

Wireless Strategies Inc.

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April 11, 2008

Marlene H. **Dortch**, Secretary
Federal communications Commission
Office of the Secretary
9300 East Hampton Drive
Capital Heights, MD 20743

Dear Madam Secretary:

Please find enclosed an original and four copies of Wireless Strategies Inc. (WSI) opposition to the informal objection filed by **AT&T** Inc. on behalf of its affiliates to **WSI's** Experimental License Application 0051-EX-PL2008.

Sincerely

A handwritten signature in black ink, appearing to read "Michael Mulcay", with a stylized flourish at the end.

Michael Mulcay, Chairman
Wireless Strategies Inc.

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April 11, 2008

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

Re: Wireless Strategies Inc. Experimental License Application
File No. 0051-EX-PL-2008

Dear Mr. Burtle:

Wireless Strategies Inc. (WSI) submits this opposition to the informal objection filed by **AT&T Inc.** on behalf of its affiliates to **WSI's** Experimental License Application 0051-EX-PL-2008.

Background of Experimental Application. Over the past few years wireless carriers have turned to point-to-point microwave links as a lower cost alternative to Incumbent Local Exchange Carrier (ILEC) and cable company terrestrial **backhaul** services. Recently analysts¹ have noted that 4G wireless financial models require a dramatically lower **cost/bit/subscriber** and as **backhaul** is a major cost component and microwave was considered a lower cost alternative to terrestrial backhaul, the **cost/bit/site** of microwave **backhaul** will have to be dramatically lower than it is now (*i.e.*, there must be an increase the efficient use of microwave spectrum). If such a breakthrough is not achieved, the growth of 4G networks will be stifled, wireless companies' shareholders will not see their promised return on investment on spectrum acquired at auction, growth plans will be severely impacted, new employment opportunities will be lost, there could be job layoffs, the United States will fall farther behind in the application of innovative wireless technologies and the public will be deprived of a plethora of new services.

As stated in WSI's Technical Submission:

"The purpose of this application is to obtain experimental authorization to test newly developed equipment whose parameters meet or exceed the requirements authorized in certain existing licenses that be will involved in the testing and to demonstrate that the Distributed Radiating Elements (**DREs**) of a Smart Antenna System, operating within the Smart Antenna System's interference contour, can reuse the licensed frequencies without causing harmful interference;"

¹ See Attachment 1.

"Operations under the requested experimental authorization will serve the public interest by allowing the applicant to:

a) test emerging equipment that meets or exceeds the parameters authorized in the license and is capable of operating in a legacy mode (frequency usage once on a single polarization) and also in a Concurrently Coordinated mode (multiple frequency re-usage on a single polarization).

b) demonstrate the ability of a Smart Antenna System with **DREs** to reuse a frequency multiple times under an operational fixed microwave radio license without causing harmful interference, thereby dramatically decreasing the cost of services and increasing the effective and efficient use of spectrum."

If these tests are successful, WSI will have shown a means of dramatically improving the efficiency of microwave radio. Granting this application will advance progress toward the goal of Section 706 of the Communications Act "to encourage deployment of advanced telecommunications capability in the United States on a reasonable and timely basis".²

Response to AT&T's Objections. The thrust of **AT&T's** Informal Objection is that **WSI's** application is not in compliance with Part 5 of the Rules and that the "...proposed testing could potentially interfere with any of **AT&T's** sites in the coordination zone." **AT&T** is wrong on both counts.

1. WSI is in full compliance with Rule **5.55(c)**. OET frequently grants experimental authority in instances in which the transmission parameters are not just one set of fixed parameters, but parameters that may vary. WSI has proposed a pre-deployment study by an independent and recognized third-party frequency coordinator or microwave engineer for each discrete set of these parameters to ensure that none of these technical parameters will cause harmful interference.

2. WSI is in full compliance with Rule **5.63(a)**. The description of the proposed experimentation is of sufficient specificity. In addition, and as OET knows, WSI has filed a petition for declaratory ruling which fully describes what WSI is asking the Commission to confirm and this application is obviously in furtherance of that petition. The petition has been subject to a host of comments, and interested parties have made several live and paper ex parte presentations to OET and Wireless Telecommunications Bureau staff on the subject of concurrently coordinated networks and smart antenna systems with distributed radiating elements (**DREs**). So, not only is the description of the

² High-Speed Services for Internet Access: Status as of June 30, 2007, at 1 (Industry Analysis and Technology Division, Wireless Telecommunications Bureau) (Mar. 2008) (**rel.** Mar. 19, 2008).

proposed experimentation of sufficient specificity but OET has considerable knowledge of what is described.

AT&T is suggesting that OET's rapid and efficient system for granting experimental licenses should be bogged down with needless regulatory hoops when the licenses are short-term, they are not used to serve subscribers, there is no history of abuse of similar licenses, and the licenses grant only secondary authority. **AT&T** does not cite any history in the experimental licensing process of mischief or harm that would be avoided by their approach, or explain why OET's already thin staff resources should be burdened with policing such a new strict approach. Experimental licensing processes should not be a battle ground where competitors are able to delay other competitor's business plans through regulatory process. In any event we think that in these circumstances, the description of the program of experimentation is sufficient. If OET does not understand to its satisfaction what WSI wants to accomplish (which we doubt), WSI will willingly supplement its narrative statement at **OET's** request.

3. As proposed, the experiments will not cause harmful interference into any of **AT&T's** or any other operator's paths for the following reasons:

i. As part of the licensing process a prior coordination study was conducted for the licensed paths **WQGH695, WQGH696** and **WQGH697** which showed that the Equivalent Isotropically Radiated Power (EIRP) from these sites on the authorized frequencies would not cause harmful interference to any path within 250 miles of the transmitting sites for angles up to **plus/minus** five degrees off the path's zero degree axis and within 125 miles of the transmitting sites for all **other** angles. As the EIRP from the experimental equipment located as specified in the above referenced licenses will, at all angles, always be equal to or less than the authorized EIRP the experiments will **NOT** cause harmful interference. Consequently, experiments on the performance of the Exalt EX-6i-T can be performed without any concerns regarding interference. In **AT&T's** summary they agree that the licensed path will not cause interference.

ii. As acknowledged by **AT&T**, before activating any DRE (associated with the licensed paths antennas), WSI will contract for a study by Comsearch, another frequency coordinator or engineer to assure that the interference received at any existing or presently proposed victim receiver from any DRE (I_{DRE}) will always be less than the interference received at any existing or presently proposed victim receiver from the licensed paths. Obviously, in order for such a study to be performed, all the necessary information must be provided, including **DRE** site locations³ within plus and minus one second in the horizontal dimensions and

³ For practical reasons (limitations on side lobe **EIRP**, receiver sensitivities and the fact that I_{DRE} must always be less than I) the operational area for **smart** antenna systems with **DREs** is limited to less than 0.3% of the coordination contour area around a licensed path. However, within this **area** the licensed frequency can be safely reused to provide access and 3G and beyond **backhaul** services at a fraction of the cost of legacy paths and equipment.

within plus or minus one meter in the vertical dimension, Emission Identifier and **EIRP**, radiated 360 degrees around the **DRE's** location. As these actions will be performed before a DRE is activated, these studies CANNOT cause **harmful** interference.

After analysis, the results of the studies showing that smart antenna systems with **DREs** can increase the effective use of spectrum by putting to productive use the previously coordinated side lobe radiation from a licensed path without causing harmful interference, will be forwarded to the Commission with a request that operational testing at one or more of these sites be permitted. As a courtesy, a copy of the results of the study with will also be sent to all licensed operators within the coordination contour of the licensed paths.

4. Although, as shown above, there is no rational reason for concerns regarding interference, **WSI's** experimental license, unlike a Part 101 license, will give WSI only secondary rights to use the spectrum. WSI will be required to protect **AT&T** and other regularly authorized microwave receivers and will be required to cease transmissions if harmful interference results. Thus, any fear that **AT&T** will have forfeited a right to object to a proposed station for failure to respond to a coordination notice is not valid.

5. The granting of **WSI's** Experimental License Application 0051-EX-PG2008 would be consistent with the Commission's Memorandum Opinion and Order (FCC 00-30, File Nos. 6001-EX-MR-1998 and 0094-EX-ST-1999) adopted February 2, 2000 and therefore, for the reasons cited above, WSI respectfully requests the Commission to grant the experimental license.

Sincerely,



Michael Mulcay, Chairman
Wireless Strategies Inc.

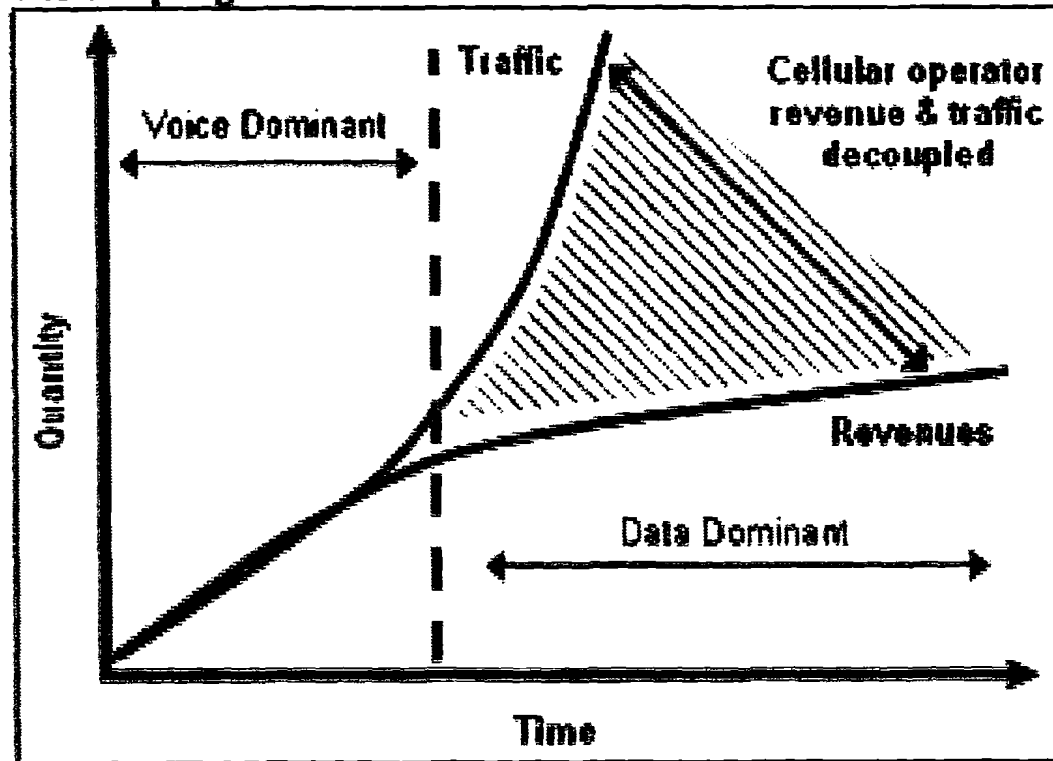
cc: James J.R. Talbot
General Attorney
AT&T Inc.
1120 20th Street, NW
Washington, DC 20036

Julius P. Knapp, Chief
Office of Engineering Technology
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Attachment 1

(Wireless Strategies Inc. opposition to the informal objection filed by AT&T Inc. to WSI's Experimental License Application File No. 0051-EX-PL-2008)

The Coupling of Traffic & Revenue



Source: Heavy Reading

NOTES:

The only way for operators to increase revenues is to add content which requires more data bits

This means the cost/bit/subscriber has to be significantly lower. Which means the cost/bit/site for backhaul must be significantly lower.

This requires innovation in path and product designs