

**Before the
Federal Communications Commission
Washington, DC 20554**

**Request of Alcatel-Lucent, et al For)
Interpretation of 47 C.F.R.) WT Docket No. 09-106
§ 101.141(a)(3) To Permit The Use)
Of Adaptive Modulation Systems)**

Comments of United States Cellular Corporation

United States Cellular Corporation ("USCC") hereby files its Comments in support of the above-referenced "Request."¹ USCC supports the rule interpretation sought in the Request, which will serve the public interest by permitting more efficient use of available microwave frequencies.

Background

USCC is a wireless carrier, serving approximately 6.2 million customers nationwide, employing CDMA technology. USCC is distinctive in that it makes very extensive use of 6 and 10 GHz common carrier microwave facilities to link its base stations with each other and with USCC's switches. At present, USCC has approximately 2,350 licensed common microwave facilities. Accordingly, USCC has an interest and a considerable stake in any change in the FCC's Part 101 Rules.

I. USCC Supports The Rule Interpretation Proposed In the Request

USCC has carefully reviewed the Request and concurs in its analysis. We agree that the FCC, in Part 101 of the Rules, imposes "capacity and loading" requirements on microwave licensees in the 4,6, 10 and 11 GHz bands, as well as specifying authorized channel bandwidths.

¹ See Request filed on May 8, 2009 on behalf of Alcatel-Lucent; Dragonware, Inc.; Ericsson, Inc.; Exalt Communications; The Fixed Wireless Communications Coalition; Harris Stratex Network; and Motorola, Inc. ("Request"). See also Public Notice, "Wireless Telecommunications Bureau Seeks Comment on Request of Alcatel-Lucent, et al, for Interpretation of 47 C.F.R. 101.141(a)(3) To Permit The Use of Adaptive Modulation Systems, W.T. Docket 09-106, DA 09-1427, released June 25, 2009.

The FCC also requires a "minimum payload capacity," expressed in megabits per second. The minimum payload capacity increases with bandwidth, i.e. the broader the bandwidth the more information must be transmitted, so as not to waste bandwidth.

USCC, like the parties to the Request, has interpreted the capacity requirements as applying at all times whenever a link is in operation. For example, where the rule specifies a minimum capacity of 134.1 Mb/sec, that means that the transmitter must be able to send at least 134.1 million bits per second of information on the authorized bandwidth to the receive site during every second that the microwave link is in operation. The Request proposes, however, to allow lower data rates to be sent during the brief periods when a microwave link would otherwise be out of service owing to atmospherically caused decreases in received signal strength which exceed a link's "fade margin," i.e. the reserve power microwave systems have to deal with the problem of temporary losses of signal strength because of atmospheric conditions. When this happens, microwave links are programmed to shut down rather fail than to send some of the data they are supposed to send.

With a lower data rate, the link would not automatically go out of service, thus preserving some service when it would otherwise provide no service for some period of time and then have to be restarted. The data rate would return to normal when the atmospheric interference ended and on average would usually exceed the minimum. In order to transmit less data temporarily, a change in the microwave link's "modulation" is required. Thus the technique is called "adaptive modulation." We believe that to allow carriers to make this adjustment would make sense, and would serve the public interest by permitting microwave links to remain in service when they would otherwise go out of service.

We also believe that adaptive modulation might also permit reduced tower loading, allow for smaller antennas, and reduce the need for backup "diversity" antennas which systems sometimes employ to ensure continuous service. Thus, owing to these internal improvements in microwave system efficiency, carriers might also be able to allow additional collocations on their tower, to provide additional services to the public. In short, the requested interpretation makes sense and will serve the public interest.

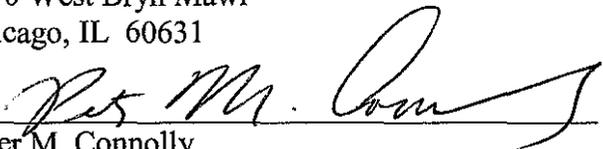
Conclusion

For the foregoing reasons and those provided in the Request, USCC supports the rule interpretation proposed in the Request.

Respectfully submitted,

UNITED STATES CELLULAR CORPORATION


Grant Spellmeyer
Director, Legislative and Regulatory Affairs
United States Cellular Corporation
8110 West Bryn Mawr
Chicago, IL 60631


Peter M. Connolly
Holland & Knight LLP
2099 Pennsylvania Avenue, NW
Suite 100
Washington, DC 20006

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