



June 21, 2010

(Filed electronically)  
Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, DC 20554

Re: **Ex Parte Notice** - WT Docket No. 07-121

Dear Ms. Dortch:

At a meeting with OET on May 12, 2010, members of the Satellite Industry Association (SIA) discussed the intent of the Wireless Telecommunications Bureau to solicit comment in a notice of proposed rulemaking that would make changes to Part 101 of the FCC's rules. The proposed rule changes were originally proposed by Wireless Strategies, Inc. (WSI), which is seeking the Commission's approval of a concept it has defined as "distributed radiating elements" (DREs). At the OET meeting, staff asked whether conditions proposed by WSI, including prior coordination of each DRE, and/or secondary status for DREs, might make the WSI proposal more palatable for the satellite community. The following recounts the history of this proceeding, showing that WSI has failed to provide the FCC with anything near the specificity necessary to move forward with an NPRM, and explains that WSI's proposed conditions do nothing to address this failure.

#### **Background**

On June 7, 2007, Wireless Strategies, Inc. (WSI) filed a request for declaratory ruling asking the FCC to confirm that Part 101 of the FCC's rules permits the concurrent coordination of terrestrial antennas with DREs. If supported by the FCC, terrestrial point-to-point licensees would be permitted to deploy additional links within the maximum allowed power radiation pattern envelope of a licensed link without further review or authorization. The request was placed on Public Notice by the FCC on June 19, 2007. Comments and replies were filed in July and August 2007, respectively.

The WSI proposal was – and continues to be -- widely opposed on both procedural and substantive grounds by a broad base of commenters, including Comsearch, the National Spectrum Managers Association, Engineers for the Integrity of the Broadcast Auxiliary Services Spectrum, mobile operators, fixed wireless licensees and satellite licensees. The comments raised serious concerns about the WSI request, showing that it: 1) did not comply with Part 101 rules, 2) created the potential for interference with existing Fixed Service and Fixed Satellite Service licensees operating in the frequency bands where these links could be deployed; 3) is spectrally inefficient due to reduced antenna standards, use of excessive transmitter power and unlicensed emitters and the use of short haul paths in long haul spectrum; and 4) could only properly be considered in a rulemaking and not as a petition for declaratory ruling.

During the 24 months following the close of the comment period, there was very little activity in the WSI docket, other than ex parte filings from WSI asking the FCC to act on the petition and filings from Sprint, which first opposed but then began supporting the WSI request. Surprisingly, the WSI proposal was then mentioned in the Commission's National Broadband Plan released in March 2010 as a concept worth exploring with respect to increasing the

availability of wireless backhaul. The specific reference to WSI was in the first bullet, which stated as follows:

*Greater spatial reuse of microwave frequencies, particularly in urban areas.* Public comment has raised the possibility that rule changes could enable more efficient use of spectrum, particularly in the area surrounding a microwave station. [footnote omitted, citing letters filed by Sprint 3/12/09 and WSI 11/4/09.] Such changes, it is claimed, could dramatically increase the ability to use spectrum for backhaul in high congestion areas, especially in urban areas. The FCC, in the context of a larger Part 101 proceeding, should expeditiously consider whether the proposal merits changes to the existing rules.

Section 5.5, Recommendation 5.10, p. 93. The National Broadband Plan, however, did not reference or discuss any of the voluminous opposition to the WSI proposal.

Since filing its original proposal, in a filing dated August 21, 2009, WSI has modified its position and has advocated that any interpretation of the rules consistent with its request be conditioned on the following:

- (1) "As required by Rule 1.1.103 and consistent with the existing procedure, before deployment of one or more DREs the licensee must coordinate the proposed DREs by studying the prospect for harmful interference, issuing a prior coordination notice (PCN) to frequency coordinators and allowing the coordinators thirty days to evaluate the potential for harmful interference."
- (2) "The DREs are secondary to the licensed path (i.e., they must not cause and must accept harmful interference."
- (3) "The addition of DREs around a licensed station is considered a major change to the license."
- (4) "Following existing coordination practice, a new applicant attempting to frequency coordinate a new path who predicts interference from a DRE would be greater than the interference from the DRE's licensed or prior applicant's proposed licensed station(s), can require the licensee or prior applicant to reduce the predicted interference to levels no higher than would be predicted from the DREs associated licensed stations."

### **The Satellite Industry's Concerns**

The Satellite Industry Association continues to oppose the grant of the WSI proposal. Because the WSI proposal is not limited to any particular frequency band or to any particular kind of terrestrial fixed service, SIA continues to be concerned about the impact of the WSI proposal on the bands shared with the Fixed Satellite Service on a co-primary basis. These frequency bands include the 4-6 GHz (C-band), and the 10-14 GHz (extended Ku-band). Satellite companies are using these bands to provide a variety of voice, data and video services for use by public safety agencies, federal, state and local governments, commercial and residential customers. The C-band, in particular, is used extensively for distribution of television and radio to thousands of broadcast stations and cable head ends serving millions of households throughout the nation. The extended Ku-band is used for international communications and for feeder links that support the mobile satellite services used by many government and public safety agencies.

Satellite companies have invested billions of dollars to in constructing the satellites and the necessary ground equipment to provide these valuable services to the public. The WSI proposal threatens to disrupt these services by creating harmful interference and/or unreasonable coordination burdens. FSS and FS licenses have been able to successfully share these bands to date because of the discrete, point-to-point nature of the FS operations and the discrete location of satellite earth stations. The detailed coordination process required by Part 101 of the Commission's rules takes these characteristics of the respective services into account.

The WSI proposal, even if adopted with all of the proposed conditions, leaves a substantial risk of interference to FSS operations because companies proposing to use DREs will

necessarily apply for the maximum allowed EIRP on the licensed path if the desired communications includes links to a number of undefined locations. In contrast, Section 101.113(a) of the FCC's rules requires use of the *minimum* amount of power necessary to carry out the communications. This would result in the maximum interference envelope, as well, limiting future applicants' use of the frequencies in the same geographic area. The satellite industry is therefore concerned that the WSI proposal, if adopted, could radically alter the interference and sharing environment between the FS and FSS in shared bands, and creates unreasonable coordination burdens on future earth stations.

### **The Latest Conditions Proposed by WSI Do Not Address the Satellite Industry's Concerns and Raise More Questions Than Answers**

The latest conditions proposed by WSI are ambiguous at best and opaque at worst, and fail to address the satellite industry's concerns.

(1) Prior coordination of individual DRE paths. This condition is ambiguous as to the coordination priority of each DRE path. This might help if the individual DRE paths coordination priority is based on the date they are actually coordinated rather than the date the main path was coordinated. But if priority is based on the coordination date for the new path, why couldn't FS operators just license each DRE path separately?

(2) DREs secondary to licensed path. This condition is ambiguous as to secondary status vs. other co-primary services in the FS bands. Will DREs also be secondary to FSS? Moreover, how is secondary status consistent with use of the prior coordination procedures under condition (1), which implies protection vs. later co-primary users?

(3) Major change to add DREs to existing license. It would be extremely burdensome for existing licensees to track modifications for DREs. Would DRE locations be prior coordinated and specified in the modification application? If so, why couldn't FS licensees simply add additional DRE paths to the existing license? What would the licensing procedure be for new FS licenses with DREs? How would this differ from the current licensing process?

(4) Coordination among DREs. The meaning of this condition is completely opaque. In any event, it appears to only address DRE-DRE interference and completely ignores inter-service interference concerns (e.g. DRE-earth station interference).

### **Many Other Questions Remain Concerning the WSI Proposal**

Moreover, and fundamentally, WSI has not adequately defined what it means by DREs. What do they do? What are their technical characteristics? WSI's filings to date include only the most general descriptions of the service and its characteristics, giving other users in the bands little assurance that either WSI or the FCC understands the impact of authorizing such services on other licensees and their customers. As such, even if the conditions are acceptable, there would still be the problem of introducing far too much flexibility by insufficiently defining the service itself. Before soliciting any further comment, the FCC should first ask WSI to submit, for the record, a more detailed description of DREs and their intended operations. Questions for WSI should include the following:

- 1) What are the DREs used for? Are they used to null interference, focus transmit power, or something else? No detail has yet been provided to explain this basic question.
- 2) How is the signal radiated/received by one DRE related to the signal radiated/received from the others?
- 3) How are the DREs interconnected?

- 4) What happens to the antenna performance if the link with one or more DREs is/are broken?
- 5) How far are DREs separated?
- 6) How is the space between DREs controlled to prevent pattern disruptions? For example, will swaying trees or passing trucks materially affect the antenna pattern?
- 7) If the DREs are used to form an aggregate beam, is the beam fixed or adaptive? If adaptive, what is it adapting to?
- 8) How can long term performance be assured?
- 9) In the proposed definition of a "Distributed Radiating/Receiving Element," what does distributed mean? Varying heights, distances or something else?
- 10) In the proposed definition of "Smart Antenna," what does it mean to transmit and receive "in an adaptive spatially sensitive manner"?

It is not sufficient to simply leave these questions for further discussion in response to a notice of proposed rulemaking. The answers to the questions above would allow the FCC and commenters to have a basic initial understanding of what is being proposed, rather than letting WSI define and redefine its service over the course of a rulemaking in response to criticism.

The FCC must also make explicit that there is no intent to exempt WSI from the absolute EIRP limits in Section 101 of the Commission's rules. This point should be added to the conditions. In order to ensure this, WSI should submit further information detailing their intended link budgets and margins, and the FCC should solicit comments on whether link budgets and margins should be more stringent if used by licensees of DREs.

SIA recommends that without answers to these questions, the FCC should not include the DRE proposal in the Spectrum Efficiency NPRM. In the alternative, SIA recommends that if DREs are included, the proposal should not allow DREs in frequency bands shared with the FSS.

Please contact the undersigned if you have any questions.

Respectfully,



Patricia Cooper  
President  
Satellite Industry Association

cc: Julius Knapp  
Bruce Romano  
Ira Keltz  
Jamison Prime  
Eloise Gore  
Jeffrey Neuman  
Shabnam Javid  
Gardner Foster  
John Schauble  
Saurbh Chhabra