

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

In the Matter of:)	
)	
Rules Governing the Use of Distributed Transmission Systems Technologies)	MB Docket No. 20-74
)	
Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard)	GN Docket No. 16-142
)	

**REPLY COMMENTS OF AMERICA’S PUBLIC TELEVISION STATIONS
AND THE NATIONAL ASSOCIATION OF BROADCASTERS**

July 13, 2020

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I. INTRODUCTION AND SUMMARY

America’s Public Television Stations and the National Association of Broadcasters (collectively “Petitioners”)¹ hereby reply to comments submitted in response to the Commission’s Notice of Proposed Rulemaking on potential changes to the Commission’s rules governing Distributed Transmission Systems (DTS).²

¹ Petitioner America’s Public Television Stations (“APTS”) is a nonprofit membership organization that represents nearly all public television stations nationwide. APTS fosters strong and financially sound noncommercial television and works to ensure member stations’ commitment and capacity to perform essential public service missions in education, public safety and civic leadership for the American people.

Petitioner 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.

² *Rules Governing the Use of Distributed Transmission System Technologies*, Notice of Proposed Rulemaking, MB Docket No. 20-74, GN Docket No. 16-142, FCC 20-43 (April 1, 2020) (NPRM).

Initial comments in this proceeding reflect support among broadcasters for the amendment of the Commission's rules to permit greater use of DTS.³ Indeed, the sole opposition to the proposal comes from advocates for unlicensed or secondary services, who ask the Commission to provide them with new spectrum rights in this proceeding. These arguments are inconsistent with Commission rules and precedent and lack any sound basis in public policy. The Commission should reject the invitation to use this proceeding to create unprecedented and legally unsustainable rights for unlicensed and secondary services.

Petitioners and other commenters have demonstrated the public interest benefits associated with amending the FCC's rules to allow broadcasters to provide superior coverage, particularly at the edges of stations' service areas. The record also demonstrates the importance of expeditious action, as specific deployment plans for stations transitioning to ATSC 3.0 may be influenced by the potential for DTS deployments to provide enhanced coverage. Swift approval of the requested changes will improve service to viewers, encourage investment and speed the rollout of ATSC 3.0 services. We urge the Commission to move forward quickly with an order amending the existing DTS rules.

II. THE COMMISSION SHOULD NOT CONSIDER THEORETICAL IMPACTS ON WHITE SPACES AVAILABILITY IN THIS PROCEEDING

A. White Spaces Proponents Fundamentally Misapprehend Their Rights and Obligations with Respect to Spectrum

Microsoft, along with two organizations it funds, New America's Open Technology Institute (OTI) and Public Knowledge, asserts that the Commission should not adopt changes to its

³ See Comments of Pearl TV, MB Docket No. 20-74, GN Docket No. 16-142 (June 12, 2020); Letter from Akin S. Harrison to Marlene H. Dortch, MB Docket No. 20-74, GN Docket No. 16-142 (June 12, 2020); Letter from Alysia M. Long to Marlene H. Dortch, MB Docket No. 20-74, GN Docket No. 16-142 (June 12, 2020).

existing DTS rules because such changes might diminish opportunities for the use of TV white spaces (TVWS) technology to close the rural broadband gap.⁴ As an initial matter, widespread deployment of DTS operations is likely to create *more* opportunities for TVWS use – particularly in the rural areas OTI and Public Knowledge and their benefactor Microsoft claim to be of primary concern – because it can help reduce dependence on TV translators operating on different channels to reach difficult to serve areas. Microsoft at least acknowledges this but asserts that it is concerned about the effects of signals from DTS deployments “spilling over” a station’s service area to preempt white spaces use outside that area.⁵ In addition to being factually incorrect, this puts Microsoft in the awkward position of supporting the use of DTS technology to free up spectrum for TVWS operations, but only in the most inefficient way possible. Such an approach will likely result in a lose-lose situation with no additional DTS deployments and no additional spectrum for TVWS operations.

At bottom, TVWS proponents in this proceeding simply refuse to acknowledge the uncertainty, unpredictability, and lack of protected rights inherent in unallocated, unlicensed spectrum use. The fundamental principle of the TV white spaces rules and, indeed, the Commission’s framework for unlicensed operation more generally, is that such operations must not cause interference to licensed services and must accept any interference received from licensed services. The purpose of the white spaces rules is to allow opportunistic use of spectrum that would otherwise lie fallow – not to provide a new allocation at the expense of licensed television

⁴ Comments of Microsoft Corporation at 2, MB Docket No. 20-74, GN Docket No. 16-142 (June 12, 2020) (Microsoft Comments); Comments of New America’s Open Technology Institute and Public Knowledge at 4, 6, MB Docket No. 20-74, GN Docket No. 16-142 (June 12, 2020) (OTI and PK Comments).

⁵ Microsoft Comments at 5.

stations seeking to better serve viewers. The cornerstones of Part 15 of the FCC’s rules, under which white spaces devices operate, are that unlicensed operations have no recognizable right to continue to operate on any particular frequency, that they must not cause harmful interference to any authorized service, and that they must accept harmful interference caused by any authorized service.⁶ Unlicensed services have no status, no right to cause interference, and no protections against interference. TVWS devices, therefore, must work around all licensed operations in the television band. Indeed, when the Commission first proposed to allow unlicensed operation in the television bands, it expressly stated that the unlicensed uses it proposed were “not intended to limit future licensed use or to guarantee spectrum access rights for this band.”⁷

The Commission has consistently upheld this view. According to the Commission, “It is, of course, most important that we ensure that new unlicensed devices do not interfere with the incumbent licensed services in the TV bands.”⁸ In particular, the Commission has noted that, “future broadcast uses of the television band will have the right to interference protection from TV band devices.”⁹ The Commission has rejected efforts to limit expanded licensed operations to provide more opportunities for unlicensed operations in the television band, concluding that the “TV services for which this spectrum is allocated on primary and secondary bases are important media for the provision of news, information, and entertainment that warrant priority over those

⁶ 47 C.F.R. § 15.5(a)-(b).

⁷ *Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Notice of Inquiry, 17 FCC Rcd 25632, ¶ 14 (2002).

⁸ *Unlicensed Operation in the TV Broadcast Bands*, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807, ¶ 33 (2010) (TVWS Second Report and Order).

⁹ *Id.* at ¶ 50.

unlicensed broadband devices.”¹⁰ In short, consistent with its rules and years of precedent, the Commission need not and should not consider the effects of rule changes on unlicensed operations in this proceeding.

B. Microsoft Mischaracterizes Petitioners’ Proposal

Microsoft mischaracterizes the proposed rule change. Microsoft claims the proposal will allow a DTS transmitter’s “interference contour to extend beyond the reference facility’s service area.”¹¹ But such extension is already permitted under the current DTS rules; in fact, it is virtually unavoidable. In any radio system, the potential to cause interference almost always extends further than its ability to provide service. This principle underlies the FCC’s allocation and allotment rules for nearly every radio service.

The interference contour of a DTS station has nothing to do with its service area, and the proposed rules would not allow interference contours to extend beyond what is already effectively permitted. Indeed, that is the crux of the proposal that petitioners, working closely with members of the broadcast industry, have set forth: the potential for interference is not increased by the proposed rule change and the area within which a broadcast television station is protected from interference is also not increased by the proposed rule change.

Microsoft similarly mischaracterizes the addition of an “Interference Area Reference Distance” as changing “the radius of coverage ... from 103 km to up to 245 km at each DTS transmitter location.”¹² Again, Microsoft appears to not understand the difference between coverage (or service) and interference. In fact it is the “Service Area Reference Distance” that

¹⁰ *Digital Television Distributed Transmission System Technologies*, Report and Order, 23 FCC Rcd 16731, ¶ 19 (2008).

¹¹ Microsoft Comments at 2.

¹² *Id.* at 6.

restricts how far a DTS site can be located from the station's reference point and limits the distance beyond which coverage is protected. Those values are not changed by the proposed rule. So, while a greater amount of "spillover" coverage would be permitted by the proposed rule change, such coverage would generally not be protected from interference and the radius of potential coverage as is already defined by the "Service Area Reference Distance" from the station's reference point would remain unchanged. This "radius of coverage" would not be enlarged at all and certainly not by two-and-a-half times as Microsoft claims.

Microsoft either misunderstands or mischaracterizes the basic protection requirement of television broadcast stations (including DTS) by TVWS devices. It claims "WSDs will have to protect the DTS transmission on its co-channel and first adjacent channels out to the reference point's 36 dBu [F(50,10) interference] contour..."¹³ That is simply not true. Protection by TVWS devices is required only within a station's 41 dBu F(50,90) coverage contour (at UHF, plus a keep-back distance)¹⁴ and this proposed rule change does not alter that requirement.

Microsoft includes in its comments a graphic on DTS protection that was presented by FCC staff to the White Space Administrator's Group in 2011, asserting that this graphic suggests that spillover coverage must be protected.¹⁵ By way of background, that graphic was authored by a current employee at NAB, and Microsoft's interpretation is completely incorrect.¹⁶ For the avoidance of doubt, regardless of the graphic, the text of that presentation plainly states the

¹³ Microsoft Comments at 6.

¹⁴ 47 CFR § 15.712(a)

¹⁵ *Id.* at 8.

¹⁶ FCC Office of Engineering and Technology, "TV Bands Database Administrator Workshop 3," slides 34-35 (May 25, 2011), available at: https://transition.fcc.gov/bureaus/oet/whitespace/TVWS_Workshop3/TVWS_Workshop_3_Presentations_5-26-11_v11.pdf (TVWS Workshop Presentation).

applicable protection requirements. It is the “Service Area Reference Distance,” shown in the graphic as “Circle defining ‘Maximum Service Area,’” that defines the protected area, and those distances are not changing.¹⁷

In short, Microsoft’s claim that “the DTS minimum spillover area is protected,” and the implication that a larger spillover would lead to greater protection requirements, is incorrect.¹⁸ Rather, the “protected area is the union of the individual DTS service areas except those areas outside both the authorized service area and the maximum service area.”¹⁹ Any spillover would be protected only to the extent that it lies either within the “single stick” 41 dBu contour or the service area reference distance, neither of which would change under the proposed rule.

C. ATSC 3.0 Portends Real World Benefits for Consumers

OTI and Public Knowledge further argue that changes to the DTS rules are premature given the lack of ATSC 3.0 deployments and services to date.²⁰ This position is grossly misguided and sorely lacking in self-awareness given the fitful progress, or lack thereof, with respect to TVWS technology.

In just the past two months, broadcasters have launched ATSC 3.0 service in Las Vegas, Nashville, Pittsburgh, and Salt Lake City, with more markets expected in the next quarter and still more in the months after that. On the other hand, while broadcasters are not opposed to TVWS operations, and have even supported modification of certain FCC rules to facilitate those

¹⁷ *Id.* at 35.

¹⁸ Microsoft Comments at 8.

¹⁹ TVWS Workshop Presentation at 35.

²⁰ OTI and PK Comments at 3, 5-6.

operations,²¹ the incontrovertible fact is that progress has been considerably slower than promised. When the Commission originally adopted white space rules, advocates for such rules promised billions of dollars of immediate investment in exciting and innovative uses, including ubiquitous “Super Wi-Fi.”²² To date, these services have not come close to materializing, and it is still not clear if they ever will. While upheavals due to the novel coronavirus and the associated economic trauma have certainly proven disruptive to broadcasters’ plans, it is far more likely that ATSC 3.0 will make more real-world progress in its first three to four years than TVWS technology did in its first ten.

OTI and Public Knowledge further characterize this proceeding as a proposed “giveaway” to broadcasters. In fact, broadcasters are not seeking a “giveaway” of any sort – rather, they are seeking regulatory flexibility to facilitate technological advancement without seeking access to additional spectrum. It is somewhat remarkable that Microsoft’s surrogates would refer to a proceeding where broadcasters seek additional regulatory flexibility as a “giveaway” while Microsoft itself is seeking similar regulatory flexibility in a current proceeding at the Commission.²³ We urge the Commission not to be swayed or distracted by unfounded and unsupported hyperbole concerning a straightforward regulatory proceeding.

²¹ Comments of the National Association of Broadcasters at 1-2, ET Docket No. 20-36 (May 4, 2020).

²² Anne Broache, “Google outlines proposal for ‘Wi-Fi on steroids’” (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/>.

²³ *Unlicensed White Space Device Operation in the Television Bands*, Notice of Proposed Rulemaking, 35 FCC Rcd 2101 (2020).

III. DTS DEPLOYMENTS PROVIDE AN OPPORTUNITY, NOT A THREAT, TO TV TRANSLATOR AND LOW POWER TELEVISION STATIONS

The Petitioners represent a significant number of television stations nationwide, including LPTV and TV Translator stations. Petitioners do not seek to harm their own members or undermine the services delivered to the public provided by LPTV and translator stations in this proceeding. Indeed, we believe the enhanced coverage afforded by DTS deployments can reduce the need for reliance on translators to serve the viewing public, while the enhanced spectrum efficiency could provide additional opportunities for LPTV stations (or TVWS operations as discussed above).

We agree with the National Translator Association (NTA) that the present pandemic has resulted in increased viewing of over-the-air television and that communications systems, including broadcasting, will need to continue to evolve in response to changing future needs.²⁴ Petitioners believe that expanding the use of DTS will play a critical role in the evolution of broadcast television and the deployment of Next Gen TV.

While NTA claims to support such an evolution, it simultaneously appears to view DTS not as a key technology enabler, but rather as a conspiracy to eliminate translators and restrict viewer choice.²⁵ Nothing could be further from the truth. Rather, Next Gen TV, if implemented using DTS, improves spectrum efficiency by eliminating the need for separate input and output channels for translators and increases viewer choice by allowing more content to be served by a single translator station. NTA's proposal that, instead of DTS, primary stations be forced to install marginally effective and inefficient translator stations belies NTA's claim to support technological

²⁴ Comments of the National Translator Association at 1-2, MB Docket No. 20-74, GN Docket No. 16-142 (June 12, 2020).

²⁵ *Id.* at 3-4.

advancement.²⁶ In fact, such a proposal would represent a step backwards, towards inferior coverage and reduced spectrum efficiency. Similarly, NTA acknowledges that translators and LPTV stations were impacted by the post-incentive auction repack, but fails to recognize that that with decreasing spectrum available for broadcasting the very future of the translator service lies with the deployment of on-channel DTS.²⁷

NTA also makes a mistake similar to Microsoft's by confusing "spillover" coverage with specification of a 36 dBu F(50,10) interference contour, which is intended to limit the potential for interference and thereby minimize impacts on LPTV and translator stations.²⁸ While some translators at the periphery of a primary station's coverage contour may be impacted by a new DTS operation, that is so regardless of whether the primary station is transmitting using ATSC 1.0 or ATSC 3.0. To be clear, the petitioners do envision that some secondary licensees will be unavoidably impacted by with the installation of new DTS nodes, but the number of secondary stations impacted is expected to be small. The number of translator stations in the continental U.S. operating in the continental U.S. totals about 3,135. Of these, there are about 165 translators that are co-channel and within 30 kilometers of the service contour of a full power station. Thus, perhaps 5.3 percent of the translator stations of greatest concern to NTA are at risk of significant interference or displacement. Even when co-channel translators out to a distance of 50 km are considered, perhaps 11 percent might be affected. It is likely that, in most cases, alternative channel arrangements can be made if the affected translator cannot or does not wish to operate as an on-channel translator (effectively a DTS node, but not licensed to the primary station). Nothing

²⁶ *Id.* at 4.

²⁷ *Id.* at 6.

²⁸ *Id.* at 3-4.

in the present rules and nothing being proposed in this proceeding would prevent translator stations from shifting their operation from the traditional and inefficient two-channel (input and output) mode to a single-channel (DTS) mode that would effectively recover spectrum for other uses. At least some of the TV translator and LPTV station licensees recently displaced by the Broadcast Incentive Auction and subsequent repack have already purchased (and been reimbursed by the Federal government for) new transmitters that are capable for ATSC 3.0 (and by extension DTS) operation with only a firmware upgrade. Petitioners sincerely hope that TV Translator operators and their viewers will welcome the opportunities presented by ATSC 3.0, although it remains their option.

NTA then makes a second mistake by claiming that the proposal would newly allow for “one station interfering with another outside of its service contour.”²⁹ As NTA should know, such interference is presently permitted, both under the present DTS rules and under Subpart E of Part 73 generally.³⁰ Indeed, the distinction between “coverage” and “interference” contours has been basic to the allotment scheme of the translator service for decades.³¹

Petitioners agree with Hammett & Edison, Inc. (H&E) that the interference study we submitted found 2 percent new interference in 3.73 to 5.05 percent of all co-channel studies performed and a lesser amount (2.23 to 2.84 percent) of all adjacent-channel studies performed. However, it is gross stretch of logic and statistics to claim that 49.8 percent (39 percent of co-channel and 10.8 percent of adjacent-channel) of LPTV stations would receive new interference greater than 2 percent. As discussed in the study petitioners submitted, in order to maximize the

²⁹ *Id.* at 3.

³⁰ 47 C.F.R. § 73.626.

³¹ *See, e.g.*, 47 C.F.R. § 73.623(c).

interference potential of each hypothetical DTS node for purposes of the study, the maximum ERP was often taken to be the ERP of the single-stick operation, which is unlikely.³² For reasonable assumptions concerning ERP (*i.e.*, not more than 250 kW at UHF) and with the DTS antenna placed 150 meters AGL, at most some 330 LPTV stations (13.8 percent of all 2,392 LPTV stations) would receive new interference greater than 2 percent. With DTS facilities placed at actual tower sites, rather than at the arbitrary locations assumed for expediency (10 km inside the current noise-limited contour in the four compass directions), allowing for the mandatory protection of other full-power and Class A stations, and using directional antennas, the impacts on LPTV stations would be further reduced. We note that about 21 percent of the LPTV stations predicted to receive interference under the assumptions of the study are located inside the noise-limited contour of the primary station and would likely receive interference were DTS facilities built under the current rules.

In short, while Petitioners acknowledge that some degree of additional interference to some LPTV and translator stations is likely, the technical constraints of real-world deployments will limit the number of such cases and the degree of interference. More broadly, the overwhelming public interest benefits of expanded DTS operations that the Commission has long acknowledged, including opportunities to LPTV and TV Translator stations, outweigh hypothetical considerations of increased interference to secondary licensees. The Commission should not expand the rights of those licensees in this proceeding by providing them with new interference protections that would constrain the operations of full-power stations.

³² Reply Comments of America's Public Television Stations and the National Association of Broadcasters, Attachment A at 4, GN Docket No. 16-142 (Nov. 27, 2019).

