

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 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
	)	
	)	GN Docket No. 12-268

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

Thomas C. Power  
Senior Vice President and General Counsel

Scott K. Bergmann  
Vice President, Regulatory Affairs

Krista L. Witanowski  
Assistant Vice President, Regulatory Affairs

**CTIA – The Wireless Association®**  
1400 Sixteenth Street, NW  
Suite 600  
Washington, DC 20036  
(202) 785-0081

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

**I. INTRODUCTION AND SUMMARY**

CTIA – The Wireless Association® (“CTIA”) respectfully submits these comments in response to the Commission’s Public Notice seeking comment on the detailed procedures necessary to carry out the first-ever broadcast television incentive auction.<sup>1</sup> As CTIA explains in these comments, a successful incentive auction will have several characteristics. First, it will have clear rules and procedures that will encourage interested broadcasters to participate with confidence. Second, it will clear as much spectrum as possible for new licensed wireless services in the 600 MHz band. Third, it will provide forward auction bidders with the information to make informed choices regarding future spectrum investments. And finally, a successful incentive auction will result in the auctioning of wireless licenses that are minimally impaired and can be productively used by wireless licensees.

To realize the vision of the Middle Class Tax Relief and Job Creation Act of 2012 (“Spectrum Act”) and respond to the surge in demand for additional mobile broadband spectrum, the Commission should take the following steps in response to this Public Notice:

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<sup>1</sup> *Comment Sought on Competitive Bidding Procedures for Broadcast Incentive Auction 1000, Including Auctions 1001 and 1002*, Public Notice, FCC 14-191 (Dec. 17, 2014) (“Auction 1000 Public Notice”).

- **The Commission should strive for simplicity in what is inherently a complex incentive auction process.** Specifically, the Commission should keep license impairments and market variation to the minimum amount necessary to achieve a significant degree of spectrum clearing. This may involve the adoption of an alternative means of determining whether the Commission has achieved a “near-nationwide” clearing of spectrum. The FCC should also differentiate between cross-border license impairments and other sorts of impairments.
- **The Commission should arm bidders – both in the forward and reverse auctions – with the information needed to confidently make the major decisions that are necessary as part of the incentive auction process.** This includes the provision of additional inter-service interference data necessary for forward auction bidders to calculate impairments on their licenses, as well as a holistic accounting of the discounted value of impaired licenses.
- **The Commission should not sacrifice important incentive auction goals in favor of speed.** The Commission should provide additional time (at least two weeks) between the reverse and forward auctions to permit parties sufficient time to evaluate their bidding strategies and other next steps. The Commission should also consider all possible clearing targets and not skip over certain clearing targets in the interest of speed. The Commission should provide forward auction bidders with more time (at least two weeks) to prepare for the assignment round. Finally, the Commission should postpone the allocation of the most heavily impaired licenses until a later date.
- **The Commission should, consistent with past auctions, conduct a mock auction for potential bidders well in advance of the actual incentive auction.** Indeed, the Commission may wish to consider if multiple mock auctions may be in the public interest, given the complexity associated with the reverse and forward auctions and the need to ensure that bidders fully understand the incentive auction process prior to the initiation of the actual auction.
- **The reverse auction should appropriately prioritize clearing unimpaired 600 MHz spectrum.** When the Commission assigns television stations to relinquishment options, it should focus on achieving the clearing target and keeping license impairments to a minimum.
- **The Commission should gather additional data from broadcast stations so it can more accurately determine the costs associated with repacking.**
- **The Commission should reconsider its proposed activity rules for the 600 MHz forward auction.** The Commission’s proposed requirement that bidders be active on 92 to 97 percent of their bidding eligibility in all clock rounds is overly aggressive. Given that this auction is the first of its kind, it is especially important that the Commission give bidders the breathing room needed to develop a comfort level with auction systems and processes. As such, the Commission should adopt

a less aggressive activity requirement, and should reach out to bidders during the auction to make sure they are comfortable before moving to higher activity levels.

The procedures developed by the Commission in this proceeding will play an extremely important role in the incentive auction's overall outcome. Because this auction represents a once-in-a-lifetime opportunity to reclaim prime spectrum for mobile broadband use, the Commission should proceed extremely carefully and develop auction procedures that keep the auction's ultimate success in mind. CTIA and its members look forward to continued discussions with the Commission and other auction stakeholders as the framework for the first ever incentive auction takes shape.

**II. THE INCENTIVE AUCTION'S OVERALL STRUCTURE SHOULD FOCUS ON MAINTAINING SIMPLICITY TO THE EXTENT POSSIBLE, KEEPING BIDDERS INFORMED, AND TAKING THE TIME NEEDED TO ACHIEVE THE AUCTION'S POLICY GOALS.**

As the Commission takes steps to develop an overall structure for the incentive auction, the Commission should be guided by certain overarching principles. First, the Commission should strive for simplicity wherever possible, recognizing that the incentive auction process is inherently complex. Most critically for wireless bidders, the Commission should aim to keep license impairments to a minimum, and should adopt clear standards for determining impairments and limiting market variation. Some of the most important decisions the Commission will make in developing procedures for the incentive auction relate to its treatment of impaired licenses offered in the forward auction.

Second, the Commission should arm bidders with the information needed to make key decisions. Given the additional complexity associated with combining a reverse and forward auction, the auction process should be transparent and structured in a way that gives bidders as much information as possible.

Third, the Commission should not sacrifice overall incentive auction goals in favor of speed. CTIA submits that the Commission should allow sufficient time for bidders to consider data provided to them in between stages of the auction, should evaluate all clearing targets, and should not rush to auction substantially impaired spectrum.

Finally, in order to promote bidder confidence in both the forward and reverse auctions, CTIA stresses that there is a distinct need to hold a mock auction well in advance of the actual auction process. A mock auction (and possibly multiple mock auctions) will also be helpful to the Commission as it “pressure-tests” auction software and procedures for the first time.

**A. The Commission Should Strive for Simplicity in an Inherently Complex Process.**

**1. The Commission Should Aim to Keep License Impairments to a Minimum.**

Both because of a desire for simplicity and efficiency in the incentive auction process and the desire to unleash as much spectrum as possible for mobile broadband, CTIA believes that the Commission should aim to keep 600 MHz license impairments to a minimum. While a certain degree of market variation and license impairment is inevitable (if only because of international border coordination issues), the Commission can promote a successful incentive auction by placing television stations in the 600 MHz band only where absolutely necessary, and in a manner that causes minimal disruption to future 600 MHz licensees.

As the Commission correctly observed in the Public Notice, the decision of where in the 600 MHz band to place a broadcast station involves trade-offs. For example, as the Commission notes, under its preferred approach there could potentially be TV stations placed in the uplink, downlink, and/or duplex gap spectrum in certain markets – complicating the band plan. However, the Commission appears to support this method as it may allow a higher amount of

spectrum to be cleared nationwide.<sup>2</sup> Alternatively, the Commission has proposed to assign stations to the downlink portion of the 600 MHz band wherever feasible, an approach that would limit the geographic reach of impairments and promote greater contiguity with television stations in the remaining TV bands, but would affect more spectrum blocks.<sup>3</sup> Meanwhile, placement of television stations in the uplink band would make interference easier to mitigate and would affect fewer spectrum blocks, but would also result in impairments covering a wider geographic area.<sup>4</sup>

In evaluating these options, CTIA believes that the Commission should take the following steps regarding the placement of television stations in the 600 MHz band. First, the Commission should attempt to be consistent in its assignment of stations to the 600 MHz band. CTIA urges the FCC not to adopt an approach in which television stations are scattered throughout the 600 MHz spectrum, with wireless operations interleaved between broadcasters. This outcome would create extraordinarily complex interference mitigation scenarios. Second, 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.<sup>5</sup> Finally, no television station should be assigned to the former Channel

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<sup>2</sup> Auction 1000 Public Notice at ¶ 35 (“In cases where a television station must be assigned to a channel in the 600 MHz Band in order to meet a given clearing target, we propose to assign these stations based on our goal of minimizing the loss of value due to impairments, i.e., minimizing the total impaired weighted-pops nationwide. Under this proposal, the optimization procedure could assign TV stations to any frequency in the 600 MHz Band. This could lead to assignments in the uplink portion of the 600 MHz Band in some markets, and in the downlink portion in others. We propose to include this objective in the optimization procedure consistent with our goals of limiting the potential for inter-service interference and maintaining a generally consistent band plan.”).

<sup>3</sup> *Id.* at ¶ 34.

<sup>4</sup> *Id.*

<sup>5</sup> *See, e.g.*, 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).

51 spectrum. Wireless licensees and the Commission have worked tirelessly to address the issue of interference caused by Channel 51 broadcast operations to the Lower 700 MHz A Block, and these efforts should not be undone through the creation of a regime that would allow for television stations to be newly assigned to this spectrum.<sup>6</sup>

## **2. The Commission Should Adopt Clear Standards for Determining Impairments and Limiting Market Variation.**

When determining whether it has achieved a “near-nationwide” clearing of spectrum, the Commission should adopt a clear standard that will promote a productive auction. While CTIA’s members continue to actively discuss this issue and hope to provide at a later date a more concrete proposal governing this requirement, CTIA believes that the Commission’s standards for determining impairments and limiting market variation should at minimum: (1) ensure that major markets are not overly impaired, (2) differentiate cross-border impairments from other license impairments, (3) provide more information on (and possibly adjust) the price index used to calculate impairments, and (4) consider a near-nationwide threshold lower than 20 percent (or adopt an alternate metric).

One of the most complicated issues that the Commission and stakeholders will face in the incentive auction is the resolution of market variation and the potential impairment of forward auction licenses. In an effort to establish a “near-nationwide” band plan, the Commission has proposed to weight the affected population in a license area by a price index based on values

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<sup>6</sup> Such action is also consistent with the Commission’s statement in the *Incentive Auction Report and Order* that “[s]tarting the 600 MHz uplink band at channel 51 also clears television operations out of channel 51, which should help spur deployment of the 700 MHz lower A Block.” *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, 29 FCC Rcd 6567, ¶ 59 (2014) (“*Incentive Auction Report and Order*”).

from past auctions.<sup>7</sup> The Commission has then proposed to set the near-nationwide clearing target at less than 20 percent.<sup>8</sup> In other words, a clearing target could be chosen only if 80 percent or more of the weighted-pops in the targeted amount of spectrum nationwide is considered unimpaired according to the Commission’s methodology.<sup>9</sup>

The Commission should develop a means of ensuring that major markets are not overly impaired, potentially by adopting a requirement that for the “near-nationwide” standard to be met, a certain number or percentage of the largest markets must contain a certain number or percentage of unimpaired licenses. CTIA is concerned that the Commission’s approach to limiting market variation could result in significant impairments in major markets – the places where the demand for additional spectrum is greatest. Based on the way the Commission has proposed to weight license impairments, *every* license in the New York and Los Angeles PEAs could be impaired, and yet the 20 percent target would not be reached. This is because the Commission has proposed to calculate impairments on a block-by-block basis, as opposed to an overall market population basis.<sup>10</sup> Such an outcome is extremely troubling, as the major markets include a significant percentage of wireless consumers. Recognizing that the largest markets are

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<sup>7</sup> Auction 1000 Public Notice at ¶ 38 (“Under this approach, for a given clearing target and assignment of TV stations to channels, we calculate the percentage of the population impaired in every PEA for each license using the county level data generated using the measurement approach set forth above. We multiply that percentage by the weighted-pops associated with the PEA to determine the ‘impaired weighted-pops’ for the license.”).

<sup>8</sup> *Id.* at ¶ 39 (“Under this standard, a clearing target could be chosen only if 80 percent or more of the weighted-pops in the targeted amount of spectrum nationwide is considered unimpaired according to our methodology.”).

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

<sup>10</sup> Federal Communications Commission, LEARN Webinar, “Integrating the Forward and Reverse Auctions” at 9 (Jan. 23, 2015), *available at* [http://wireless.fcc.gov/incentiveauctions/learn-program/Integration\\_Webinar\\_Slides.pdf](http://wireless.fcc.gov/incentiveauctions/learn-program/Integration_Webinar_Slides.pdf).

of significant importance from a spectrum clearing percentage, the Commission has asked whether, alternatively, certain PEAs or a specified number of PEAs not have any impaired licenses for the near-nationwide standard to be reached.<sup>11</sup> CTIA concurs that the Commission’s “near-nationwide” standard should include a requirement that a certain number or percentage of the most populated markets contain a certain number or percentage of unimpaired licenses.

Second, CTIA believes it makes sense to differentiate cross-border license impairments from other sorts of license impairments. Where a 600 MHz license is impaired because of a requirement to protect an incumbent Canadian or Mexican broadcast station, this impairment is unavoidable, and no action by the Commission can prevent it. This type of license impairment is fundamentally different from an impairment within the Commission’s control (i.e., an impairment created by placing a U.S. broadcast station in the 600 MHz band) and should be treated accordingly. For example, the Commission may consider only permitting license impairments greater than a set percentage (such as 10 or 15 percent) where the impairment is caused by an international television station, with an expectation that the border impairments may potentially be reduced over time. Alternatively, the Commission could establish a different threshold for impairment in border markets as opposed to non-border markets.

Third, the Commission should consider adjusting the price index used to calculate weighted-pops for impairment purposes. All the Commission has revealed is that it has multiplied the affected population in a market based on a price index, which the Commission stated was based on previous auctions. At a minimum, the Commission should provide additional information regarding the calculations it used to arrive at these numbers, including, at

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<sup>11</sup> Auction 1000 Public Notice at ¶ 40 (“For example, should we set a lower standard? Should we require that certain PEAs, or a specific number of PEAs (e.g., 40 of the top 50 PEAs as measured by total population), not have any Category 2 licenses in order to choose a clearing target?”).

a minimum, the specific auction data it is relying upon and the mathematical formulas used to create this price index. Only then can interested parties provide feedback on the Commission's methodology and its appropriateness for determining license impairments.

Finally, the Commission's "near-nationwide" threshold should reflect conditions that truly point toward a near-nationwide band plan for the 600 MHz band. This may require adoption of a standard other than 20 percent. CTIA and its members continue to examine this issue, and CTIA is not endorsing a particular alternative standard at this time. However, CTIA notes that there are several clearly undesirable auction outcomes that would nonetheless satisfy the 20 percent requirement. For example, the Commission could have 100 percent impairment for *all* licenses outside of the top 55 markets, and the 20 percent threshold would not be reached. In addition, and as noted above, the Commission could impair every license in both New York and Los Angeles and impairments could remain below 20 percent. Such outcomes were clearly not what the Commission envisioned when it sought to create a "near-nationwide" band plan. CTIA recognizes that a certain degree of impairment to 600 MHz licenses is inevitable. However, if the 20 percent threshold would permit a significant amount of impairment and result in what no reasonable person could describe as a "near-nationwide" band plan, then this standard should be revisited. CTIA welcomes the Commission's consideration of alternative means to satisfy the "near-nationwide" standard, and looks forward to continued discussion of this issue.<sup>12</sup>

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*Id.*

**B. The Commission Should Arm Bidders With the Information Needed to Make Key Decisions.**

**1. The Commission Should Provide Additional Inter-Service Interference Data to Enable Bidders to Calculate Impairments.**

The Commission should provide forward auction bidders with additional information germane to potential inter-service interference in the markets where they are bidding. CTIA has previously stressed that for any auction to be a success, the Commission must provide clarity and certainty to bidders regarding the assets available for purchase.<sup>13</sup> This is especially true where, as here, not all spectrum blocks available for bid are fully fungible. Thus, the Commission's auction procedures should emphasize the provision of critical information to forward auction bidders. In particular, the Commission should provide inter-service interference data for both the F(50,50) and F(50,10) methodologies,<sup>14</sup> as well as key technical parameters regarding the broadcasters that may cause inter-service interference in a market. This will allow bidders to make more informed decisions regarding their forward auction bids.

The Commission should provide inter-service interference information to forward auction bidders based on more than one statistical measure. In the Public Notice, the Commission points to Appendix B to define the amount of information that will be provided to forward auction participants concerning license impairments.<sup>15</sup> The Commission's inter-service interference methodology is based on the F(50,50) statistical measure, which assumes that a DTV signal will

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<sup>13</sup> See, e.g., Comments of CTIA – The Wireless Association®, GN Docket No. 12-268, at 15-16 (Jan. 25, 2013).

<sup>14</sup> The F(50,50) statistical measure for field strength prediction assumes that an interfering signal will be strong enough to interfere in 50 percent of the locations 50 percent of the time. The F(50,10) measure for field strength prediction assumes that an interfering signal will be strong enough to interfere in 50 percent of the locations 10 percent of the time.

<sup>15</sup> Auction 1000 Public Notice at ¶ 140, n. 251.

be strong enough to interfere with wireless operations in 50 percent of the locations within the wireless license area 50 percent of the time.<sup>16</sup> In the Commission's proceeding on inter-service interference, parties have called for the Commission to instead base its methodology on the F(50,10) statistical measure, which assumes that a DTV signal will be strong enough to interfere with wireless operations in 50 percent of the locations within the wireless license area 10 percent of the time.<sup>17</sup> This more conservative measure, if used, would provide potential forward auction bidders with more useful information regarding the nature and frequency of interference it may suffer in a particular impaired market. CTIA submits that the Commission should provide inter-service interference information based on *both* of these statistical measures, as this will give bidders a more complete picture of the potential interference environment in markets where they plan to bid on 600 MHz licenses. While the FCC ultimately may not rely upon the F(50,10) propagation data for determining license impairments, forward auction bidders would benefit from having as much information as possible about potential impacts on mobile broadband service.

For forward auction bidders to better model potential encumbrances on their licenses, the Commission should also provide additional information regarding the broadcasters that would serve as the source of inter-service interference. The Commission could provide key operating parameters – such as station location, antenna height, and power level – to forward auction

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<sup>16</sup> See, e.g., *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, ¶ 32 (2014).

<sup>17</sup> See Petition for Reconsideration of Sprint Corporation, GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14 (Jan. 22, 2015).

bidders on a confidential basis. This information would be extremely valuable to forward auction bidders, who could use it to further predict the amount of interference they may face in a market, and to determine whether a particular forward auction investment is worthwhile. Meanwhile, providing this information solely on a confidential basis would help ensure that the identities of broadcasters participating in the reverse auction<sup>18</sup> – who would not be a potential source of inter-service interference as long as they are still in the reverse auction – remain confidential, consistent with the Spectrum Act.<sup>19</sup>

## **2. When Discounting Licenses Based on Impairments, the Commission Should Incorporate a More Holistic Assessment of Value.**

Because the value of an impaired license does not decline in a linear fashion based on the degree of impairment, the Commission should incorporate a more holistic assessment of value than that discussed in the Public Notice. In the Public Notice, the Commission has suggested that the price of an impaired license would be discounted for one percent for each one percent of predicted impairment.<sup>20</sup> CTIA does not believe that this is a reasonable proxy for value. The Commission should ensure that bidders know which geographic areas in a market are impaired so that bidders can make informed decisions regarding the value of an impaired license to their spectrum planning. Meanwhile, the Commission should consider alternate means of discounting impaired license.

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<sup>18</sup> Data would only be required regarding broadcasters who have exited the reverse auction.

<sup>19</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6403(a)(3) (codified at 47 U.S.C. § 1452), 126 Stat. 156 (2012) (“Spectrum Act”).

<sup>20</sup> Auction 1000 Public Notice ¶ 147 (“For example, under this proposal a 10 percent discount would be applied to a license that is 10 percent impaired following the clock phase of the forward auction impairment.”).

In the Public Notice, the Commission has proposed to incorporate a price adjustment into the auction system at the end of the assignment phase that will account for varying degrees of predicted impairment to the licenses offered for sale.<sup>21</sup> The Commission indicated that these price adjustments would “help accommodate a range of values among generic licenses within a proposed category, while minimizing the number of bidding categories in the interest of simplicity.”<sup>22</sup> The price adjustment to an impaired license would be directly correlated to the percentage impairment – in other words, a license with 20 percent impairment would be discounted by 20 percent regardless of the nature of the impairment.

CTIA believes that the Commission’s numerical, linear approach to impairment does not truly reflect the value of a license or the impact of impairment. Put simply, the value of an impaired license does not decline linearly as the degree of impairment rises. There are several scenarios where a numerically small impairment could have a major impact on a license’s value. For example, there are locations that are essentially unpopulated – such as interstate highways and stadiums – where wireless coverage is nonetheless extremely important. Should a license’s zone of impairment include these areas, the value of the license would be significantly diminished. Moreover, if a certain percentage of the population in a key portion of the PEA is impaired (such as an urban cluster), the overall value of the license could be greatly reduced – much more than the population impaired.

The issue of license impairment and license value is an extremely complicated one, and CTIA urges the Commission to continue evaluating this issue to determine whether a more holistic approach should be adopted. CTIA and its members are continuing to study this issue

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

<sup>22</sup> *Id.*

and will attempt to provide at a later time a consensus-based metric that could be used as a substitute for a linear license pricing discount. At a minimum, forward auction bidders should be given detailed information regarding the location of license impairments so that they make informed decisions as they bid for license blocks in the assignment round. Currently, the Commission has proposed to “display the percentage of impairment for each block in each category during bidding,”<sup>23</sup> but by providing more granular geographic data the Commission would greatly enhance the ability of bidders to develop strategies and make sound choices.

**C. When Structuring the Auction, the Commission Should Not Sacrifice Incentive Auction Goals in Favor of Speed.**

In the Public Notice, the Commission proposed several procedures that would help to speed along the incentive auction, but the Commission should not sacrifice the important policy goals of this auction in favor of speed. The ultimate success of the incentive auction will be measured by the number of broadcasters and wireless licensees who walk away from the auction having achieved their goals, the productivity of the post-auction 600 MHz spectrum environment, and the amount of spectrum made available to address the surging demand for mobile broadband services. The success of the incentive auction will not be measured by the speed at which the auction was conducted. Accordingly, the Commission should: (1) provide additional time between the reverse and forward auctions, (2) consider all possible clearing targets, (3) provide forward auction bidders more time to prepare for the assignment round, and (4) postpone the allocation of the most impaired licenses until a later date.

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<sup>23</sup> Auction 1000 Public Notice at n. 260.

**1. At Least Two Weeks Will Be Necessary to Evaluate the Results of the Reverse Auction.**

Contrary to the Commission's proposal in the Public Notice, forward auction bidders will need more than two days to evaluate the results of the reverse auction and adjust their bidding strategies accordingly. The Commission has sought "to provide the minimum necessary time between the reverse and forward auctions in any stage," proposing to start the reverse auction on the second day after the close of reverse auction bidding in the initial stage, with forward auction bidding starting on the next business day after the close of reverse auction bidding in subsequent stages.<sup>24</sup> CTIA submits that two business days – and certainly not one business day – is not sufficient time for forward auction bidders to digest information from the reverse auction.

It is particularly important that forward auction bidders be given sufficient time to analyze reverse auction results. While forward auction bidders may have developed strategies well in advance of the auction, they will necessarily need to be adjusted based on the results of the reverse auction. For example, license impairments will be completely unknown to forward auction bidders until the reverse auction is completed. Depending on the outcome of the reverse auction, forward auction bidders may need to make significant adjustments to their bidding strategies.

CTIA submits that to permit forward auction bidders sufficient time to analyze the reverse auction results and develop bidding strategies, the Commission should not begin the forward auction until at least two weeks (ten business days) after the release of a provisional 600 MHz band plan. This will enable forward auction bidders to closely analyze the band plan adopted by the Commission, and to determine their desired license acquisitions in various markets. CTIA further notes that forward auction bidders would not be the only beneficiaries of

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<sup>24</sup> Auction 1000 Public Notice at ¶ 66.

this approach. The reverse auction process will undoubtedly place significant strain on Commission personnel and other resources (such as information technology). Additional time between the reverse and forward auctions will enable both bidders and Commission staff to take steps necessary to ensure a smooth forward auction without harming broadcast participation.

**2. The Commission Should Not Skip Over Particular Clearing Targets Solely in the Interest of Speed.**

To ensure that the maximum amount of spectrum is cleared for mobile broadband uses, the Commission should not skip over particular clearing targets, but rather should evaluate each one as the auction advances to subsequent stages. The Commission has asked whether it should skip certain clearing targets – such as the 108 MHz clearing target – where “the benefits outweigh the costs.”<sup>25</sup> CTIA is concerned that if the Commission skips over particular clearing targets, there will be a significant difference in the number of television stations that must be cleared. As a result, the Commission could be missing out on the chance to achieve a higher clearing target than it ultimately settles on. For example, if the Commission skips the 108 MHz clearing target as proposed, the difference between the 114 MHz clearing target and the next clearing target (84 MHz) is five television channels – a significant drop. Because this auction represents a critical opportunity to obtain additional spectrum for mobile services, CTIA submits that the Commission should evaluate each clearing target in turn, to ensure that the Commission does not unknowingly bypass an opportunity to clear additional spectrum.

**3. At Least Two Weeks Will be Necessary to Prepare for the Assignment Round.**

For bidders to have sufficient time to review auction results and develop strategies for the assignment round, the Commission should provide at least two weeks (ten business days)

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<sup>25</sup> *Id.* at ¶ 69.

between the end of the auction and the commencement of the assignment round. The Commission has proposed that the assignment round of the forward auction start five business days after the auction system provides more information about the assignment phase.<sup>26</sup> While the Commission has expressed a desire for efficiency, five business days is not enough time for forward auction participants to prepare for the assignment round.

The assignment phase of the forward auction will be critical for forward auction winners. Forward auction winners will need to closely review their spectrum needs and potential impairments in markets where they have won spectrum, and determine which licenses and markets should be prioritized. This process will require a considerable amount of time and effort. The Commission's proposed timetable does not give bidders sufficient time to prepare and review their bids prior to submission. The Commission acknowledges the need for time and careful review by auction winners, but notes that "our goal is to conclude the incentive auction as efficiently as possible."<sup>27</sup> Speed, however, is but one component of efficiency. A truly efficient auction will be one where the maximum number of winning bidders are ultimately satisfied with the licenses assigned to them. Given that the overall objective of the incentive auction is to assign new spectrum for mobile broadband services, the Commission should not sacrifice true efficiency (in terms of a favorable outcome) for speed.

The Commission should provide at least two weeks (or ten business days) between the provision of more detailed information about the assignment phase and the commencement of the assignment phase. This is the same amount of time as CTIA has requested between the forward and reverse auction phases. By providing forward auction winners with this additional

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<sup>26</sup> *Id.* at ¶ 70.

<sup>27</sup> *Id.*

time to develop strategies for the assignment round, the Commission will promote an efficient auction by increasing the likelihood that each auction winner obtains the spectrum most well-suited to its needs.

**4. The Commission Can Address the Most Heavily Impaired Licenses at a Later Date.**

To promote an efficient assignment round and productive allocation of licenses with greater than 50 percent impairment, the Commission should offer these licenses for auction at a later date and should not address these licenses in the assignment round. Recognizing the unique nature of heavily impaired spectrum blocks, the Commission has proposed to make “overlay” licenses available in the assignment phase. CTIA believes that the most productive allocation of such licenses would occur at a later date than the assignment phase, and that these licenses should not be included in the forward auction.

In the Public Notice, the Commission has asked whether bidders would be at all interested in bidding on licenses that are more than 50 percent impaired, and has tentatively included not to offer such licenses in the forward auction.<sup>28</sup> Alternatively, the Commission has asked whether these licenses should be made available in the assignment phase as “overlay” licenses bundled with the most impaired frequency-adjacent licenses.<sup>29</sup> CTIA believes that the Commission should not rush to determine the allocation of this spectrum in the assignment phase, and instead should hold a subsequent auction. While bidders may be extremely interested in acquiring spectrum even with impairments in excess of 50 percent, they may not be in a position to evaluate this until the assignment phase is complete and they know what their respective spectrum positions are in each market. A subsequent auction will also give potential

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<sup>28</sup> *Id.* at ¶¶ 145-146.

<sup>29</sup> *Id.* at ¶ 148.

bidders the time needed to more thoroughly evaluate the nature of the impairments on each license. And, this approach should not jeopardize the success of the incentive auction, as the Commission presumably will not be relying on the sale of this spectrum to satisfy the final stage rule. For the reasons above, removing the most impaired spectrum from the forward auction is clearly preferable than attempting to resolve the fate of these licenses during the already complex assignment round process.

**D. A Mock Auction Will be Extremely Useful for Potential Bidders.**

Given the complex and unique nature of the incentive auction, it will be particularly important that the Commission conduct a mock auction well in advance of the actual auction so that interested parties may familiarize themselves with auction procedures and mechanics. While the Commission has previously indicated an intent to conduct a mock auction<sup>30</sup> – as is typical of Commission spectrum auctions – the Public Notice makes no mention of a mock auction. There are several benefits to a mock auction. As T-Mobile has observed, a mock auction “would ‘allow qualified bidders to familiarize themselves with the FCC Auction System’ and inquire about the system and auction conduct.”<sup>31</sup> This will be of particular import to broadcasters, who have not historically taken part in Commission auctions. However, a mock auction would also “ensure that the Commission has an adequate opportunity to perform stress tests on the auction process to identify weaknesses or unanticipated obstacles in the auction,

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<sup>30</sup> Federal Communications Commission, *Estimated Timeline of Key Events Leading Up to the FCC’s Broadcast Incentive Auction (June 25, 2014)*, at [http://wireless.fcc.gov/incentiveauctions/learn-program/Incentive\\_Auction\\_Timeline.pdf](http://wireless.fcc.gov/incentiveauctions/learn-program/Incentive_Auction_Timeline.pdf).

<sup>31</sup> Comments of T-Mobile USA, Inc., GN Docket No. 12-268, at 58-59 (Jan. 25, 2013), *quoting Auction of AWS-1 and Broadband PCS Licenses*, Public Notice, 23 FCC Rcd 11850, ¶¶ 14-18 (2008).

modify the auction design as necessary, and re-test those modifications prior to expending the vast resources necessary to carry out the auctions.”<sup>32</sup>

Consistent with past spectrum auctions, the Commission should once again conduct a mock auction well in advance of the reverse and forward auctions, and should allow itself enough time after the mock auction to make adjustments to its auction design and/or information infrastructure as needed. Indeed, given the novel nature of ascending and descending clock auctions, the integration of forward and reverse auctions, the amount of data to be provided to auction participants during the auction, and other integration issues, the Commission may well wish to consider if multiple mock auctions may be in the public interest. CTIA believes that many of the concerns voiced by stakeholders in this and related proceedings may be resolved by conducting a thorough and illustrative mock auction (or mock auctions).

### **III. THE REVERSE AUCTION SHOULD APPROPRIATELY PRIORITIZE CLEARING OF UNIMPAIRED 600 MHZ SPECTRUM.**

When the Commission conducts its optimization to assign participating stations to relinquishment options, it should prioritize: (1) achievement of the clearing target and (2) minimizing the number of channels that are impaired. The Commission’s current proposal prioritizes other, less important factors. Because the ultimate goal of the incentive auction is to achieve the Commission’s clearing target and reallocate spectrum for mobile broadband, the Commission’s optimization methods should be reflective of these policy priorities.

In the Public Notice, the Commission indicated that once each station has made an initial commitment, the auction system will determine an initial assignment of stations to

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<sup>32</sup> *Id.* at 59.

relinquishment options using optimization techniques.<sup>33</sup> CTIA submits that, when determining which relinquishment option should be assigned to each station, the Commission should focus on achieving the clearing target and minimizing impairments. Clearing spectrum for mobile broadband services is the ultimate goal of the incentive auction, and it should be prioritized accordingly. CTIA proposes that the current rule (5) (“[m]inimiz[ing] the sum of impaired weighted-pops across all licenses”) should be ranked first among the rules enumerated by the Commission. Meanwhile, the Commission currently does not propose to consider how its assignment of stations to relinquishment options may impact license impairments. CTIA believes that it is extremely important that the Commission take any and all steps to minimize the number of channels that are impaired. In addition to reordering the five existing “rules” to prioritize spectrum clearing, the Commission should also take into account how its assignment of relinquishment options may impair the 600 MHz band and should put weight on configurations that would minimize the amount and degree of impairment to 600 MHz licenses.

#### **IV. TO DETERMINE REPACKING COSTS, THE COMMISSION SHOULD GATHER ADDITIONAL INFORMATION ON THE OPERATIONAL COSTS OF BROADCASTERS.**

The Commission can obtain necessary information regarding broadcasters’ repacking costs by releasing a public notice requesting data on broadcasters’ existing facilities and technical parameters. CTIA has repeatedly suggested that the Commission poll existing television station licensees to determine the costs associated with repacking, and has noted that

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<sup>33</sup> *Id.* at ¶ 91. The five rules are: (1) Minimize the number of UHF participating stations that must be assigned to their pre-auction band, (2) Minimize the number of VHF participating stations that must be assigned to their pre-auction band, (3) Maximize the number of participating stations that can be assigned to their preferred relinquishment option, (4) Maximize the number of participating stations that can be assigned to go off the air as an alternative option, and (5) Minimize the sum of impaired weighted-pops across all licenses (i.e. solve for the primary objective of the clearing target optimization. *Id.*

this information would enable the Commission to develop an effective and cost-effective strategy for repacking.<sup>34</sup> As the Commission notes, “[t]he costs associated with repacking a station to a new channel in the repacking process vary from station to station,” and the Commission and thus the process by which the Commission will “disburse funds from the \$1.75 billion TV Broadcaster Relocation Fund as fairly and efficiently as possible” will be a challenging one.<sup>35</sup> By gathering this data, the Commission should be able to minimize repacking costs and thus ensure a fair and productive repacking.

As the Commission observed in the Public Notice, “we may not have perfectly accurate data on equipment, facilities, and other factors relevant to determining anticipated relocation costs.”<sup>36</sup> This data, however, can be readily obtained. Specifically, the Commission could issue a public notice that requires all, or some identified subset, of existing full power and Class A television stations to provide detailed information about their existing transmit facilities. This information would include the make and model of their transmitter, the ability of the existing transmitter to be re-tuned to a new UHF channel, the antenna make and model, the ability of the existing antenna to broadcast at a new UHF channel, and any other associated technical modifications that would be required to repack the licensee to a new channel. The Commission could also consider polling some of the largest television equipment manufacturers regarding the capabilities of RF channel modifications to current TV transmitters and antennas. Once the Commission gathers this information, it will be well-positioned to determine the costs associated

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<sup>34</sup> See, e.g., Comments of CTIA – The Wireless Association®, GN Docket No. 12-268, at 35-36 (Jan. 25, 2013).

<sup>35</sup> Auction 1000 Public Notice at ¶ 133.

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

with repacking. Without this key data, the task before the Commission will be much more complicated.

**V. THE COMMISSION’S PROPOSED ACTIVITY RULE FOR THE FORWARD AUCTION IS OVERLY AGGRESSIVE.**

CTIA believes that the activity rules suggested by the Commission in the Public Notice are overly aggressive, particularly in light of the fact that the Commission does not intend to permit activity rule waivers.<sup>37</sup> Given the novel components and complexity of this auction, it is appropriate for the Commission to adopt a less aggressive activity requirement so that bidders have the time needed to adjust to this new auction format. The Commission should also reach out to bidders during the auction to make sure they are comfortable before moving to higher activity levels.

In the Public Notice, the Commission proposed to require that bidders be active on 92 to 97 percent of their bidding eligibility in all regular clock rounds.<sup>38</sup> This is a significant increase from past auctions. In the AWS-3 auction that just closed, the Commission’s activity for stage one of the auction was 80 percent.<sup>39</sup> This requirement rose to 95 percent for stage two, 98 percent for stage three, and 100 percent for stage four. In other words, what the Commission has proposed for a first-of-its-kind clock auction is much more aggressive than what was adopted for a recent simultaneous multiple-round auction, a format with which most bidders were extremely familiar and comfortable.

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<sup>37</sup> Auction 1000 Public Notice ¶¶ 186-188.

<sup>38</sup> *Id.* ¶ 186.

<sup>39</sup> *Auction of Advanced Wireless Services (AWS-3) Licenses Scheduled for November 13, 2014, Notice and Filing Requirements, Reserve Prices, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 97*, Public Notice, DA 14-1018, ¶ 163 (July 23, 2014).

Because the incentive auction will be the first ever clock auction, it is appropriate for the Commission to adopt activity rules that provide bidders with the time and flexibility needed to familiarize themselves with the auction process and mechanics. This is particularly important if, as the Commission has proposed, there will be no activity rule waivers offered.<sup>40</sup> Further, the Commission should – as it usually does – reach out to bidders during the auction to make sure that they are comfortable before proceeding to higher activity levels. However, the Commission has proposed to set activity rules so high for the opening round that bidders may never have time to establish a comfort level with the auction system. Because the incentive auction is unprecedented and somewhat experimental, a less aggressive activity rule will benefit bidders by enabling them to make more confident, informed, and accurate bids, ultimately leading to a more successful auction.

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<sup>40</sup> Auction 1000 Public Notice at ¶ 188.

## VI. CONCLUSION

The procedures adopted by the Commission in response to the Public Notice will play a vital role in shaping the incentive auction's ultimate outcome and success. This auction is the first of its kind, represents a once in a lifetime opportunity, and will likely serve as a model for other auctions to come. For this reason, CTIA urges the Commission to adopt procedures that will help ensure the auction's success and help to achieve the ultimate public interest goals of the broadcast television incentive auction.

Respectfully submitted,

By: /s/ Krista L. Witanowski

Krista L. Witanowski  
Assistant Vice President, Regulatory Affairs

Thomas C. Power  
Senior Vice President, General Counsel

Scott K. Bergmann  
Vice President, Regulatory Affairs

CTIA – The Wireless Association®  
1400 16<sup>th</sup> Street, NW, Suite 600  
Washington, D.C. 20036  
(202) 785-0081

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