

**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of	)	
	)	
Comment Sought on Competitive Bidding Procedures for Broadcast Incentive Auction 1000, Including Auctions 1001 and 1002	)	AU Docket No. 14-252
	)	
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions	)	GN Docket No. 12-268
	)	
	)	

**COMMENTS OF T-MOBILE USA, INC.**

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**COMMENTS OF T-MOBILE USA, INC.**

**I. INTRODUCTION AND SUMMARY**

T-Mobile USA, Inc. (“T-Mobile”)<sup>1</sup> submits these comments in response to the Federal Communication Commission’s Incentive Auction Task Force’s Public Notice concerning staff simulations of initial clearing target optimization procedures.<sup>2</sup>

Choosing an initial spectrum-clearing target has profound implications for the incentive auction. If the Commission chooses an initial spectrum-clearing target that is too low, the 600 MHz auction will deliver less spectrum for wireless broadband services than the market demands, and many broadcasters that might have preferred to move their spectrum to higher-valued uses in exchange for cash payments may prove unable to do so. If the Commission chooses an initial spectrum-clearing target that is too high, the risks are less consequential so long as substantial risks related to the spectrum-reserve trigger are corrected because the auction

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<sup>1</sup> T-Mobile USA, Inc. is a wholly owned subsidiary of T-Mobile US, Inc., a publicly traded company.

<sup>2</sup> *Incentive Auction Task Force Releases Initial Clearing Target Optimization Simulations*, Public Notice, AU Docket No. 14-252, GN Docket No. 12-268, DA 15-606 (rel. May 20, 2015) (“Public Notice”).

process will eventually result in bringing broadcast spectrum supply in line with broadband spectrum demand.<sup>3</sup> Assuming that the substantial risks associated with the spectrum-reserve trigger are corrected to ensure the reserve functions as intended, setting too high of an initial spectrum clearing target could still require broadcasters, forward-auction bidders, and the Commission to spend more time than is necessary in an auction environment where, by necessity, communications among businesses, investors, suppliers, and the public will be limited. Having too little information in the market for too long of a time could adversely affect stakeholders and constrain economic activity. For these reasons, the Task Force’s simulations of the initial clearing target optimization procedures for the incentive auction represent an important and welcome contribution to the record of how the Commission intends to conduct the incentive auction.

## **II. THE SIMULATIONS’ TREATMENT OF CANADIAN AND MEXICAN IMPAIRMENTS ON THE UNITED STATES 600 MHZ BAND ARE REASONABLE AND WELL SUPPORTED**

The Public Notice is transparent about the limitations of the current simulations. The Public Notice explains that the simulations presented are “illustrative,” not definitive, and adds

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<sup>3</sup> If the Commission were to postpone creation of the reserve until the Final Stage Rule without measures to protect against anti-competitive gaming, setting the initial clearing target too high could render the spectrum reserve meaningless. If the reserve were not to come into existence until late in the process, for example, excessively high unmet clearing costs from early stages of the auction could result in prices on reserve licenses that reach foreclosure levels before the auction reaches the proper clearing target. *See, e.g.,* Letter from Lawrence R. Krevor, Vice President, Legal and Government Affairs—Spectrum, Sprint Corp., *et al.*, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 12-268, AU Docket No. 14-252 at 3-4 (May 20, 2015) (noting that “withholding reserve implementation until the FSR is satisfied exposes reserve-eligible bidders to the very risks of anticompetitive bidding that motivated the Commission to create a spectrum reserve in the first place”); Letter from Trey Hanbury, Counsel to T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 12-268, AU Docket No. 14-252 at 2 (Apr. 24, 2015) (explaining that “[t]ying the spectrum reserve to both elements of the FSR could allow pricing to reach foreclosure levels in some or all markets before the reserve becomes effective, which would cause competitors to drop out of the auction”).

that the simulations rely on assumptions about how to protect TV stations located in Canada and Mexico.<sup>4</sup> In T-Mobile's view, the Task Force's treatment of Canadian- and Mexican-origin impairments on the 600 MHz band in the United States is both reasonable and well supported.

With respect to Canada, the simulations assume that the Commission will not need to protect vacant Canadian television allotments because Industry Canada has proposed just such an outcome in its ongoing *Consultation on Repurposing the 600 MHz Band*.<sup>5</sup> The Public Notice also notes that Industry Canada has announced its intent to harmonize its 600 MHz band plan with whatever the incentive auction ultimately produces in the United States.<sup>6</sup> Should Canada act on its stated intention, the resulting harmonized spectrum will obviate the need for the Commission to protect any Canadian television allotments whether occupied or vacant because the Canadian broadcast band will no longer conflict with the post-auction 600 MHz band in the United States. Notwithstanding the likelihood that Canadian broadcast operations would not occupy channels designated for broadband use in the United States 600 MHz band following the incentive auction, the simulations offered in the Public Notice take the more conservative course and protect currently occupied Canadian broadcast allotments.<sup>7</sup>

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<sup>4</sup> Public Notice ¶¶ 2, 3.

<sup>5</sup> *Id.* ¶ 3.

<sup>6</sup> *Id.* ¶ 3 n.8; *see also* Consultation on Repurposing the 600 MHz Band, Spectrum Management and Telecommunications, Industry Canada, SLPB-005-14, ¶ 30 (rel. December 18, 2014) (“While the specific band plan option to be used for the 600 MHz band will not be known until after the incentive auction in the United States, it would be beneficial for Canada to adopt this framework, and commit to harmonize with the band plan option to be adopted by the United States. The band plan option to be chosen is tied to the amount of spectrum to be repurposed. If Canada adopts the same band plan configuration as the United States (and repurposes the same amount of spectrum), cross-border interference and frequency coordination challenges would be limited, thus facilitating deployment of services in the border areas. As well, Canadian spectrum users would have access to a wider supply of wireless equipment at lower costs.”), available at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10891.html>.

<sup>7</sup> *Id.* ¶ 3 n.10.

With respect to Mexico, the simulations pursue the same balanced, pragmatic approach. The Mexican national radiofrequency regulator, IFETEL, has not yet publicly proposed plans for repurposing the 600 MHz band; therefore, the simulations take the conservative view that the Commission will need to protect *all* Mexican television allotments from interference by broadband operations in the United States even if those allotments are currently vacant.<sup>8</sup> Due to insufficient data about the nature of current and planned Mexican broadcast operations, however, the simulations do not reflect any interference from Mexican TV stations into the United States.<sup>9</sup>

The exclusion of Mexican television interference into the United States represents an important limitation of the present simulations, but a reasonable one. First, interference from Mexican TV stations into the United States will be limited to the southwestern border region. Second, while portions of this area are obviously very heavily populated, much of this territory has low population densities and is unlikely to generate meaningful aggregate impairments for the nation as a whole.<sup>10</sup> Third, most of the television allocations actually used by Mexico along the border are clustered at a few specific locations at more moderate power levels, which allow broadband licensees in the United States greater flexibility to accommodate those operations.<sup>11</sup> Fourth, as explained in greater detail below, assumptions that err on the side of excluding false positives on interference are preferable to ones that incorporate false negatives in the absence of

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<sup>8</sup> *Id.* ¶ 3.

<sup>9</sup> *Id.*

<sup>10</sup> *See* Letter from Michael P. Goggin, General Attorney, AT&T, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 12-268 (Apr. 14, 2015) (“AT&T Ex Parte”) (reviewing the predicted impairments of operational television stations in Mexico on the United States band plan using various assumptions about the stations’ operating parameters due to a lack of publicly available information).

<sup>11</sup> Active Mexican TV stations affecting metro areas are clustered along the borders in Tijuana, Mexicali Ciudad Juarez, Nuevo Laredo, and Reynosa. San Diego and Los Angeles are the only major US markets impacted by the Mexican border.

more definitive information about the nature and extent of impairments.<sup>12</sup> This preference promotes the public interest in increasing broadband investment, innovation and deployment because assumptions that over-report potential impairments along the Mexican border would lead the Commission to adopt a lower clearing target than actual market conditions warrant.

### **III. PREDICTIVE JUDGMENTS REDUCE THE RISK OF PROVIDING TOO LITTLE SPECTRUM FOR BROADBAND BY TAKING CARE NOT TO OVERESTIMATE IMPAIRMENT LEVELS**

Unlike a more generous clearing target, a lower-than-warranted clearing target cannot be remedied through the capacity of the auction to match supply with demand. This dynamic exists because the initial spectrum-clearing target can only decrease, not increase, during the incentive auction.<sup>13</sup> Therefore, if the spectrum-clearing target is set too low initially, the once-in-a-lifetime low-band spectrum auction will conclude without allowing market forces an opportunity to put the optimal amount of the nation's spectrum resources to the highest valued use. Furthermore, a lower-than-warranted clearing target will decrease the number of spectrum blocks protected from anti-competitive foreclosure by the dominant incumbents that already hold more than one-third

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<sup>12</sup> Moreover, one of the more comprehensive studies on border interference impairments identifies similar levels of impairments to the major markets of San Diego and Los Angeles from the Mexican border. *See* AT&T Ex Parte, Attached Study at 15. In Los Angeles, AT&T's study shows four unauctionable, two Category 2, and one Category 1 blocks while the FCC's simulation shows potentially four unauctionable, one Category 2, and two Category 1 Blocks. In San Diego, the AT&T study shows zero auctionable blocks while the FCC simulation shows potentially two Category 1 blocks. *See id.*; *see also* Public Notice, Appendix at 5-6. This common directionality shows importance in securing sufficient broadcaster participation along the U.S. side of the border and choosing a reasonable initial spectrum-clearing target.

<sup>13</sup> *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567 ¶¶ 326, 328 (2014) ("*Incentive Auction Order*") (noting that the "initial clearing target—the maximum amount of spectrum sought to be cleared of television stations and repurposed through the incentive auction—will be determined before commencement of the reverse and forward auction bidding processes" and will be reduced in each subsequent round until the final stage rule is satisfied).

of the available low-band spectrum in a particular geographic market area.<sup>14</sup> The potential for a reduction in or elimination of the pro-consumer spectrum reserve exists because the size of initial clearing target determines the size of the reserve.<sup>15</sup> If the initial clearing target is set too low due to the Commission having over-estimated the effects of total aggregate impairments in the 600 MHz band, then the spectrum reserve will decrease and could disappear entirely.<sup>16</sup> A smaller initial clearing target of less than 84 megahertz would mean a smaller spectrum reserve, which, in turn, would reduce the opportunity for competitive carriers to challenge the two dominant providers in the market. The detrimental effects of overstating the degree of impairment in the post-auction band plan should caution against adopting assumptions that, taken together, predict more interference than is likely to occur.

A determination of the optimal initial spectrum-clearing target for the 600 MHz incentive auction must, by necessity, rely on an array of assumptions that involve a variety of predictive judgments about future events, including the future regulatory environments of Canada and Mexico, the future of television broadcasting in each of those nations and the future behavior of reverse-auction participants in the United States. The Public Notice makes reasonable predictive judgments regarding each of these factors and even accounts for multiple ranges of possible behavior where numerous stakeholders are involved.<sup>17</sup> Employing assumptions that exercise

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<sup>14</sup> See *Incentive Auction Order* ¶¶ 326, 752.

<sup>15</sup> See *Policies Regarding Mobile Spectrum Holdings; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6133 ¶ 184 (2014). In the *Mobile Spectrum Holdings Report and Order*, the Commission provided a chart that illustrated the maximum amount of reserve spectrum in each market for a range of initial clearing targets. The Order explained that if the auction does not close in the initial stage, the maximum spectrum reserve in each PEA would be the smaller of the maximum amount of reserved spectrum in the previous stage, or the amount of reserve-eligible demand at the previous stage. *Id.*

<sup>16</sup> See *Incentive Auction Order* ¶¶ 46, 326.

<sup>17</sup> See Public Notice, Appendix (showing three tiers of broadcast participation in the auction).

caution not to overstate the extent of total aggregate impairments will result in a superior auction outcome to those that over-represent the degree of total aggregate impairment because they will put more spectrum to a market test, protect the pro-consumer spectrum reserve, and retain the flexibility to self-correct by reaching equilibrium during the course of the auction unlike assumptions that would result in a less-than-warranted spectrum clearing target.

#### **IV. THE SIMULATIONS REASONABLY FOCUS ON A TOTAL AGGREGATE IMPAIRMENT THRESHOLD THAT IS LESS THAN 20 PERCENT**

The Task Force's decision to focus its simulations on a total aggregate impairment threshold on the low end of the 10 to 20 percent range the Commission proposed in its *Comment Public Notice* may prove too intolerant of impairments to ensure sufficient spectrum is made available to satisfy consumer broadband demand.<sup>18</sup> In its Reply Comments, T-Mobile proposed a scaled measurement of total aggregate impairments corresponding to 10 percent total aggregate impairments at clearing targets of more than 84 megahertz and 20 percent total aggregate impairments at clearing targets of equal to or less than 84 megahertz.<sup>19</sup> In the alternative, T-Mobile proposed a scaled measurement that would steadily increase the tolerance for impairment at lower levels of spectrum clearing.<sup>20</sup> The basis for this recommendation was straightforward: at higher levels of spectrum-clearing, carriers and the Commission will want to place a higher priority on achieving greater commonality and a lower priority on clearing yet more spectrum. Placing a higher priority on reducing the level of total aggregate impairment at higher levels of spectrum clearing helps ensure that a common band plan is available across enough of the United

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<sup>18</sup> Public Notice ¶ 2.

<sup>19</sup> See Reply Comments of T-Mobile USA, Inc., AU Docket No. 14-252, GN Docket No. 12-268 at 21-23 (Mar. 13, 2015) ("T-Mobile Reply Comments").

<sup>20</sup> *Id.*

States' population to allow for meaningful economies of scale and scope in deployment for a wider, more complex, more costly band plan design. At levels of spectrum clearing at or below 84 megahertz, however, the priorities shift from prioritizing commonality to prioritizing broadband spectrum availability for the public. While greater commonality remains desirable even at lower clearing targets, implementing the more compact band plan associated with lower spectrum clearing targets will not be as costly or as complex as implementing the band plan design of higher spectrum clearing target and, just as important, the per unit demand on each additional megahertz of broadband spectrum will be progressively greater as the clearing target decreases.

The Public Notice appears to acknowledge the desirability of such a scaled approach, but – by establishing a total aggregate impairment threshold equivalent to just 14% of spectrum at 84 megahertz of spectrum cleared<sup>21</sup> – sets its tolerance levels lower than necessary or desirable.<sup>22</sup> Numerous bands have faced much larger encumbrances when those licenses were made available for competitive bidding or when they were purchased in the secondary market. T-Mobile, for example, purchased Lower 700 MHz A Block spectrum from Verizon Wireless for more than \$3 billion notwithstanding the presence of broadcast impairments on approximately half of the available MHz-POPs being acquired.<sup>23</sup> When compared to the entire 700 MHz band, that impairment level equates to roughly the equivalent of one channel that the Public Notice proposes to use. It also reinforces the Public Notice's conclusion that imputed aggregate

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<sup>21</sup> Public Notice ¶ 2 n.4.

<sup>22</sup> T-Mobile Reply Comments at 21-23.

<sup>23</sup> See Phil Goldstein, *T-Mobile hopes to deploy LTE in all of its 700 MHz A Block spectrum this year*, Fierce Wireless (Mar. 19, 2015) (discussing T-Mobile's efforts to resolve the impairments of the 700 megahertz licenses purchased from Verizon), available at <http://www.fiercewireless.com/story/t-mobile-hopes-deploy-lte-all-its-700-mhz-block-spectrum-year/2015-03-19>.

impairment levels equivalent to one of seven available blocks of spectrum available nationally is reasonable, especially if the alternative is to make available less spectrum for broadband use by the public.

Different commenters naturally have assessed the requisite minimally efficient levels of non-impaired population differently, and commenters proposed a variety of different mechanisms to strike the proper balance between securing additional wireless broadband spectrum, on the one hand, and achieving greater uniformity of the band plan from market to market, on the other.<sup>24</sup> The Task Force’s simulations recognize the value of a scaled approach, but risk providing too little spectrum for broadband use by employing a figure at the low end of the range of impairment levels proposed by the Commission at low clearing levels.

For purposes of simulation, the Public Notice adopts an impairment level that is equivalent to one block of spectrum across the United States.<sup>25</sup> The Public Notice is careful to note that this assumed impairment level does not suggest that one block of spectrum would, in fact, be impaired in every geographic market area.<sup>26</sup> Instead, the Public Notice explains that imputing a level of one-block of impairment allows for a range of possible total aggregate impairment levels depending on the clearing target involved –from 14 percent of total weighted-POPs nationwide at a clearing target of 84 megahertz, to 11 percent of total weighted-POPs nationwide at a clearing target of 114 megahertz, to 10 percent of total weighted-POPs nationwide at a clearing target of clearing target of 126 megahertz. This range of impairments

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<sup>24</sup> Compare T-Mobile Reply Comments at 20-21 (“provisions to prevent excessive impairment”) (“T-Mobile Reply Comments”) with Comments of AT&T, GN Docket No. 12-268 at 5 (filed Feb. 20, 2015) (stating “it matters greatly” the location of impairments).

<sup>25</sup> Public Notice ¶ 2.

<sup>26</sup> Public Notice ¶ 2 n.4.

falls at the low end of the 10 to 20 percent level of total aggregate impairment that the Commission proposed in its Comment Public Notice and, as such, risks elevating consistency over making high-value spectrum available for broadband use, especially at lower levels of spectrum clearing. As a result, while T-Mobile supports employing a range of total aggregate impairments, those that the Public Notice proposes would prove too low to the extent spectrum clearing falls below 84 megahertz.

**V. THE SIMULATIONS SHOULD NOT TREAT IMPAIRMENTS OF DOWNLINK AND UPLINK SPECTRUM UNIFORMLY**

Another area in which the Public Notice's assumptions may require refinement is the uniform way in which it treats impairments of downlink and uplink spectrum. As T-Mobile and other commenters have repeatedly noted, adjusting the impairment categorization depending on the percentage of uplink or downlink impairment would reflect meaningful differences in the intensity of use, operation, and value of uplink and downlink blocks.<sup>27</sup> Spectrum impairments should take into account the different value of uplink and downlink spectrum segments to more accurately reflect provider deployment needs. In its simulations, the Task Force eliminated the proposed weight on impairments in the downlink, where downlink impairments are counted as impairing the corresponding uplink, but uplink impairments would not be counted as impairing the corresponding downlink band.<sup>28</sup> By failing to weigh downlink impairments more heavily

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<sup>27</sup> See Comments of the Competitive Carriers Association, AU Docket No. 14-252, GN Docket No. 12-268 at 5 (Filed Feb. 20, 2015).

<sup>28</sup> Public Notice ¶ 2 n.5.

than uplink impairments, specifically on a 2-to-1 basis, the Task Force's predictions may underestimate the amount of valuable spectrum licenses that would otherwise be available.<sup>29</sup>

In this regard, it is worth noting that while achieving paired spectrum should remain the paramount goal, there are no special operational limitations on other blocks in a geographic area that would exist if impairments led to competitive bidding for a license in which only the downlink segment were available because the LTE (Long Term Evolution) wireless broadband standard allows wireless operators to readily deploy both downlink-only and paired broadband operations in the same market. LTE allows for deployment parameter variations on a transceiver-by-transceiver basis.<sup>30</sup> The practical burden of programming base stations to accommodate both downlink-only and paired blocks is minimal.<sup>31</sup> As a result, deploying downlink-only and paired LTE operations within the same market poses no special technical

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<sup>29</sup> Comments of T-Mobile USA, Inc., AU Docket No. 14-252, GN Docket No. 12-268 at 10-14 (Filed Feb. 20, 2015).

<sup>30</sup> Deploying a 4G LTE network using both downlink-only and paired blocks in the same market would simply require an operator to set the carrier aggregation parameters separately for each base station. If the area served by a base station includes paired blocks, then the operator could program the base station to aggregate both the paired uplink and downlink blocks, or not support carrier aggregation at all. If the area served by a base station includes only downlink blocks, then the operator would aggregate the unpaired downlink with another paired band and specify that the type of aggregation will be downlink only. In the latter case, the paired band would be the primary component carrier in the aggregation, which means simply that the paired band would provide the control channels for the communications link. The base stations an operator uses to deploy its LTE network are likely to already support aggregation of different bands of spectrum, such as the 700 MHz and AWS bands. As an operator uses newly acquired spectrum, specific aggregation combinations of the newly acquired spectrum and existing spectrum bands will be standardized and implemented in base station hardware. Using the LTE standard, the implementation of carrier aggregation includes the capability to support aggregation of different amounts of downlink spectrum and uplink spectrum, although the former should always exceed the latter. Thus, base station hardware includes the capability to aggregate downlink spectrum but not uplink spectrum.

<sup>31</sup> Adjusting a base station's settings to configure transmissions for that base station's particular environment represents standard radiofrequency engineering practice: as a rule, engineers or technicians will configure each base station in the network regardless of whether or not downlink-only operations are involved. Moreover, as an operator builds devices that can operate on the 600 MHz band, there should be little or no additional cost to supporting carrier aggregation of downlink-only blocks with paired spectrum, provided that the carrier builds support for carrier aggregation simultaneously into its devices.

hurdles. Nor does such a configuration pose any meaningful economic or operational challenges for wireless operators.

To acknowledge the differences in demand and utility between high-value downlink segments and lower-value uplink segments, the simulations should weight downlink impairments on a 2-to-1 basis against uplink impairments.

## **VI. THE SIMULATIONS ARE SOUND AND PREDICT UNIFORM LICENSES WITH LOW IMPAIRMENT**

While the weighting of downlink versus uplink impairments could be improved, the simulations found in the Public Notice are generally sound. The simulations rely on a variety of assumptions and predictive judgments, some of which increase the presumed total aggregate impairment level and others of which decrease the presumed total aggregate impairment level. While disregarding the potential for interference from operational Mexican television stations into the United States will understate the degree of impairment in the Southwest, this understatement is to some degree unavoidable given the dearth of publicly available information about the Mexican television environment and the ever-present potential for regulatory change. The understatement of potential impairments to the United States 600 MHz band from Mexico is in any case limited to one portion of the country and counterbalanced by the assumption that all Mexican allotments must be protected, even ones that are vacant today. Perhaps most important, sound public policy reasons exist to incorporate assumptions that might under-state interference potential, not the least of which is that, unlike over-statements of interference potential, any errors in predictive judgment can be corrected by the auction process itself. As a result, the assumptions behind the simulations of the Public Notice are reasonable, clear and fully warranted by how the incentive auction is supposed to operate, the Commission's Comment Public Notice and the record of the incentive auction proceedings.

## VII. THE SIMULATIONS PREDICT STRIKINGLY UNIFORM LICENSES

Moving past the validity of the assumptions that the Public Notice explains in detail, the simulations themselves provide useful insight into the likely composite of licenses available in the 600 MHz band following the incentive auction. Despite predictions of considerable heterogeneity among the licenses being offered,<sup>32</sup> the simulations produce surprisingly uniform licenses with remarkably low levels of impairment. The simulations use three different levels of broadcast participation to set initial clearing targets based on the assumptions described in the Public Notice. This procedure results in an initial clearing target of 84 megahertz where 40 to 50 percent of broadcasters participate in the reverse auction (Scenario 1); an initial clearing target of 114 megahertz where 50 to 60 percent of broadcasters participate (Scenario 2); and an initial clearing target of 126 megahertz where 60 to 70 percent of broadcasters participate (Scenario 3).<sup>33</sup> In each scenario, the vast majority of the licenses are comprised of lightly impaired Category 1 licenses:

- For Scenario 1, there are only forty-six Category 2 licenses of the 2842 possible licenses.
- For Scenario 2, there are only fifty Category 2 licenses of the 3654 possible licenses.
- For Scenario 3, there are only forty-eight Category 2 licenses of the 4060 possible licenses.<sup>34</sup>

These results are not confined to low-demand markets, either. In all three scenarios, 88 to 93 percent of the licenses in the high-demand markets are Category 1 licenses and 84 to 88 percent of PEAs contain *only* Category 1 licenses. The results from all three scenarios are sensible and predict a significant percentage of lightly impaired licenses in major markets. Even allowing for

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<sup>32</sup> Comments of AT&T, AU Docket No. 14-252, GN Docket No. 12-268 at 6 (filed Feb. 20, 2015) (“AT&T Comments”).

<sup>33</sup> Public Notice ¶ 5.

<sup>34</sup> *Id.*, Appendix at 1.

the effects of additional impairments along the Mexican border as a result of operational television stations in Mexico impairing the United States band plan would not produce substantial additional heterogeneity on a national scale. The simulations strongly suggest that concerns are about the burden of Category 2 spectrum and excessive heterogeneity among licenses are misplaced.<sup>35</sup> No modeling can be entirely accurate and any simulations must rely on a variety of predictive judgments about future behavior. But the simulations presented in the Public Notice rely on generally reasonable assumptions to produce impairment models that suggest a significant number of unimpaired or lightly impaired 600 MHz licenses will be available in the incentive auction across a variety of broadcast participation scenarios.

## **VIII. CONCLUSION**

The initial spectrum clearing target set by the Commission will affect the ability of interested parties to sell or acquire spectrum during the incentive auction. A target that is too low will not make enough spectrum available for new wireless broadband services and limit opportunities for broadcasters to participate. If the Commission chooses an initial spectrum-clearing target that is too high and no remedies have been adopted to prevent gaming the spectrum-reserve trigger, the spectrum reserve would prove meaningless. Assuming rules are adopted to prevent gaming the reserve trigger, however, the risks of a higher clearing target will be less consequential than a lower clearing target because the incentive auction process will eventually reduce the amount of spectrum to a level that is consistent with broadband spectrum demand.

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<sup>35</sup> AT&T Comments at 18-21; Comments of Verizon, AU Docket No. 14-252, GN Docket No. 12-268 at 7-8 (filed Feb. 20, 2015).

The Task Force's simulations of the initial clearing target optimization procedures for the incentive auction give cause for optimism. The assumptions behind the simulations are generally sound and produce results that, even allowing for the absence of data about the effects of Mexican television operations, indicate a significant number of lightly impaired licenses will be available in the incentive auction. Adopting a 2-to-1 differential in impairments of downlink and uplink spectrum segments would better reflect the greater utility, demand and value of downlink spectrum to uplink spectrum. But even if the current downlink-uplink weighting is retained without adjustment, the results are, on balance, robust enough to indicate that the incentive auction should produce spectrum blocks that are generally lightly impaired across a substantial portion of the United States.

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