



July 8, 2015

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Notice of Oral *Ex Parte* Presentation

Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, GN Docket No. 12-268

Comment Sought on Competitive Bidding Procedures for Broadcast Incentive Auction 1000, Including Auctions 1001 and 1002, AU Docket No. 14-252

Dear Ms. Dortch:

On July 6, 2015, Michael Calabrese of New America’s Open Technology Institute (OTI), Harold Feld and Phillip Berenbroick of Public Knowledge, and Colin Oldberg of Common Cause (collectively the “public interest advocates”), met with Commissioner Michael O’Rielly and his wireless Legal Advisor, Erin McGrath, concerning the above-referenced proceedings.

The public interest advocates conveyed widespread concern in the unlicensed spectrum community about the incentive auction team’s recommendation to relocate broadcast stations in the Duplex Gap in certain key markets, including possibly Los Angeles, Philadelphia and Baltimore, among others. Exclusion of unlicensed devices in the Duplex Gap in these markets would deprive millions of Americans of the full benefits of unlicensed low-band spectrum availability in such “TV white spaces,” including “next generation WiFi,” by undermining the benefits identified in the 2014 Framework Order that depends on providing a minimum of three channels for unlicensed sharing in every market.

The advocates noted that the Commission’s 2014 Framework Order explicitly decided that, under every auction scenario, the band plan would include an 11 megahertz-wide Duplex Gap in

every market nationwide. The Commission also decided then to make all guard bands (including the Duplex Gap) available for unlicensed use “nationwide.”¹ As the Framework Order stated:

Under the band plan we adopt in this Order, between 14 and 28 megahertz of spectrum in the 600 MHz Band guard bands will be *available for unlicensed use nationwide*, . . . *including in major markets where today and post-auction few if any vacant television channels may be available*. . . . Permitting unlicensed operations in the 600 MHz Band guard bands will make additional spectrum *available for unlicensed devices nationwide*. The record provides significant support for this action.²

The support cited by the Commission includes the express intent of Congress in the Middle Class Tax Relief and Job Creation Act, as described by former Rep. Henry Waxman, who was the House Commerce Committee’s ranking Democrat and negotiated the compromise the Framework Order cites: “Section 6407(c) was a compromise intended by the conferees to ‘create a *nationwide band* of spectrum that can be used for innovative unlicensed applications.’”³ 158 Cong. Rec. H915 (daily ed. Feb. 17, 2012) (remarks of Rep. Waxman).³

By necessity, this commitment to facilitate nationwide unlicensed use requires sufficient spectrum availability to make such robust use feasible. Unlicensed access to at least three channels nationwide is the minimum needed to spur and sustain investment from chip makers such as Broadcom, MediaTek, and others, before they can integrate the IEEE 802.11af standard for TVWS into WiFi chips for smartphones, tablets and other mobile devices that would benefit from the greater penetration and range of low-band unlicensed spectrum. Availability of the Duplex Gap for unlicensed use on a nationwide basis is a necessary ingredient for obtaining this minimum of three channels. Together with unlicensed access to Channel 37 (shared with Wireless Medical Telemetry Services) and to one reserved channel in the ongoing TV band (shared with unlicensed wireless microphones), the Report and Order’s allocation of the Duplex Gap for unlicensed TVWS technologies on a *nationwide* basis would provide the minimum three channels that are essential for investment and widespread deployment so useful to consumers.

The advocates noted the complete lack of support in the record for placing TV stations in the Duplex Gap. Indeed, there is strong record opposition by virtually every party, including the national mobile carriers, National Association of Broadcasters, and licensed microphone users, to locating any broadcast station in the Duplex Gap.⁴ The wireless industry has stated in several

¹ *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, GN Docket No. 12-268, 29 FCC Rcd 6567, ¶¶ 270-271 (rel. June 2, 2014).

² *Id.* ¶¶ 266, 271 (emphasis added). The Duplex Gap is the “guard band between 600 MHz uplinks and downlinks.” *Id.* at ¶ 270.

³ *Id.* at ¶ 271, n. 815 (emphasis added).

⁴ *See, e.g.*, Comments of the National Association of Broadcasters, *Incentive Auction Task Force Releases Initial Clearing Target Optimization Simulations*, Public Notice, AU Docket No. 14-252, GN Docket No. 12-268, at 6-7 (June 3, 2015).

filings that their engineering studies demonstrate that locating a broadcast station in the Duplex Gap would create unacceptable levels of harmful interference to LTE downlink operations in the auctioned channels adjacent to the Duplex Gap.⁵ For example, in February CTIA asserted that “the Commission should not place television stations in the duplex gap. As has been well-established in the record, television stations in the duplex gap would create harmful interference to 600 MHz licensees.”⁶ And Verizon, based on its engineering studies, similarly stated: “Wherever it is impossible to avoid repacking a broadcaster into a portion of the repurposed spectrum, the Commission should only place the broadcaster in the uplink portion of the mobile band plan – not in its downlink, duplex gap, or guard band spectrum.”⁷

Nor does the report on the staff simulations⁸ provide support for placing full power broadcasters in the Duplex Gap. As an initial matter, reliance on the simulation study raises significant concerns under the Administrative Procedure Act. As noted by both Commissioner Pai⁹ and Commissioner O’Reilly,¹⁰ the Public Notice failed to disclose critical information with regard to assumptions and methodology. If the Commission chooses to place part of a study in the record, it cannot selectively fail to disclose relevant information and still rely upon the study as evidence.¹¹ More troubling, the Public Notice specifically stated it was intended to provide information that was “illustrative only,” in order to assist parties in “discussing relevant issues.” An agency cannot disclaim its intent to rely on a Public Notice as evidence, only to then explicitly rely on the Public Notice as evidence to reverse a specific decision in the Framework Order.

Setting aside these concerns, the staff simulations do not support the proposal to place broadcasters in the Duplex Gap, contrary to the weight of other comments in the docket, for the following reasons. 1) The study states that it made a simplifying assumption that it would treat impairment in the uplink as identical to impairment in the downlink, whereas the Commission stated in the NPRM that location of a broadcaster in the uplink would produce significantly different types of impairment; 2) The study explicitly identified a lack of data with regard to impairment from Mexico, and employed a simplifying assumption with regard to impairment

⁵ See, e.g., Comments of CTIA – The Wireless Association, *Comment Sought on Competitive Bidding Procedures for Broadcast Incentive Auction 1000, Including Auctions 1001 and 1002*, Public Notice, AU Docket No. 14-252, GN Docket No. 12-268, at 5 (filed Feb. 20, 2015) (“CTIA Auction 1000 PN Comments”); Comments of Verizon, AU Docket No. 14-252, GN Docket No. 12-268, at 4-8 (filed Feb. 20, 2015) (“Verizon Comments”).

⁶ CTIA Auction 1000 PN Comments at 5; see also Comments of AT&T Inc., GN Docket No. 12-268, at 24-26 (Jan. 25, 2013); Comments of Motorola Mobility LLC, GN Docket No. 12-268, at 9-10 (Jan. 25, 2013).

⁷ Verizon Comments at 17; see also *id.* at 19 (“As with the downlink portion of the band, there is no viable filtering solution for the handset. The only viable alternative is to insert the broadcast stations into the uplink band, where the handset transmits to the base station receiver.”).

⁸ Public Notice, “Incentive Auction Task Force Releases Initial Clearing Target Optimization Simulations,” AU Docket No. 14-252, GN Docket No. 12-268 (rel. May 20, 2015).

⁹ Statement of Commissioner Ajit Pai on the Release of Misleading Auction Data (May 20, 2015).

¹⁰ Statement of Commissioner Michael O’Reilly on Incentive Auction Task Force Releasing initial Clearing Target Optimization Simulations (May 20, 2015).

¹¹ See *American Radio Relay League, Inc. v. FCC*, 524 F.3d 227 (D.C. Cir. 2008).

along the Canadian border that it stressed was subject to the outcome of Canada’s industry consultation process; and, most critically; 3) The disclosure of results in Appendix A compares impairment in Top 40 PEs for an unprotected Duplex Gap v. Top 20 PEs for a protected Duplex Gap, but fails to explain whether the “protect duplex gap” scenario includes options other than siting the broadcaster in the Duplex Gap, and otherwise makes “apples to apples” comparisons impossible.

The public interest advocates acknowledged the difficult trade-offs the auction team is trying to reconcile, a challenge made more difficult because broadcast station participation rates are unknown. Nevertheless, the advocates stated that the Commission must continue to bear in mind that improved capability for smartphones and other mobile devices equipped with next generation Wi-Fi is an important spur to competition, consumer utility and spectrum efficiency. Moreover, the claim that packing broadcast stations into the Duplex Gap would result in less impairment in the auctioned 600 MHz spectrum is dubious on its own terms, as explained above. As CTIA and Verizon have demonstrated, broadcast operations in the Duplex Gap would impair LTE Downlink channels, which are more valuable than uplink and which can be, if necessary, paired asymmetrically with uplink channels (if there are fewer uplink channels in a market).

In sum, unlicensed access to the Duplex Gap on a nationwide basis is the key to enormous consumer benefits from a richer ecosystem for WiFi and other low-band unlicensed innovations. WiFi is already offloading roughly two-thirds of mobile device data traffic,¹² and as Commissioner Rosenworcel herself has observed, generating at least \$140 billion in economic activity in the U.S. alone.¹³ Emerging competition from “WiFi First” carriers (*e.g.*, Republic Wireless) and business models (Cablevision’s FreeWheel, Google’s Project Fi) will be greatly enhanced if consumer handsets have more quality connections to WiFi indoors and outdoors thanks to the superior propagation characteristics of 600 MHz spectrum.

The public interest advocates concluded their discussion of TVWS by stating that a bare minimum of three six-megahertz channels in every market nationwide remains essential not only

¹² Unlicensed spectrum already carries the majority of all mobile device data traffic and will soon carry twice as much traffic as licensed spectrum. Cisco’s *Virtual Networking Index* estimates that Wi-Fi offloaded 57 percent of all U.S. mobile data traffic onto fixed (wireline) networks in 2014 and projects that 66 percent of U.S. mobile data traffic will be offloaded via Wi-Fi by 2019. Robert Pepper, *Cisco Visual Networking Index (VNI) Mobile Data Traffic Update, 2014-2019*, presentation at Mobile World Congress, GSMA Seminar (March 3, 2015), available at <http://www.gsma.com/spectrum/wp-content/uploads/2015/03/MWC15-Spectrum-Seminar.-Dr-Roberto-Pepper.-Cisco-presentation.pdf>. Mobidia usage surveys show Wi-Fi is already carrying an average 80 percent of total mobile device data traffic for iPhone and Android users. Mobidia, “Network Usage Insights: Average Data Usage for LTE, 3G and WiFi of Wireless Subscribers in the USA, Q3 2014” (Nov. 2014).

¹³ Remarks of Commissioner Jessica Rosenworcel, SXSW Interactive, Austin, Texas (March 16, 2015) (“Wi-Fi is how we get online. . . . Wi-Fi is how we foster innovation. . . . Wi-Fi is also a boon to the economy. . . . \$140 billion annually – and it’s only going to grow. . . . We need to keep it coming. We need to make Wi-Fi a priority in spectrum policy”).

for achieving the enormous public interest benefits of making low-band WiFi available in mobile (personal/portable) devices.

Nationwide availability of the Duplex Gap for unlicensed devices is also important outside the largest urban areas. While fixed wireless broadband services by WISPs using unlicensed TVWS could continue in rural and small town markets with fewer than three channels, those offerings would not be as affordable or available as they should be in this scenario either. WISPs could not provide a direct air interface with consumer devices, nor offer robust service in low-band unlicensed spectrum unless the Commission returns to a balanced policy.

Respectfully submitted,

/s/

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cc: Erin McGrath