

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of:	)	
	)	
Amendment of Part 15 of the Commission’s Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Bands and Duplex Gap, and Channel 37	)	ET Docket No. 14-165
	)	
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions	)	GN Docket No. 12-268
	)	
Unlicensed White Space Device Operations in the Television Bands	)	ET Docket No. 20-36
	)	
Unlicensed Operation in the TV Broadcast Bands	)	ET Docket No. 04-186

**COMMENTS OF  
THE NATIONAL ASSOCIATION OF BROADCASTERS**

**I. INTRODUCTION**

The National Association of Broadcasters (NAB)<sup>1</sup> hereby submits the following comments in response to the Commission’s Further Notice of Proposed Rulemaking in the above-referenced proceedings.<sup>2</sup> The Commission should require all television white space (TVWS) devices, including narrowband devices, to recheck the white spaces database every

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<sup>1</sup> The National Association of Broadcasters (NAB) is the nonprofit trade association that advocates on behalf of free local radio and television stations and broadcast networks before Congress, the Federal Communications Commission and other federal agencies, and the courts.

<sup>2</sup> *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, Second Order on Reconsideration, Further Notice of Proposed Rulemaking, and Order*, ET Docket No. 14-165, GN Docket No. 12-268, ET Docket No. 20-36, ET Docket No. 04-186, FCC 22-6 (rel. Jan. 26, 2022) (FNPRM).

hour to confirm the accuracy of channel information on which devices rely to prevent harmful interference. This one-hour requirement already represents a significant concession to the eternally nascent TVWS industry and is scarcely adequate to accommodate the needs of wireless microphones.

More broadly, NAB urges the Commission to re-evaluate its ongoing, and frankly inexplicable, pursuit of a technological experiment that has an unbroken track record of underperformance spanning more than a decade. Microsoft has asked the Commission to dedicate a staggering level of resources to the promotion of TVWS technology; yet there are fewer TVWS devices operating in the United States now than a year ago, and only roughly a quarter as many as there were five years ago. NAB also notes that Microsoft continues to seek these fruitless changes despite paying no corresponding FCC regulatory fees. Perversely, broadcasters are left paying part of the bill for a failed technology that does not benefit anyone, and least of all broadcasters (resulting in a “broadcast tax” if you will).

## **II. ONGOING EFFORTS TO SPUR WHITE SPACES TECHNOLOGY WASTE COMMISSION RESOURCES**

When the Commission ultimately issues an order in this proceeding it will be the *eighth* order the Commission has approved in its ongoing efforts to spur the deployment of TVWS devices.<sup>3</sup> There is currently a separate open proceeding examining TVWS rules that may lead

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<sup>3</sup> *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, First Report and Order and Further Notice of Proposed Rulemaking, 21 FCC Rcd 12266 (2006); *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807 (2008); *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Second Memorandum Opinion and Order, 25 FCC Rcd 18661 (2010); *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Third Memorandum Opinion and Order, 27 FCC Rcd 3692 (2012); *Amendment of Part of the Commission’s Rules for*

to a *ninth* order.<sup>4</sup> These orders collectively span more than 600 pages. Beyond the orders themselves are Notices of Proposed Rulemaking, Orders on Reconsideration, Public Notices regarding testing of devices and database providers, and other proceedings where the Commission has considered potential impacts on white spaces.<sup>5</sup> Microsoft has, to date, submitted over 100 filings to the FCC regarding white spaces, with other TVWS proponents submitting well over 100 filings of their own. Indeed, the number of filings TVWS proponents have forced the FCC to read *exceeds the number of TVWS devices actually operating*. This work has consumed thousands – more likely tens of thousands – of hours of time of the dedicated Commission staff, representing an investment of several million dollars over almost two decades.

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*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 the 600 MHz Duplex Gap, Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 30 FCC Rcd 9551 (2015); *Amendment of Part 15 Rules for Unlicensed White Spaces Devices*, Report and Order and Order on Reconsideration, 34 FCC Rcd 1827 (2019); *Unlicensed White Space Device Operations in the Television Bands*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 12603 (2020).

<sup>4</sup> *Unlicensed White Space Device Operations in the Television Bands*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 12603 (2020).

<sup>5</sup> Examples include the broadcast television spectrum incentive auction and the Commission's proceeding regarding Distributed Transmission Systems technologies. See, e.g., *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, ¶¶ 230-239 (2012) (seeking comment on how to expand white spaces availability in connection with the incentive auction); *Rules Governing the Use of Distributed Transmission System Technologies*, Notice of Proposed Rulemaking, 35 FCC Rcd 3330, ¶¶ 27, 36 (2020) (seeking comment on effects modification of DTS rules would have on white space device users).

The result of this effort and investment is 209 TVWS devices operating in the United States. That is 100 fewer devices than were operating a year ago,<sup>6</sup> and only roughly a quarter as many devices as were operating five years ago.<sup>7</sup> This is a calamitous failure, representing a waste of time of valuable Commission staff as well as that of interested stakeholders. This failure is only compounded by the fact that the chief proponent of TVWS technology is one of the wealthiest technology companies in the world – a company that broadcasters and other regulated industries have substantially subsidized through regulatory fees funding the Commission’s Sisyphean efforts to get white spaces off the ground.

Initial optimism surrounding TVWS technology may have been warranted based on the promises advocates made. When the Commission first authorized unlicensed operations in the television band in 2008, white spaces proponents promised a wave of innovation and investment. Advocates promised ubiquitous high speed internet service,<sup>8</sup> a “new era of technology allowing for major investments in innovative wireless broadband,”<sup>9</sup> and that engineers and entrepreneurs would be quick to build devices to take advantage of white spaces.<sup>10</sup> In 2010, when the Commission revised its white spaces rules, proponents again

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<sup>6</sup> In September 2021, NAB noted to the Commission that there were 322 TVWS devices operating in the United States. Letter from Patrick McFadden to Marlene H. Dortch at 3, MB Docket No. 20-74, GN Docket No. 16-142 (Sept. 13, 2021).

<sup>7</sup> In July 2017, NAB noted to the Commission that there were only roughly 800 TVWS devices operating in the United States. Letter from Patrick McFadden to Marlene H. Dortch at 1, GN Docket No. 12-268, ET Docket No. 14-165, MB Docket No. 15-146 (July 10, 2017).

<sup>8</sup> Anne Broache, “Google outlines proposal for ‘Wi-Fi on steroids’” cnet, (April 28, 2008) (“Google on Monday said it has a plan to have American consumers from Manhattan to rural North Dakota surfing the Web on handheld gadgets at gigabits-per-second speeds by the 2009 holiday season.”) available at: <http://www.cnet.com/news/google-outlines-proposal-for-wi-fi-on-steroids/>.

<sup>9</sup> Matt Richtel, “F.C.C. Nods to New Use of Airwaves,” NY Times (Nov. 4, 2008) (quoting Greg Brown, president and co-chief executive of Motorola).

<sup>10</sup> *Id.* (quoting Larry Page, Google’s co-founder).

heralded the move, stating that the Commission was “helping to unleash a whole new class of mobile wireless broadband services with applications that are nearly limitless,”<sup>11</sup> and that white spaces would “unleash innovation and promote pervasive connectivity, particularly in underserved communities.”<sup>12</sup>

At this point, however, more than a decade later, with just over 200 devices operating, it strains credulity for Microsoft to assert that that TVWS technology is just one rule change away from taking flight. We urge the Commission to take a clear-eyed view towards this and other proceedings where Microsoft asks the Commission to continue to double down on white spaces, and instead interrogate whether there are better ways to serve the public interest. Plainly the Commission and the public have yet to see any substantial benefit from the disproportionate investment of time and resources NAB’s members have helped fund.

### **III. A ONE HOUR INTERVAL FOR RECHECKING THE DATABASE IS MORE THAN REASONABLE**

For the reasons described above, NAB struggles to understand how it serves the public interest for Microsoft to demand additional proceedings for a technology that has so plainly failed to produce any tangible public interest benefit. But beyond the question of whether it is worth the Commission’s time to consider Microsoft’s request, the substance of that request is unpersuasive.

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<sup>11</sup> Joelle Tessler, “FCC opens up unused TV signals for broadband,” Seattle Times (Sept. 23, 2010) (quoting Michael Dell, Chairman and Chief Executive of Dell).

<sup>12</sup> Courtney Rubin, “FCC Opens Up Unlicensed Airwaves for Innovation,” Inc. (Sept. 24, 2010) (quoting Michael Calabrese of the Open Technology Institute at New America).

In 2015, the Commission approved changes to the television white spaces (TVWS) rules.<sup>13</sup> Among other things, to accommodate the needs of licensed wireless microphone users for immediate access to channels for late-breaking news events, the Commission adopted a requirement that TVWS databases “push” notifications of changes in channel availability to white spaces devices in the area where the wireless microphones would be used.<sup>14</sup> The Commission concluded that this rule would be more efficient than a requirement that devices recheck the database every twenty minutes, which could prove unduly burdensome for database operators and could negatively affect battery life for TVWS devices. The push notification requirement ultimately proved unworkable. The *draft* order in this proceeding would have replaced the push notification requirement with a rule that all devices recheck the database once per hour, concluding that this adequately balances the need to protect licensed services with considerations regarding TVWS battery life and form factor. Ultimately, the Commission abandoned this approach and issued the FNPRM seeking comment on the appropriate recheck interval to apply to certain classes of devices – potentially replacing the push notification requirement with nothing at all.<sup>15</sup>

Microsoft’s primary objection to more frequent database checks for narrowband devices centers around battery life and the expense associated with providing TVWS devices with larger batteries.<sup>16</sup> But Microsoft provides no substantive information regarding the

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<sup>13</sup> *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*, Report and Order, 30 FCC Rcd 9551 (Aug. 11, 2015).

<sup>14</sup> *Id.* at ¶ 256.

<sup>15</sup> FNPRM at ¶ 34.

<sup>16</sup> Comments of Microsoft Corporation at 2-3, ET Docket No. 14-165, GN Docket No. 12-268, ET Docket No. 20-36, ET Docket No. 04-186 (May 2, 2022).

impact on battery life of an hourly recheck nor on the incremental cost of a larger battery if required. Microsoft claims that the costs would be “significant,” but provides no further information or even an approximation of the costs of these devices and the incremental costs of larger batteries.<sup>17</sup> NAB and the Commission are left with no way to evaluate the validity of this claim or the actual economic impact, if any.

Further, this explanation simply defies common sense. The amount of information retrieved in rechecking the database is trivial and would likely require only a few milliseconds of transmission time. Microsoft itself notes that narrowband TVWS devices are limited to a duty cycle of 36 seconds per hour.<sup>18</sup> Not only does this limit itself help to preserve battery life, it is also difficult to imagine a device capable of up to 36 seconds per hour of transmission being fatally affected by a fraction of a second transmission. If TVWS devices are in fact incapable of handling this extra “burden” without larger batteries, and if larger batteries would cripple the financial viability of these devices, NAB again questions the value of further proceedings regarding a technology with such negligible utility.

Finally, in a likely unintentional moment of self-awareness, Microsoft characterizes the lack of harmful interference reported during the last six years with only a daily recheck requirement as “powerful evidence” that more frequent rechecks are unnecessary. Of course, as noted above, there are next to no white spaces devices actually operating in the country, so it is entirely unsurprising that there have been no complaints of interference. Microsoft might as well note that there have been no complaints of unicorn attacks in the last six years; while true, the observation proves nothing. In fact, the exceedingly unlikely prospect of TVWS

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<sup>17</sup> *Id.* at 2-3.

<sup>18</sup> Microsoft Comments at 2.

technology suddenly and belatedly springing into some semblance of existence is, if anything, “powerful evidence” that the Commission should stop sinking considerable resources into a rapidly dwindling technology. This is particularly the case when those efforts are subsidized by the broadcast industry through regulatory fees that fund the Commission – fees Microsoft does not pay.

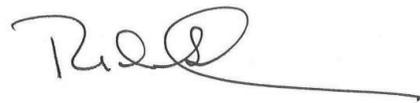
#### **IV. CONCLUSION**

With respect to the substance of the FNPRM in this matter, Microsoft’s contention that the cost of narrowband TVWS devices would be dramatically affected by an hourly database check is unsubstantiated and appears illogical. The Commission should simply impose the same requirements on narrowband TVWS devices as on other devices until it can gather more information about whether these devices will ever actually exist and what their interference potential actually is in the real world. More importantly, NAB urges the Commission to reevaluate its ongoing dedication to investing scarce resources in a technological experiment that has yet to serve the public interest in any meaningful way.

Respectfully submitted,

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