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James R. Burtle, Chief
Experimental Licensing Branch
Office of Engineering and Technology
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

RE: Informal Objection to Experimental License Application 0051-EX-PL-2008

Dear Mr. Burtle:

Pursuant to Sections 1.41 and 5.95 of the Commission's rules,[1] AT&T Inc., on behalf of its affiliates, ("AT&T") submits this informal objection to a proposed experimental license application filed by Wireless Strategies Inc. ("WSI"). AT&T believes that this experimental testing, without proper coordination, could adversely affect essential traffic carried on AT&T's fixed microwave network. AT&T requests that WSI's experimental authority be conditioned on full compliance with the fixed microwave prior coordination requirements of Section 101.103(d) of the Commission's rules[2] and that WSI be required to.define its proposed experiment more clearly.

Background on Experimental Application. WSI proposes to obtain an experimental authorization to test equipment whose parameters meet or exceed the requirements authorized in its existing fixed microwave licenses. In particular, WSI is requesting operational authority at 39 17 15 N, 76 36 56 W in Baltimore, MD operating at frequencies between 6123.1 to 6375.14 MHz.[3] WSI asserts that it will initiate a "study" by Comsearch, or another frequency coordinator or engineer, to assure that the interference received at any existing or presently proposed victim receiver from any "Distributed Radiating Element" ("DRE") will always be less than the interference received at any existing or proposed receiver from its "Smart Antenna System."[4] WSI further claims that it will use its licensed

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[1] 47 C.F.R. §§1.41, 5.95.

[2] 47 C.F.R. §101.103(d).

[3] See Experimental Application of Wireless Strategies, Inc., FCC File Number 0051-EX-PL-2008 (filed Feb. 22,2008).

[4] *Id.* at Attachment 1.

antenna locations, antenna characteristics, frequency, power, frequency tolerance, emission and bandwidth data for the experiments.[5]

Background on Petition for Declaratory Ruling. As the Commission is aware, this experimental application would provide data presumably supporting a Petition for Declaratory Ruling filed by WSI and currently under consideration.[6] In its Petition, WSI is seeking a ruling by the Commission that a licensee may use antennas having distributed elements to operate links, in addition to the main link, subject to conditions that: (1) all radiating elements together conform to the applicable antenna radiation pattern in Section 101.1 15; and (2) all links are successfully coordinated.[7] WSI's Petition was placed on Public Notice in June of 2007[8] and, not surprisingly, caused numerous concerns to be raised by various affected parties.[9] AT&T believes these concerns are equally applicable to the WSI experimental application.

AT&T Objections. Coordination zone analysis[10] shows that, within WSI's proposed band of operation, AT&T has licenses in the coordination zone authorizing operation on 176 frequencies from 75 sites within 125 miles of the filed coordinates and on 394 frequencies

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[5] WSI lists three FCC licenses (WQGH695, WQGH696 and WQGH697) as containing the relevant technical information.

[6] *See Request for Declaratory Ruling By Wireless Strategies, Inc. Regarding Coordination of Microwave Link Under Part 101 of the Commission's Rules;* WT Docket No. 07-121 (filed February 23,2007) ("WSI Petition").

[7] *See id.* at 1.

[8] *See Wireless Telecommunications Bureau Seek Comment on Request for Declaratory Ruling by Wireless Strategies, Inc. Regarding Coordination of Microwave Link under Part 101 of the Commission's Rules,* Public Notice, DA 07-2684, WT Docket No. 07-121 (rel. June 19,2007).

[9] *See, e.g.,* Opposition of Alcatel-Lucent at 4; Comments of Comsearch at 1-9; Comments of David B. Popkin at 2-4; Comments of Harris-Stratex, Inc. at 5; Comments of the National Spectrum Managers Association at 3, 8; Comments of Mobile Satellite Ventures Subsidiary LLC and Terrestar Networks, Inc. at 2; Comments of Verizon at 2-6.

[10] AT&T has performed a coordination zone analysis based on the recommendations of the National Spectrum Managers Association ("NSMA"). NSMA recommends that prior coordination analysis extend 125 miles from the fixed microwave operation and 250 miles from the keyhole associated with the main beam of the interfering antenna. Since WSI has not provided information on where the main beams of its "distributed elements" will reside, AT&T has used a 250 mile coordination zone surrounding only the single set of coordinates provided in its application. If WSI's distributed radiating elements are located elsewhere, additional AT&T stations could be affected. *See* *http://www.nsma.org/recommendation/WG3.90.026.pdf.*

from 136 sites within 250 miles of the filed coordinates. Indeed, AT&T alone is responsible for 17-21% of the total usage by all licensees in the sub-band of the heavily used lower 6 GHz band[11] where WSI proposes to conduct testing. WSI's proposed testing could potentially interfere with any of AT&T's sites in the coordination zone. The traffic AT&T carries on these microwave paths is of an exceedingly critical nature. In addition to commercial traffic, the microwave stations are used to carry voice and data traffic from state and local government/public safety entities, 911 call traffic and other similarly urgent communications. These links are designed to ensure this essential voice and data traffic is carried without interruption.

Initially, WSI has failed to comply with the supplementary statement requirements for experimental license applications. Section 5.55(c) requires that each application for experimental authority be specific and complete with regard to station location, proposed equipment, power, antenna height, and operating frequency.[12] Additionally, Section 5.63(a) requires that each application contain a narrative statement describing in detail the program of research and experimentation proposed, the specific objectives sought to be accomplished, and how the program of experimentation has a reasonable promise of contribution to the development and extension of the radio art.[13]

WSI has failed to adequately describe its proposed experimentation to meet the requirements of these rules. Specifically, it appears that WSI's experimental transmissions could occur anywhere in Baltimore, Jessup and White Marsh, MD and some undefined area described by WSI as the "interference contour" of the authorization stations. Section 5.55(c) requires that WSI provide the locations of each transmission as part of the application (we note that WSI has applied to use up to 16 transmitters in its proposed experiment).[14] Further,

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[11] AT&T's study of the entire Lower 6 GHz band (5925-6425 MHz) indicates intense usage within 125 miles and 250 miles of the filed coordinates. A review of all licenses shows a total of 1,771 frequencies licensed at 519 sites within 125 miles and 4,158 frequencies licensed for use at 1,220 sites within 250 miles. Across the entire Lower 6 GHz band, AT&T is authorized to use 332 frequencies at 109 sites within 125 miles and 712 frequencies at 191 sites within 250 miles.

[12] See 47 C.F.R. §5.55(c).

[13] See 47 C.F.R. §5.63(a).

[14] WSI's experimental application only lists a single set of coordinates and a single azimuth while, at the same time, declaring that it plans to use its licensed "locations" for its experiments. Id. at Attachment 1, ¶ 2 (emphasis added). In addition, WSI proposes to use licensed antenna characteristics, frequency, power, frequency tolerance, emission and bandwidth data for the experiments. It does not mention azimuth, a critical licensed parameter. See id. Any radiation from locations or at azimuths other than the one specifically identified (N39 17 15 W76 36 56, azimuth 56.50 degrees) in WSI's experimental application should be prior coordinated. Coordination information should include those items overlooked in WSI's application: overall antenna height above ground to tip of antenna

WSI has not described its theory of operation, the term "Distributed Radiating Element" is not explained or defined, and the term "concurrently coordinated" is explained only as the use of multiple frequencies on a single polarization. In order for affected parties adequately to determine the effects of this experimentation on their licensed systems, WSI must fully describe its experiment as well as all the parameters involved in the test.

In addition, AT&T requests that the Commission condition any grant of experimental authority to WSI on compliance with the prior frequency coordination requirements of Section 101.103(d) of the Commission's rules. Section 101.103(d) requires that proposed frequency usage must be prior coordinated with existing licensees, permittees and applicants in the area whose facilities could affect or be affected by the new proposal in terms of frequency interference on active channels, applied-for channels, or channels coordinated for future growth.[15] More critically, Section 101.103(d) notes that such coordination consists of two separate elements: notification and response.[16] Section 101.103(d) does not contemplate the completion of a vague "study" or any other unilateral action that would enable a fixed microwave system to initiate operations; rather, it requires notification and response as part of the coordination process. Particularly in light of the critical nature of much of the communications carried over AT&T's fixed microwave system affected by the proposed WSI test, AT&T believes that WSI must be required to comply fully with the requirements of Section 101.103(d) of the Commission's rules.

Use of the prior coordination procedures codified in the Commission's rules enables AT&T to utilize recognized interference analysis tools to consider effects that may or may not be present during the proposed WSI test. For example, fading effects may not be present at the time of the WSI test – at particular times of the day or during the year a particular fixed microwave path may experience significant fading due to any of a number of reasons (climatic, ducting, etc.). The interference analysis methodologies employed by AT&T are able to give consideration to such effects and enable certainty that the fixed microwave system will continue to have high availability. AT&T does not believe that it can adequately ensure the reliability of its fixed microwave network without full prior coordination of any transmissions by WSI in the suggested testing area.

In sum, WSI must be required fully to describe its proposed experiment as well as to conduct prior frequency coordination for all transmissions from locations other than the specific, already licensed coordinates provided in its experimental application (within 1 second of latitude and longitude), azimuth and consistent with the other filed technical

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and elevation of ground at antenna site above mean sea level. We also note that WSI has failed to include the required exhibit describing directional antenna characteristics in its experimental application.

[15] *See* 47 C.F.R. §101.103(d)(1).

[16] *See* 47 C.F.R. §101.103(d)(2)(i).

parameters for its existing licenses (*e.g.*, antenna type, antenna height, power, modulation).[17] By requiring WSI to prior coordinate each transmission (location, power, azimuth, antenna height, etc.) just as if a new fixed point-to-point station were being proposed, all affected parties will be in a position to study the interference effects of WSI's proposed operations.

Sincerely,

James J. R. Talbot

cc: Wireless Strategies, Inc.
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[17] *See* 47 C.F.R. §101.103(d)(2)(ii).