

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 15 of the)	ET Docket No. 14-165
Commission’s Rules for Unlicensed)	
Operations in the Television Bands,)	RM-11840
Repurposed 600 MHz Band, 600 MHz)	
Guard Bands and Duplex Gap, and)	
Channel 37)	

**COMMENTS OF ACT | THE APP ASSOCIATION IN SUPPORT OF MICROSOFT
CORP.’S PETITION FOR RULEMAKING**

INTRODUCTION

ACT | The App Association (App Association) submits the following comments requesting that the Federal Communications Commission (FCC or Commission) grant Microsoft’s Petition for Rulemaking regarding the above-captioned proceeding.¹ Such Commission action will address the growing need for broadband connectivity in rural areas via TV white spaces (TVWS).

The App Association is a non-profit trade association that represents more than 5,000 application (app) makers and connected device companies in the mobile economy.² Our members leverage the connectivity of smart devices to create innovative solutions that make

¹ *In the Matter of Amendment 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*, Microsoft’s Petition for Rulemaking, ET Docket No. 14-165 (2019). Available at [https://ecfsapi.fcc.gov/file/1050380945109/White%20Spaces%20Petition%20for%20Rulemaking%20\(May%203%202019\).pdf](https://ecfsapi.fcc.gov/file/1050380945109/White%20Spaces%20Petition%20for%20Rulemaking%20(May%203%202019).pdf). (Microsoft’s Petition).

² <http://actonline.org/>.

consumers' lives better. The App Association is the leading industry resource on market strategy, regulated industries, privacy, and security.

The App Association has supported and continues to support the Commission's efforts to bring better broadband to Americans by reducing regulatory burdens and opening up more spectrum.³ Our membership represents small to medium-sized app developers across all 435 congressional districts. In particular, many of our members are located in rural areas that traditional networks cannot reach. TVWS-enabled wireless connectivity, along with the Commission's work related to wireless infrastructure deployment, will allow these small businesses to grow and contribute to local economies. It is why we ask the Commission to grant Microsoft's request for a rulemaking. This action would demonstrate the Commission's continued commitment to bridging the digital divide.

I. The App Association Supports Microsoft's Petition and Asks the Commission to Grant Its Request to that Effect in the Hopes of Closing the Digital Divide

The Commission will play an integral role in closing the digital divide, and the App Association is committed to assisting in this effort. The Commission has made great strides in that regard.⁴ We believe unlicensed TVWS bands play a significant role in this interconnected ecosystem and know that the Commission also views this spectrum as a solution to promote needed broadband infrastructure to support the progress and broad adoption of future internet of things (IoT) services.

³ E.g., ACT Comments, GN 17-258; see, ACT Letter, WTB 17-79; and see, ACT Comment, WTB 17-79, et al..

⁴ E.g., *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Second Report and Order, WC Docket No. 17-84 (2018). Available at <file:///Users/joelthayer/Downloads/DOC-350769A1.pdf>; *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, Declaratory Ruling, Report and Order, 33 FCC Rcd 9088 (2018). Available at file:///Users/joelthayer/Downloads/FCC-18-133A1_Rcd.pdf.

A. The Success of the App Economy Depends on Its Access to Broadband

The hyper-competitive app industry is the driving force behind the rise of smartphones, tablets, and a growing number of internet-enabled devices. As detailed in our annual State of the App Economy report,⁵ the app economy is led by U.S. companies and drives a thriving ecosystem worth more than \$950 billion that will add 444,000 new app developer jobs to the American workforce by 2024.⁶ In addition, 83 percent of U.S. app companies are located outside Silicon Valley, many in rural areas.⁷

Almost without exception, IoT innovations depend upon wireless networks. For instance, Swisslog – a company specializing in integrated automation solutions – developed Smartlift technology, which creates an indoor, localized GPS network to aggregate data from sensors on forklifts and directional barcodes placed around the warehouse.⁸ This technology allows warehouse managers to access analytics through their tablets or mobile phones to optimize productivity and receive real-time, near perfect inventory reports. Bobcat, an equipment company based in North Dakota, deployed Swisslog’s technology in its warehouse and experienced a 30 percent increase in pallets loaded per hour “with no inventory errors.”⁹ None of this innovation would be possible without the ability for highly-integrated and interoperable technologies to access wireless networks.

⁵ ACT | The App Association, *State of the App Economy*, 6th Edition (2018) (https://actonline.org/wp-content/uploads/ACT_2018-State-of-the-App-Economy-Report_4.pdf) (2018 App Economy Report).

⁶ *See id.*

⁷ ACT | The App Association, *State of the App Economy*, 5th Edition (2017). Available at https://actonline.org/wp-content/uploads/App_Economy_Report_2017_Digital.pdf.

⁸ Swisslog, website, found here: <https://www.swisslog.com/en-us/warehouse-logistics-distribution-center-automation/software-inventory-management/synq-warehouse-management-system-wms-mfcs/smart-software-integration>

⁹ *See id.*

Many of our members are based in rural areas and depend on broadband to provide their innovative services. For example, App Association member Quantified AG is based in Lincoln, Nebraska.¹⁰ Quantified AG uses IoT technology to predict and prevent illness amongst farm animals. Using a non-invasive ear tag, Quantified AG enables farmers to address animal illness before it spreads. The biometric ear tags include sensors that transmit livestock data in real time and feature LED lights to help farmers quickly and easily identify sick animals. As Commission leadership has directly witnessed, Quantified AG's innovative service can only occur if it has robust broadband connectivity.¹¹ This is where TVWS can make up the difference and why granting Microsoft's petition is so important. Opening up these spectrum bands for unlicensed wireless connectivity will ensure that our members have access to improved broadband infrastructure so as to create mobile apps that revolutionize the consumer and enterprise experiences for all Americans.

B. TVWS-enabled Broadband is a Cost-Effective Strategy to Close the Digital Divide and Allow the App Economy to Thrive in Rural Areas

The ever-growing need for broadband access in rural areas is a preeminent concern for the Commission. In fact, over 90 percent of the FCC's Lifeline program is wireless-service based and the demand for wireless broadband is only going to increase, especially for app companies.¹² As the Commission is aware, TVWS can cover vastly larger expanses than traditional Wi-Fi routers. For this reason, the FCC chose TVWS as a proposed solution to service un-served rural

¹⁰ <https://quantifiedag.com/>.

¹¹ See Matt Olberding, *Lincoln Firmer Quantified Ag Highlights Rural Internet Needs, Draws Visit from FCC Official*, Lincoln Journal Star (May 29, 2018). Available at https://journalstar.com/business/agriculture/lincoln-firm-quantified-ag-highlights-rural-internet-needs-draws-visit/article_7aba8360-31fe-5fcc-a040-115c6cab699a.html.

¹² Comments of the Nat'l Lifeline Ass'n, WC Docket No. 17-287 et al, 9 (filed Feb. 21, 2018).

areas, stating in 2010 that access to TVWS “enable[s] more powerful public [i]nternet connections...with extended range, fewer dead spots, and improved individual speeds;”¹³ and also ameliorates overly-congested wireless networks (a phenomenon typically referred to as “spectrum crunch”). Even the Commission’s leadership has commented on the value unlicensed TVWS bands have to the internet ecosystem.¹⁴

TVWS could be particularly helpful for our member companies that are located outside traditional “tech hubs.” In Birmingham, Alabama, App Association member MotionMobs operates out of an office building that at first was only equipped with Digital Subscriber Line broadband. This simply did not get the job done for a business transmitting almost immeasurable amounts of data across a network, but there were few options locally for quality broadband. Out of necessity, MotionMobs had to contact its local ISP to pull a new underground line to its office from an existing line—estimated at about a few hundred feet—at the enormous cost of almost \$200,000.¹⁵ If TVWS-enabled services were available, they would provide MotionMobs with a cost-effective alternative or complement to get that necessary resource essential for growth and to perform MotionMobs’ basic operations (e.g., data storage, multiple coders working on projects on the network, etc.).

¹³ E.g., *In the Matter of Unlicensed Operation in the TV Broadcast Bands, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, ET Docket No. 04-186 & ET Docket No. 02-380, Second Memorandum Op. & Ord., 25 FCC 18661 (2010).

¹⁴ E.g., Ajit Pai, Commissioner, FCC, Remarks at WISPApolooza (Oct. 15, 2014), available at https://apps.fcc.gov/edocs_public/attachmatch/DOC-329969A1.pdf [hereinafter WISPAPOLOOZA SPEECH; Remarks of FCC Commissioner Michael O’Rielly Before the Wi-Fi Alliance Annual Member Meeting (Jun. 4, 2019). Available at <https://docs.fcc.gov/public/attachments/DOC-357794A1.pdf> (O’Rielly Speech).

¹⁵ Shane Tews, 5G for Main Street America and Small Businesses: Implications for 5G as an Engine of Job Growth, ACT | The App Association, at p. 3 (2018). Available at <http://actonline.org/wp-content/uploads/5G-for-Main-Street-America-and-Small-Businesses-1.pdf>.

TVWS-enabled broadband can provide cost-effective alternatives to traditional broadband buildout schemas; small businesses, such as MotionMobs, can leverage these technologies to thrive in their local economies as opposed to being forced into other highly-concentrated tech markets (e.g., Brooklyn, New York, or Silicon Valley). Moreover, if this cost-saving option were available, our members could instead orient those resources to hiring more developers or investing in new projects as opposed to spending it on retrofitting an entire building to get reliable broadband.

In the next state over, App Association member Rimidi¹⁶—a Georgia-based software platform in the connected health space—wrote about how essential broadband is to deliver connected care services to rural areas.¹⁷ In that article, Rimidi founder Dr. Lucienne Ide explains that “the same rural areas affected by higher chronic conditions and mortality rates are also less likely to have reliable broadband access, leaving communities without access to the telehealth services that could save lives.”¹⁸ Dr. Ide goes on to cite that areas with the most diabetic patients in the country also have the least-connected rural communities by a staggering disparity.¹⁹ Moreover, rural areas have an estimated 41 percent higher rate of patients with diabetes than the national average.²⁰ Thus, opening up TVWS for unlicensed wireless broadband will not only help to bridge the digital divide, but also the healthcare divide.

¹⁶ <https://rimidi.com/company/>.

¹⁷ Lucienne Ide, *The Promise of Connected Care Depends on Rural Connectivity*, ACT Website (2019). Available at <http://actonline.org/2019/05/02/the-promise-of-connected-care-depends-on-rural-connectivity/>.

¹⁸ *See id.*

¹⁹ *See id.*

²⁰ Randy Rieland, *Lack of Broadband Limits Telemedicine in Rural Areas*, NextAvenue (Mar. 15, 2018). Available at <https://www.nextavenue.org/broadband-telemedicine-rural-areas/>.

II. The Commission Should Grant Microsoft’s Petition for a Further Rulemaking to Promote Regulatory Certainty for Stakeholders Leveraging TVWS-Enabled Devices to Provide Broadband

The Commission has started the process in codifying rules and bringing more regulatory certainty to this band.²¹ However, even with its 2019 TVWS Order, there are still outstanding issues. The Microsoft Petition presents the Commission with a great opportunity to provide further clarity to its rules so as to promote unlicensed wireless connectivity via TVWS.

A. Microsoft’s Petition is a Necessary Complement to the Important Work the Commission has Done Enabling Stakeholders to Use TVWS for Wireless Broadband Use

As the Commission is aware, this proceeding is the logical outgrowth of its Report and Order (R&O) in 2015.²² The 2015 R&O outlined technical rules related to the 600 MHz duplex gap and channel 37 so as to allow stakeholders to use these parts of the spectrum for unlicensed, wireless broadband via TVWS devices.²³ Several stakeholders and interest groups filed petitions for reconsideration on various aspects of the 2015 R&O.²⁴ In its 2019 TVWS Order, the Commission updated its rules to address some of the concerns raised in several petitions on

²¹ *E.g., See generally, 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, 9574–76 ¶ 56 (2015) (“2015 R&O”); *see also, In the Matter of Promoting Wireless Microphone Operations, et al*, GN Docket No. 14-166, Order on Reconsideration & Further Notice of Proposed Rulemaking (2017); & *In the Matter of Amendment of Part 15 of the Commission’s Rules for Unlicensed White Space Devices, et al.*, Report and Order and Order on Reconsideration, ET Docket No. 16-56, et al., at para. 5-7 (2019). Available at <https://docs.fcc.gov/public/attachments/FCC-19-24A1.pdf>. (2019 TVWS Order).

²² 2015 R&O.

²³ *See* 2015 R&O.

²⁴ The following Petitioners submitted Petition for Reconsideration in ET Docket No. 14-165 on 12/23/2015 and 12/24/2015: GE HealthCare (GE Health Petition); Sure Incorporated (Shure Petition); WMTS Coalition (WMTS Petition); National Association of Broadcasters (NAB Petition); Carlson Wireless Technologies, Inc. (Carlson Petition); Wireless Internet Service Providers Association (WISPA Petition); Google, Inc. (Google’s Petition); Sennheiser Electronic Corp. (Sennheiser Petition); & Audio-Technica U.S., Inc. (Audio-Technica Petition).

reconsideration regarding its 2015 R&O.²⁵ As the Commission acknowledged, its 2019 TVWS Order does not address every petition and chose not to address Microsoft’s suggested changes as outlined in its *ex parte*²⁶ filing to the FCC dated October 2, 2018.²⁷

The 2019 TVWS Order is broken up into two main parts: 1) the Report and Order; and 2) an Order on Reconsideration. The 2019 TVWS Order’s R&O did a lot to clarify rules related to fixed-device location data and fixed-device registration. Its Order on Reconsideration articulated clear rules for low-power fixed devices to operate within adjacent and contiguous channels and was integral in setting rules related to antenna height and buildout requirements for those wanting to provide TVWS-enabled broadband. On the whole, the 2019 TVWS Order made necessary improvements to the Commission’s Part 15 technical rules, but as the Commission noted, more must be done.

In that spirit, Microsoft has proffered solutions to the Commission that address some of the outstanding issues the 2019 TVWS Order does not; it is why we lend our support to its request to the FCC to institute a further rulemaking. Additionally, Microsoft’s proposal reflects a measured approach that promotes broadband in rural areas. The Microsoft Petition appears to have taken into account the concerns that stakeholders have raised in the docket and have developed a workable approach that ameliorates those issues,²⁸ which we believe moves this proceeding forward in the right direction. Moreover, in a speech to the Wi-Fi Alliance, Commissioner Mike O’Rielly stated that the Commission “should seek comment on [Microsoft’s Petition] and other

²⁵ See. 2019 TVWS Order, at para. 5-7.

²⁶ Microsoft, Corp., ET Docket No. 14-165, Ex Parte (Oct. 2, 2018). Available at [https://ecfsapi.fcc.gov/file/100134355586/TVWS%20Airband%20Ex%20Parte%20\(10%201%2018\)\(FINAL\).pdf](https://ecfsapi.fcc.gov/file/100134355586/TVWS%20Airband%20Ex%20Parte%20(10%201%2018)(FINAL).pdf).

²⁷ 2019 TVWS Order, para. 7.

²⁸ E.g., Declaration Networks Comment, ET Docket No. 14-165 (2019); & Sacred Wind Communications, Inc. Comment, ET Docket No. 14-165 (Jun. 5, 2019).

submitted ideas as soon as possible.”²⁹ We agree. The App Association also agrees with the Commissioner’s sentiments that “[the Commission] must maximize the benefits of unlicensed use, especially in the unserved and rural areas of the country...,”³⁰ especially as it relates to the use of TVWS.

The App Association is encouraged by the Commission’s continued effort to clarify rules in this proceeding and fervently urge that it continue in that trajectory by granting Microsoft’s request at bar.

CONCLUSION

For the reasons above, the App Association supports Microsoft’s petition for rulemaking and urges the Commission to consider our views and data provided herein.

Sincerely,

/s/

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²⁹ O’Rielly Speech.

³⁰ *See id.*