



May 13, 2016

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, GN Docket No. 12-268; Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37; Amendment of Part 74 of the Commission's Rules for Low Power Auxiliary Stations in the Repurposed 600 MHz Band and 600 MHz Duplex Gap, ET Docket No. 14-165; Notice of Ex Parte Communication

Dear Ms. Dortch:

This letter responds to Google's April 29, 2016 letter concerning the Commission's "push notification" requirement for unlicensed television white spaces (TVWS) devices to protect licensed wireless microphone operations.¹ The National Association of Broadcasters (NAB) agrees with Google that the Commission's push notification requirement is unworkable. However, Google's proposed alternative, fast polling on two channels, is plainly inadequate. Instead, the Commission should simply require TVWS devices to query the database every 20 minutes – a far simpler approach that will be both easier to implement and more effective. Google's claims that frequent database queries on all channels would be burdensome or unreasonable are unavailing.

Google asserts that requiring queries on all channels would have a significant adverse effect on the battery life of TVWS devices.² As an initial matter, there are no battery powered TVWS devices; none have been approved by the Commission. Moreover, Google's explanation of why fast polling on all channels would drain battery life does not withstand scrutiny. Google states that fast polling on all channels would "have to be implemented by directing devices to query a database no less often than the Commission-specified interval," which would require a device "to activate its radio frequently, when it otherwise could remain in a low-

¹ Letter from Austin Schlick, Google Inc., to Marlene H. Dortch, FCC, ET Docket No. 14-165, GN Docket No. 12-268, (April 29, 2016) (Google Letter).

² *Id.* at 1.

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power mode.”³ There is no requirement, however, that TVWS devices not transmitting or in “low power” receive-only operating mode for extended periods of time contact the database. Nothing in NAB’s proposal would impose such a requirement.

Further, under the FCC’s current rules, and under NAB’s proposal, TVWS devices would only be required to poll the database for updated information on the channel they are operating on before actually transmitting. Thus, a TVWS device need not poll on all channels every 20 minutes; it simply needs to confirm that its current channel is still available. Only if its current channel is no longer available must the device must query the database for other available channels. Google itself concedes that “a small amount of additional traffic might not drastically affect battery life when the device is already transmitting data.”⁴ Because TVWS devices would initially only need to fast poll on the channel on which they are currently operating, the amount of traffic would be particularly small. Thus, Google and NAB agree that NAB’s proposal need not impair the battery life of hypothetical battery-powered TVWS devices that may be approved in the future.

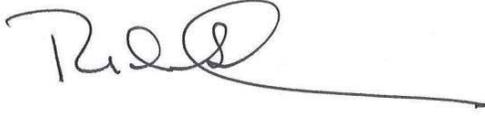
On the other hand, Google’s proposal for fast polling on only two channels is likely to be ineffective and unworkable in practice. Under Google’s proposal, the two polling channels are determined by the location of a TVWS device. But the two designated fast polling channels at the TVWS device’s location might be different from the channels that are actually available at a wireless microphone’s location. That is, a wireless microphone could be operating on a channel that does not happen to be designated as a fast polling channel at the location of a TVWS device. The only way to avoid this possibility would be for the TVWS database to determine all potentially available wireless microphone channels within the interference radius of all TVWS devices and designate all of those channels as “fast polling” channels – an entirely new burden for TVWS database administrators. Additionally, TVWS devices would need to be able to vary their polling interval depending on instructions from the database; also a new burden for TVWS device manufacturers.

Given the practical difficulties of Google’s proposal and the likely lack of impact on hypothetical battery-powered TVWS devices, it make sense for the Commission to require that devices query the database more frequently. NAB’s proposal is far simpler and easier to implement, for both database administrators and manufacturers.

³ *Id.*

⁴ *Id.*

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Rick Kaplan", with a long horizontal flourish extending to the right.

Rick Kaplan
General Counsel and Executive Vice President,
Legal and Regulatory Affairs
National Association of Broadcasters