

December 30, 2015

Ms. Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, NW
Washington, DC 20554

Re: MB Docket No. 15-146, Amendment of Parts 15, 73 and 74 of the Commission's Rules to Provide for the Preservation of One Vacant Channel in the UHF Television Band For Use By White Space Devices and Wireless Microphones

Dear Ms. Dortch:

On December 21, 2015, Harold Feld and Phillip Berenbroick of Public Knowledge (“collectively, Public Knowledge” or “PK”) met with Michelle Carey, Deputy Bureau Chief, Media Bureau, Ira Keltz, Deputy Bureau Chief, OET, Geraldine Matise, Associate Chief, OET, Gary Epstein, Incentive Auction Task Force, Mary Margaret Jackson, Incentive Auction Task Force, Charlie Meisch, Incentive Auction Task force, William Scher, Incentive Auction Task Force to discuss matters in the above-captioned proceedings. Due to the December holidays, this *ex parte* was accidentally delayed and is filed late.

PK began with the observation that NAB continues to misinterpret both the Commission's general statutory authority and the Commission's specific authority pursuant to the 2012 Spectrum Act. No one proposes to eliminate a single full power broadcast station or Class A LPTV, which the statute requires protecting. Nor will anyone force these stations on unwillingly into the VHF band. All that is at issue here is the post-repacking of secondary services and unlicensed services. Both of which are mentioned in the 2012 Act. Indeed, the 2012 Spectrum Act explicitly authorizes the Commission to implement the TVWS Order in the remaining spectrum not reallocated for mobile use.

LPTVs, TV Translators, and Wireless Microphones, like the TVWS, must make do with the available space after repacking. The Commission has chosen a policy consistent with the PCAST Report and emerging spectrum policy for the last 10 years that views interference protection not as a measure of moral worth connoting a superior contributor to society, but simply as a level of interference protection. The Commission has taken significant steps to alleviate the burden on LPTVs and translators with the adoption of the 3rd R&O and issuance of a FNPRM. These policy choices are consistent with the Commission's previous policy choices to seek to maximize the diverse uses of spectrum pursuant to 47 U.S.C. §§ 303(g), 303(r), and 303(y); and to promote widespread adoption and use of broadband pursuant to 47 U.S.C. § 1302.

PK also addressed two recent arguments by NAB. First, NAB is simply wrong as a matter of fact in claiming that the Commission will violate precedent by requiring LPTVs and Translators to demonstrate that at least 2 channels will remain for wireless microphones and TVWS devices. As an initial matter, of course, Section 304 requires every licensee to waive any claim based on prior use, let alone a claim to an entire band. Broadcasters received their exclusive licenses for free, and recently welcomed large event venues using wireless microphones into the ranks of licensed users of the “broadcast band.” For broadcasters to whine as to the injustice of allocating spectrum for use by the general public because it shares the same frequencies as the exclusive licenses awarded to broadcasters for free scores 5 Morisettes on the irony scale.

PK also addressed the most recent argument by broadcasters that permitting TVWS operation on vacant channels will interfere with adoption of a new broadcasting standard, ATSC 3.0. This argument is

flawed for several reasons. First, this argument has nothing to do with second vacant channel operation. Rather, it would seem to be a generalized complaint about permitting TVWS operation under the existing rules *at all*. While PK encourages broadcasters to explore new standards that will allow for more productive use of broadcast licenses, they must do so in the context of existing services.

This segues into the second objection to the ATSC 3.0 argument. The objections to date are entirely hypothetical. There is no currently settled ATSC 3.0 standard. There is no showing of how the presence or absence of TVWS impacts the development of ATSC 3.0. The broadcasters raising this argument simply assert that the presence of TVWS operations may make it somehow “more” difficult or otherwise somehow limit them – in some undefined way – as broadcasters develop and roll out the next generation ATSC standard. Such speculation piled upon speculation cannot possibly create a cognizable argument against the proposed rules.

Finally, Public Knowledge discussed the repeated assertions of broadcasters that TVWS has “failed.” To the contrary, TVWS has evolved in a manner consistent with similar technologies, and reflects both the existing uncertainty over available spectrum and the general evolution of technology. Complete rules for specifications for TVWS devices were not approved and released by the Commission until late 2010. The Commission did not approve a national TVWS database until 2011. Unsurprisingly, production of new technology involving conservative filtering took time to develop. Uncertainty from the Spectrum Act of 2012 further delayed production. Nevertheless, the first prototype TVWS devices using the IEEE 802.22 standard we created in 2013.¹ Today, several wireless equipment providers offer TVWS equipment for commercial use.² Unsurprisingly, these first generation devices are primarily oriented to rural providers where the need for transmitters capable of NLOS transmission at a range of several miles is most urgent, and where there is certainty that TVWS devices will have sufficient spectrum to operate after the Incentive Auction.

It is also useful to compare the evolution of TVWS to the evolution of other technologies that were previously written off as “failures” and have now become examples of highly successful and highly disruptive technologies. The Internet itself, in 1998, was dismissed as having no more impact on business than the introduction of the fax machine.³ VOIP began to be deployed as early as 1997. After the collapse of the Vonage IPO in 2006, and the failure of OTT VIP providers to put ILECs out of business, people rushed to declare VOIP a failed technology. Today, nearly 20 years after VOIP came on the market, and 10 years after being declared a “failure,” VOIP accounts for the majority of voice communication in the United States.⁴ Unlicensed spectrum first became available in 1985. After the failure of the first efforts at municipal broadband in the mid-00s, conventional wisdom deemed Wi-Fi a failure as a broadband solution. Today, Wi-Fi is fully integrated into both wireline and wireless broadband deployment, and over 2000WISPs relying primarily on unlicensed spectrum provide broadband today to millions of Americans.

These examples more than prove the case that TVWS is where it should be in terms of development and deployment – especially in light of the uncertainty surrounding availability of useable

¹ See Tammy Parker, “TV White Space Device Prototypes Roll Out,” *Fierce Wireless Tech* (January 23, 2013), <http://www.fiercewireless.com/tech/story/tv-white-space-device-prototypes-roll-out/2013-01-23>

² See, e.g., Carlson Wireless Technologies, <http://www.carlsonwireless.com/tv-white-space/>; Adaptrum, http://www.adaptrum.com/Products_index.htm; Aviacomm, <http://www.aviacomm.com/markets/tv-white-space/>; and, KTS Wireless, <http://www.ktswireless.com/agility-white-space-radio-awr/>.

³ Jay Yarow, “Paul Krugman Responds to All The People Throwing Around His Old Internet Quote,” *Business Insider* (December 30, 2016), <http://www.businessinsider.com/paul-krugman-responds-to-internet-quote-2013-12>

⁴ This includes all VOIP communication, both interconnected and OTT.

TVWS spectrum on a national basis. As PK and other supporters of TVWS have consistently insisted, whether TVWS remains primarily a rural broadband product or expands to become a more widely deployed technology depends in large part on the availability of sufficient spectrum on a national basis – precisely the reason why the FCC issued the rulemaking under consideration here. Accordingly, the Commission should adopt the proposed approach to ensure that TVWS will have sufficient spectrum to continue its successful evolution.

In accordance with Section 1.1206(b) of the Commission’s rules, an electronic copy of this letter is being filed in the above-referenced docket. Please contact me with any questions regarding this filing.

Sincerely,

/s/ Harold Feld
Senior Vice President
Public Knowledge

CC: Mary Margaret Jackson
Michelle Carey
Ira Keltz
Geraldine Matise
Gary Epstein
Charlie Meisch
William Scher