

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

In the Matter of	)	
	)	
Expanding the Economic and Innovation	)	GN Docket No. 12-268
Opportunities of Spectrum Through Incentive	)	
Auctions	)	
	)	
Office of Engineering and Technology Releases	)	ET Docket No. 13-26
and Seeks Comment on Updated OET-69	)	
Software	)	
	)	
Office of Engineering and Technology Seeks to	)	ET Docket No. 14-14
Supplement the Incentive Auction Proceeding	)	
Record Regarding Potential Interference	)	
Between Broadcast Television and Wireless	)	
Services	)	

**REPLY COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®**

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**I. INTRODUCTION AND SUMMARY**

CTIA – The Wireless Association® (“CTIA”) hereby submits these reply comments in response to the Commission’s Second Report and Order and Further Notice of Proposed Rulemaking (“*ISIX Order*” and/or “*ISIX Further Notice*”) in this proceeding.<sup>1</sup> In its opening comments, CTIA emphasized the importance of adopting clear, easily-followed procedures for identifying and mitigating inter-service interference. It is clear that management of inter-service interference will be extremely complicated, and the Commission should avoid placing unnecessary or overly burdensome requirements on wireless licensees. CTIA therefore opposes certain proposals made in opening comments that would impose significant and unnecessary

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<sup>1</sup> *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Office of Engineering and Technology Releases and Seeks Comment on Updated OET-69 Software, Office of Engineering and Technology Seeks to Supplement the Incentive Auction Proceeding Record Regarding Potential Interference Between Broadcast Television and Wireless Services, Second Report and Order and Further Notice of Proposed Rulemaking, FCC 14-157 (Oct. 16, 2014) (“ISIX Order and FNPRM”).*

obligations on wireless licensees and/or undermine the auction's spectrum clearing goals. CTIA asks the Commission to take the following actions in response to opening comments filed in this proceeding:

- The Commission should not adopt the “zero person threshold” for interference advocated by the National Association of Broadcasters (“NAB”). Like the zero percent interference threshold proposed by the Commission in the *ISIX Further Notice*, this action would be impractical and unprecedented.
- The Commission should clarify elements of its inter-service interference resolution procedures, and decline to adopt proposals that would add even more unnecessary regulatory obligations for wireless licensees.
- The Commission should reject its complicated proposal for the ongoing analysis of inter-service interference. The Commission can and should adopt a much simpler, “safe harbor” approach to interference prevention and mitigation.
- The Commission should adopt its proposal to use OET-74 when modeling the interference environment for broadcast television, and such action is entirely consistent with the Spectrum Act.
- To facilitate the broader goals of the Spectrum Act, the Commission should accommodate a limited amount of market variation in the 600 MHz band plan, so long as the interests of broadcast and wireless licensees continue to be protected.
- Because there is no way for over the air television viewers to differentiate among different types and sources of interference, the Commission should decline commenter proposals to institute specialized procedures for handling viewer complaints regarding inter-service interference.

CTIA supports the adoption of appropriate interference protections for both broadcast and wireless licensees in the 600 MHz band. However, the Commission can meet this objective without imposing the overly complicated and onerous requirements proposed in the *ISIX Further Notice*. In adopting rules to address inter-service interference issues in the 600 MHz band, the Commission should maintain the principles of certainty and transparency that will pave the way to a successful incentive auction and post-auction 600 MHz environment.

## **II. CTIA REITERATES ITS OPPOSITION TO REQUIREMENTS PLACED ON WIRELESS LICENSEES THAT ARE OVERLY BURDENSOME OR UNNECESSARY.**

In the course of developing inter-service interference protections for the 600 MHz band, the Commission should not take action that would inject unnecessary complications into the interference prevention and resolution process. First, the Commission should not further strengthen the interference protections for broadcasters by adopting NAB's "zero person" interference threshold. This proposal is impractical and unprecedented, and its adoption is not necessary to ensure adequate protection of broadcasters. Second, the Commission should note the record evidence that implementation of its proposed inter-service interference procedures would be extremely difficult. The Commission should simplify its requirements, and should reject proposals made in this proceeding that would complicate this process even further. Third, and finally, the Commission should affirm its authority to use tools and software, such as OET-74, that will help to model the interference environment for broadcast television.

### **A. The Commission Should Reject Proposals for Unnecessary, Unprecedented and Impractical Interference Protections.**

As CTIA demonstrated in its initial comments, the Commission's proposed "zero percent threshold" for harmful interference to broadcast stations is impractical and inconsistent with the Commission's past treatment of such matters.<sup>2</sup> Now, in its comments, NAB takes this unreasonable proposal a step further and asks the Commission to "clarify that the limit for predicted interference is, in fact, zero persons, rather than some fraction of the population that

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<sup>2</sup> For example, AWS-1 licensees are required to operate outside of designated "exclusion zones," but are not required to undertake the complicated and ongoing engineering analysis proposed by the Commission in the *ISIX Further Notice*. 47 C.F.R. § 27.1134.

rounds to zero percent.”<sup>3</sup> In other words, NAB argues that the zero percent threshold is insufficient to protect TV receivers and should be increased. Just as the zero percent threshold is unprecedented and will undermine the incentive auction’s ultimate success, so too will NAB’s proposed “zero persons” standard.

A “zero persons” standard will have an even greater negative impact on the incentive auction than the zero percent threshold would. In its opening comments, CTIA noted that adoption of the zero percent threshold would necessitate more 600 MHz spectrum being labeled “impaired” in the forward auction than would be otherwise. The result could be depressed investment by forward auction bidders, which could threaten the overall success of the auction. Further, once licensed, wireless spectrum subject to a zero percent interference standard would be extremely difficult to build out, as the restrictions regarding base station deployment will be more numerous and will affect more licensees. This would, in turn, limit the wireless service available to wireless consumers. A “zero persons” standard would be even more damaging, as wireless licensees would be prevented from deploying their networks even if the risk of interference was to a single over-the-air viewer. NAB’s assertion would in effect limit service to potentially extensive numbers of wireless subscribers in a market just to protect the alleged interests of a solitary television viewer (who may, in fact, be receiving its television programming solely or primarily from a cable or satellite provider). This is an outcome that is clearly not in the public interest, extremely impractical, and will undermine investment in 600 MHz spectrum.

CTIA reiterates that the proposed zero percent interference threshold (including NAB’s “zero persons” interpretation) is inconsistent with the Commission’s typical treatment of

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<sup>3</sup> Comments of the National Association of Broadcasters, GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14, at 4-5 (Jan. 21, 2015) (“NAB Comments”).

interference issues generally and interference to broadcast television in particular. In advocating that “[t]he goal is not merely to predict zero interference, it is to cause zero interference and prevent harm to viewers,”<sup>4</sup> NAB has offered no explanation why a *de minimis* amount of interference caused to a viewer is acceptable if that interference is caused by another broadcaster, but is a violation of broadcasters’ rights if that interference comes from a wireless carrier. The Commission has long permitted broadcasters to cause “pairwise” interference to each other’s signals, so long as this interference does not exceed 0.5 percent of the population served by the victim station.<sup>5</sup> The effect of interference on viewers is the same whether that interference is caused by a new wireless licensee or a newly-authorized television station. Meanwhile, the zero percent (or “zero person”) interference threshold would have a significant negative impact on wireless entrants in the 600 MHz band, and neither the Commission nor NAB have argued why this standard is necessary.

As CTIA noted in its initial comments, the proposed zero percent threshold for harmful interference is unprecedented. CTIA is unaware of any interference threshold within the Commission’s rules that would prohibit even a *de minimis* increase in the amount of interference faced by a licensee. Indeed, in this very proceeding the Commission is proposing to adopt a much lower standard of protection with respect to interference caused by unlicensed white space devices and wireless microphones to licensed wireless services.<sup>6</sup> Because neither the

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<sup>4</sup> NAB Comments at 5.

<sup>5</sup> See 47 C.F.R. § 73.616(e).

<sup>6</sup> See *Amendment of Part 15 of the Commission’s Rules for Unlicensed Operation in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37*, Notice of Proposed Rulemaking, 29 FCC Rcd 12248 (2014); *Promoting Spectrum Access for Wireless Microphone Operations*, Notice of Proposed Rulemaking, 29 FCC Rcd 12343 (2014).

Commission nor any commenter in this proceeding has provided an adequate justification for why the Commission must depart from its historical, more reasonable approaches to interference protection, the Commission should reject the overly conservative zero percent or “zero persons” threshold. Instead, it should adopt an appropriate interference threshold that permits 600 MHz licensees greater flexibility to manage interference to broadcast television receivers.

**B. The Commission Should Clarify Key Elements of Its Interference Analysis and Adopt a Tailored and Achievable Interference Protection Framework.**

So that wireless licensees may more readily understand and comply with inter-service interference protections, the Commission should reject its burdensome proposal for ongoing interference analysis. At a minimum, the Commission should decline to adopt additional requirements that would further burden 600 MHz wireless licensees. Further, the requests for clarification of the Commission’s proposed framework demonstrate that what the Commission has suggested is impractical.

**1. Certain of the Commission’s Proposed Regulations Require Clarification.**

In its comments, the Consumer Electronics Association (“CEA”) states that “[s]everal portions of the Commission’s proposed framework . . . require further analysis or explanation.”<sup>7</sup> In particular, CEA requests clarifications related to the protection distances between wireless and broadcast licensees, the use of the “alpha” factor, and the DTV parameters to be used to protect broadcasters post-auction.<sup>8</sup> CTIA shares CEA’s belief that further clarification on these points would be very helpful.

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<sup>7</sup> Comments of the Consumer Electronics Association, GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14, at 2 (Jan. 21, 2015) (“CEA Comments”).

<sup>8</sup> *Id.* at 3.

***DTV Contour Extensions.*** In its comments, CEA notes that the Commission has proposed that broadcast television stations in the 600 MHz band be permitted to modify their facilities “only to the degree that doing so does not extend their contours in the direction of a co-channel or adjacent-channel 600 MHz wireless license area within a set distance.”<sup>9</sup> However, the *ISIX Further Notice* does not define or specifically seek comment on what this “set distance” would be.<sup>10</sup> CTIA supports the idea of clarifying the “set distances” between wireless and broadcast licensees. That said, the Commission should allow all interested stakeholders the opportunity to comment on the metrics used to protect wireless licensees from incursions from broadcast TV station licensees, and should not simply adopt a distance without first taking this step.

***“Alpha” Factor.*** Similarly, CTIA echoes CEA’s request that the Commission provide more guidance on its proposed “alpha” factor and how it is used to determine separation distances. In the *ISIX Further Notice*, the Commission has incorporated a scaling or “alpha” factor that is intended to adjust the required desired-to-undesired signal ratio threshold for DTV reception to correspond with the predicted strength of the DTV signal.<sup>11</sup> If the DTV signal is strong, it can withstand more interfering energy. The “alpha” factor is at its highest when the predicted DTV signal is weakest – such as at the edge of a station’s service contour. These disparities in the “alpha” factor, CEA argues, result in large changes to the separation distance between LTE and DTV stations even with minor changes in the predicted signal strength of the

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<sup>9</sup> *Id.* at 21.

<sup>10</sup> *Id.* at 21-22.

<sup>11</sup> *Id.* at 16.

DTV signal.<sup>12</sup> CTIA agrees that, as written, the Commission’s “alpha” factor proposal is unclear and merits further explanation. CTIA echoes CEA’s request that the Commission further examine this issue and explain its effect on the variation in required separation distances.<sup>13</sup>

***Pre-Repacking Calculations.*** Finally, CEA observed that the Commission’s *ISIX Further Notice* does not address how a wireless licensee should determine potential inter-service interference with a station that is not currently co- or adjacent-channel and within the culling distance, but will be once it is repacked.<sup>14</sup> CEA states that the Commission was not clear as to whether wireless providers should employ the inter-service interference methodology based on the *Channel Reassignment Public Notice*, the broadcaster’s construction permit application, or some other source of information.<sup>15</sup> While CTIA believes that the Commission’s intent was to have wireless licensees perform inter-service interference calculations based on the contours specified in the *Channel Reassignment Public Notice*, confirmation and/or clarification by the Commission would be helpful.

The numerous requests for clarification of the Commission’s approach to inter-service interference demonstrate that the regime proposed by the Commission is extremely – and overly – complicated. CTIA submits that these requests for clarification underscore the impracticality of the framework the Commission seeks to adopt.

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<sup>12</sup> *Id.* at 17.

<sup>13</sup> *Id.* at 19.

<sup>14</sup> *Id.* at 23.

<sup>15</sup> *Id.* at 24.

2. **The Commission Should Decline to Adopt Additional Burdens on Wireless Licensees.**

The record developed in this proceeding makes clear that the Commission has proposed an extraordinarily burdensome framework for the mitigation of inter-service interference. In its comments, NAB has proposed several additions to an already problematic regulatory framework. The Commission should reject these requests, as NAB's proposals only further highlight the underlying problems with the Commission's proposed approach. Further, CTIA believes that the additional study of intermodulation interference, as proposed by CEA, is unnecessary. Intermodulation interference issues are unlikely, and are best addressed on a case-by-case basis.

CTIA opposes the numerous additional burdens on wireless licensees suggested by NAB, which go above and beyond the already cumbersome regulatory framework proposed by the Commission in the *ISIX Further Notice*. In its comments, NAB supports the Commission's proposal to require wireless licensees to perform an interference analysis if their operations will fall within a set "culling distance" from a broadcaster, as well as the requirement that wireless licensees retain the latest copy of these analyses.<sup>16</sup> As CTIA indicated in its initial comments, the Commission's proposed requirements in the *ISIX Further Notice* are already impractical.<sup>17</sup> Now, NAB has asked the Commission to take these already onerous requirements a step further by requesting a requirement that wireless licensees submit their engineering analyses to all potentially affected broadcasters on each update, and that the Commission modify the method

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<sup>16</sup> NAB Comments at 5.

<sup>17</sup> The Commission has asked that new engineering analyses be performed when wireless licensees make changes to their existing base stations, yet provides no specificity as to what changes would trigger the requirement. The Commission's proposed approach would also affect a large number of base stations, and this number will only increase as wireless network providers take greater advantage of small cell technologies. And the ongoing burden to conduct hundreds, if not thousands of engineering analyses, constantly update them, and make them available upon request would ultimately injure consumers by making network deployment and enhancement much more difficult.

used to model antenna radiation patterns from wireless base stations.<sup>18</sup> CTIA opposes these additional burdens suggested by NAB. Not only would NAB's suggested additions make an already tremendously difficult process even more onerous, but they also create the potential for confusion. If wireless licensees are required to constantly submit new and updated technical reports to broadcasters, the sheer volume of these submissions will be more likely to overwhelm or confuse, rather than inform, affected broadcasters.

Other changes suggested by NAB highlight the difficulty with adhering to the Commission's proposal to have analyses performed every time a change or addition to the wireless base station architecture occurs. NAB asks that modifications be made to place a lower limit on elevation pattern relative field values for base station antennas.<sup>19</sup> NAB's proposals suffer from the same infirmities that undermined the utility of the FCC's proposal. The FCC should decline such approaches under which analyses must be performed every time a change or addition to the base station architecture occurs. Instead, as explained further below, a "safe harbor" standard for compliance should be established, with wireless carriers afforded full flexibility to maintain their networks so long as they do not cause interference.

CTIA also does not believe that additional study of intermodulation interference – as proposed by CEA – is necessary in the 600 MHz band. CEA has asked that the Commission conduct additional study of intermodulation interference (caused by two LTE signals or from one

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<sup>18</sup> NAB Comments at 6-7.

<sup>19</sup> NAB Comments at 6-7. NAB also recommends that azimuth patterns have a lower relative field limit of 0.1 (corresponding to 1 percent of the maximum radiated power in any compass direction). *Id.* at 7. NAB further recommends that elevation patterns assume maximum radiation (relative field limit of 1.0) from 0 to 10 degrees below the horizontal with a lower relative field limit of 0.1 at other elevation antennas. *Id.* NAB notes that if the published antenna patterns specify greater levels, those higher levels would be used. *Id.*

LTE signal and one DTV signal) to DTV receivers.<sup>20</sup> CTIA agrees with the Commission’s findings in the *ISIX Order* that the current rules governing DTV-to-DTV interference do not consider multiple LTE interferers or third order modulation and “yet there is no evidence that the rules fail to adequately protect DTV signals as a result.”<sup>21</sup> Nor does CTIA believe that the Commission should further complicate its inter-service interference investigation by considering intermodulation interference. The current protections for DTV reception are already extremely conservative, and instances where intermodulation interference might occur are likely to be infrequent. For this reason, CTIA submits that case-by-case resolution of any intermodulation interference events would be more practical than adding such considerations to the inter-service interference methodology.

3. **The Commission Should Instead Adopt an Interference “Safe Harbor.”**

As CTIA indicated in its initial comments, the Commission should establish an interference protection framework, suggest “safe harbor” approaches for new 600 MHz licensees, and allow 600 MHz licensees to manage compliance with these requirements. Under such an approach, 600 MHz licensees would have full flexibility to build out their networks so long as their operational parameters do not exceed the “safe harbor.”<sup>22</sup> This approach would provide full protection from interference for broadcast stations and receivers, is much less burdensome on wireless licensees, is consistent with past precedent, and is warranted in light of the submissions in this proceeding. CEA’s comments and requests for clarification demonstrate

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<sup>20</sup> CEA Comments at 3-16.

<sup>21</sup> *ISIX Order and FNPRM* ¶ 46.

<sup>22</sup> Comments of CTIA – The Wireless Association, GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14, at 12 (Jan. 21, 2015).

that what the Commission has proposed is highly complex, ambiguous, and cumbersome. The additional requirements requested by NAB do not reflect a workable framework but rather merely highlight just how difficult it will be for wireless carriers to comply with the Commission's proposed regulations. Neither the Commission nor the NAB can identify any attendant benefit that would justify imposition of the Commission's burdensome proposed requirements over a more traditional framework for identifying and resolving interference. As such, CTIA echoes its earlier request that the Commission adopt a less burdensome approach and allow 600 MHz licensees the flexibility to determine the most effective approach for compliance instead of mandating an overly rigorous and unnecessary approach as proposed.

**C. The Commission Has Authority to Use Other Tools and Software When Modeling the Interference Environment for Broadcast Television.**

The Commission should uphold its proposal to have wireless licensees use proposed OET Bulletin 74 ("OET-74") to predict whether wireless operations will interfere with television stations in the 600 MHz band.<sup>23</sup> NAB argues that the Commission is barred by the Spectrum Act from using anything other than OET Bulletin 69 ("OET-69") and its implementing software to model interference to broadcast stations. CTIA disagrees, and supports the Commission's proposed use of OET-74.

NAB argues that the Spectrum Act constrains the Commission from applying any methodology other than OET-69 to address issues of interference to broadcast television stations.<sup>24</sup> This argument is inconsistent with the plain language of the Spectrum Act. The

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<sup>23</sup> *ISIX Order and FNPRM* ¶ 61.

<sup>24</sup> NAB Comments at 7-8 ("As the Commission is well aware, Section 6403(b)(2) of the Spectrum Act dictates the means by which the Commission must preserve both coverage area and population served . . . Unfortunately, OET-74 is not OET-69."); *see also id.* at 8 ("The FCC is required to use OET-69 to protect *both* coverage area *and* population served in reassigning

Spectrum Act stipulates that when assigning television stations to new channels through the repacking, the Commission “shall make all reasonable efforts to preserve, as of the date of the enactment of this Act, the coverage area and population served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69 of the Office of Engineering and Technology of the Commission.”<sup>25</sup> NAB argues that because “the Act is silent on the potential sources of any losses,” “OET-69 (and its implementing software) continues to be the relevant standard for predicting interference,” regardless of the context.<sup>26</sup> This argument is not supported by the plain language of the Spectrum Act, would unnecessarily freeze the FCC’s ability to address interference issues in the future, and is inconsistent with the framework of the Incentive Auction.

First, the plain language of the Spectrum Act – and the Spectrum Act’s *only* reference to OET-69 – states that OET-69 methodology shall be used to preserve a television station’s coverage area and population served in the *repacking* process.<sup>27</sup> The Spectrum Act makes no mention of how interference (to broadcasters) in the 600 MHz band is to be managed post-repacking and post-commencement of wireless operations. Meanwhile, the Commission’s proposed inter-service interference requirements for wireless licensees are only triggered upon the wireless licensee’s preparing to deploy service, an event that clearly will occur well after the

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television stations – including in reassigning those stations to portions of the 600 MHz band where they may be subject to interference from wireless operators.”) (emphasis in original).

<sup>25</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6403(b)(2) (codified at 47 USC §1452), 126 Stat. 156 (2012) (“Spectrum Act”)

<sup>26</sup> NAB Comments at 8.

<sup>27</sup> Spectrum Act § 6403(b)(2) (“In making any reassignments or reallocations under paragraph (1)(B), the Commission shall make all reasonable efforts to preserve, as of the date of the enactment of this Act, the coverage area and population served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69 . . .”).

repacking. Indeed, while broadcaster interference protections for purposes of the repacking will have been determined using the methodology dictated by OET-69, the Commission is still permitted to use other tools and software to analyze TV station interference issues. Therefore, the Commission's use of OET-74 still maintains the protections derived from use of the OET-69 methodology – so the Commission is fully complying with the requirements of the Spectrum Act to ensure that the population served and coverage area served by a broadcaster is still dictated by the OET-69 methodology.

Second, NAB's statement that "OET-69 . . . continues to be the relevant standard for predicting interference" ignores the fact that OET-69 is inapplicable to issues of inter-service interference. Even if NAB's reading of the Spectrum Act is correct, and OET-69 must be used after the repacking phase, the Commission is in fact using the "methodology" from OET-69 to the fullest possible extent. However, OET-69 "does not provide for evaluating the impact of wireless operations on television station operations" and "is not designed to predict inter-service interference."<sup>28</sup> NAB concedes as much when it states that "[i]nter-service interference is so complicated that it has spawned a new draft OET Bulletin. It is so complex that the Commission has had to develop separate methodologies for predicting it . . ."<sup>29</sup> Yet NAB offers no explanation for how the Commission can reasonably apply OET-69 in circumstances it was not designed for, and to which it is inapplicable. Because OET-69 is not designed to measure inter-service interference, claiming that the Spectrum Act requires its use in all circumstances leads to nonsensical results. NAB's interpretation of the Spectrum Act – that it mandates use of OET-69

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<sup>28</sup> *ISIX Order and FNPRM* n. 216.

<sup>29</sup> NAB Comments at 1.

for *all* interference analysis, even interference analysis that requires use of an alternate tool – is plainly unreasonable.

Third, NAB’s interpretation of the Spectrum Act would freeze OET-69 as the *permanent* means of addressing interference in the broadcast television band, a plainly illogical reading of the statute.<sup>30</sup> NAB’s interpretation of Section 6403(b)(2) leads to an absurd result: that Congress has forbidden the Commission from using anything other than OET-69 to resolve broadcast-related interference issues in the 600 MHz band, absent future statutory permission to do so. It is highly unlikely that, in specifying OET-69 as the bulletin to be used for replicating coverage in the repacking process, that Congress intended for OET-69 to be the exclusive means of addressing interference going forward. It is similarly unlikely that the Congress intended to implicitly and indefinitely divest OET of the ability to develop new bulletins for then-unanticipated interference scenarios.

Finally, NAB’s interpretation of OET-74’s usage is illogical in light of the incentive auction’s mechanics. In attempting to extend the Spectrum Act’s repacking-related requirements to the analysis of inter-service interference, NAB argues that during the repacking process, the Commission must factor in interference from future wireless licensees when calculating a station’s coverage area and population served.<sup>31</sup> However, there is no way to determine at the

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<sup>30</sup> NAB’s argument is that because all forms of interference affect a television station’s coverage, because OET-69 has historically been used to predict the coverage area and population served for broadcasters, and because the Spectrum Act has specified OET-69 in connection with preservation of coverage in the repacking process, that OET-69 is the governing methodology that must be used for all interference predictions involving TV broadcasters. *Id.* at 8.

<sup>31</sup> NAB Comments at 8 (“And, because interference levels – regardless of their source – directly affect calculations of the populations served by specific television stations, OET-69 (and its implementing software) continues to be the relevant standard for predicting interference.”).

time of the repacking precisely where wireless base stations will be located – the primary input for evaluating interference.

Because the Spectrum Act places no restrictions on what tools and/or software the Commission may use to address inter-service interference, the Commission has clear authority to require use of OET-74 to predict inter-service interference. Indeed, unlike OET-69, OET-74 actually models interference between wireless and broadcast operations. This makes OET-74 the clearly preferable alternative, as OET-69 was not designed to model the interference scenario for which NAB argues its use is mandated. The Commission should once again reject NAB’s arguments that the Spectrum Act imposes a broad requirement to use OET-69 (and its previous implementing software) exclusively and in perpetuity.

### **III. CTIA CONTINUES TO SUPPORT A LIMITED AMOUNT OF MARKET VARIATION IN THE 600 MHZ BAND PLAN.**

The Commission should reject NAB’s proposal to adopt a nationwide band plan, as this action would undermine the overall goals of the Spectrum Act by greatly limiting the amount of spectrum cleared for wireless services. As a general matter, CTIA believes that market-to-market variation in the 600 MHz band plan should be minimized, but that a certain degree of variation is necessary to ensure that more spectrum is made available for mobile broadband services. This proceeding is an important step by the Commission toward accommodating this market variability and promoting coexistence of diverse services where necessary.

In its comments, NAB has once again called for the Commission to adopt a nationwide band plan, which would obviate the need for inter-service interference regulations.<sup>32</sup> To be certain, a consistent band plan is a desirable option, and the Commission should make every

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<sup>32</sup> NAB Comments at 2-4.

effort to clear a consistent amount of spectrum across the country.<sup>33</sup> CTIA acknowledges that there are many benefits to a consistent band plan. As the Commission observed, limiting the amount of market variation will not only limit the amount of potential inter-service interference, but it will also help licensees achieve economies of scale when deploying their 600 MHz networks.<sup>34</sup> This approach will be particularly ideal in the largest markets, where the need for additional spectrum is greatest.

However, the accommodation of a limited amount of variation will allow much more spectrum to be made available for mobile broadband services. A review of the Commission's interference and domain file data makes clear that certain uncontrollable factors will make some market variability unavoidable. By modeling the interference environment between broadcast and wireless licensees, the Commission will facilitate this necessary, limited market variation while ensuring that both wireless and broadcast licensees' investments are protected, and that the best possible service is provided to consumers. The alternative – that the Commission limit the amount of spectrum cleared to that in the most constrained market (the “least common denominator” problem) – is a highly undesirable outcome.

The need for additional licensed spectrum is overwhelming, and the Commission should not permit constraints in one market to cause the withholding of needed spectrum in others. The Commission agreed, finding in the *Incentive Auction Order* that “[i]f the 600 MHz Band Plan could not accommodate some market variation, we would be forced to limit the amount of spectrum offered across the nation to what is available in the most constrained market. . . even if

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<sup>33</sup> See *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, Report and Order, 29 FCC Rcd 6567 ¶ 83 (2014) (“*Incentive Auction Order*”).

<sup>34</sup> *Id.*

more spectrum could be made available in the vast majority of the country.”<sup>35</sup> The Commission added that “[b]y allowing for market variation in our 600 MHz Band Plan, we can ensure that broadcasters have the opportunity to participate in the reverse auction in markets where interest is high. As a result, more spectrum can be made available nationwide in the forward auction.”<sup>36</sup> CTIA agrees, and asks the Commission to once again reject calls for a nationwide, “least common denominator,” band plan.

#### **IV. THERE IS NO NEED FOR ADDITIONAL PUBLIC OUTREACH CONCERNING INTER-SERVICE INTERFERENCE.**

Finally, CTIA believes that proposals to institute specialized procedures for handling of over-the-air viewer complaints are unnecessary. In its comments, Cohen, Dippell, and Everist, P.C. (“CDE”) asks the Commission to create a toll-free number and a website through which over-the-air viewers can register complaints of inter-service interference problems.<sup>37</sup> CDE also asks that the FCC implement an interference handbook which demonstrates how an over-the-air viewer may be faced with interference from a new wireless operation.<sup>38</sup> CTIA believes these proposals are unnecessary. There is no real ability for over-the-air viewers to gauge why their TV reception is disrupted, *i.e.*, whether the interference is caused by inter-service interference, interference from another source, or another problem with the receiver. In light of the conservative protection requirements proposed by the Commission in this proceeding, inter-

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<sup>35</sup> *Incentive Auction Order* ¶ 82.

<sup>36</sup> *Id.*

<sup>37</sup> Comments of Cohen, Dippell and Everist, P.C., GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14, at 3 (Jan. 21, 2015).

<sup>38</sup> *Id.*

service interference is highly unlikely to be the cause of such disruptions. For this reason, CTIA requests that this request by CDE be rejected as unnecessary.

## V. CONCLUSION

CTIA recognizes the challenges faced by the Commission in accommodating market variation in its 600 MHz band plan. As explained in these comments, CTIA believes that the Commission's proposed rules are overly conservative and burdensome to the wireless industry. The Commission should reject proposals made in comments that would make this process even more complicated. However, the Commission should not abandon market variability altogether, and should strive to accommodate market variation to the extent that it facilitates the clearing of additional spectrum for mobile broadband. By adopting a simpler, more easily complied with approach to inter-service interference, the Commission will promote a successful auction and a harmonious post-auction 600 MHz band environment.

Respectfully submitted,

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