



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

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Internet: <https://www.fcc.gov>  
TTY: 1-888-835-5322

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## INCENTIVE AUCTION OF UPPER MICROWAVE FLEXIBLE USE SERVICE LICENSES IN THE UPPER 37 GHZ, 39 GHZ, AND 47 GHZ BANDS FOR NEXT-GENERATION WIRELESS SERVICES

### COMMENT SOUGHT ON COMPETITIVE BIDDING PROCEDURES FOR AUCTION 103

AU Docket No. 19-59

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By the Commission: Chairman Pai and Commissioners Carr, Rosenworcel, and Starks issuing separate statements.

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## I. INTRODUCTION

1. By this Public Notice, we seek comment on the procedures to be used for Auction 103, the incentive auction of Upper Microwave Flexible Use Service (UMFUS) licenses in the Upper 37 GHz (37.6-38.6 GHz), 39 GHz (38.6-40 GHz), and 47 GHz (47.2-48.2 GHz) bands. We propose to use an ascending clock auction format for the licenses offered in Auction 103 and then hold a sealed bid assignment phase. The clock phase of Auction 103 serves as both the forward and reverse portions of the incentive auction by determining the prices and winners of new flexible use licenses as well as determining the amount of incentive payments to those incumbent licensees that relinquish spectrum usage rights.<sup>1</sup> By initiating the pre-auction processes for assigning licenses in Auction 103, we take another step toward releasing even more high-band spectrum to the market and thus furthering the deployment of fifth-generation (5G) wireless, the Internet of Things (IoT), and other advanced spectrum-based services.

2. This Public Notice sets forth the proposed auction procedures for those entities that seek to bid to acquire licenses in Auction 103. This is distinct from the *Initial Reconfiguration Procedures Public Notice* released by the Wireless Telecommunications Bureau (Bureau) in cooperation with the Office of Economics and Analytics (Office) on March 20, 2019, which describes the reconfiguration process and seeks comment on procedures that would apply to all existing spectrum usage rights held by incumbent licensees in the 39 GHz band.<sup>2</sup>

## II. LICENSES TO BE OFFERED IN AUCTION 103

3. Auction 103 will offer UMFUS licenses for all available spectrum in the Upper 37 GHz (37.6-38.6 GHz), 39 GHz (38.6-40 GHz), and 47 GHz (47.2-48.2 GHz) bands. We will offer 100 megahertz blocks of spectrum licensed by Partial Economic Area (PEA) service area. In combination, the Upper 37 GHz and the 39 GHz bands offer the largest amount of contiguous spectrum in the millimeter wave bands for flexible-use wireless services—a total of 2,400 megahertz—and the 47 GHz band will provide an additional 1,000 megahertz of millimeter wave spectrum for such services. We propose to limit Auction 103 to only these bands because licenses for no other UMFUS spectrum bands are ready and/or suitable to be auctioned at this same time.<sup>3</sup>

4. The specific number of Upper 37 and 39 GHz licenses to be auctioned in each PEA will be determined by the reconfiguration process, which concludes with the Initial Commitments of 39 GHz incumbents as described in the *Spectrum Frontiers Fourth R&O* and *Initial Reconfiguration Procedures Public Notice*. The licenses that will be available in the auction depend, in part, on upcoming decisions by those entities that currently hold 39 GHz licenses (referred to herein as “incumbents”) to either accept modified licenses, reconfigured to conform with the new band plan and service areas, or to relinquish all

<sup>1</sup> See *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Fourth Report and Order, FCC 18-180, 4-5, paras. 9-10 (Dec. 12, 2018) (*Spectrum Frontiers Fourth R&O*).

<sup>2</sup> *Notice of Initial 39 GHz Reconfiguration Procedures; Preparation for Incentive Auction of Upper Microwave Flexible Use Service Licenses in the 37 GHz, 39 GHz, and 47 GHz Bands (Auction 103); Order of Modification; 39 GHz License Transfer and Assignment Freeze*, Public Notice, DA 19-196 (WTB/OEA Mar. 20, 2019) (*Initial Reconfiguration Procedures Public Notice*). As the *Initial Reconfiguration Procedures Public Notice* makes clear, current 39 GHz licensees that are *not* interested in acquiring additional licenses via bidding in Auction 103 will not be subject to the procedures proposed herein. *Id.* at 2-3, para. 2.

<sup>3</sup> See *Spectrum Frontiers Fourth R&O* at 13 n.64.

their existing spectrum usage rights in exchange for a share of the auction proceeds.<sup>4</sup> If all incumbents choose to relinquish their licenses, we will offer new licenses for 3,400 megahertz of spectrum across all three spectrum bands, or 34 licenses in every PEA.<sup>5</sup> Following incumbents' binding commitments, a public notice will announce the specific licenses available in the Upper 37 and 39 GHz bands for auction. This public notice will be released well in advance of the deadline for the submission of short-form applications to bid in Auction 103 so that potential applicants can make informed decisions whether to apply.

5. It is possible that an incumbent that chooses to receive modified licenses will decide to retain its partial PEA holding (i.e., covering less than the full geographic area of a PEA).<sup>6</sup> The remaining portion of the spectrum block will thus have unassigned spectrum usage rights. We do not propose to make this "white space" available in the auction. The *Spectrum Frontiers Fourth R&O* determined that the reconfiguration process will attempt to minimize this white space, and the Commission observed that leaving the remainder of the spectrum block unassigned would help preserve the structure of the new band plan.<sup>7</sup> Because we expect that the total white space as a result of this process will be extremely low relative to the total 39 GHz band,<sup>8</sup> we conclude that the additional complexity of including these partial blocks in the auction likely outweighs any potential benefit.

6. Each of the bands available in Auction 103 will be licensed on an unpaired basis in 100 megahertz channel blocks by PEA. A licensee in these bands may provide any services permitted under a fixed or mobile allocation, as set forth in the non-Federal Government column of the Table of Frequency Allocations in section 2.106 of the Commission's rules.<sup>9</sup>

7. We seek comment on these proposals.

### III. PROPOSED PRE-BIDDING PROCEDURES

8. In the *2016 Spectrum Frontiers Order*, the Commission decided to conduct any auction of UMFUS licenses in conformity with the amended Part 1 rules.<sup>10</sup> The Commission's Part 1 rules require each applicant seeking to bid to acquire licenses in a spectrum auction to provide certain information in a short-form application (FCC Form 175), including ownership details and numerous certifications.<sup>11</sup> This is a separate and distinct application from the application (FCC Form 175-A) that incumbents must file concerning their existing license holdings. In other words, an incumbent wishing to bid to acquire licenses in the auction must file both applications.<sup>12</sup> For Auction 103, we are not proposing

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<sup>4</sup> *Id.* at 7, para. 17; *see also Initial Reconfiguration Procedures Public Notice* at 19-21, paras. 59-66. Those incumbents that choose to retain their licenses and accept a reconfiguration of their holdings may still choose to relinquish any partial PEA block holding for an incentive payment.

<sup>5</sup> *See Spectrum Frontiers Fourth R&O* at 13, para. 37.

<sup>6</sup> *See generally Initial Reconfiguration Procedures Public Notice* at 14, para. 40.

<sup>7</sup> *See Spectrum Frontiers Fourth R&O* at 11, para. 28.

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

<sup>9</sup> 47 CFR § 30.6.

<sup>10</sup> *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services et al.*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, 8097-98, para. 245 (2016) (*2016 Spectrum Frontiers Order*).

<sup>11</sup> *See generally* 47 CFR § 1.2105.

<sup>12</sup> *See Initial Reconfiguration Procedures Public Notice* at 5, 18, paras. 9, 55. An incumbent must also make an Initial Commitment to relinquish all its existing licenses in order to participate in the bidding for new licenses in Auction 103. An incumbent does not need to file FCC Form 175 if (i) it opts for a modification of its existing licenses or (ii) it is not interested in bidding to acquire licenses in the auction.

that short-form applicants provide any additional categories of information than those already required by the Commission's rules.

9. *Prohibited Communications.* In connection with the application process, the *Initial Reconfiguration Procedures Public Notice* discusses certain issues that are also applicable to entities that wish to acquire licenses in Auction 103. In particular, the *Initial Reconfiguration Procedures Public Notice* addresses the applicability to 39 GHz incumbents of section 1.2105(c)(1), which prohibits applicants from engaging in certain communications relating to bids and bidding strategies.<sup>13</sup> As the public notice explains, the rule would apply not only to a short-form applicant's communication to another applicant, but also to (i) a specific entity that is considered a nationwide provider (here, AT&T, Sprint, T-Mobile, and Verizon Wireless) and (ii) an incumbent that files an application (FCC Form 175-A) as part of the process for it to select whether to retain or relinquish its existing license(s).<sup>14</sup>

10. *Joint Bidding Arrangements.* That same analysis applies to the Part 1 rules' prohibition of joint bidding arrangements. To implement the prohibition on joint bidding arrangements, the Commission's rules require each auction applicant to certify in its short-form application that it has disclosed any arrangements or understandings of any kind relating to the licenses being auctioned to which it (or any party that controls or is controlled by it) is a party; the applicant must also certify that it (or any party that controls or is controlled by it) has not entered and will not enter into any arrangement or understanding of any kind relating directly or indirectly to bidding at auction with, among others, "any other applicant" or a nationwide provider.<sup>15</sup> For Auction 103, therefore, a short-form applicant's certifications with respect to its arrangements or understandings will necessarily encompass an incumbent that files a mini-short-form application (or any party that controls or is controlled by it).

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<sup>13</sup> See *Initial Reconfiguration Procedures Public Notice* at 17-19, paras. 53-57.

<sup>14</sup> *Id.* at 17-19, paras. 54-55, 57. As section 1.2105(c)(5)(i) makes clear, the prohibition would apply to communications to all officers and directors of the entity, all controlling interests of the entity, and all holders of partnership and other ownership interests and any stock amounting to 10% or more of the entity, or outstanding stock, or outstanding voting stock of the entity. See 47 CFR § 1.2105(c)(5)(i) (defining "applicant").

<sup>15</sup> "The short-form application must contain . . .

(viii) Certification that the applicant has provided in its application a brief description of, and identified each party to, any partnerships, joint ventures, consortia or other agreements, arrangements or understandings of any kind relating to the licenses being auctioned, including any agreements that address or communicate directly or indirectly bids (including specific prices), bidding strategies (including the specific licenses on which to bid or not to bid), or the post-auction market structure, to which the applicant, or any party that controls as defined in paragraph (a)(4) of this section or is controlled by the applicant, is a party.

(ix) Certification that the applicant (or any party that controls as defined in paragraph (a)(4) of this section or is controlled by the applicant) has not entered and will not enter into any partnerships, joint ventures, consortia or other agreements, arrangements, or understandings of any kind relating to the licenses being auctioned that address or communicate, directly or indirectly, bidding at auction (including specific prices to be bid) or bidding strategies (including the specific licenses on which to bid or not to bid), or post-auction market structure with: any other applicant (or any party that controls or is controlled by another applicant); with a nationwide provider that is not an applicant (or any party that controls or is controlled by such a nationwide provider); or, if the applicant is a nationwide provider, with any non-nationwide provider that is not an applicant (or with any party that controls or is controlled by such a non-nationwide provider), other than:

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### A. Bidding Credit Caps

11. Consistent with the Commission's decisions in the *2015 Part 1 Report and Order*,<sup>16</sup> we seek comment on establishing reasonable caps on the total amount of bidding credits that an eligible small business or rural service provider may be awarded for Auction 103. We administer our bidding credit programs to promote small business and rural service provider participation in auctions and in the provision of spectrum-based services.<sup>17</sup>

12. Eligibility for the small business bidding credit is determined according to a tiered schedule of small business size definitions that are based on an applicant's average annual gross revenues for the preceding three years, and which determine the size of the bidding credit discount.<sup>18</sup> In the *2015 Part 1 Report and Order*, the Commission revised the gross revenue thresholds that define the eligibility tiers for the small business bidding credit,<sup>19</sup> and it adopted a rural service provider bidding credit program.<sup>20</sup> In the *2016 Spectrum Frontiers Order*, the Commission determined that eligibility for the small business bidding credit in UMFUS auctions would be defined using two of the thresholds of the standardized schedule of small business sizes.<sup>21</sup> Specifically, the Commission determined that an entity with average annual gross revenues for the preceding three years not exceeding \$55 million would be designated as a "small business" eligible for a 15% bidding credit, and that an entity with average annual gross revenues for the preceding three years not exceeding \$20 million would be designated as a "very small business" eligible for a 25% bidding credit.<sup>22</sup> The Commission further determined that entities providing commercial communication services to a customer base of fewer than 250,000 combined wireless, wireline, broadband, and cable subscribers in primarily rural areas would be eligible for the 15% rural service provider bidding credit.<sup>23</sup>

13. To protect the integrity of the bidding credit program and to mitigate the incentives for abuse, the Commission, in the *2015 Part 1 Report and Order*, established a process to implement a reasonable cap on the total amount of bidding credits that an eligible small business or rural service

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(a) Agreements, arrangements, or understandings of any kind that are solely operational as defined under paragraph (a)(4) of this section;

(b) Agreements, arrangements, or understandings of any kind to form consortia or joint ventures as defined under paragraph (a)(4) of this section;

(c) Agreements, arrangements or understandings of any kind with respect to the transfer or assignment of licenses, provided that such agreements, arrangements or understandings do not both relate to the licenses at auction and address or communicate, directly or indirectly, bidding at auction (including specific prices to be bid), or bidding strategies (including the specific licenses on which to bid or not to bid), or post-auction market structure."

47 CFR § 1.2105(a)(2)(viii)-(ix); see also *Updating Part 1 Competitive Bidding Rules et al.*, Report and Order, Order on Reconsideration of the First Report and Order, Third Order on Reconsideration of the Second Report and Order, Third Report and Order, 30 FCC Rcd 7493, 7570-78, paras. 180-201 (2015) (*2015 Part 1 Report and Order*).

<sup>16</sup> See *2015 Part 1 Report and Order*, 30 FCC Rcd at 7539-46, paras. 109-30.

<sup>17</sup> See 47 U.S.C. § 309(j)(4)(D); see also *id.* § 309(j)(3)(A)-(B).

<sup>18</sup> See 47 CFR § 1.2110(f)(2).

<sup>19</sup> *2015 Part 1 Report and Order*, 30 FCC Rcd at 7524-25, paras. 73-74. The Commission retained the existing 15%, 25%, and 35% tiers of the small business bidding credit program but revised the gross revenue thresholds that define eligibility for each tier. *Id.* at 7523-25, paras. 72-74.

<sup>20</sup> *Id.* at 7530-31, para. 88; see also 47 CFR § 1.2110(f)(4).

<sup>21</sup> *2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8099, paras. 249-50; see also 47 CFR § 1.2110(f)(2)(i). The Commission defines the small business size standards on a service-by-service basis, after evaluating the associated characteristics and capital requirements of each service. 47 CFR § 1.2110(c)(1); see also 47 CFR § 1.2110(b)(1)(i); *2015 Part 1 Report and Order*, 30 FCC Rcd at 7529, para. 85.

provider may be awarded in any auction, based on an evaluation of the expected capital requirements presented by the particular service and inventory of licenses being auctioned.<sup>24</sup> The Commission determined that bidding credit caps would be implemented on an auction-by-auction basis, but resolved that, for any particular auction, the total amount of the bidding credit cap for small businesses would not be less than \$25 million, and the bidding credit cap for rural service providers would not be less than \$10 million.<sup>25</sup> For Auction 101 and Auction 102, the Commission adopted a \$25 million cap on the total amount of bidding credits that may be awarded to an eligible small business in each auction (i.e., \$25 million in each auction) and a \$10 million cap on rural service provider bidding credits in each auction.

14. We propose to adopt the same bidding credit caps for Auction 103. Like Auction 101 and Auction 102, Auction 103 will offer licenses in the millimeter wave spectrum, and we anticipate that the range of potential use cases suitable for the UMFUS bands, including localized fiber replacement and IoT, combined with the small license areas in these bands, may permit deployment of smaller scale networks with lower total costs.<sup>26</sup> Further, based on past auction data, we expect that a \$25 million cap on small business bidding credits will allow the substantial majority of small businesses in the auction to take full advantage of the bidding credit program.<sup>27</sup> We therefore believe that our proposed cap will promote the statutory goals of providing meaningful opportunities for *bona fide* small businesses to compete in auctions and in the provision of spectrum-based services,<sup>28</sup> without compromising our responsibility to prevent unjust enrichment and ensure efficient and intensive use of spectrum.<sup>29</sup>

15. We propose to adopt a \$10 million cap on the total amount of bidding credits that may be awarded to an eligible rural service provider in Auction 103.<sup>30</sup> We anticipate that a \$10 million cap on rural service provider bidding credits will not constrain the ability of any rural service provider to participate fully and fairly in Auction 103.<sup>31</sup> In addition, to create parity in Auction 103 among eligible small businesses and rural service providers competing against each other in smaller markets, we propose a \$10 million cap on the overall amount of bidding credits that any winning small business bidder may

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<sup>22</sup> *2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8099, para. 250; *see also* 47 CFR § 30.302(a).

<sup>23</sup> *2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8100, para. 251; *see also* 47 CFR § 30.302(c). The Commission determines eligibility for bidding credits, including the rural service provider bidding credit, on a service-by-service basis. *See* 47 CFR § 1.2110(f)(1); *see also 2015 Part 1 Report and Order*, 30 FCC Rcd at 7529, para. 85. The Commission defined “rural area” as a county with a population density of 100 persons or fewer per square mile. *2015 Part 1 Report and Order*, 30 FCC Rcd at 7536-37, para. 104 & n.340.

<sup>24</sup> *See 2015 Part 1 Report and Order*, 30 FCC Rcd at 7541, 7544, paras. 114, 119.

<sup>25</sup> *Id.* at 7541, para. 114; *see also* 47 CFR § 1.2110(f)(2)(ii), (4)(ii).

<sup>26</sup> *See, e.g., 2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8029, para. 35 (“[A] county-based license affords a licensee the flexibility to develop localized services, allows for targeted deployments based on market forces and customer demand, and facilitates access by both smaller and larger carriers.”); *id.* at 8046, para. 82 (“[Licensing on a PEA basis] strikes the appropriate balance between facilitating access to spectrum by both large and small providers . . . while incentivizing investment in, and rapid deployment of, new technologies.”); *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services et al.*, Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, Memorandum Opinion and Order, 32 FCC Rcd 10988, 10991, para. 5 (2017) (*2017 Spectrum Frontiers Order*) (“We note that major carriers and smaller operators are beginning to develop the mmW frequencies’ potential for low-cost wireless equivalents of fiber to homes and small businesses.”).

<sup>27</sup> We observe, for example, that a \$25 million cap would have allowed 95% of small businesses in Auction 66, 98% of small businesses in Auction 73, 73% of small businesses in Auction 97, and 75% of small businesses in the Broadcast Incentive Auction to realize the full value of their bidding credits based on gross winning bid amounts. *See 2015 Part 1 Report and Order*, 30 FCC Rcd at 7541, para. 115 n.367; *see generally Incentive Auction Closing and Channel Reassignment Public Notice et al.*, Public Notice, 32 FCC Rcd 2786, App. B (WTB/MB 2017) (*Incentive Auction Closing Public Notice*). Further, 100% of rural service providers that claimed bidding credits in

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apply to winning licenses in markets with a population of 500,000 or less.<sup>32</sup>

16. We seek comment on these proposed caps. Specifically, do the expected capital requirements associated with operating in the UMFUS bands, the potential number and value of UMFUS licenses, past auction data, or any other considerations justify a higher or lower cap for either type of bidding credit? Moreover, are there convincing reasons why we should not achieve parity with the bidding credit caps in Auctions 101 and 102? Commenters are encouraged to identify unique circumstances and characteristics of this millimeter wave auction that should guide us in establishing bidding credit caps, and to provide specific, data-driven arguments in support of their proposals.

17. We remind applicants applying for designated entity bidding credits that they should take due account of the requirements of the Commission's rules and implementing orders regarding *de jure* and *de facto* control of such applicants.<sup>33</sup> These rules include a prohibition, which applies to all applicants (whether or not seeking bidding credits), against changes in ownership of the applicant that would constitute an assignment or transfer of control.<sup>34</sup> Applicants should not expect to receive any opportunities to revise their ownership structure after the filing of their short- and long-form applications, including making revisions to their agreements or other arrangements with interest holders, lenders, or others in order to address potential concerns relating to compliance with the designated entity bidding credit requirements. This policy will help to ensure compliance with the Commission's rules applicable to the award of bidding credits prior to the conduct of this auction, which will involve competing bids from those who do and do not seek bidding credits, and thus preserves the integrity of the auction process. We also believe that this will meet our objectives in awarding licenses through the competitive bidding process.<sup>35</sup>

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the Broadcast Incentive Auction fell below the \$10 million cap adopted by the Commission. *See generally Incentive Auction Closing Public Notice*, 32 FCC Rcd 2786, App. B.

<sup>28</sup> *See* 47 U.S.C. § 309(j)(4)(D); *see also id.* § 309(j)(3)(A)-(B).

<sup>29</sup> *See id.* § 309(j)(3)(C)-(D).

<sup>30</sup> An entity is not eligible for a rural service provider bidding credit if it has already claimed a small business bidding credit. 47 CFR § 1.2110(f)(4)(i).

<sup>31</sup> The Broadcast Incentive Auction is the only concluded auction to date to implement the rural service provider bidding credit established in the *2015 Part 1 Report and Order*. No rural service provider exceeded the \$10 million cap in that auction. Of the 27 rural service providers that were awarded bidding credits in the Broadcast Incentive Auction, only 8 rural providers were awarded more than \$1 million, and the largest bidding credit received was approximately \$2.4 million. *See generally Incentive Auction Closing Public Notice*, 32 FCC Rcd 2786, App. B.

<sup>32</sup> Markets that are subject to the small market bidding credit cap are those PEAs with a population of 500,000 or less, which corresponds to PEAs 118–416, excluding PEA 412 (Puerto Rico). This proposal is consistent with the approach adopted by the Commission in the Broadcast Incentive Auction. *See 2015 Part 1 Report and Order*, 30 FCC Rcd at 7546-47, paras. 127-28.

<sup>33</sup> *See, e.g.*, 47 CFR §§ 1.2110-11.

<sup>34</sup> *Id.* § 1.2105(b)(2). Pursuant to 47 CFR § 1.929(a)(2), any substantial change in ownership or control is classified as a major amendment. *See also id.* § 1.927(a)-(b), (h).

<sup>35</sup> The Commission's objectives when awarding licenses through competitive bidding include "the development and rapid deployment of new technologies, products, and services for the benefit of the public . . . without administrative or judicial delays" and "promoting economic opportunity and competition and ensuring that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses." 47 U.S.C. § 309(j); *see also 2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8097-101, paras. 244-54.

**B. Information Procedures During the Auction Process**

18. As with most recent Commission spectrum license auctions, we propose to limit information available in Auction 103 in order to prevent the identification of bidders placing particular bids until after the bidding has closed.<sup>36</sup> More specifically, we propose to not make public until after bidding has closed: (1) the license areas that an applicant selects for bidding in its short-form application (FCC Form 175), (2) the amount of any upfront payment made by or on behalf of an applicant for Auction 103, (3) any applicant's bidding eligibility, and (4) any other bidding-related information that might reveal the identity of the bidder placing a bid.

19. Once the bidding in Auction 103 starts, under these proposed limited information procedures (sometimes also referred to as anonymous bidding), information to be made public after each round of bidding would include for each category of license in each geographic area, the supply, the aggregate demand, the price at the end of the last completed round, and the price for the next round. However, the identities of bidders placing specific bids and the net bid amounts (reflecting bidding credits) would not be disclosed until after the close of bidding.

20. To be clear, bidders would have access through the bidding system to additional information related to their own bidding and bid eligibility. For example, bidders would be able to view their own level of eligibility, before and during the auction, through the FCC auction bidding system.

21. After the close of bidding, bidders' PEA selections, as applicable, upfront payment amounts, bidding eligibility, bids, and other bidding-related actions would be made publicly available.

22. We seek comment on the above details of our proposal for implementing limited information procedures, or anonymous bidding, in Auction 103. Commenters opposing the use of anonymous bidding in Auctions 103 should explain their reasoning and propose alternative information rules.

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<sup>36</sup> See, e.g., *Auctions of Upper Microwave Flexible Use Licenses for Next-Generation Wireless Services; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auctions 101 (28 GHz) and 102 (24 GHz); Bidding in Auction 101 Scheduled to Begin November 14, 2018*, Public Notice, 33 FCC Rcd 7575, 7596-98, paras. 50-56 (2018) (*Auctions 101 and 102 Procedures Public Notice*); *Broadcast Incentive Auction Scheduled to Begin on March 29, 2016; Procedures for Competitive Bidding in Auction 1000, Including Initial Clearing Target Determination, Qualifying to Bid, and Bidding in Auctions 1001 (Reverse) and 1002 (Forward)*, Public Notice, 30 FCC Rcd 8975, 9046, para. 138 (2015) (*Auction 1000 Bidding Procedures Public Notice*); *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, 29 FCC Rcd 8386, 8429-30, para. 150 (WTB 2014) (*Auction 97 Procedures Public Notice*); *Auction of 700 MHz Band Licenses Scheduled for July 19, 2011; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 92*, Public Notice, 26 FCC Rcd 3342, 3372-73, paras. 126-29 (WTB 2011); *Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments and Other Procedures for Auction No. 66*, Public Notice, 21 FCC Rcd 4562, 4600-05, paras. 140-57 (2006); see also 47 CFR § 1.2104(h).



#### IV. DUE DILIGENCE

23. Each potential bidder is solely responsible for investigating and evaluating all technical and marketplace factors that may have a bearing on the value of the licenses that it is seeking in Auction 103. Each bidder is responsible for assuring that, if it wins a license, it will be able to build and operate facilities in accordance with the Commission's rules. **The Commission makes no representations or warranties about the use of this spectrum for particular services. Each applicant should be aware that a Commission auction represents an opportunity to become a Commission licensee, subject to certain conditions and regulations. This includes the established authority of the Commission to alter the terms of existing licenses by rulemaking, which is equally applicable to licenses awarded by auction.**<sup>37</sup> A Commission auction does not constitute an endorsement by the Commission of any particular service, technology, or product, nor does a Commission license constitute a guarantee of business success.

24. An applicant should perform its due diligence research and analysis before proceeding, as it would with any new business venture. Each potential bidder should perform technical analyses and/or refresh any previous analyses to assure itself that, should it become a winning bidder for any Auction 103 license, it will be able to build and operate facilities that will comply fully with all applicable technical and regulatory requirements. For example, licensees operating in the Upper 37 GHz band near specific Federal sites must coordinate with those Federal operations.<sup>38</sup> We strongly encourage each applicant to inspect any prospective sites for communications facilities located in, or near, the geographic area for which it plans to bid; confirm the availability of such sites; and familiarize itself with the Commission's rules regarding the National Environmental Policy Act.<sup>39</sup>

25. We strongly encourage each applicant to conduct its own research prior to Auction 103 in order to determine the existence of pending administrative, rulemaking, or judicial proceedings that might affect its decisions regarding participation in the auction.

26. We also strongly encourage participants in Auction 103 to continue such research throughout the auction. The due diligence considerations mentioned in this Public Notice do not constitute an exhaustive list of steps that should be undertaken prior to participating in this auction. As always, the burden is on the potential bidder to determine how much research to undertake, depending upon the specific facts and circumstances related to its interests.

27. We also remind bidders of the Commission's mobile spectrum holding policies applicable to the millimeter wave bands. Specifically, for purposes of reviewing proposed secondary market transactions, the Commission adopted a threshold of 1850 megahertz of combined millimeter wave spectrum in the 24 GHz, 28 GHz, 37 GHz, 39 GHz, and 47 GHz bands.<sup>40</sup> In addition, the Commission found that it is in the public interest to review applications for initial licenses filed post-auction on a case-by-case basis using this same 1850 megahertz threshold.<sup>41</sup>

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<sup>37</sup> See, e.g., *Cellco P'ship v. FCC*, 700 F.3d 534, 542 (D.C. Cir. 2012); *Celtronix Telemetry, Inc. v. FCC*, 272 F.3d 585, 589 (D.C. Cir. 2001) (citing 47 U.S.C. § 309(j)(6)(D)).

<sup>38</sup> See 47 CFR § 30.205; see also *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Fifth Report and Order, FCC 19-30, 6-7, paras. 14-15 (Apr. 15, 2019) (referencing any changes to Federal access to the Upper 37 GHz band).

<sup>39</sup> 47 CFR Chapter 1, Part 1, Subpart I.

<sup>40</sup> *2017 Spectrum Frontiers Order*, 32 FCC Rcd at 11011, para. 74.

<sup>41</sup> *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.*, Third Report and Order, Memorandum Opinion and Order, Third Further Notice of Proposed Rulemaking, 33 FCC Rcd 5576, 5590, para. 34 (2018).

## V. PROPOSED BIDDING PROCEDURES

### A. Clock Phase

#### 1. Clock Auction Design

28. We will conduct Auction 103 using an ascending clock auction design that will offer licenses for spectrum held by the Commission and for spectrum relinquished by incumbent licensees, and which will also determine incentive payments for relinquishing licensees. The first phase of the incentive auction will consist of successive clock bidding rounds in which bidders indicate their demands for categories of generic license blocks in specific partial economic areas (PEAs), followed by a second phase with bidding for frequency-specific license assignments, as the Commission decided in the *Spectrum Frontiers Fourth R&O*.<sup>42</sup> We seek comment here on the specific clock auction procedures we propose to use for Auction 103. We direct the Office, in conjunction with the Bureau, to release, concurrent with this Public Notice, technical guides that provide the mathematical details of the proposed auction procedures and algorithms for the clock and assignment phases of Auction 103.<sup>43</sup> The information in the technical guides supplements the proposals herein.

29. As in the clock auction used in the forward auction portion of the Broadcast Incentive Auction (Auction 1002) and the ongoing auction of licenses in the 24 GHz Band (Auction 102), the clock auction for Auction 103 will incorporate bidding for categories of generic spectrum blocks. The auction will proceed in a series of rounds, with bidding being conducted simultaneously for all spectrum blocks available in the auction. During the clock phase, the FCC auction bidding system will announce prices for blocks in each category in each PEA, and qualified bidders will submit quantity bids for the number of blocks they seek. Bidding rounds will be open for predetermined periods of time, during which bidders will indicate their demands for blocks at the clock prices associated with the current round. As in SMR auctions, bidders will be subject to activity and eligibility rules that govern the pace at which they participate in the auction.

30. Under the ascending clock auction format adopted by the Commission, in each PEA, the clock price for a license category will increase from round to round if bidders indicate total demand that exceeds the number of blocks available in the category. The clock rounds will continue until, for all categories of blocks in all PEAs, the number of blocks demanded does not exceed the supply of available blocks. At that point, those bidders indicating demand for a block in a category at the final clock phase price will be deemed winning bidders. The final clock phase price for a generic block in a PEA will determine the incentive payment associated with a relinquished block of spectrum in the PEA.

31. Following the clock phase, the assignment phase will offer clock phase winners the opportunity to bid an additional amount for licenses with specific frequencies. All winning bidders, regardless of whether they bid in the assignment phase, will be assigned licenses for contiguous blocks within a category in a PEA.<sup>44</sup>

32. We seek comment on specific procedures to implement this ascending clock auction and on alternative procedures for conducting, in a timely manner, an auction of Upper 37 GHz, 39 GHz, and 47 GHz licenses.

#### 2. Determining Categories of Generic Blocks for Bidding

33. The *Spectrum Frontiers Fourth R&O* determined that the Upper 37 GHz, 39 GHz, and 47

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<sup>42</sup> See Section V.B (Assignment Phase), below.

<sup>43</sup> The *Clock Phase Technical Guide* details proposals for the clock phase of Auction 103. The *Assignment Phase Technical Guide* details proposals for the assignment phase of Auction 103.

<sup>44</sup> Incumbents that accepted modified holdings and thus did not bid in the auction will also be assigned licenses after the conclusion of this phase.

GHz bands would be reconfigured and licensed in uniform 100 megahertz blocks in each of 416 PEAs. To facilitate bidding in the clock phase, we propose to establish two categories of generic blocks in each PEA.

34. We propose that the first category will consist of the available blocks between 37.6–40 GHz. This category, designated Category M/N, will comprise a total of twenty-four blocks: ten in the Upper 37 GHz band (Blocks M1–M10) and 14 in the 39 GHz band (Blocks N1–N14). These 24 blocks represent a continuous swath of spectrum, and including them in a single bidding category should speed up the auction and give bidders greater flexibility to aggregate multiple contiguous spectrum blocks. A second category, Category P, will consist of the ten blocks between 47.2–48.2 GHz (Blocks P1–P10).

35. In each bidding round, a bidder will have the opportunity to bid for the quantity of generic blocks it demands in each of the two bidding categories. Bidding in the clock phase will determine a single price for all the generic blocks in each category in each PEA.

36. If an incumbent, in the Initial Commitment phase, chooses to accept a reconfigured license (full or partial) in one or more PEAs, the number of generic blocks available for bidding in the M/N category in those PEAs will be reduced accordingly.<sup>45</sup> As a result, under this proposed procedure, there may be fewer than 24 blocks available for bidding in some PEAs in the M/N category. We propose to announce the full auction inventory—i.e., the number of blocks available in each category in each PEA— after the Initial Commitment phase has closed.

37. Our proposal for bidding on generic blocks in two categories is based on the close similarity of the blocks within each bidding category.<sup>46</sup> To the extent a bidder has a preference for specific frequency licenses, the bidder may bid for its preferred blocks in the assignment phase. However, a bidder for a generic block cannot be assured that it will be assigned, or not be assigned, any particular frequency block. We ask that commenters explain any concerns they may have about the interchangeability of generic blocks within the two proposed categories of generic blocks, bearing in mind potential tradeoffs between the number of categories and auction length, the ability of the auction system to assign contiguous blocks to winners of multiple blocks, and bidder manageability.

### 3. Determining Incentive Payments

38. The final clock phase price for a generic licensing block in Category M/N in a given PEA will determine the incentive payment associated with 100 megahertz of relinquished spectrum rights in that PEA, as determined in the *Spectrum Frontiers Fourth R&O*.<sup>47</sup> Further, an incumbent that relinquishes spectrum rights equivalent to fewer than 100 megahertz in the full geography of the PEA will be entitled to an incentive payment equal to the final clock phase price for a Category M/N block times the fraction of its relinquished rights, measured in MHz-pops, relative to the full number of MHz-pops in the PEA.

39. An incumbent that both relinquishes the equivalent of a full block of spectrum rights in Category M/N in a PEA and wins a generic block in the category in the same PEA will, in effect, receive an incentive payment credit equal to the final clock phase price and incur an obligation in the same amount, for a net clock phase payment of zero. If an incumbent chooses to bid for specific frequencies in the assignment phase, the incumbent will be obligated to pay any additional payment.

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<sup>45</sup> Under our proposed procedures, we will withhold a full 100-megahertz block from the bidding inventory in the event that an incumbent accepts a reconfigured partial license. As a result, no blocks of less than 100 megahertz will be available for bidding in Auction 103.

<sup>46</sup> These frequency bands are subject to the same service rules. See 47 CFR § 30.1 *et seq.* In addition, the Upper 37 GHz and 39 GHz bands are subject to an operability requirement in which mobile and transportable stations that operate on any portion of frequencies within those bands must be capable of operating on all frequencies within the bands. See 47 CFR § 30.208.

<sup>47</sup> *Spectrum Frontiers Fourth R&O* at 12, para. 35.

40. As determined in the *Spectrum Frontiers Fourth R&O*, an incumbent that is eligible for bidding credits and that both relinquishes spectrum and bids for new licenses will receive a bidding credit discount only on its net cash payment for new licenses.<sup>48</sup>

#### 4. Bidding Rounds

41. Under this proposal, Auction 103 will consist of sequential bidding rounds, each followed by the release of round results. The initial bidding schedule will be announced in a public notice to be released at least one week before the start of bidding.

42. Auction 103 will be conducted over the Internet using the FCC auction bidding system. Bidders will also have the option of placing bids by telephone through a dedicated auction bidder line. The toll-free telephone number for the auction bidder line will be provided to qualified bidders prior to the start of bidding in the auction.

43. We propose that the initial bidding schedule may be adjusted in order to foster an auction pace that reasonably balances speed with the bidders' need to study round results and adjust their bidding strategies. Such changes may include the amount of time for bidding rounds, the amount of time between rounds, or the number of rounds per day, depending upon bidding activity and other factors. We seek comment on this proposal. Commenters on this issue should address the role of the bidding schedule in managing the pace of the auction, specifically discussing the tradeoffs in managing auction pace by bidding schedule changes, by changing the activity requirement or the increment percentage, or by using other means.

#### 5. Net Revenue Requirement

44. As required by the *Spectrum Frontiers Fourth R&O*,<sup>49</sup> we propose an aggregate net revenue requirement to ensure that the proceeds from Auction 103, net of bidding credits, are sufficient to cover incentive payment obligations to incumbents relinquishing spectrum. Under this proposal, we will consider revenues from licenses in the Upper 37 GHz, 39 GHz, and the 47 GHz bands in determining whether the net revenue requirement has been met. We propose to make available to bidders an estimate of the current shortfall for meeting the net revenue requirement, updated after each round of bidding, until the requirement is met. We propose to indicate on the Public Reporting System (PRS) whether the requirement has been met. We further propose to consider only clock phase revenues in determining whether the net revenue requirement is met.

45. Under this proposal, the shortfall figure we make available prior to the close of bidding in the clock phase will be a conservative estimate. It will not be known whether the clock phase winners will be designated entities that can claim a bidding credit until the clock phase bidding has ended. Consequently, the revenue estimate that is used to calculate the shortfall for rounds before the net revenue requirement has been met will assume, for a category in a PEA with excess demand, that blocks are won by the bidders with the highest bidding credit percentages, to the extent that designated entities are among the bidders still demanding blocks in the category in the PEA. This includes a check to consider bidding credit caps.<sup>50</sup> In so doing, we avoid a potential situation whereby the net revenue requirement appears to be met, but then actual net revenues are insufficient to cover incentive payments when bidding credits are considered. For a category in a PEA without excess demand, the requirement will be evaluated based on a true calculation of net revenue after bid processing, rather than on the estimate, since information on how to apply bidding credits precisely will be available in that case. If the net revenue requirement has

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<sup>48</sup> *Id.* at 14-15, para. 43. For details on how bidding credits are applied, see the *Clock Phase Technical Guide* and the *Assignment Phase Technical Guide*.

<sup>49</sup> *Spectrum Frontiers Fourth R&O* at 16, para. 49. The specific calculation is described in the *Clock Phase Technical Guide*.

<sup>50</sup> The calculation of the estimated shortfall is set forth in detail in the *Clock Phase Technical Guide*.

not been met after a round, the estimated shortfall will be calculated as the incentive payments across all incumbents after the round minus the revenue estimate (described above) across all categories and PEAs, rounded up to the nearest \$1 million.

46. We propose to consider only clock phase revenues—not assignment phase revenues—in determining whether the net revenue requirement is met. Revenues from assignment phase payments are expected to be small relative to those from the clock phase and therefore less likely to contribute significantly to meeting the revenue requirement.<sup>51</sup> Because assignment phase payments are determined using a second-price rule, an individual bidder wishing to boost revenues intentionally will have little ability to do so. In addition, we are mindful of the additional time required to conduct assignment rounds, and we do not wish to require bidders or Commission staff to invest the additional time in the assignment phase if ultimately no licenses will be assigned.

47. If the net revenue requirement has been satisfied at the time that the clock phase bidding stops for both categories of blocks, the auction system will determine the winning bidders of generic blocks, and the auction will proceed to the assignment phase. If the net revenue requirement has not been satisfied at the time bidding stops in the clock phase, the auction will end, and no new licenses will be assigned. Incumbents in the 39 GHz band will retain their original licenses pending further decisions by the Commission.

48. We seek comment on our proposed net revenue requirement and on our proposals to make available a conservative estimate of the shortfall after each round and to consider only clock phase revenues in determining whether the requirement has been met.

## 6. Stopping Rule

49. We propose a simultaneous stopping rule for the clock phase of Auction 103, under which both categories of licenses in all PEAs will remain available for bidding until the bidding stops on both categories.<sup>52</sup> Specifically, we propose that the clock phase of bidding will end for both categories of blocks after the first round in which there is no excess demand in any category in any PEA. Consequently, under this approach, it is not possible to determine in advance how long Auction 103 would last.

50. We seek comment on our proposed simultaneous stopping rule.

## 7. Upfront Payments and Bidding Eligibility

51. In keeping with the Commission's usual practice in spectrum license auctions, we propose that applicants be required to submit upfront payments as a prerequisite to becoming qualified to bid.<sup>53</sup> As described below, the upfront payment is a refundable deposit made by an applicant to establish its eligibility to bid on licenses. Upfront payments that are related to the inventory of licenses being auctioned protect against frivolous or insincere bidding and provide the Commission with a source of funds from which to collect payments owed at the close of bidding.<sup>54</sup>

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<sup>51</sup> For example, less than 1% of Auction 1002 revenues were attributable to assignment phase payments.

<sup>52</sup> The Commission may establish stopping rules before or during multiple round auctions in order to complete the auction within a reasonable time. 47 CFR § 1.2104(e).

<sup>53</sup> *Id.* § 1.2106. Congress recently passed legislation amending the Communications Act to provide that upfront auction payments for future auctions are to be deposited in the U.S. Treasury. *See Consolidated Appropriations Act, 2018, Pub. L. No. 115-141, Division P, Title I, 132 Stat. 348, 1080 (2018).*

<sup>54</sup> *See Implementation of Section 309(j) of the Communications Act—Competitive Bidding, Second Report and Order, 9 FCC Rcd 2348, 2377-79, paras. 169-76 (1994) (Competitive Bidding Second Report and Order).* We note that the Commission's rules require that “[a]ny auction applicant that, pursuant to § 1.2105(a)(2)(xii), certifies that it is a former defaulter must submit an upfront payment equal to 50 percent more than the amount that would otherwise be required.” 47 CFR § 1.2106(a).

52. We propose to assign each PEA a specific number of bidding units, equal to one bidding unit per \$10 of the upfront payment. The number of bidding units for a given PEA is fixed and does not change during the auction as prices change. The bidding unit amount assigned to a specific PEA will apply to a single generic block for that PEA. Bidding units will be used for purposes of measuring bidder eligibility and bidding activity. We further propose to determine the bidding units for a PEA based on the same weights we will use in the reconfiguration process and in Round Zero to quantify the weighted MHz-pops of an incumbent's spectrum holdings.<sup>55</sup> Since weights are not yet determined, we list in Attachment A the MHz-pops of each PEA, and we will update Attachment A with bidding units and upfront payment amounts when the weights are available.

53. Taking into account the various purposes of upfront payments, we propose to use a tiered approach, under which upfront payment amounts will vary by market population. We propose upfront payments for a generic block in a PEA based on \$0.001 per weighted MHz-pop for PEAs 1–50, \$0.0002 per weighted MHz-pop for PEAs 51–100, and \$0.0001 per weighted MHz-pop in other PEAs.<sup>56</sup> The proposed upfront payments equal approximately half the proposed minimum opening bids, which are established as described in Section V.A.9, below. We seek comment on the proposed method for calculating upfront payment amounts. For informational purposes, Attachment A shows the unweighted MHz-pops per each PEA and the result of multiplying the unweighted MHz-pops by \$0.001, \$0.0002, or \$0.0001 depending on the PEA.

54. We further propose that the amount of the upfront payment submitted by a bidder will determine its initial bidding eligibility in bidding units. To the extent that bidders wish to bid on multiple generic blocks simultaneously, they will need to ensure that their upfront payment provides enough eligibility to cover multiple blocks. Under our proposed approach to calculating bidding units, the generic Category M/N and Category P blocks in a PEA will be assigned the same number of bidding units, which will facilitate bidding across categories.

55. Under our proposed approach, a bidder's upfront payment will not be attributed to blocks in a specific PEA or PEAs. If an applicant is found to be qualified to bid on more than one block being offered in Auction 103, such a bidder may place bids on multiple blocks, provided that the total number of bidding units associated with those blocks does not exceed its current eligibility. A bidder cannot increase its eligibility during the auction; it can only maintain its eligibility or decrease its eligibility. Thus, in calculating its upfront payment amount and hence its initial bidding eligibility, an applicant must determine the maximum number of bidding units on which it may wish to bid in any single round and submit an upfront payment amount covering that total number of bidding units. We seek comment on these proposals.

56. In connection with our proposed upfront payment amounts and corresponding bidding eligibility, we tentatively conclude that we will not adopt a different upfront payment procedure for incumbent bidders relinquishing spectrum rights. As the Commission discussed in the *Spectrum Frontiers Fourth R&O*, Verizon advocated for crediting incumbent licensees with upfront payments for existing licenses they agree to relinquish.<sup>57</sup> We ask any commenter that disagrees with this tentative conclusion not to adopt procedures that would allow incumbents to make their upfront payment with significantly less cash to consider whether such an approach would give the Commission sufficient funds from which to collect default payments, given that defaults may occur for reasons other than non-payment of winning bids. In addition, would the approach serve to deter insincere bidding, given that an

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<sup>55</sup> See *Initial Reconfiguration Procedures Public Notice* at 11-12, paras. 26-33.

<sup>56</sup> The results of these calculations will be rounded using the Commission's standard rounding procedures for auctions: results above \$10,000 are rounded to the nearest \$1,000; results below \$10,000 but above \$1,000 are rounded to the nearest \$100; and results below \$1,000 are rounded to the nearest \$10. Additionally, the proposed upfront payment amount for Gulf of Mexico blocks is \$1,000.

<sup>57</sup> See *Spectrum Frontiers Fourth R&O* at 17, para. 51.

incumbent's bidding eligibility would derive from its intended relinquishments rather than from its intended bidding for new licenses? If license relinquishments could be credited toward upfront payments, would the associated bidding eligibility apply to any PEA or just to the PEA in which a license is relinquished, and if the latter, how would that comport with eligibility accruing from cash upfront payments, which is not PEA-specific?

#### **8. Activity Rule, Activity Rule Waivers, and Reducing Eligibility**

57. In order to ensure that the auction closes within a reasonable period of time, an activity rule requires bidders to bid actively throughout the auction, rather than wait until late in the auction before participating. For a clock auction, a bidder's activity in a round for purposes of the activity rule will be the sum of the bidding units associated with the bidder's demands as applied by the auction system during bid processing. Bidders are required to be active on a specific percentage of their current bidding eligibility during each round of the auction. Failure to maintain the requisite activity level will result in a reduction in the bidder's eligibility, possibly curtailing or eliminating the bidder's ability to place additional bids in the auction.

58. We propose to require that bidders maintain a fixed, high level of activity in each round of Auction 103 in order to maintain bidding eligibility. Specifically, we propose to require that bidders be active on between 90% and 100% of their bidding eligibility in all clock rounds, with an initial activity requirement of 95%. Thus, the activity rule would be satisfied when a bidder has bidding activity on blocks with bidding units that total 90% to 100% of its current eligibility in the round. If the activity rule is met, then the bidder's eligibility does not change in the next round. We propose to calculate bidding activity based on the bids that are applied by the FCC auction bidding system. That is, if a bidder requests a reduction in the quantity of blocks it demands in a category, but the FCC auction bidding system does not apply the request because demand for the category would fall below the available supply, the bidder's activity will reflect its unreduced demand.<sup>58</sup> If the activity rule is not met in a round, a bidder's eligibility automatically would be reduced.<sup>59</sup> Under our proposal, the activity requirements may be changed during the auction.

59. We invite comment on this proposal, in particular on whether to set the activity requirement between 90% and 100%. Commenters may wish to address the relationship between the proposed activity rule and the ability of bidders to switch their demands across PEAs or across categories of blocks within a PEA.<sup>60</sup> We encourage any commenters that oppose an activity rule in this range to explain their reasons with specificity.

60. We point out that under our proposed clock auction, bidders are required to indicate their demands in every round, even if their demands at the new round's prices are unchanged from the previous round. Missing bids—bids that are not reconfirmed—are treated by the auction bidding system as requests to reduce to a quantity of zero blocks for the category. If these requests are applied, or applied partially, a bidder's bidding activity, and hence its bidding eligibility for the next round, will be reduced.

61. For Auction 103, we do not propose to provide for activity rule waivers to preserve a bidder's eligibility. This proposal is consistent with the ascending clock auction procedures adopted for

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<sup>58</sup> See Section V.A.10 (Changing Demand, Bid Types, and Bid Processing), below (proposing that the auction system not allow a bidder to reduce the quantity of blocks it demands in a category if the reduction will result in aggregate demand falling below the available supply of licenses in the category).

<sup>59</sup> If a bidder does not meet the activity rule in a round, its eligibility will automatically be reduced to the amount that brings it in compliance with the activity requirement. For example, for an activity requirement of 95%, the bidder's reduced eligibility for the next round will be calculated by multiplying the bidder's current round activity by twenty-nineteenths (20/19).

<sup>60</sup> See Section V.A.10 (Changing Demand, Bid Types, and Bid Processing), below.

Auctions 1002 and 102.<sup>61</sup> In previous Commission multiple round auctions, when a bidder's eligibility in the current round was below a required minimum level, the bidder was able to preserve its current level of eligibility with a limited number of activity rule waivers.<sup>62</sup> The clock auction, however, relies on precisely identifying the point at which demand falls to equal supply to determine winning bidders and final prices. Allowing waivers would create uncertainty with respect to the exact level of bidder demand, interfering with the basic clock price-setting and winner determination mechanisms. Moreover, uncertainty about the level of demand would affect the way bidders' requests to reduce demand are processed by the FCC auction bidding system.<sup>63</sup> We seek comment on this proposal.

## 9. Acceptable Bids

### a. Reserve Price or Minimum Opening Bids

62. We seek comment on the use of a minimum opening bid amount and/or reserve price for Auction 103, as we do prior to the start of each auction, consistent with the statutory mandate of section 309(j) of the Communications Act of 1934, as amended.<sup>64</sup>

63. A reserve price is an absolute minimum price below which a construction permit or license will not be sold in a given auction. A minimum opening bid, on the other hand, is the minimum bid price set at the beginning of the auction below which no bids are accepted. It is generally used to accelerate the competitive bidding process. In Auction 103, if there are any PEAs in which demand for blocks never exceeds the supply of blocks, the minimum opening bid will serve as the basis for determining incentive payments to incumbents relinquishing spectrum in a PEA (because the final clock phase price will be equal to the minimum opening bid).

64. We propose to establish minimum opening bid amounts for Auction 103. Based on our experience in past auctions, a minimum opening bid amount is an effective bidding tool for accelerating the competitive bidding process.<sup>65</sup> At the beginning of the clock phase, a bidder will indicate how many blocks in a generic license category in a PEA it demands at the minimum opening bid price. For Auction 103, we propose to establish initial clock prices, or minimum opening bids, as set forth in the following paragraph. We do not propose to establish license-specific reserve prices that are different from minimum opening bid amounts for the licenses to be offered in Auction 103.

65. For Auction 103, we propose to calculate minimum opening bid amounts using a formula based on bandwidth and license area population, incorporating the same weights we will use in the reconfiguration process and Round Zero to quantify the weighted MHz-pops of an incumbent's spectrum

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<sup>61</sup> See *Auction 1000 Bidding Procedures Public Notice*, 30 FCC Rcd at 9007, para. 213; *Auctions 101 and 102 Procedures Public Notice*, 33 FCC Rcd at 7650, para. 245.

<sup>62</sup> See, e.g., *Auction of H Block Licenses in the 1915-1920 MHz and 1995-2000 MHz Bands Scheduled for January 14, 2014; Notice and Filing Requirements, Reserve Price, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 96*, Public Notice, 28 FCC Rcd 13019, 13060, paras. 157-60 (2013) (*H Block Procedures Public Notice*).

<sup>63</sup> See Section V.A.10 (Changing Demand, Bid Types, and Bid Processing), below.

<sup>64</sup> See *Implementation of Section 309(j) of the Communications Act—Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Service Licenses et al.*, First Report and Order, 13 FCC Rcd 15920, 15971, para. 134 (1998) (*Broadcast First Report and Order*); *Amendment of Part 1 of the Commission's Rules—Competitive Bidding Procedures et al.*, Third Report and Order and Second Further Notice of Proposed Rule Making, 13 FCC Rcd 374, 454-56, paras. 139-41 (1997) (*Part 1 Third Report and Order*); see also 47 CFR § 1.2104(c), (d).

<sup>65</sup> See, e.g., *Auction of FM Broadcast Construction Permits Scheduled for July 23, 2015; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 98*, Public Notice, 30 FCC Rcd 3544, 3579, para. 139 (WTB/MB 2015).



holdings.<sup>66</sup> This is similar to our approach in many previous spectrum auctions of weighting by an index of relative prices from prior auctions. Since weights are not yet determined, we list in Attachment A the MHz-pops of each PEA, and we will update Attachment A with bidding units and upfront payment amounts when the weights are available.

66. We propose to use a tiered approach, under which minimum opening bid amounts will vary by market population. We propose minimum opening bid amounts for a generic block in a PEA based on \$0.002 per weighted MHz-pop for PEAs 1–50, \$0.0004 per weighted MHz-pop for PEAs 51–100, and \$0.0002 per weighted MHz-pop in other PEAs.<sup>67</sup> For informational purposes, Attachment A shows the unweighted MHz-pops per each PEA and the result of multiplying the unweighted MHz-pops by \$0.002, \$0.0004, or \$0.0002 depending on the PEA. We seek comment on the proposed method for calculating minimum opening bid amounts. If commenters believe that the minimum opening bid amounts will result in unsold licenses or are not reasonable amounts at which to start bidding or as a minimum for incentive payments, they should explain why this is so and comment on the desirability of an alternative approach. Commenters should support their claims with valuation analyses and suggested amounts or formulas for reserve prices or minimum opening bids.

67. In establishing minimum opening bid amounts, we particularly seek comment on factors that could reasonably have an impact on bidders' valuation of the spectrum, including the type of service offered, market size, population covered, any other relevant factors.

68. Commenters may also wish to address the general role of minimum opening bids in managing the pace of the auction. For example, commenters could compare using minimum opening bids—e.g., by setting higher minimum opening bids to reduce the number of rounds it takes licenses to reach their final prices—to other means of controlling auction pace, such as changes to bidding schedules, percentage increments, or activity requirements.

#### **b. Clock Price Increments**

69. Under our proposed clock auction format for Auction 103, after bidding in the first round and before each subsequent round, the FCC auction bidding system will announce a clock price for the next round, which is the highest price to which bidders can respond during the round. We propose to set the clock price for each category in each specific PEA for a round by adding a fixed percentage increment to the price for the previous round.<sup>68</sup> As long as total demand for blocks in a category exceeds the supply of blocks, the percentage increment will be added to the clock price from the prior round. If demand equaled supply at an intra-round bid price in a previous round, then the clock price for the next round will be set by adding the percentage increment to the intra-round bid price.<sup>69</sup>

70. We propose to apply an increment that is between 5% and 20% and generally to apply the same increment percentage to all categories in all PEAs. We propose to set the initial increment within this range, and to adjust the increment as rounds continue. The proposed 5-20% increment range will allow the FCC to set a percentage that manages the auction pace, taking into account bidders' needs to evaluate their bidding strategies while moving the auction along quickly. We also propose that increments may be changed during the auction on a PEA-by-PEA or category-by-category basis based on bidding activity to assure that the system can offer appropriate price choices to bidders.

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<sup>66</sup> See *Initial Reconfiguration Procedures Public Notice* at 11-12, paras. 26-33.

<sup>67</sup> See note above above 56 (concerning rounding), above. Additionally, the proposed minimum opening bid amount for Gulf of Mexico blocks is \$2,000.

<sup>68</sup> For example, if the price for the first round is \$10 and the price increment is 20%, the clock price for the second round will be \$12.

<sup>69</sup> Final clock phase prices, however, will not increase above the price at which there is no excess demand.

**c. Intra-Round Bids**

71. We propose to permit a bidder to make intra-round bids by indicating a point between the previous round's price and the new clock price at which its demand for blocks in a category changes. In placing an intra-round bid, a bidder would indicate a specific price and a quantity of blocks it demands if the price for blocks in the category should increase beyond that price.

72. Intra-round bids would be optional; a bidder may choose to express its demands only at the clock prices. This proposal to permit intra-round bidding would allow the auction system to use relatively large clock increments, thereby speeding the clock phase, without running the risk that a jump in the clock price will overshoot the market clearing price—the point at which demand for blocks equals the available supply.

**10. Changing Demand, Bid Types, and Bid Processing**

73. We propose specific bidding procedures for the clock phase of Auction 103, and address how the FCC auction bidding system will process the proposed types of permitted bids.<sup>70</sup> As an initial matter, we propose that the FCC auction bidding system not apply a bidder's request to reduce the quantity of blocks it demands in a category if the reduction will result in aggregate demand falling below the available supply of blocks in the category.

74. Under the ascending clock format we propose for Auction 103, a bidder will indicate in each round the quantity of blocks in each category in each PEA that it demands starting at a given price, indicating that at prices above the bid price it is willing to get the changed quantity.<sup>71</sup> A bidder can express its demands at the clock price or at an intra-round price, and bid quantities can represent an increase or a decrease over the bidder's previous demands for blocks in a category.

75. Under our proposal, if a bidder demands fewer blocks in a category than it did in the previous round, the FCC auction bidding system will treat the bid as a request to reduce demand that will be implemented only if aggregate demand would not fall below the available supply of blocks in the category. In addition, if a bidder demands more blocks in a category than it did in the previous round, the FCC auction bidding system will treat the bid as a request to increase demand that will be implemented only if the bidder has sufficient bidding eligibility to cover the increase.

76. We also propose to process bids after a round ends in order of price point, where the price point represents the percentage of the bidding interval for the round.<sup>72</sup> Under this proposal, once a round ends, the FCC auction bidding system will process bids in ascending order of price point, first considering intra-round bids in order of price point and then bids at the clock price. The system will consider bids at the lowest price point for all categories in all PEAs, then look at bids at the next price point in all areas, and so on. In processing the bids submitted in the round, the FCC auction bidding system will determine the extent to which there is excess demand for each category in each PEA in order to determine whether a bidder's requested reduction in demand can be implemented.

77. For a given category in a given PEA, the uniform price for all blocks in the category will stop increasing when aggregate demand no longer exceeds the available supply of blocks in the category. If no further bids are placed, the final clock phase price for the category will be the stopped price.<sup>73</sup>

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<sup>70</sup> Complete details on Auction 103 clock phase bid types and bid processing details are provided in the *Clock Phase Technical Guide*.

<sup>71</sup> For example, a bidder may indicate that it demands two blocks in Category P in a given PEA starting at price \$102,000 and up to the round's clock price (if the bidder does not submit any other bid for Category P in that PEA in the round).

<sup>72</sup> For example, if the price for the previous round is \$5,000 and the new clock price is \$6,000, a price of \$5,100 will correspond to the 10% price point since it is 10% of the bidding interval between \$5,000 and \$6,000.

<sup>73</sup> This and other Auction 103 bid processing details are addressed in the *Clock Phase Technical Guide*.

78. In order to facilitate bidding for multiple blocks in a PEA, we propose that bidders will be permitted to make two types of bids: simple bids and switch bids.

79. A “simple” bid indicates a desired quantity of licenses in a category at a price (either the clock price or an intra-round price). Simple bids may be applied partially. A simple bid that involves a reduction from the bidder’s previous demands may be implemented partially if aggregate excess demand is insufficient to support the entire reduction. A simple bid to increase a bidder’s demand in a category may be applied partially if the total number of bidding units associated with the bidder’s demand, given all changes in demand that have been applied so far in the bid processing, exceeds the bidder’s bidding eligibility for the round.

80. A “switch” bid allows the bidder to request to move its demand for a quantity of licenses from the M/N category to the P category, or vice versa, within the same PEA. A switch bid may be applied partially, but the increase in demand in the “to” category will always match in quantity the reduction in the “from” category.

81. The proposed bid types will allow bidders to express their demand for blocks in the next clock round without running the risk that they will be forced to purchase more spectrum at a higher price than they wish. When a bid to reduce demand can be applied only partially, the uniform price for the category will stop increasing at that point, since the partial application of the bid results in demand falling to equal supply. Hence, a bidder that makes a simple bid or a switch bid that cannot be fully applied will not face a price for the remaining demand that is higher than its bid price.

82. Because in any given round some bidders may increase demands for licenses in a category while others may request reductions, the price point at which a bid is considered by the auction bidding system can affect whether it is applied. In addition to proposing that bids be considered by the system in order of increasing “price point,” we further propose that bids not applied because of insufficient aggregate demand or insufficient eligibility be held in a queue and considered, again in order, if there should be excess demand (in the case of a bid to reduce demand) or if the bidder’s demand in other categories and PEAs is reduced (in the case of a bid to increase demand) later in the processing after other bids are processed.

83. More specifically, under our proposed procedures, once a round closes, the FCC auction bidding system will process the bids by first considering the bid submitted at the lowest price point and determine whether it can be applied given aggregate demand as determined most recently and given the associated bidder’s eligibility. If the bid can be applied, or partially applied, the number of licenses the bidder demands will be adjusted, and aggregate demand will be recalculated accordingly. If the bid cannot be applied in part or in full, the unfulfilled bid, or portion thereof, will be held in a queue to be considered later during bid processing for that round. The FCC auction bidding system will then consider the bid submitted at the next highest price point, accepting it in full, in part, or not at all, given recalculated aggregate demand and given the associated bidder’s eligibility. Any unfulfilled requests will again be held in a queue, and aggregate demand will again be recalculated. Every time a bid or part of a bid is applied and aggregate demand has been recalculated, the unfulfilled bids held in queue will be reconsidered, in the order of their original price points (and by pseudo-random number, in the case of tied price points). The auction bidding system will not carry over unfulfilled bid requests to the next round, however. The bidding system will advise bidders of the status of their bids when round results are released.

84. After the bids are processed in each round, the FCC auction bidding system will announce new clock prices to indicate a range of acceptable bid prices for the next round. Each bidder will be informed of the number of blocks in a category on which it holds bids, the aggregate demand for each category in a PEA, and, if demand fell to equal supply during the round, the intra-round price point

at which that occurred.<sup>74</sup>

85. *No Bidding Aggregation.* We do not propose to incorporate any form of package bidding procedures into the clock phase of Auction 103. Package bidding would add complexity to the bidding process, and we do not see significant benefit from such procedures, given the clock auction and assignment phase format we are proposing. A bidder may bid on multiple blocks in a PEA and in multiple PEAs.<sup>75</sup> As set forth below, we propose that the assignment phase will assign contiguous blocks to winners of multiple blocks in a category in a PEA and give bidders an opportunity to express their preferences for specific frequency blocks, thereby facilitating aggregations of licenses.

86. We seek comment on our proposals regarding reducing demand, bid types, and bid processing for Auction 103.

### **11. Winning Bids in the Clock Phase**

87. Under our proposed clock auction format for Auction 103, as long as the net revenue requirement has been satisfied, bidders that are still expressing demand for a quantity of blocks in a category in a PEA at the time the stopping rule is met will become the winning bidders and will be assigned specific frequencies in the assignment phase.

### **12. Bid Removal and Bid Withdrawal**

88. The FCC auction bidding system allows each bidder to remove any of the bids it placed in a round before the close of that round. By removing a bid placed within a round, a bidder effectively “unsubmits” the bid. Once a round closes, a bidder may no longer remove a bid.

89. Unlike an SMR auction, there are no provisionally winning bids in a clock auction. As a result, the concept of bid withdrawals is inapplicable to a clock auction. As proposed above, however, bidders in Auction 103 may request to reduce demand for generic blocks.<sup>76</sup>

## **B. Assignment Phase**

### **1. Sequencing and Grouping of PEAs**

90. We propose to sequence assignment rounds to make it easier for bidders to incorporate frequency assignments from previously assigned areas into their bid preferences for other areas, recognizing that bidders winning multiple blocks of licenses generally will prefer contiguous blocks across adjacent PEAs. To that end, we propose to conduct rounds for the largest markets first to enable bidders to establish a “footprint” from which to work.

91. Specifically, we propose to conduct a separate assignment round for each of the top 20 PEAs and to conduct these assignment rounds sequentially, beginning with the largest PEAs.<sup>77</sup> Once the

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<sup>74</sup> As discussed above, we propose that if there is excess demand, a fixed percentage increment will be added to the clock price for the previous round, and this percentage will be the same for all categories in all PEAs. However, if in the round, an intra-round bid brings demand down to the point at which it is equal to supply, we propose that the clock increment will be added to that intra-round price. See Section V.A.9.c (Intra-Round Bids), above.

<sup>75</sup> Under our proposal, in any given round a bidder may place no more than five bids for blocks in a single category in a single PEA. We impose this limit to ensure system and bidder manageability, and we do not expect that the restriction will have a significant impact on bidder strategy.

<sup>76</sup> See Section V.A.10 (Changing Demand, Bid Types, and Bid Processing) (discussing how the system will process requests to reduce demand), above.

<sup>77</sup> In Auction 1002, we conducted sequential rounds for the top 40 PEAs and for Auction 102, we will do the same. We alter our proposal for Auction 103, in order to further speed up the assignment phase by including PEAs 21-40 in the simultaneous REAG assignment rounds. Our experience in Auction 1002 suggests that this proposed change will not adversely affect bidders. We will consider the results of Auction 102, as well as any commenter input, before determining our final procedures.

top 20 PEAs have been assigned, we propose to conduct, for each Regional Economic Area Grouping (REAG),<sup>78</sup> a series of assignment rounds for the remaining PEAs within that region. We further propose, where feasible, to group into a single market for assignment any non-top 20 PEAs within a region in which the supply of blocks is the same in each category, the same entities (winning bidders and incumbents keeping modified licenses) need to be assigned the same number of blocks in each category, and all are subject to the small markets bidding cap or all are not subject to the cap, which will also help maximize contiguity across PEAs. We propose to sequence the assignment rounds within a REAG in descending order of population for a PEA group or individual PEA. We further propose to conduct the bidding for the different REAGs in parallel in order to reduce the total amount of time required to complete the assignment phase.

92. We seek comment on these proposals for sequencing assignment rounds, including conducting separate rounds for the top 20 PEAs, and on our proposal to group PEAs for bidding under some circumstances within REAGs.

## 2. Acceptable Bids and Bid Processing

93. Under our proposal, in each assignment round, a bidder will be asked to assign a price to one or more possible frequency assignments for which it wishes to express a preference, consistent with its winnings for generic blocks in the clock phase. The price will represent a maximum payment that the bidder is willing to pay, in addition to the base price established in the clock phase for the generic blocks, for the frequency-specific license or licenses in its bid. We propose that a bidder will submit its preferences for blocks it won in the Upper 37 and 39 GHz bands and the 47 GHz band separately, rather than submitting bids for preferences that include blocks in both categories. That is, if a bidder won one block in category M/N and two blocks in category P, it would not be able to submit a single bid amount for an assignment that included all three blocks. Instead, it would submit its bid or bids for assignments in category M/N separately from its bid or bids for assignments in category P.

94. We propose to use an optimization approach to determine the winning frequency assignment for each category in each PEA or PEA group.<sup>79</sup> We propose that the auction system will select the assignment that maximizes the sum of bid amounts among all assignments that satisfy the contiguity requirements.<sup>80</sup> We propose that the additional price a bidder will pay for a specific frequency assignment (above the base price) will be calculated consistent with a generalized “second price” approach—that is, the winner will pay a price that would be just sufficient to result in the bidder receiving that same winning frequency assignment while ensuring that no group of bidders is willing to pay more for an alternative assignment that satisfies the contiguity restrictions.<sup>81</sup> This price will be less than or equal to the price the bidder indicated it was willing to pay for the assignment. We propose to determine prices in this way because it facilitates bidding strategy for the bidders, encouraging them to bid their full value for the assignment, knowing that if the assignment is selected, they will pay no more than would be necessary to ensure that the outcome is competitive.<sup>82</sup>

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<sup>78</sup> The six REAGs are: Northeast, Southeast, Great Lakes, Mississippi Valley, Central, and West. Each of the remaining REAGs (i.e., Alaska, Hawaii, Puerto Rico and US Virgin Islands, Guam and the Northern Mariana Islands, American Samoa, and the Gulf of Mexico) will be merged in one of the six main REAGs.

<sup>79</sup> Because they are in a single bidding category, blocks in the Upper 37 and 39 GHz bands will be treated as interchangeable in the assignment phase. As a result, an incumbent in the 39 GHz band that chooses to receive modified licenses may be assigned frequencies in the Upper 37 GHz band.

<sup>80</sup> Furthermore, if multiple blocks in a category in a PEA remain unsold, the unsold licenses will be contiguous.

<sup>81</sup> The *Assignment Phase Technical Guide* provides mathematical details of this proposal.

<sup>82</sup> We propose to determine prices using the Vickrey-nearest approach, which is described in the *Assignment Phase Technical Guide*.

95. We seek comment on these proposed procedures. In particular, we ask whether bidders would find it useful to be able to submit a single bid for assignments that include frequencies in both categories, in cases where the bidder won blocks in both category M/N and category P.

## VI. POST-AUCTION PROCESS

### A. Additional Default Payment Percentage

96. Any winning bidder that defaults or is disqualified after the close of an auction (i.e., fails to remit the required down payment by the specified deadline, fails to submit a timely long-form application, fails to make full and timely final payment, or is otherwise disqualified) is liable for a default payment under section 1.2104(g)(2) of the rules.<sup>83</sup> This payment consists of a deficiency payment, equal to the difference between the amount of the bidder's winning bid and the amount of the winning bid the next time a license covering the same spectrum is won in an auction, plus an additional payment equal to a percentage of the defaulter's bid or of the subsequent winning bid, whichever is less.

97. The Commission's rules provide that, in advance of each auction, it will establish a percentage between 3% and 20% of the applicable winning bid to be assessed as an additional default payment.<sup>84</sup> As the Commission has indicated, the level of this additional payment in each auction will be based on the nature of the service and the licenses being offered.<sup>85</sup>

98. For Auction 103, we propose to establish an additional default payment of 15%, which is consistent with that adopted for Auctions 101 and 102.<sup>86</sup> As noted in the *CSEA/Part 1 Report and Order*, defaults weaken the integrity of the auction process and may impede the deployment of service to the public, and an additional default payment of up to 20% will be more effective in deterring defaults than the 3% used in some earlier auctions.<sup>87</sup> At the same time, we do not believe the detrimental effects of any defaults in Auction 103 are likely to be unusually great. In light of these considerations, we propose for Auction 103 an additional default payment of 15% of the relevant bid. We seek comment on this proposal.

99. In case they are needed for post-auction administrative purposes, the bidding system will calculate individual per-license prices that are separate from final auction payments, which are calculated on an aggregate basis. The bidding system will apportion to individual licenses any assignment phase payments and any capped bidding credit discounts,<sup>88</sup> since in both cases, a single amount may apply to multiple licenses.<sup>89</sup>

## VII. TUTORIAL AND ADDITIONAL INFORMATION FOR APPLICANTS

100. We intend to provide additional information on the bidding system and to offer demonstrations and other educational opportunities for applicants in Auction 103 to familiarize themselves with the FCC auction application system and the auction bidding system. For example, we

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<sup>83</sup> 47 CFR § 1.2104(g)(2).

<sup>84</sup> *Id.* § 1.2104(g)(2)(ii).

<sup>85</sup> *Implementation of the Commercial Spectrum Enhancement Act and Modernization of the Commission's Competitive Bidding Rules and Procedures*, Report and Order, 21 FCC Rcd 891, 903-04, para. 31 (2006) (*CSEA/Part 1 Report and Order*).

<sup>86</sup> See, e.g., *Auctions 101 and 102 Procedures Public Notice*, 33 FCC Rcd at 7660, para. 295; *Auction 97 Procedures Public Notice*, 29 FCC Rcd at 8451, para. 240 (adopting an additional default payment of 15%); *H Block Procedures Public Notice*, 28 FCC Rcd at 13073-74, para. 218 (adopting an additional default payment of 15%).

<sup>87</sup> *CSEA/Part 1 Report and Order*, 21 FCC Rcd at 902-03, para. 29.

<sup>88</sup> See Section III.A (Bidding Credit Caps), above.

<sup>89</sup> For additional details, see Section 8 of the *Assignment Phase Technical Guide* (Post-Auction per-License Price Calculations).

intend to release an online tutorial that will help applicants understand the procedures to be followed in the filing of their auction short-form applications (FCC Form 175) for Auction 103.

## VIII. PROCEDURAL MATTERS

101. *Supplemental Initial Regulatory Flexibility Analysis.* As required by the Regulatory Flexibility Act of 1980, as amended (RFA),<sup>90</sup> we have prepared this Supplemental Initial Regulatory Flexibility Analysis (Supplemental IRFA) of the possible significant economic impact on small entities of the policies and rules addressed in this Public Notice to supplement the Commission's Initial and Final Regulatory Flexibility Analyses completed in the *Spectrum Frontiers Fourth R&O*, *2017 Spectrum Frontiers Order*, *2016 Spectrum Frontiers Order*, and other Commission orders pursuant to which Auction 103 will be conducted.<sup>91</sup> Written public comments are requested on this Supplemental IRFA. Comments must be identified as responses to the Supplemental IRFA and must be filed by the same deadline for comments specified on the first page of this Public Notice. We will send a copy of this Public Notice, including this Supplemental IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).<sup>92</sup> In addition, this Public Notice and Supplemental IRFA (or summaries thereof) will be published in the *Federal Register*.<sup>93</sup>

102. *Need for, and Objectives of, the Proposed Rules.* This Public Notice sets forth the proposed auction procedures for those entities that seek to bid to acquire licenses in Auction 103. This Public Notice seeks comment on proposed procedural rules to govern Auction 103, which will auction Upper Microwave Flexible Use Service (UMFUS) licenses in the Upper 37 GHz (37.6-38.6 GHz), 39 GHz (38.6-40 GHz), and 47 GHz (47.2-48.2 GHz) bands. This process is intended to provide notice of and adequate time for potential applicants to comment on proposed auction procedures.<sup>94</sup> To promote the efficient and fair administration of the competitive bidding process for all Auction 103 participants, we seek comment on the following proposed procedures:

- establishment of bidding credit caps for eligible small businesses and rural service providers in Auction 103;
- use of a clock auction format for Auction 103 under which each qualified bidder will indicate in successive clock bidding rounds its demands for categories of generic blocks in specific geographic areas;
- a specific minimum opening bid amount for generic blocks in each PEA available in Auction 103;
- a specific upfront payment amount for generic blocks in each PEA available in Auction 103;
- establishment of a bidder's initial bidding eligibility in bidding units based on that bidder's upfront payment through assignment of a specific number of bidding units for each generic block;
- use of an activity rule that would require bidders to bid actively during the auction rather than waiting until late in the auction before participating;
- a requirement that bidders be active on between 90% and 100% of their bidding eligibility in all regular clock rounds;

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<sup>90</sup> 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996, Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

<sup>91</sup> *See Spectrum Frontiers Fourth R&O* at 25-33, App. B; *2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8234-42, 8262-69, Apps. E, H; *2017 Spectrum Frontiers Order*, 32 FCC Rcd at 11087-96, 11107-11, Apps. C, D, F.

<sup>92</sup> *See* 5 U.S.C. § 603(a).

<sup>93</sup> *See id.*

<sup>94</sup> *See* 47 U.S.C. § 309(j)(3)(E)(i) (requiring the Commission to seek comment on auction procedures).

- establishment of acceptable bid amounts, including clock price increments and intra-round bids, along with a proposed methodology for calculating such amounts;
- a proposed methodology for processing bids and requests to reduce demand;
- a procedure for breaking ties if identical high bid amounts are submitted on a license in a given round;
- establishment of an assignment phase that will determine which frequency-specific licenses will be won by the winning bidders of generic blocks during the clock phase;
- establishment of an additional default payment of 15% under section 1.2104(g)(2) of the rules in the event that a winning bidder defaults or is disqualified after the auction.

103. The proposed procedures for the conduct of Auction 103 constitute the more specific implementation of the competitive bidding rules contemplated by Parts 1 and 30 of the Commission's rules and the underlying rulemaking orders, including the *Spectrum Frontiers Fourth R&O, 2017 Spectrum Frontiers Order, 2016 Spectrum Frontiers Order*, and relevant competitive bidding orders, and are fully consistent therewith.<sup>95</sup>

104. *Legal Basis.* The Commission's statutory obligations to small businesses under the Communications Act of 1934, as amended, are found in Sections 309(j)(3)(B) and 309(j)(4)(D). The statutory basis for the Commission's competitive bidding rules is found in various provisions of the Communications Act of 1934, as amended, including 47 U.S.C. §§ 154(i), 301, 302, 303(e), 303(f), 303(r), 304, 307, and 309(j). The Commission has established a framework of competitive bidding rules, updated most recently in 2015, pursuant to which it has conducted auctions since the inception of the auction program in 1994 and would conduct Auction 103.<sup>96</sup>

105. *Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply.* The RFA directs agencies to provide a description of, and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules and policies, if adopted.<sup>97</sup> The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>98</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>99</sup> A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field

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<sup>95</sup> See generally *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2360-75, paras. 68-159.

<sup>96</sup> See generally 47 CFR Part 1, Subpart Q; see also 47 CFR §§ 73.5000, 73.5002-.5003, 73.5005-.5009. In promulgating those rules, the Commission conducted numerous RFA analyses to consider the possible impact of those rules on small businesses that might seek to participate in Commission auctions. See, e.g., *Implementation of Section 309(j) of the Communications Act—Competitive Bidding*, Notice of Proposed Rule Making, 8 FCC Rcd 7635, 7666, App. (1993); *Amendment of Part 1 of the Commission's Rules—Competitive Bidding Proceeding*, Order, Memorandum Opinion and Order and Notice of Proposed Rule Making, 12 FCC Rcd 5686, 5749-53, App. C (1997); *2015 Part 1 Report and Order*, 30 FCC Rcd at 7613-28, App. B. In addition, multiple Final Regulatory Flexibility Analyses (FRFAs) were included in the rulemaking orders which adopted or amended rule provisions relevant to this Public Notice. See *2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8234-42, App. E; *2017 Spectrum Frontiers Order*, 32 FCC Rcd at 11087-96, Apps. C, D.

<sup>97</sup> 5 U.S.C. § 603(b)(3).

<sup>98</sup> *Id.* § 601(6).

<sup>99</sup> *Id.* § 601(3) (incorporating by reference the definition of "small business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."



of operation; and (3) satisfies any additional criteria established by the SBA.<sup>100</sup>

106. As noted above, Regulatory Flexibility Analyses were incorporated into the *Spectrum Frontiers Fourth R&O*, *2017 Spectrum Frontiers Order*, and *2016 Spectrum Frontiers Order*. In those analyses, we described in detail the small entities that might be significantly affected. In this Public Notice, we hereby incorporate by reference the descriptions and estimates of the number of small entities from the previous Regulatory Flexibility Analyses in the *Spectrum Frontiers Fourth R&O*, *2017 Spectrum Frontiers Order*, and *2016 Spectrum Frontiers Order*.<sup>101</sup>

107. Based on the information available in the Commission's public Universal Licensing System (ULS), we estimate there are currently 16 incumbent 39 GHz licensees.<sup>102</sup> Of these incumbent 39 GHz licensees, we estimate that up to 8 could be considered a "small entity" under the RFA.

108. *Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities.* The Commission designed the auction application process itself to minimize reporting and compliance requirements for applicants, including small business applicants. In the first part of the Commission's two-phased auction application process, parties desiring to participate in an auction file streamlined, short-form applications in which they certify under penalty of perjury as to their qualifications.<sup>103</sup> Eligibility to participate in bidding is based on an applicant's short-form application and certifications, as well as its upfront payment. In the second phase of the process, winning bidders file a more comprehensive long-form application. Thus, an applicant which fails to become a winning bidder does not need to file a long-form application and provide the additional showings and more detailed demonstrations required of a winning bidder.

109. We do not expect the processes and procedures proposed in this Public Notice will require small entities to hire attorneys, engineers, consultants, or other professionals to participate in Auction 103 and comply with the procedures we ultimately adopt because of the information, resources, and guidance we make available to potential and actual participants. For example, we intend to release an online tutorial that will help applicants understand the procedures for filing of the auction short-form applications (FCC Form 175). We also intend to make information on the bidding system available and offer demonstrations and other educational opportunities for applicants in Auction 103 to familiarize themselves with the FCC auction application system and the auction bidding system. By providing these resources as well as the resources discussed below, we expect small business entities who utilize the available resources to experience lower participation and compliance costs.

110. *Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered.* The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for

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<sup>100</sup> 15 U.S.C. § 632.

<sup>101</sup> *Spectrum Frontiers Fourth R&O* at 25-33, App. B; *2016 Spectrum Frontiers Order*, 31 FCC Rcd at 8234-42, App. E; *2017 Spectrum Frontiers Order*, 32 FCC Rcd at 11087-96, Apps. C, D.

<sup>102</sup> In Auction 30, the Commission offered 2,450 licenses in the 39 GHz band. Auction 30 closed on May 8, 2000 with 29 winning bidders winning a total of 2,173 licenses. See *39 GHz Band Auction Closes*, Public Notice, 15 FCC Rcd 13648 (2000). 18 of these winning bidders (winning a total of 849 licenses) claimed eligibility for a small business bidding credit. *Id.* We note that, as a general matter, the number of winning bidders that are eligible for a small business bidding credit at the close of an auction does not necessarily represent the number of small businesses currently in a service. Also, we do not generally track subsequent business size unless, in the context of assignments or transfers, unjust enrichment issues are implicated.

<sup>103</sup> See *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2376-77, paras. 163-66.

such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”<sup>104</sup>

111. We have taken steps to minimize any economic impact of our auction procedures on small businesses through among other things, the many resources we provide potential auction participants. Small entities and other auction participants may seek clarification of or guidance on complying with competitive bidding rules and procedures, reporting requirements, and the FCC’s auction bidding system. An FCC Auctions Hotline provides access to Commission staff for information about the auction process and procedures. The FCC Auctions Technical Support Hotline is another resource which provides technical assistance to applicants, including small business entities, on issues such as access to or navigation within the electronic FCC Form 175 and use of the FCC’s auction bidding system. Small entities may also use the web-based, interactive online tutorial produced by Commission staff to familiarize themselves with auction procedures, filing requirements, bidding procedures, and other matters related to an auction.

112. We also make various databases and other sources of information, including the Auctions program websites, and copies of Commission decisions, available to the public without charge, providing a low-cost mechanism for small businesses to conduct research prior to and throughout the auction. Prior to and at the close of Auction 103, we will post public notices on the Auctions website, which articulate the procedures and deadlines for the auction. We make this information easily accessible and without charge to benefit all Auction 103 applicants, including small businesses, thereby lowering their administrative costs to comply with the Commission’s competitive bidding rules.

113. Prior to the start of bidding, eligible bidders are given an opportunity to become familiar with auction procedures and the bidding system by participating in a mock auction. Further, we intend to conduct Auction 103 electronically over the Internet using its web-based auction system that eliminates the need for bidders to be physically present in a specific location. Qualified bidders also have the option to place bids by telephone. These mechanisms are made available to facilitate participation in Auction 103 by all eligible bidders and may result in significant cost savings for small business entities who use these alternatives. Moreover, the adoption of bidding procedures in advance of the auction, consistent with statutory directive, is designed to ensure that the auction will be administered predictably and fairly for all participants, including small businesses.

114. For Auction 103, we propose a \$25 million cap on the total amount of bidding credits that may be awarded to an eligible small business and a \$10 million cap on the total amount of bidding credits that may be awarded to a rural service provider. In addition, we propose a \$10 million cap on the overall amount of bidding credits that any winning small business bidder may apply to winning licenses in markets with a population of 500,000 or less. Based on the technical characteristics of the UMFUS bands and our analysis of past auction data, we anticipate that our proposed caps will allow the majority of small businesses to take full advantage of the bidding credit program, thereby lowering the relative costs of participation for small businesses.

115. These proposed procedures for the conduct of Auction 103 constitute the more specific implementation of the competitive bidding rules contemplated by Parts 1 and 30 of the Commission’s rules and the underlying rulemaking orders, including the *Spectrum Frontiers Fourth R&O, 2017 Spectrum Frontiers Order, 2016 Spectrum Frontiers Order*, and relevant competitive bidding orders, and are fully consistent therewith.<sup>105</sup>

116. *Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules.* None.

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<sup>104</sup> 5 U.S.C. § 603(c)(1)-(4).

<sup>105</sup> See generally *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2360-75, paras. 68-159.

117. *Deadlines and Filing Procedures.* Pursuant to sections 1.415 and 1.419 of the Commission's rules,<sup>106</sup> interested parties may file comments or reply comments on or before the dates indicated on the first page of this document in AU Docket No. 19-59. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.<sup>107</sup> We strongly encourage interested parties to file comments electronically.

- *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the ECFS at <http://www.fcc.gov/ecfs>.
- *Paper Filers:* Parties who choose to file by paper must file an original and one copy of each filing.

118. Filings in response to this Public Notice may be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th Street, SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. Eastern Time (ET). All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of *before* entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington, DC 20554.

119. *E-mail:* We also request that a copy of all comments and reply comments be submitted electronically to the following address: [auction103@fcc.gov](mailto:auction103@fcc.gov).

120. *People with Disabilities:* To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call the Consumer and Government Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (TTY).

121. This proceeding has been designated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.<sup>108</sup> Persons making oral *ex parte* presentations must file a copy of any written presentations or memoranda summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine Period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda, or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to the Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte*

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<sup>106</sup> 47 CFR §§ 1.415, 1.419.

<sup>107</sup> See generally *Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24121 (1998).

<sup>108</sup> See 47 CFR §§ 1.1200(a), 1.1206.

presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

122. *Contact Information.* For further information concerning this proceeding, contact the offices listed below:

**Broadband Division, Wireless Telecommunications Bureau**

Upper Microwave Flexible Use Service (UMFUS) questions: Simon Banyai at (202) 418-2487

**Auctions Division, Office of Economics and Analytics**

Auction legal questions: Mark Montano or Erik Beith at (202) 418-0660  
General auction questions: Auctions Hotline at (717) 338-2868

**Office of Communications Business Opportunities**

For questions concerning small business inquiries: (202) 418-0990

123. Action by the Commission on April 12, 2019: Chairman Ajit Pai, and Commissioners Brendan Carr, Jessica Rosenworcel and Geoffrey Starks issuing separate statements.

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**STATEMENT OF  
CHAIRMAN AJIT PAI**

Re: *Incentive Auction of Upper Microwave Flexible Use Service Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz Bands for Next-Generation Wireless Services*, AU Docket No. 19-59

No song has ever received more awards than *Shallow*, the now-iconic song from last year's remake of *A Star is Born*. And to quote Lady Gaga and Bradley Cooper, "we're far from the shallow now" when it comes to spectrum auctions. Later this year, we will be auctioning 3,400 megahertz of spectrum for the commercial marketplace in the upper 37 GHz, 39 GHz, and 47 GHz bands. This is an astounding milestone: It's the most spectrum we ever will have auctioned at one time. On top of that, it will be our second incentive auction. In short, we're ready to venture off the deep end in order to secure American leadership in 5G, the next generation of wireless connectivity.

With today's public notice, we dive into the procedures for this large spectrum auction. For example, we're seeking comment on plans for an incentive auction in which we propose to use an ascending clock auction format for the offered licenses and then hold a sealed-bid assignment phase. Together, the upper 37 GHz and the 39 GHz bands will offer the largest amount of contiguous spectrum in the millimeter-wave bands for flexible-use wireless services—a total of 2,400 megahertz. And the 47 GHz band, no slouch itself, will provide an additional 1,000 megahertz of millimeter-wave spectrum for such services. Combined with the 28 GHz and 24 GHz auctions, the FCC is making available almost five gigahertz of spectrum for commercial use.

Ultimately, the biggest winners of these auctions will be the American people. As taxpayers, they'll benefit from the money raised for the U.S. Treasury. And more important, as consumers, they'll be better off from the advanced services that will be delivered using these airwaves.

I'd like to thank the dedicated FCC team that worked on this item: Valerie Barrish, Erik Beith, Craig Bomberger, Rita Cookmeyer, Jill Goldberger, Shabnam Javid, Evan Kwerel, Paul Lafontaine, Giulia McHenry, Mark Montano, Erik Salovaara, Linda Sanderson, Martha Stancill, and Margaret Wiener from the Office of Economics and Analytics; Simon Banyai, Stephen Buenzow, Jonathan Campbell, Erin Fitzgerald, John Schauble, Blaise Scinto, Dana Shaffer, Donald Stockdale, Joel Taubenblatt, and Jennifer Tomchin from the Wireless Telecommunications Bureau; and Douglas Klein and William Richardson from the Office of General Counsel. I look forward to continuing to work with all of you and my colleagues to make this auction a reality.

**STATEMENT OF  
COMMISSIONER BRENDAN CARR**

Re: *Incentive Auction of Upper Microwave Flexible Use Service Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz Bands for Next-Generation Wireless Services*, AU Docket No. 19-59

The Public Notice before us may seem ordinary. We propose to auction 100 MHz blocks of flexible use spectrum by PEA. We use the familiar clock auction format followed by an assignment round. And we provide bidding credits for small businesses and rural service providers.

But when you step back, the process we've put in place in the U.S. for allocating and auctioning spectrum is actually pretty remarkable. It's one we arrived at after years of experimenting with other approaches. And it's one that works because of the talented teams of people at the FCC. These seemingly ordinary procedures are really a model for the world.

I was reminded of this a few weeks ago, when I was in Kenya to speak at a training for East African telecom regulators. The training was hosted by the Communications Authority of Kenya or CA, and its chairman, Ben Gituku.<sup>1</sup>

Kenyans have been a region-wide leader in telecom regulation. I had the chance to see the progress they're making. They're standing up a universal service fund this year. This can help bring better connectivity to schools throughout the country, like the one I was able to visit in Nairobi's Dagoretti district.<sup>2</sup> Kids there are using tablets for online lessons. They have no lack of enthusiasm or energy.

The CA has granted experimental licenses for Internet service on TV white spaces. In a market town a few hours outside of Nairobi, I met Paul<sup>3</sup> who is now using a white space device to expand his business, take mobile payments, and even sell airtime.

And Kenya is incorporating more market-based principles in their spectrum licensing. They also have been a key partner for the U.S. in much of the important advocacy we are doing ahead of the next World Radio Conference.

The regulators who the Kenyans invited to the training have not had the benefit of long-established agencies like the Kenya CA or the FCC here. To give just one example, until two years ago, the Somali government did not have sufficient stability to regulate wireless providers at all. Wireless service existed—it just didn't exist in the context of law. So issues like zoning, permitting, and spectrum interference, to the extent they were handled, were handled by the providers amongst themselves, without rules.

As the Somalis stand up a telecom regulator from scratch, they're confronted with first-order questions: What spectrum should be licensed and unlicensed? Who should get access to spectrum? And how do you police violations of the rules?

The new regulators asked fantastic questions.<sup>4</sup> Many of them were about spectrum auctions. There's no consensus yet in many of their countries that spectrum should be auctioned let alone schedules for doing so. They asked me to explain why removing restrictions on spectrum is important and why they should strongly consider flexible use. We also discussed the role of secondary market transactions in making spectrum use more efficient and providing greater access to the people they serve.

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<sup>1</sup> <https://twitter.com/BrendanCarrFCC/status/1111214580259127296>.

<sup>2</sup> <https://twitter.com/BrendanCarrFCC/status/1110946635977277446>.

<sup>3</sup> <https://twitter.com/BrendanCarrFCC/status/1110552999754194945>.

<sup>4</sup> <https://twitter.com/BrendanCarrFCC/status/1111245417826697217>.

I recounted some of the history of how we used to do things—beauty contests, lotteries, and the like. And I shared with them the successes of our recent auctions.

The telecom regulators and commissioners from these countries by and large are young, they are smart, they are ambitious, and they are eager to contribute to their countries' success. It was heartening to hear how much they admired the FCC, and especially the reforms we've made to increase transparency and efficiency.

Our modern approach to spectrum allocation was not a given. It took decades of study and experimentation to make, and it continues to require our attention to remain a model for the world. With this Public Notice we continue the FCC's world-leading approach to wireless services.

So congratulations to the Wireless Bureau and our auctions staff on this step towards another set of successful auctions. This Public Notice has my support.

**STATEMENT OF  
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Incentive Auction of Upper Microwave Flexible Use Service Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz Bands for Next-Generation Wireless Services*, AU Docket No. 19-59

With this Public Notice, we move one step closer to an auction of up to 3,400 megahertz of spectrum across the 37, 39, and 47 GHz bands. This represents the largest swath of contiguous spectrum for 5G services yet. It's an impressive number.

But there's another number that deserves more attention than it is getting. And that's the amount of critical mid-band spectrum this agency has made available for 5G services. That number is zero.

The reality is that as we forge ahead the United States is increasingly alone in its mission to make millimeter wave the core of its domestic 5G approach. This means that we have internationally ceded leadership when it comes to mid-band spectrum. If you want evidence this is true, it's out in the open for all to see. You can start with South Korea, which last year wrapped up an auction of the 3.5 GHz band. You can move on to the United Kingdom, which held an auction last year of the 2.3 and 3.4 GHz bands. At roughly the same time Spain and Italy held auctions of the 3.6-3.8 GHz bands. Austria did the same with the 3.4-3.8 GHz band earlier this year. Similarly, Switzerland auctioned the 2.6 GHz and 3.5 GHz bands this year, as well as the 1.4 GHz band. Meanwhile, Germany and Japan are both auctioning mid-band spectrum this month. And China allocated 300 megahertz of mid-band spectrum for carriers last year. The United States? Again, when it comes to mid-band spectrum, we've made available zero.

This is a problem. If we continue our current path—prioritizing only millimeter wave—we may find ourselves without a global supply base as mid-band becomes the core of worldwide 5G service. This means less scale, higher costs, interoperability challenges, and less security as other nations' technologies proliferate. Moreover, recent commercial launches of 5G service in the United States are confirming what we already know—that commercializing the millimeter wave will not be easy, given its propagation challenges. The network densification these airwaves require is costly. If we want to serve everywhere in the country—and not create communities of 5G haves and 5G have-nots—we are going to need a healthy mix of airwaves that provide both coverage and capacity. That means we need mid-band spectrum. And it's especially important for rural America, where the challenging economics of service do not presently support the high cost of high-band infrastructure. This is a fact and no pronouncement from this agency or this Administration will make it otherwise.

So here's what we need to do. It's time for the United States and the Federal Communications Commission to flip its priorities and pivot to the mid-band. We can start by scheduling an auction of the 3.5 GHz band. We should continue our discussion and engage Congress regarding the 3.7-4.2 GHz band. Then we need to explore innovative opportunities for making more efficient use of the 2.5 GHz band. Finally, we need to continue to press our federal partners to work collaboratively with us to open more mid-band spectrum for new commercial use.

The truth is when it comes to mid-band spectrum we are not just behind, we are no longer even running in the same race as the rest of the world. The good news is that it's not too late to do something about it. So while we celebrate the auction of yet more high-band spectrum today, what we need to do next is prioritize bringing mid-band spectrum to market. And if we are successful, we can reclaim what we have lost and make real progress with the deployment of 5G service to every community, everywhere across the country.



**STATEMENT OF  
COMMISSIONER GEOFFREY STARKS**

Re: *Incentive Auction of Upper Microwave Flexible Use Service Licenses in the Upper 37 GHz, 39 GHz, and 47 GHz Bands for Next-Generation Wireless Services*, AU Docket No. 19-59

A Public Notice announcing auction procedures may not seem like the most exciting event, but this item is a big deal. When Auction 103 takes place, it will be the largest spectrum auction in FCC history – 3,400 megahertz. And the spectrum involved promises to be a key component in the 5G revolution that will take place over the next 5 to 10 years. With this auction, we are one step closer to seeing a wave of technological changes in our everyday lives – from remote medical examinations, to self-driving cars, to virtual and augmented reality, to applications that we can't even imagine yet.

With new technology comes the responsibility to ensure that we have the right regulatory approach. In making new spectrum available, we must think creatively about how to encourage both the participation of new market entrants and new ways to use that resource. I'm particularly pleased with two major components of the approach here.

First, this is the first Commission auction that will offer multiple millimeter wave bands together. Auctioning off so much spectrum in multiple bands at the same time encourages participation by an expanded group of parties – not only the large national carriers, but regional carriers, fixed wireless providers, and even companies looking to provide specialized IoT services. Moreover, the amount of spectrum and variety of bands provides bidders with the flexibility to choose the best combination of spectrum for their particular needs.

Second, it adopts, for only the second time, an incentive auction format to encourage incumbents to relinquish their spectrum rights in exchange for compensation. Much of this spectrum was assigned years ago but hasn't seen meaningful deployment. An incentive auction will be an efficient way to get spectrum into the hands of those best positioned to use it today while compensating the original licensees. I'm intrigued by this approach and look forward to seeing the results, as well as how it might work in other contexts.

Congratulations to the Office of Economics and Analytics for completing your first meeting item. Thank you for your work on this, and I look forward to working with all of you moving forward.