point-to-point frequency band and every single fixed frequency allocation under Part 101. This kind of wide-ranging, sweeping and all encompassing change in context will affect every single Part 101 licensee and would require Rule interpretations on many more Rule Parts than the two listed in the Request for Declaratory Ruling. These are not issues to be decided by Declaratory Ruling – a

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<sup>5</sup> Additionally, legacy point-to-multipoint Digital Termination Systems exist at 10.6 GHz. See 56 Rad. Reg. 2d 1171 (1984).

<sup>6</sup> From this perspective, it would be unfair to reallocate the point-to-point bands, which are licensed on a per-station non-competitive (therefore non-auction) basis, for point-to-multipoint use.

<sup>7</sup> See substantial service filings and FCC Report and Order DA 08-867

<sup>8</sup> See slides 5,7 and 9 in WSI's ex parte dated January 13, 2009.

change of context this large should require, at a minimum, a formal Proposal for Rulemaking and, if found to have merit, a formal Notice of Proposed Rulemaking (NPRM) proceeding.

As pointed out by several parties in the Comment and Reply Comment phase of this proceeding, we have already seen WSI significantly abuse the power requirements of Section 101.113 with its point-to-point licenses in Baltimore and Philadelphia (WQGH695, WQGH696, WQGH697, WHQD215, WQHD217, WQHD218). These comments and reply comments pointed out that the licensed power on these stations is more than 20 dB higher than the minimum necessary to meet required availability on the paths. This kind of predatory, spectrum-wasting, out of context abuse of the rules will only continue unless the FCC immediately and appropriately rejects this Request for Declaratory Ruling.

### **Section 101.115 Discussion**

Nothing in this latest presentation by WSI or in any of its numerous and repetitious comments, reply comments or ex parte filings has ever been presented to show how an aggregation of multipoint antennas could possibly meet the main beam gain, beamwidth and suppression requirements for the main antenna as defined under Section 101.115. In its initial filing, WSI claimed that there is some kind of specified area (called by WSI a “Maximum Power RPE” *area*; as yet still undefined) surrounding every directional point-to-point antenna. Comments and Reply Comments from several parties pointed out that there is no “*area*” component in the requirements of Section 101.115. In its reply comments dated August 20, 2007, WSI agreed that there is no area component in Section 101.115. This kind of “double-speak” is characteristic of WSI’s filings in this proceeding. First they argue that there is an area under which these multipoint antennas can operate and still comply with Section 101.115 and then they argue that there is no area component in this rule.

In the same reply comments, WSI presents “Evidence that a Smart Antenna with DREs Complies with Rule 101.115”. What WSI calls “DREs” are actually individual multipoint transmitters scattered throughout a service area. However, the only “evidence” provided that this aggregation of multipoint transmitters might be in compliance is a simple misleading statement, “In summary any type of antenna that meets the electrical specification by definition meets the Rules”. This statement does not provide any *evidence* that a collection of multipoint transmitters that have been scattered miles away from the coordinated antenna at one end of a point-to-point link and which will be transmitting signals that have absolutely nothing to do with the main antenna could possibly meet the requirements of Section 101.115. Transmissions from these multipoint transmitters do not help form the pattern of the main beam antenna or contribute to its gain; in fact they apparently transmit signals at different times than the main antenna. Thus, WSI’s claim that the DREs are a part of the antenna system appears to be a Catch 22 definition. If the DREs are a part of the antenna system they should be responsible for determining the radiation pattern envelope (RPE). If they are not part of

the antenna system for determining the RPE, then this definition of an antenna system, i.e., a back plane with remote distributed elements, falls apart.

WSI has never identified in this proceeding what antennas will be used for these multipoint installations, but its website states that there is no restriction on the type of antenna and says that small flat panels and even dipoles could be used. Dipoles are hardly highly directive devices and it is not difficult to see how each of these devices would violate the requirements of Section 101.115. These devices are currently not allowed under the rules and WSI has provided no *evidence* on why or how they now should be allowed.

WSI has never provided real, bona fide, technical evidence such as a Radiation Pattern Envelope on how a group of multipoint transmitting antennas could possibly meet the requirements listed in Section 101.115. Where would one even begin to measure such a wide-area pattern? No matter where the reference point is selected, the pattern will be completely different for each location surrounding the site.

Subparts H and I of Part 101 specifically cover fixed point-to-point microwave services, and Section 101.115 was written in this context. WSI's comment that the rules do not specify the location of an antenna's radiating element is not correct as they have not applied the rule in its proper context. Section 101.115 was written to cover the performance characteristics of highly directional antennas for the fixed point-to-point services. Under the context of the point-to-point services, the radiating element(s) must be located in close proximity to the antenna assembly in order for the antenna to meet the requirements. It makes little if any sense in these services for the radiating elements of an antenna to be located any more than at most several meters from the antenna assembly due to the effects of free space or propagation loss. Therefore, the Rule did not need to specify the exact location of all pieces and parts of the antenna since under the context of point-to-point services, these are assumed, by definition and requirement, to be closely located (co-located) to the antenna or licensed location. WSI seems to think that if these devices do not cause interference, there's no harm. None of the Sections we are discussing allow licensees or even non-licensees to implement non-conforming, unlicensed radiating antennas as long as they do not interfere. If this kind of thinking were allowed, there would be all kinds of non-conforming devices in use. In fact, the recent 11 GHz small antenna rulemaking would not have been necessary.

It should be noted that the directive antenna requirements in Section 101.115 are even required in wide-area or point-to-multipoint bands that are licensed under Part 101. It is clear that, as pointed out in NCTA's reply comments, WSI's "DRE" and "concurrent coordination" concept is nothing more than an end run around the point-to-point service rules under Subparts H and I to establish a wide-area point-to-multipoint service as well as to avoid the requirement to prior coordinate and license each transmit location.

## **Section 101.103 Discussion**

WSI is claiming that each one of these multipoint antennas is somehow part of the main link's antenna and therefore they do not need to be formally coordinated or even licensed individually. It is clear that these devices are indeed separate transmit/receive stations serving separate and distinct customers and locations and connected to separate radios. The signals that they transmit may be on the same frequency as the licensed link, but they will be emitting signals from a separate transmit source; the remote antennas ("DREs") have no phase relationship to the main antenna and do not contribute to formation of its pattern. In addition, they will be transmitting in directions that are diametrically opposed to the direction of transmission received from the licensed transmitter. For example, if the direction from the licensed antenna to the multipoint antenna is an azimuth of 90°, the multipoint antenna will be transmitting on an azimuth of 270°. It should also be noted that these azimuths (90-270 degrees in this example) may not have any relationship to azimuths associated with the licensed (and coordinated) primary path. Under subparts C, H and I, all transmit locations in the frequency bands proposed by WSI are **required** to be prior coordinated and **separately licensed**. In addition, per FCC Rule Sections 101.21(e) and 101.103(d)(2)(iii), as well as the instructions for filling out Form 601, all transmit locations are to be specified to within 1 second in latitude and longitude. These facts make it obvious that the DREs should be considered as independent antennas with characteristics that must meet FCC requirements.

WSI appears to claim that if the aggregate radiation (measured from some undefinable distance) from its multipoint antenna cloud does not exceed the limits of the FCC mask specified for a particular band, that it is in compliance with the rules. However, it is important to look carefully at the intended purpose of the radiation mask- to limit the actual antenna pattern *peak* EIRP in a particular direction. This is a useful limit, but does not intend that the antenna should reach that limit in all directions. A typical transmitting antenna has many valleys between the peaks where the radiation is substantially less than that allowed by the regulatory limit. In those directions, there is considerably less potentially interfering radiation transmitted, thus considerably lowering the overall interference environment. Even if the flawed WSI concept were valid, the benefit of lowered radiation in nearly all directions, where the EIRP peaks and valleys are less than the mask, would be lost.

WSI's initial claim in its Request for Declaratory Ruling was that all areas around a previously prior coordinated path were considered "concurrently coordinated" as they were claimed to be *less* interfering than the licensed link. This was shown to be completely invalid as each interfering path and transmitting device has its own antenna pattern characteristics and perhaps more importantly, its own propagation characteristics. WSI is now claiming that Section 101.103(d)(2)(ix) somehow allows them to only notify potentially affected parties instead of properly prior coordinating as envisioned under Section 101.103(d). Once again, WSI has taken this rule completely out of context and applied a completely unsupported and self-serving definition. Section 101.103(d)(2)(ix) states:

“If, after coordination is successfully completed, it is determined that a subsequent change could have no impact on some parties receiving the original notification, these parties must be notified of the change and of the coordinator’s opinion that no response is required”

This Rule assumes that the changes contemplated will be minor in nature. The prior coordination community relies on 47 CFR Section 1.929 to make this determination. It was written to allow some leeway in the coordination time period when minor adjustments were made to previously coordinated and cleared facilities. To suggest that coordination of transmit devices located miles away from the previously coordinated link and with completely different parameters, including coordinates, ground elevation, antenna height, antenna type, transmit azimuth, radio equipment, EIRP, etc., could even remotely be considered minor is just not supported by the rule, its underlying purpose and meaning, NSMA guidelines and recommendations, TIA TSB10-F, licensees or the prior coordination community. WSI’s interpretation of this Rule places them solely in-charge of protecting all licensees from potential harmful interference with its facilities and changes the bilateral, notification/response process to a unilateral notification-only process. This is totally unacceptable and violates the very basic requirements of Section 101.103(d).

Please do not hesitate to contact us with questions.

Respectfully submitted,

**NATIONAL SPECTRUM MANAGEMENT  
ASSOCIATION**

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