



M/A-COM

April 4, 2006

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

Re: Reply Comments of M/A-COM, Inc. (WSBU) , Docket WT 06-18

Dear Ms. Dortch:

Attached are the above referenced reply comments being filed in ECFS today.

If there are any questions or any additional information required, please do not hesitate to contact me. I can be reached at (434) 455-9465.

Sincerely,

A handwritten signature in black ink that reads "Robert J. Speidel". The signature is written in a cursive style with a large, stylized initial "R".

Robert J. Speidel
Manager, Government Affairs-Regulatory
Policy
M/A-COM, Inc. (WSBU)

Attachment

cc: Pillsbury, Winthrop, Shaw, Pittman L.L.P. (Scott R. Flick, Esq.;
Christopher J. Sadowski, Esq.) via electronic mail

Fleischman and Walsh, L.L.P. (Arthur H. Harding, Esq.; Mark B.
Denbo, Esq.)

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of

**REQUEST FOR WAIVER OF TELEVISION
INTERFERENCE RULES BY THE STATE OF
NEW YORK TO IMPLEMENT A 700 MHz
PUBLIC SAFETY COMMUNICATIONS SYSTEM**

WT 06-18

Reply Comments of M/A-COM, Inc.

A. Apparent Basis for the Opposing Parties' Objections

M/A-COM has examined the two comment filings opposing the State of New York (SoNY) request for a waiver in the matter of interference impact to Channel 63 TV viewers from SWN base radios operating in the band 774 - 776 MHz. The 774-776 band is in the first adjacent TV Channel to Channel 63, i.e. the band is within Channel 64.

The basis for the comments opposing the SoNY request for waiver appear to be as follows:

- The State's consultant used "unorthodox interference prediction calculations".
- The State's parameter values, and assumptions used in the analysis supporting the waiver are not specified. According to the opposing parties the State's analysis "fails to disclose various critical assumptions, calculations and just plain basic information".
- The State's methodology is not transparent, i.e. the analysis uses "undisclosed methodology". The methodology is referred to as "a black-box with a flow-chart painted on the side."

- WMBC-TV notes that significant material needs to be added to the engineering brief.
- WFUT-TV indicates that the wrong site was used for their transmitter, which had been moved in 2004
- WFUT-TV disputes the number of their viewers assumed / impacted in the State's analysis.
- WFUT-TV maintains that fixed-to-fixed station analysis cannot be extended to mobile-to-fixed problem
- The opposing parties allege that since the interferer is mobile, the specific source of any resultant interference can never be identified conclusively.

B. Discussion of Validity of the Opposing Party

Objections

In M/A-COM's experience with the SoNY and its' consultant, Syracuse Research Corporation (SRC), M/A-COM has found neither the SoNY nor its' consultant use "unorthodox interference prediction methods". What the SoNY and SRC have done is to automate the process of analysis, and display the results very efficiently, so that propagation and system problems of hitherto un-imaginable complexity and sheer size can now be handled in a reasonable period of time, using the SRC custom tool-box. Using web-based tools, SRC is able to interact with several very large databases, such as census data, thereby enabling realistic analysis and development of solutions for these very complex problems. Standard Geographic Information System (GIS) techniques are modeled into these tools, allowing the number of viewers within the interference footprint of a mobile radio, as an example, to be readily obtained. M/A-COM agrees with both opposing parties

that there is probably no-one else who has developed such a comprehensive set of tools for spectrum management, but that should not be construed as a realistic basis for criticizing the tool itself. M/A-COM has reviewed the results of a number of SoNY and SRC analyses for different kinds of interference situations and M/A-COM has developed a high confidence in the methods employed by SoNY and SRC. In particular, when analyzing interference within the SoNY Statewide Wireless Network (SWN) system, M/A-COM has had the opportunity to check a number of SRC's results independently, using M/A-COM's own analysis tools, all of which have become well regarded throughout the land mobile radio (LMR) industry. These independent analyses using M/A-COM's own tools have found the SRC analysis to be reliable in all cases.

There is nothing in the laws of physics precluding extension of fixed-to-fixed analysis methods to solve mobile-to-fixed analysis problems. One simply has to remember to consider the mobility issue. Extension of fixed-to-fixed analysis methods to mobile-to-fixed analysis leads to a solution that is expressed in a statistical format. The probability that some small percentage of viewers will experience interference can be assessed. The fact that the analysis will not identify the exact mobile unit that may be causing any alleged interference is balanced by the fact that that mobile will not create interference to a given user all of the time.

The opposing parties apparently want to rely on more traditional "rule of thumb" methods, such as contour intersection methods for interference analysis. Seemingly they believe any analysis not employing such traditional

methods should not be trusted. Admittedly these methods have been around for a long time, are easy to understand, and simple to use. Unfortunately, as has been M/A-COM's experience, these methods are in general not sufficiently accurate or site-specific to fully support the demands of designing a large modern communications system.

It is very much in the public interest to develop systems and approaches that allow for more efficient use of spectrum. The desire of the modern communications systems engineer is to make sure that everything can be modeled and has been incorporated into the analysis. As an example, LMR systems today often employ close spaced frequency reuse in their designs and the impact of these choices needs to be modeled very accurately and very efficiently. Specific engineering analysis of particular interference issues is now the rule rather than the exception. M/A-COM utilizes databases, to produce site-specific analyses. The results of these more modern analysis techniques have been proven by comparison with actual measurements to be much more accurate than the results obtained through traditional contour intersection methods.

System engineers are always faced with the issue of deciding how much information is necessary in a submission. This is based on judgment and the goal is to assure the understanding of the reader. It is not always feasible to provide all of the supporting information to facilitate the reader's replication of the entire analysis. M/A-COM believes it is more appropriate for the reader to request any

additional information desired rather than to simply oppose the results of a more modern analysis.

Some errors may arise because available public data is not always fully up to date. This can be readily corrected, assuming updated/corrected data is provided in sufficient time. Again, M/A-COM believes it would be preferable for the reader questioning the accuracy of the input data to note any problems in the data's accuracy rather than to simply oppose the results of a more modern analysis technique that may have used some inaccurate data.

In the post 9/11 security environment, system designers need to bring to fruition the most efficient communications systems that are so necessary to support our first responders in carrying out their difficult duties. Engineers are always interested in advancing the body of knowledge in the profession and promoting "wise policy and technological good order." At the same time, the Land Mobile Radio industry is increasingly relying on innovators, skilled in communications design and modern computational methods, to provide a level of problem-solving capability unlike anything the industry has experienced previously.

C. Conclusion

With the support of spectrum management experts like SRC, M/A-COM feels that the industry now knows considerably more about the extent of the interference that the State's proposal would cause to these opposing parties and others. M/A-COM, like many in the industry, has very high confidence in the analysis employed and the results obtained in support of the SoNY waiver request. M/A-COM does not believe the results provided in support of the waiver request should be discounted simply because new and innovative analysis techniques were utilized. M/A-COM believes any opposing party has a "burden of proof" to satisfy by providing "clear and convincing" evidence the analysis techniques were deficient and the results obtained from such analysis were thereby flawed. Vague, general questions regarding the analysis techniques used should not be considered as satisfying this "burden of proof."

M/A-COM believes granting the waiver request of the SoNY is in the "public interest."

Wherefore, M/A-COM respectfully requests the Commission act favorably to the requested waiver.

Respectfully submitted,



Robert J. Speidel
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Policy

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Dated: April 4, 2006