Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Policies to Promote Rural Radio Service	)	MB Docket No. 09-52
and to Streamline Allotment and	)	RM-11528
Assignment Procedures	)	

To: The Commission

COMMENTS OF COMMUNICATIONS TECNNOLOGIES, INC.

Communications Technologies, Inc. ("CTI") herein submits comments in the above noted proceeding. CTI is a broadcast engineering consulting firm located in Marlton, New Jersey which has offered technical consulting services to clients since 1987. CTI and its principals have filed numerous Comments and Reply Comments in FCC Broadcast related proceedings and their experience is believed generally known in the Broadcast Industry and among the Media Bureau staff.

INTRODUCTION

The comments submitted herein are directed to paragraphs 48-50 of the NPRM which discuss codification of Guidelines for Section 73.313(e) Supplemental Showings. CTI applauds the Commission's desire to address the matter of supplemental showings. The lack of a standard methodology is estimated to cost the Media Bureau, and applicants, hundreds of hours in lost time each year in addressing applicant claims, and resolving disputes between parties concerning the proposed signal level over the community of license or main studio location. There can be no doubt that establishing a single reliable standard, one that can be employed by the FCC staff, applicants and their engineering counsel, which always gives the same answer when a particular set of parameters are entered, is in the public interest.

CAN SIGNAL LEVEL PREDICTIONS BE MADE WITH CERTAINTY?

In the Sixth Further Notice Of Proposed Rule Making, MM Docket No. 87-268, Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, Appendix B, Released August 14, 1996, the Commission fleshed out propagation predictions using the Longley-Rice point-to-point propagation model Version 1.2.2. In a Public Notice the FCC described use of the Longley-Rice methodology In OET Bulletin No. 69 saying "The Bulletin provides guidance on the implementation and use of Longley-Rice methodology for evaluating TV service coverage and interference in accordance with Sections 73.622, 73.623 and 74.704 of the FCC rules. Those sections of the rules became effective with the adoption of the *Sixth Report and Order* in MM Docket No. 87-268 concerning Digital Television Allotments, on April 3, 1997, 12 FCC Rcd 14588 (1997)".

OET Bulletin No. 69 methodology has been implemented by some software providers such as V-Soft in their Probe software and RadioSoft in its ComStudy product with computational results that can come within tenths of a percent of the results obtained when using the actual FCC program run on a Sun Workstation. This level of agreement requires the use of the exact specified terrain database, population data and prescribed methodology. However, engineers within the FCC, and consultants and group engineers in the broadcast industry regularly undertaking DTV facility design and or application preparation, know that they always will obtain the exact same study result that the FCC processing staff obtains if they use the original software on a Sun mainframe. To the best of CTI's knowledge there are no allowances for varying results.[1] The OET-69 mainframe result is the only correct answer so there is never any ambiguity or wasted FCC staff time discussing why another approach or methodology would yield a better answer. It is believed that this level of unquestioned accuracy should be the standard employed in this proceeding as well.

[1] It is noted that 1 or 2 kM cell size and 0.1 kM and 1 kM terrain profile step sizes may be selected. These variations can be employed to suit the study requirements with LPTV facilities perhaps being best analyzed with smaller gird and interval settings.

PENDING REQUESTS FOR COMMISSION REVIEW AND ACTION

CTI is aware of a number of requests for review by the full Commission of the actions taken by the Audio Division of the Media Bureau ("Bureau") concerning supplemental showings. Two of these are highlighted below. These Petitions for Review include extensive arguments in support of an accurate, uniform, supplemental prediction methodology that will result in uniform results allowing consulting engineers and the staff to easily verify showings without argument and delay.

File No. BPED-20070905ABF, California State University, Long Beach Foundation filed February 5, 2009, the applicant for modified facilities of KKJZ(FM) argued that Commission policy regarding the acceptability of supplemental contour prediction methodologies in the FM, and particularly the NCE-FM, context is outdated and in conflict with Congressional mandates and Commission policy toward the utilization of technological innovations and advancements in methodologies that permit more efficient use of the spectrum. Specifically, In the *Satellite Home Viewer Improvement Act of 1999*, Congress directed the Commission to adopt an up-to-date predictive method for reliably determining the ability of a particular location to receive an over-the-air digital television signal. Ultimately, the entire digital television table of allotments was built on Longley-Rice propagation prediction because it offers a far more efficient use of the spectrum than could have been achieved through reliance on the old F(50,50) propagation curves and mileage separations formerly used for analog TV channel allotments.

File No. MB Docket No. 05-245, CCR-Sierra Vista IV, LLC ("CCR") filed April 21, 2008. In this Rulemaking case the applicant pointed out that the Bureau decision being appealed stated that for an alternative prediction methodology, "Section 73.313(e) of the rules requires that the terrain must "depart widely" from the 50 meter value incorporated into the standard methodology. However, the Commission itself has yet to provide guidance on what it means by terrain that "departs widely." In a 1997 Report and Order, the Commission addressed instances where supplemental showings have been accepted.[2] However, the Commission did not provide guidance on what it means to have terrain that "departs widely," nor did it mention a justification for limiting the application of Section 73.313(g) of the rules to 70 dBu contours.

[2] *In the Matter of Amendments of Parts 73 and 74 of the Commission's Rules to Permit Certain Minor Changes in Broadcast Facilities Without a Construction Permit*, 12 FCC Rcd 12371, 12401-12403 (1997).

WHY THE PROPOSED SUPPLEMENTAL SHOWING GUIDELINES ARE BELIEVED TO BE WHOLLY INADEQUATE

The OET-69 example offers a good case for why the proposed guidelines are incapable of achieving any measure of certainty. In order that the FCC processing staff, and the broadcast engineering community, obtain the same results it is necessary that the computer program be entirely self contained and the Bureau stand behind the program calculated results as correct without question. The OET-69 program includes terrain data, population data, link to the CDBS to pull in station records, all reference data such as transmit antenna elevation pattern and horizontal plane radiation pattern, receive antenna horizontal plane data, terrain retrieval interval, terrain characteristics, % service, etc.

Paragraphs 48 and 49 offer examples of when an alternate prediction method can be employed but offer no software, no terrain and population databases and no established methodologies to be utilized. In CTI's opinion this is simply unacceptable as it would offer no relief to the staff or the engineering community. Existing areas of conflict between applicants and the staff include:

Differing signal level results when 3 second and 30 second terrain data are employed.

Differing signal levels between different 3 second terrain databases such as FCC 3 second and more recent Space Shuttle terrain data.

There is no specification as to land use attenuation values to be employed which affect calculated signal level.

There is no specification as to the software routine to be employed. Currently significant differences in calculated signal level exist when Longley-Rice point-to-point propagation model Version 1.2.2 is employed in commonly used software such as V-Soft Probe and RadioSoft ComStudy.

There is no Commission guidance on how to determine terrain roughness or the exact length of the radial to be employed.

The FCC's OET web page links to a November 1, 2002 paper written by FCC Engineer Harry K. Wong titled "Field Strength Prediction In Irregular Terrain – The PTP Model." Mr. Wong's work is highly regarded by many and in reviewing this paper, and discussions with the author, it is clear that signals which vary by greater than 10% of the 73.313 contour value may exist under many different conditions and are not limited to a 30% HAAT variation on a radial or a terrain roughness of 20 meters or less or 100 meters or greater.

RECOMMENDATION

It is CTI's belief that the public, Bureau and broadcast engineering community are best served when a program that gives exact signal strength answers for FM, just as OET-69 does for TV, is available for implementation and no action should be taken until that time. It is noted that OET-69 is a software tool designed to calculate coverage and interference. For the FM application at hand only the coverage portion is required to address community of license and main studio issues. At such time as the program is implemented, just as with OET-69, the program should be used without reservation as it clearly will offer calculation results far more in-line with real world coverage experience than the current contour methodology.

CONCLUSION

It must be pointed out that the Commission has looked at the matter of Supplemental Showings and that matter remains open after many years. In MM Docket No. 98-93, 1998 Biennial Regulatory Review Streamlining of Radio Technical Rules Parts 73 and 74 of the Commission's Rules, June 15, 1998, the Commission released a *Notice of Proposed Rulemaking and Order* (the "*NPRM*") in the above-captioned matter, proposing, *inter alia*, to permit applicants to utilize supplemental prediction methodology to calculate interfering contours for the purpose of demonstrating compliance with FM service overlap/interference regulations.[3] In particular, the *NPRM* noted that failure to accept more accurate supplemental analyses would result in the unnecessary preclusion of applications proposing new or expanded service because standard prediction would show interference where none, in fact, existed.[4]

[3] 13 FCC Rcd 14849, 14863-14865 (1998) ("*NPRM*").

[4] *NPRM*, at 14863.

The Commission also proposed in the *NPRM*, as part of the larger consideration of negotiated interference agreements, to permit modifications seeking to extend a station's service area resulting in new areas of interference received.[5] Subsequent Orders issued in the proceeding promised to resolve these rulemaking proposals, but the Commission never completed the process. In the *Second Report and Order* released November 1, 2000, the Commission deferred resolution but noted it "anticipated addressing the negotiated interference proposal and the PTP alternative FM signal propagation prediction methodology in a subsequent Order later this year."[6]

This reference to MM Docket No. 98-93 is offered to point out that the need for improved, more accurate, signal level calculations has been known for many years. In the intervening time both OET-69 and OET-72 have been implemented to allow more accurate calculation of TV signal levels. The Commission is urged to complete the process begun long ago through development and implementation of an accurate and reliable integrated FM field strength calculation software routine for use by the FM broadcast community. Three public interest benefits would be achieved:

1. More efficient use of spectrum.

2. Efficiency not at the expense of interference.

3. Certainty and consistency of results.

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[5] *NPRM* at 14859. This proposal went beyond situations like the KKJZ case cited earlier, in which sophisticated methods demonstrated the lack of received interference, reaching situations even where PTP analysis predicts received interference.

[6] 15 FCC Rcd 21649, 21651 (2000).

Respectfully Submitted,
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