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BY HAND DELIVERY AND ELECTRONIC FILING

Julius Genachowski
Chairman
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: Ex Parte Letter
ET Docket Nos. 04-186 and 02-380

Dear Chairman Genachowski:

As the Commission prepares to act on the petitions for reconsideration of its current white spaces rules, MSTV and NAB have held a number of meetings with Commissioner offices and the Office of Engineering and Technology. In these cooperative and constructive discussions, MSTV and NAB have urged three basic points:

1. the current white spaces rules should be refined, corrected and clarified in a number of specific respects;¹
2. the current rules, of which they have sought judicial review, should not be further weakened as some parties have urged;² and
3. the Commission should *not* jettison the current sensing requirement, which plays a vital backstop role in protecting against interference to broadcast service and which is the *only* mechanism for protecting against interference to licensed wireless microphones used for newsgathering purposes—but if it does, the Commission should make certain changes in its rules governing white spaces devices and in its not-yet adopted procedures for overseeing geolocation/database operations.³

¹ See MSTV and NAB's August 12 ex parte letter.

² See MSTV and NAB's August 23 ex parte letter.

³ See *id.*

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The August 12 ex parte letter identified areas where rule changes to partially compensate for a loss of sensing protection would be necessary. The purpose of this letter, as requested by various Commission personnel, is to identify and describe five basic areas of changes (a) to the TV band devices (hereinafter, “devices”) rules and (b) to the requirements for geolocation/database operations⁴ — changes that are necessary, but not sufficient, to compensate for elimination of the current sensing requirements.⁵

I. REQUIREMENT THAT ALL DEVICES HAVE GEOLOCATION CAPABILITY OR BAN ON MODE I DEVICES.

Under the current rules, a Mode I device does not itself have any geolocation capability and does not directly communicate with the database. To protect against its causing interference to incumbent services, a Mode I device under the current rules relies on its sensing capability *and* it relies on its being linked to a fixed or Mode II device which does communicate with the geolocation database. If the sensing requirement is to be eliminated (which MSTV and NAB oppose), the geolocation requirements for Mode I devices need to be strengthened. Because the current rules require sensing once every 60 seconds, if a Mode I device senses an incumbent signal, or moves to a location where its previously designated channel is in use, the Mode I device knows not to operate on the occupied channel. But without sensing, the Mode I device would rely only on the channel availability information from a Mode II or fixed device, which under the current rules could be as much as 24 hours old. Moreover, the Mode I device could continue to operate up to 48 hours on channels that are occupied by incumbents. In both situations, extensive interference could result.

⁴ As noted in the August 12 ex parte letter, these recommended rule changes and other suggestions are more complex than those submitted in the attachment to the August 12 ex parte letter. Furthermore, the suggestions are offered here without the benefit of knowing what changes the FCC might make in its current rules if it decides to eliminate the sensing requirement.

⁵ MSTV and NAB remain concerned about the lack of an adequate substitute for sensing to protect licensed wireless microphone services. Under the current rules, sensing provides the only protection for licensed wireless microphones used in coverage of live, breaking news events and emergencies. The venue protections contained in the current rules are inadequate because in these situations, news crews and others cannot anticipate the location of live events and emergencies. Moreover, the channels to be set aside for licensed wireless microphones as envisioned in the rules would appear to differ at various locations throughout a market. To accomplish this task would require stations to replace their entire inventory of wireless microphones, which is inconsistent with long-standing Commission policy that unlicensed operations should take steps against interfering with existing licensed services, not the other way around.

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Adopting the recommendation set forth in Section II and other suggestions in this letter to reduce the risk of Mode I devices operating on the basis of stale database information would help mitigate these problems and would compensate, in part, for elimination of the current 60-second sensing requirement. If, however, the FCC does not adopt these requirements for effective and timely geolocation for Mode I device operations, it should not authorize Mode I devices and should instead confine the service to Mode II and fixed devices.

II. REQUIREMENT OF EFFECTIVE, NEAR REAL-TIME DATABASE CONTROL OVER DEVICES.

If the sensing requirement is eliminated, all devices should be required to check the database for channel availability information on a near real-time basis. Specifically, to provide interference protection roughly comparable to that provided by the current spectrum sensing requirement, Mode I devices should be required to check with the Mode II or fixed device every 60 seconds. In turn, Mode II and fixed devices should check the database no less frequently than every 15 minutes. With these additional safeguards, if the channel on which the device is operating becomes unavailable in the location where the device is operating, the device would promptly shut down or move to a different channel. Further, if contact with the database is not established within three attempts, the device should have to shut off.⁶

The geolocation/database approach should be further strengthened by requiring a mechanism in the database function that would remotely turn off all device transmissions to prevent interference due to an error in the database or due to changed circumstances. This remote turn-off protection is especially important to prevent interference to licensed wireless microphones used in fast-breaking news events.

Also, the database's list of available channels should include revocable time- and date-stamp information. This requirement would help ensure that information is current and prevent spoofing devices.

⁶ If the sensing requirement currently contained in the rules were to be eliminated, a mechanism should be required in both the devices and in the database system to increase the reliability of geolocation data in order to compensate for the loss of the backstop function provided by sensing. For example, verification mechanisms that may be used to achieve greater accuracy could include requiring: (1) geolocation data to be included in the header of messages and (2) collective location assessment, in which devices would communicate with each other and the database to determine if a particular device is outside a specified area.

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III. NEED FOR AUTOMATIC GEOLOCATION INFORMATION.

All devices need to have automatic, reliable, and tamper-proof geolocation capability. To prevent tampering, transmission of a device's position information should be performed internally within the device and automatically without user intervention. The information should also be updated as often as necessary to assure that the database knows when the device has changed location.

IV. STRENGTHENED SECURITY OF DATABASES AND DEVICES.

In order to prevent illegal database and illegal device operation, up-to-date and secure FCC database contact information should be required to be built into the device. Devices must also have the capability to register over a secure link with the FCC's Office of Engineering and Technology and to download the information necessary to contact FCC-designated TV Bands database administrator(s). Devices must be designed to store this contact information in a secure and tamper-proof manner, so that it can be used only to contact the database for available channel information. This information should be automatically updated at the request of the device, or least once a year. This process can be automatic from the user's perspective, so that it is similar to a software update on a personal computer.

V. GREATER FCC OVERSIGHT OF DATABASE OPERATIONS.

Database information must always be accurate, secure and reliable. Toward this end, the FCC must ensure that all database operators provide the same list of available channels for the same geographic location and with the same level of security and reliability of communications. Also, because database operators will be paid by device operators or manufacturers, they will have incentives to maximize the number of channels they identify as being available, at the expense of protecting viewers. To avoid this danger, the database should be operated by the FCC or by a single independent third party (under tight FCC supervision) that has no affiliation with manufacturers and no other conflicting business interests.

The Commission has not tested the efficacy of the database approach in protecting the tens of millions of TV receivers and licensed wireless microphones used for news operations. Accordingly, the FCC should adopt specific rules and/or procedures in the current proceeding that will provide explicit guidance and instruction for the selection of a database administrator and for the conduct of the administrator's functions.⁷ Further, the Commission should refrain from certifying any devices until its rules for an operational database regime are in place, have been stress-tested, and are finalized. The risks of moving forward before these steps have been

⁷ The Commission also should adopt the specific recommendations for database operations submitted by MSTV and NAB. *See* Comments of MSTV and NAB (February 12, 2010) and Reply Comments of MSTV and NAB (February 24, 2010), both in ET Docket No. 04-186.

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taken successfully are too great, given (i) the possibility that, with the deletion of the sensing requirement, hundreds of thousands of devices could be distributed almost immediately after the FCC issues its decision; (ii) the acknowledged complexities of effective enforcement of the Commission's requirements; and (iii) the inability of the FCC to find and reclaim devices once they are in the hands of consumers.⁸

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⁸ The Commission's experience with unlicensed devices in the 5 GHz band, documented in MSTV and NAB's August 12 ex parte letter, demonstrates the importance of taking these steps in advance.

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If the Commissioners, OET, or other Commission personnel have further questions about these matters, MSTV and NAB would be pleased to engage in additional discussions. They share with the Commission the common goal of allowing American consumers to continue to enjoy the benefits of over-the-air digital television.

Respectfully submitted,

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