



PUBLIC NOTICE

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AUCTION OF PRIORITY ACCESS LICENSES FOR THE 3550-3650 MHz BAND

COMMENT SOUGHT ON COMPETITIVE BIDDING PROCEDURES FOR AUCTION 105

Bidding in Auction 105 Scheduled to Begin June 25, 2020

AU Docket No. 19-244

Comment Date: October 28, 2019

Reply Comment Date: November 12, 2019

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I. INTRODUCTION

1. By this Public Notice, we seek comment on the procedures to be used for Auction 105, the auction of Priority Access Licenses (PALs) in the 3550-3650 MHz band.¹ Bidding in the auction is scheduled to commence on June 25, 2020. By initiating the pre-bidding process for assigning licenses in Auction 105, we take an important step toward releasing flexible-use mid-band spectrum to the market and furthering deployment of fifth-generation wireless, the Internet of Things, and other advanced spectrum-based services in the United States.

II. LICENSES TO BE OFFERED IN AUCTION 105

A. Description of Licenses

2. Auction 105 will offer seven PALs in each county-based license area.² Each PAL consists of a 10-megahertz unpaired channel within the 3550-3650 MHz band. The auction will offer a total of 22,631 PALs.³ PALs are 10-year renewable licenses.⁴ Priority Access Licensees may hold up to four 10-megahertz channel licenses (out of a total of seven) within the band in any license area at any given time.⁵

3. A frequency coordinator called a Spectrum Access System (SAS) will assign the specific channel for a particular licensee on a dynamic basis.⁶ Individual PALs will not be identified by specific spectrum blocks. Although Priority Access Licensees may request a particular channel or frequency range from an SAS following the auction, bidders should be mindful that licensees are not guaranteed a particular assignment.⁷ Potential bidders should also understand that an SAS may dynamically reassign a PAL to a different channel as needed to accommodate a higher priority Incumbent Access user.⁸ An SAS

¹ See *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order, 30 FCC Rcd 3959 (2015) (*2015 Report and Order*); *Promoting Investment in the 3550-3700 MHz Band*, GN Docket No. 17-258, Report and Order, 33 FCC Rcd 10598 (2018) (*2018 3.5 GHz Order*).

² 47 CFR § 96.13; *2018 3.5 GHz Order*, 33 FCC Rcd at 10643, para. 82. For purposes of this auction, counties shall be defined using the United States Census Bureau's data reflecting county legal boundaries and names valid through January 1, 2017. See 47 CFR § 96.3. See also *2018 3.5 GHz Order*, 33 FCC Rcd at 10607, para. 19, n.71. Information regarding PALs, including (1) a map and list of 2017 counties, (2) a map and list of the proposed 172 CMA-level bidding areas, and (3) an interactive map of both counties and CMA-level biddings areas, can be found at <https://www.fcc.gov/35-ghz-band-overview>. We will not be issuing Priority Access Licenses in the Gulf of Mexico.

³ A summary of the licenses offered in Auction 105 is available in Attachment A to this Public Notice. Due to the large number of licenses offered in Auction 105, the complete list of licenses to be offered in in Auction 105 will be provided in an electronic format only. The separate "Attachment A" files will be available on the Auction 105 website at www.fcc.gov/auction/105.

⁴ 47 CFR § 96.25(b)(3); *2018 3.5 GHz Order*, 33 FCC Rcd at 10623, para. 46.

⁵ 47 CFR § 96.31(a); *2015 Report and Order*, 30 FCC Rcd at 3998, para. 117; *2018 3.5 GHz Order*, 33 FCC Rcd at 10653-54, para. 107.

⁶ *2018 3.5 GHz Order*, 33 FCC Rcd at 10643-44, para. 82; 47 CFR § 96.25(b)(2).

⁷ *2018 3.5 GHz Order*, 33 FCC Rcd at 10643-44, para. 82, n.327.

⁸ 47 CFR §§ 96.25(b)(2)(i), 96.59(c); *2018 3.5 GHz Order*, 33 FCC Rcd at 10643, para. 82.

will “assign geographically contiguous PALs held by the same Priority Access Licensee to the same channels in each geographic area” and “assign multiple channels held by the same Priority Access Licensee to contiguous frequencies within the same License Area,” to the extent feasible.⁹ However, an SAS may temporarily reassign individual PALs to non-contiguous channels to the extent necessary to protect incumbent users from harmful interference or if necessary to perform its required functions.¹⁰

4. Each Priority Access Licensee must register its Citizens Broadband Radio Service Devices (CBSDs) with an SAS before operating those devices in the band.¹¹ A CBSD registration includes its geographic location, antenna height, CBSD class, requested authorization status, FCC identification number, call sign, user contact information, air interface technology, unique manufacturer’s serial number, sensing capabilities (if supported), and information on its deployment profile.¹² An SAS relies on this information to coordinate access for Priority Access Licensees and General Authorized Access (GAA) users,¹³ and an SAS Administrator may charge Priority Access Licensees and GAA users a reasonable fee for its services.¹⁴

A. Sharing in 3.5 GHz Band

5. The 3.5 GHz band is governed by a three-tiered spectrum authorization framework.¹⁵ The three tiers of authorization are: Incumbent Access, Priority Access, and General Authorized Access (GAA).¹⁶ SASs will facilitate sharing among the three tiers of authorized users.¹⁷ Incumbent users receive protection from Priority Access Licensees and GAA users, while Priority Access Licensees receive protection from GAA users.¹⁸ The three-tiered structure is designed to accommodate a variety of commercial uses on a shared basis with incumbent federal and non-federal uses of the band. The Citizens Broadband Radio Service includes Priority Access Licensees and GAA users in the 3550-3650 MHz band and GAA users in the 3550-3700 MHz band (collectively, the 3.5 GHz band).¹⁹

⁹ 47 CFR §§ 96.25(b)(1)(i), 96.59(b); *2018 3.5 GHz Order*, 33 FCC Rcd at 10643-44, paras. 80-82.

¹⁰ 47 CFR §§ 96.25(b), 96.59; *2015 Report and Order*, 30 FCC Rcd at 3390, para. 93.

¹¹ 47 CFR § 96.23(b). General Authorized Access (GAA) users must also register their Citizen Broadband Radio Service Devices (CBSDs). *See* 47 CFR § 96.33(b). CBSDs are “Fixed Stations, or networks of such stations, that operate on a Priority Access or General Authorized Access basis in the Citizens Broadband Radio Service consistent with this rule part. For CBSDs which comprise multiple nodes or networks of nodes, CBSD requirements apply to each node even if network management and communication with the SAS is accomplished via a single network interface. End User Devices are not considered CBSDs.” 47 CFR § 96.3.

¹² 47 CFR § 96.39(c). When registering with an SAS, Category A CBSDs must also transmit whether the device will be operated indoors or outdoors. 47 CFR § 96.43(b). When registering with an SAS, Category B CBSDs must also transmit antenna gain, beamwidth, azimuth, downtilt angle, and antenna height above ground level. 47 CFR § 96.45(d).

¹³ 47 CFR § 96.53.

¹⁴ 47 CFR § 96.65(a). Upon request, the Commission will review SAS fees and can require changes to the fees if we find the fees to be unreasonable. *See* 47 CFR § 96.65(b).

¹⁵ 47 CFR § 96.1(b); *2015 Report and Order*, 30 FCC Rcd at 3978, para. 54.

¹⁶ 47 CFR § 96.1(b); *2015 Report and Order*, 30 FCC at 3978, para. 54. The Citizens Broadband Radio Service includes Priority Access and GAA tiers of service.

¹⁷ 47 CFR § 96.63; *2015 Report and Order*, 30 FCC Rcd at 4051, para. 311.

¹⁸ 47 CFR §§ 96.1(b), 96.15, 96.17, 96.21, 96.35.

¹⁹ 47 CFR § 96.1(b).

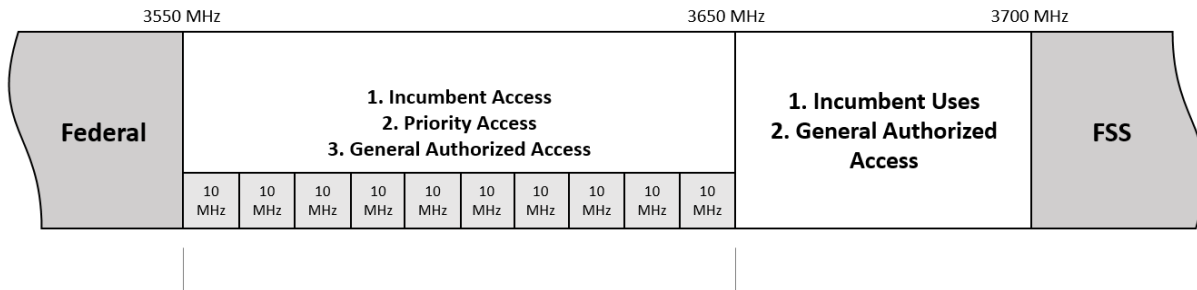
6. Table 1 shows the tiered structure of the 3550-3650 MHz band.

Table 1: 3550-3650 MHz Band Tiered Structure

3550 MHz	3600 MHz	3650 MHz
Tier 1: Federal Radiolocation and Federal Aeronautical Radionavigation		
	Tier 1: Non-Federal Grandfathered Fixed Satellite Service (space-to-Earth)	
Tier 2: Priority Access Licenses		
Tier 3: General Authorized Access		

7. Figure 1 shows the band plan for the 3.5 GHz band.

Figure 1: 3.5 GHz Band Plan



8. Incumbent users, which have the highest priority, include federal radiolocation users in the 3550-3650 MHz band and non-Federal grandfathered Fixed Satellite Service (FSS) earth stations in the 3600-3650 MHz band.²⁰

9. The 3550-3650 MHz band segment is allocated for use by Department of Defense (DoD) radar systems on a primary basis and by Federal non-military Radiolocation Service on a secondary basis.²¹ Federal aeronautical radionavigation (ground-based) stations may also be authorized on a primary basis in the 3500-3650 MHz band when accommodation in the 2700-2900 MHz band is not technically or economically feasible.²² Non-Federal licensees, including Priority Access Licensees, may not cause harmful interference to, or claim protection from federal stations in the aeronautical radionavigation (ground-based) and radiolocation services in the 3550-3650 MHz band.²³ The National

²⁰ 47 CFR §§ 96.3, 96.15, 96.17, 96.19, 96.21. See *2015 Report and Order*, 30 FCC Rcd at 3964-65, paras. 15-18; 3972-75, paras. 30-43. Note that for a finite period, grandfathered terrestrial wireless licensees in the 3650-3700 MHz band are in the “Incumbent Access” tier receiving protection. However, the 3650-3700 MHz band is not available for PALs. Therefore, protections for the grandfathered terrestrial wireless licensees are outside the scope of this Public Notice.

²¹ 47 CFR § 2.106, note G59; *2015 Report and Order*, 30 FCC Rcd at 3964, para. 15.

²² 47 CFR § 2.106, note G110; *2015 Report and Order*, 30 FCC Rcd at 3964-65, para. 15.

²³ 47 CFR § 2.106, note US433, 96.15(a).

Telecommunications and Information Administration (NTIA) may approve frequency assignments for new and modified Federal stations at current or new locations.²⁴

10. In the 3550-3650 MHz band, non-Federal stations in the Radiolocation Service that were licensed or had pending applications prior to July 23, 2015 may operate on a secondary basis to the Citizens Broadband Radio Service until the end of the equipment's useful lifetime.²⁵ FSS (space-to-Earth) earth station operations in the 3600-3650 MHz band may operate on a primary basis if the Commission authorized operation prior to or granted an application filed prior to July 23, 2015 and if the FSS licensee constructed the subject earth station(s) within 12 months of the initial authorization.²⁶ Any new FSS (space-to-Earth) earth stations in the 3600-3650 MHz band assigned after July 23, 2015, are authorized on a secondary basis.²⁷ Regardless of primary or secondary status, all non-Federal FSS (space-to-Earth) operations in the 3600-3650 MHz band are limited to international inter-continental systems and subject to case-by-case electromagnetic compatibility analysis.²⁸

11. GAA users may operate in the 3550-3700 MHz band,²⁹ but are not guaranteed protection from interference. GAA users may operate in the 3650-3700 MHz band and on any frequencies not in use by Priority Access Licensees or Tier 1 licensees in the 3550-3560 MHz band.³⁰ The GAA tier is licensed-by-rule to permit open, flexible access to the band for the widest possible group of potential users.³¹

12. Each potential bidder is solely responsible for investigating and evaluating all technical and marketplace factors that may have a bearing on the potential uses of a PAL that it may seek in Auction 105. In addition to the typical due diligence considerations that we encourage of bidders in all auctions,³² we call particular attention in Auction 105 to the spectrum-sharing issues described above. Each applicant should closely follow releases from the Commission concerning these issues and consider carefully the technical and economic implications for commercial use of the 3.5 GHz band.

III. PROPOSED PRE-BIDDING PROCEDURES

A. Information Procedures During the Auction Process

13. Consistent with most recent spectrum auctions, we propose to limit information available in Auction 105 in order to prevent the identification of bidders placing particular bids until after the bidding has closed.³³ More specifically, the Commission proposes not to make public until after bidding

²⁴ 47 CFR § 96.15(a)(3). The exclusion zones are shown at <https://www.ntia.doc.gov/category/3550-3650-mhz>. NTIA will notify the Commission in writing if and when the list of radiolocation sites is updated.

²⁵ 47 CFR § 2.106, note US105; *2015 Report and Order*, 30 FCC Rcd at 3974, para 40.

²⁶ 47 CFR § 2.106, note US107(a); *2015 Report and Order*, 30 FCC Rcd at 3973, para 37.

²⁷ 47 CFR § 2.106, note US107(b); *2015 Report and Order*, 30 FCC Rcd at 3973, para 37.

²⁸ 47 CFR § 2.106, note US245.

²⁹ 47 CFR § 96.11(a)(1); *2015 Report and Order*, 30 FCC Rcd at 4011, para. 159.

³⁰ 47 CFR § 96.13; *2015 Report and Order*, 30 FCC Rcd at 3982, para. 67.

³¹ 47 CFR § 96.33; *2015 Report and Order*, 30 FCC Rcd at 4011, paras. 159-60.

³² See, e.g., *Auctions of Upper Microwave Flexible Use Licenses for Next-Generation Wireless Services; Comment Sought on Competitive Bidding Procedures for Auctions 101 (28GHz) and 102 (24 GHz); Bidding in Auction 101 Scheduled to Begin November 14, 2018*, AU Docket No. 18-85, 33 FCC Rcd 4103, 4116-17, paras. 36-41 (2018) (*Auctions 101-102 Comment Public Notice*).

³³ See, e.g., *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 (continued....)*)

has closed: (1) the licenses or license areas that an applicant selects for bidding in its auction application (FCC Form 175); (2) the amount of any upfront payment made by or on behalf of an applicant for Auction 105; (3) an applicant's bidding eligibility; and (4) any other bidding-related information that might reveal the identity of the bidder placing a bid.

14. Under these proposed limited information procedures (sometimes also referred to as anonymous bidding), information to be made public after each round of bidding in Auction 105 includes, for each county: the aggregate demand for licenses, the prices at the end of the last completed round, and the prices for the next round. 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.

15. Bidders would have access 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.

16. After the close of bidding, bidders' county selections and the number of licenses selected for each county, upfront payment amounts, bidding eligibility, bids, and other bidding-related actions would be made publicly available.

17. We seek comment on the above details of our proposal for implementing limited information procedures, or anonymous bidding, in Auction 105. Commenters opposing the use of anonymous bidding in Auction 105 should explain their reasoning and propose alternative information rules.

B. Bidding Credit Caps

18. The Commission administers its bidding credit programs to promote small business and rural service provider participation in auctions and in the provision of spectrum-based services.³⁴ In 2018, the Commission determined that it would offer bidding credits in competitive bidding for PALs in the 3550-3650 MHz band auction to improve the ability of small businesses and rural service providers to attract the capital necessary to meaningfully acquire PALs.³⁵ Specifically, the Commission adopted the gross revenue thresholds that define the eligibility tiers for the small business bidding credit,³⁶ as revised by the *2015 Part 1 Report and Order*,³⁷ as well as a rural service provider bidding credit program.³⁸ For PALs in the 3550-3650 MHz band, the Commission determined that an entity with average annual gross revenues for the preceding three years not exceeding \$55 million will be eligible to qualify as a "small

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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*, AU Docket No. 14-78, 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*, AU Docket No. 10-248, 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*, AU Docket No. 06-30, Public Notice, 21 FCC Rcd 4562, 4600-05, paras. 140-57 (2006); *see also* 47 CFR § 1.2104(h).

³⁴ *See* 47 U.S.C. § 309(j)(4)(D); *see also id.* § 309(j)(3)(A)-(B).

³⁵ *2018 3.5 GHz Order*, 33 FCC Rcd at 10645-46, para. 86.

³⁶ *Id.* at 10647, para. 89, citing 47 CFR § 1.2110(f)(2)(i)(B), (C).

³⁷ *Updating Part 1 Competitive Bidding Rules et al.*, WT Docket Nos. 14-170 and 05-211; GN Docket No. 12-268, 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, 7524-25, paras. 73-74 (*2015 Part 1 Report and Order*).

³⁸ *2018 3.5 GHz Order*, 33 FCC Rcd at 10647-48, para. 90.

business” for a bidding credit of 15%, while an entity with average annual gross revenues for the preceding three years not exceeding \$20 million will be eligible to qualify as a “very small business” for a bidding credit of 25%,³⁹ consistent with the standardized schedule in Part 1 of our rules.⁴⁰ Additionally, the Commission 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 will be eligible for the 15% rural service provider bidding credit in competitive bidding for PALs in the 3550-3650 MHz band.⁴¹

19. Consistent with the Commission’s decision in the *2015 Part 1 Report and Order* to set a reasonable cap on the total amount of bidding credits that an eligible small business or rural service provider may be awarded in any auction, we now seek comment on establishing the caps on the total amount of bidding credits that an eligible small business or rural service provider may be awarded for Auction 105.⁴² As the Commission explained in the *2015 Part 1 Report and Order*, the total amount of the bidding credit cap for small businesses will not be less than \$25 million, and the bidding credit cap for rural service providers will not be less than \$10 million.⁴³

20. For Auction 105, 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 an eligible rural service provider.⁴⁴ These proposals are consistent with our recent decisions in Auctions 101, 102,⁴⁵ and 103.⁴⁶ As in those auctions, we believe that the range of potential use cases suitable for spectrum in the 3550-3650 MHz band, combined with the relatively small geographic areas for PALs, may permit deployment of smaller scale networks with lower total costs.⁴⁷ Moreover, past auction data suggests that the proposed caps will allow the substantial majority of eligible businesses in the auction to take advantage of the bidding credit program.⁴⁸ In addition, to create parity in Auction 105 among eligible small businesses and rural service providers competing against each other in small markets, we propose a \$10 million small markets cap on the overall amount of bidding credits that

³⁹ *Id.* at 10647, para. 89.

⁴⁰ See 47 CFR § 1.2110(f)(2)(i)(B), (C). In the *2015 Part 1 Report and Order*, the Commission adopted a process for establishing a reasonable monetary limit or cap on the amount of bidding credits that an eligible small business or rural service provider may be awarded in any particular auction. See *2015 Part 1 Report and Order*, 30 FCC Rcd at 7539-44, paras. 110-21. We established the parameters to implement a bidding credit cap for future auctions on an auction-by-auction basis. *Id.*

⁴¹ *2018 3.5 GHz Order*, 33 FCC Rcd at 10647-48, para. 90; 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.

⁴² See *2015 Part 1 Report and Order*, 30 FCC Rcd at 7541, para. 114.

⁴³ *Id.*; see also 47 CFR § 1.2110(f)(2)(ii), (4)(ii).

⁴⁴ 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).

⁴⁵ *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*, AU Docket No. 18-85, Public Notice, 33 FCC Rcd 7575, 7609-10, para. 93 (2018) (*Auction 101-102 Procedures Public Notice*).

⁴⁶ *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; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 103; Bidding in Auction 103 Scheduled to Begin December 10, 2019*, (continued....)

any winning small business bidder may apply to licenses won in counties located within any Partial Economic Area (PEA) with a population of 500,000 or less.⁴⁹

21. We seek comment on these proposed caps. Specifically, do the expected capital requirements associated with operating in the 3550-3650 MHz band, the potential number and value of PALs, past auction data, or any other considerations justify the proposed caps or a higher cap for either type of bidding credit? Commenters are encouraged to identify circumstances and characteristics of this auction that should guide us in establishing bidding credit caps, and to provide specific, data-driven arguments in support of their proposals.

22. We remind applicants applying for designated entity bidding credits that they should take account of the requirements of the Commission's rules and implementing orders regarding *de jure* and *de facto* control of such applicants.⁵⁰ 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.⁵¹ 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 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 with and without bidding credits, and thus preserve the integrity of the auctions process. We also believe that this will meet the objectives that the Commission must consider in awarding licenses through the competitive bidding process, including "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

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AU Docket No. 19-59, Public Notice, FCC 19-63, at 27-28, para. 79 (July 10, 2019) (*Auction 103 Procedures Public Notice*).

⁴⁷ See, e.g., *2018 3.5 GHz Order*, 33 FCC at 10612, para. 27 ("County-sized PALs will 'provide small, rural providers with a reasonable opportunity to obtain spectrum and . . . promote more effective use of spectrum for actual service delivery in rural areas.'"), quoting Letter from Jill Canfield, Vice President of Legal & Industry, Assistant General Counsel, NTCA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 2 (filed June 19, 2018).

⁴⁸ See *Auctions 101-102 Comment Public Notice*, 33 FCC Rcd at 4114-15, para. 32 n.61, citing *2015 Part 1 Report and Order*, 30 FCC Rcd at 7541, para. 115 n.367, and *Incentive Auction Closing and Channel Reassignment Public Notice et al.*, MB Docket No. 16-306; AU Docket No. 14-252; WT Docket No. 12-269; GN Docket No. 12-268, Public Notice, 32 FCC Rcd 2786, Appx. B (WTB/MB 2017) (noting 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 bids, and that 100% of rural service providers that claimed bidding credits in the Incentive Auction fell below the \$10 million cap).

⁴⁹ 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. There are 298 PEAs with populations of less than 500,000. These PEAs comprise 1926 counties available to be licensed as PALs, which, accordingly, will be subject to the small markets cap.

⁵⁰ See, e.g., 47 CFR §§ 1.2110-11.

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.”⁵²

IV. PROPOSED BIDDING PROCEDURES

A. Clock Auction Design

23. We propose to conduct Auction 105 using an ascending clock auction design, in which bidders indicate their demands for generic license blocks in specific geographic areas—in this case, counties. Our proposed clock auction format would proceed in a series of rounds, with bidding being conducted simultaneously for all spectrum blocks in all counties available in the auction. During each bidding round, we would announce a per-block price in each county, and qualified bidders would submit, for each county for which they wish to bid, the number of blocks they seek at the clock prices associated with the current round. Bidding rounds would be open for predetermined periods of time. Bidders would be subject to activity and eligibility rules that govern the pace at which they participate in the auction.

24. Under our proposal, in each county, the clock price for a generic license block would increase from round to round if bidders indicate total demand in that county that exceeds the number of blocks available. The bidding rounds would continue until, for all counties, the total number of blocks that bidders demand does not exceed the supply of available blocks. At that point, those bidders indicating demand for a block at the final price would be deemed winning bidders.

25. The clock auction design we propose for Auction 105 is similar in many respects to that used by the Commission for Auctions 1002⁵³ and 102,⁵⁴ and that will be used for Auction 103,⁵⁵ but it would differ in several important respects.⁵⁶ First, no assignment phase will be held to assign frequency-specific licenses, as was done in previous auctions, because Priority Access Licensees will not be assigned frequency-specific licenses, but will be authorized to use frequencies associated with their PALs as dynamically assigned by SASs.⁵⁷ Second, although the geographic licensing areas will be counties, we seek comment on a proposal to allow any bidder to elect to bid at a Cellular Market Area (CMA) level for certain large CMAs rather than bidding separately for the counties within the CMA. We seek comment on bid incrementing and processing procedures to accommodate CMA-level bidding.⁵⁸ These approaches could permit greater flexibility for bidders seeking to serve areas larger than a county. Third, we propose to modify the bidding activity rules that were used in our prior clock auctions to provide a safeguard against a bidder losing bidding eligibility under certain circumstances.⁵⁹

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⁵¹ *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).

⁵² 47 U.S.C. § 309(j).

⁵³ *See Auction 1000 Bidding Procedures Public Notice*, 30 FCC Rcd at 9042-9095, paras. 132-258.

⁵⁴ *Auction 101-102 Bidding Procedures Public Notice*, 33 FCC Rcd at 7644-7658, paras. 215-284.

⁵⁵ *Auction 103 Procedures Public Notice* at 49-68, paras. 153-236.

⁵⁶ In addition to the design differences we address here, we will use a new auction bidding system in order to accommodate generic blocks in auction with the largest number of license areas ever offered by the Commission to date. *2018 3.5 GHz Order*, 33 FCC Rcd at 10614-16, para. 31.

⁵⁷ 47 CFR § 96.13.

⁵⁸ There are 734 CMAs (Cellular Market Areas) in the US, of which—not including the Gulf of Mexico—305 are classified as MSAs (Metropolitan Statistical Areas) and 428 are classified as RSAs (Rural Service Areas). Proposed procedures for CMA-level bidding are set forth in sections IV.B, H, and I (Generic License Blocks; Acceptable Bids; and Bids to Change Demand and Bid Processing).

⁵⁹ This proposal is set forth in section IV.G (Activity Rule, Activity Upper Limit, and Reducing Eligibility).

26. We direct the Office of Economics and Analytics (OEA), in conjunction with the Wireless Telecommunications Bureau (Bureau), to prepare and release, concurrent with this Public Notice, a technical guide supplementing the information in this notice and including the mathematical details and algorithms of the proposed auction design.⁶⁰

B. Generic License Blocks

27. According to the *2018 3.5 GHz Order*, the 70 megahertz of spectrum designated for PALs in the 3550-3650 MHz band will be licensed in seven generic 10-megahertz blocks by county. Accordingly, in the auction, seven generic block licenses will be available for bidding in each county.

28. *Limit on number of blocks per bidder.* In the *2018 3.5 GHz Order*, we affirmed the Commission's previous decision to impose a spectrum aggregation limit for PALs of 40 megahertz (i.e., four PALs) in any geographic area at any point in time.⁶¹ Consistent with this limit on the number of blocks that a single entity can hold in any single county, the bidding system will limit to four the quantity of blocks that a bidder can demand in any given area at any point in the auction. Therefore, in each bidding round, a bidder will have the opportunity to bid for up to four generic blocks of spectrum per county.

29. *County-level or CMA-level bidding.* As indicated in the *2018 3.5 GHz Order*,⁶² we seek comment on proposed procedures that could give greater bidding flexibility to bidders interested in serving areas larger than a county.⁶³ Under this proposal, a bidder could elect prior to the start of the bidding to bid at a CMA level for blocks in all of the counties comprising certain large CMAs.⁶⁴ A bid at the CMA level would indicate demand for a single quantity of blocks for every county in the CMA. If a bidder is bidding at the CMA level and wins blocks in the CMA, the bidder would win the same number of blocks specified in the bid in each of the counties in the CMA.⁶⁵ If a bidder elects CMA-level bidding for a CMA, the bidder would forego the opportunity to bid also at the county level for the individual counties in that CMA for the duration of Auction 105.

30. Since the benefits to bidders of being able to bid for an aggregation of counties, rather than having to bid for the counties separately, would likely be greatest for large metropolitan areas,⁶⁶ we propose that CMA-level bidding, subject to the conditions and procedures we specify, be permitted only for the top CMAs that include more than one county.⁶⁷ Where the benefits of bidding for an aggregation

⁶⁰ The *Auction 105 Technical Guide* details proposals and provides examples for Auction 105.

⁶¹ *2018 3.5 GHz Order*, 33 FCC Rcd at 10653-54, paras. 105-107, citing *2015 Report and Order*, 30 FCC Rcd at 3998, para. 117.

⁶² *Id.* at 10621, para. 40.

⁶³ *Id.* The Order anticipated seeking comment on procedures for a "form of package bidding consistent with proposals for other bidding procedures." Since the procedures proposed here for CMA-level bidding differ significantly from most package bidding implementations, we do not refer to them here as "package bidding."

⁶⁴ PALs will be licensed on a county basis regardless of whether demands for the counties in a specific CMA are expressed through CMA-level or county-by-county bidding.

⁶⁵ For example, if an entity bids successfully on four channels in CMA-60 that covers Orange, Osceola, and Seminole counties in Florida, then the Commission would issue twelve licenses. After the auction, the licensee would hold four 10-megahertz channel licenses within the 3550-3650 MHz band in each of the three counties.

⁶⁶ See *id.*, citing Letter from Rebecca Murphy Thompson, Executive Vice President and General Counsel, CCA, and Scott K. Bergmann, Senior Vice President, Regulatory Affairs, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 2 (filed Apr. 20, 2018) (arguing that using MSAs in would minimize burdens for applicants interested in a larger footprint in urban areas).

⁶⁷ For purposes of Auction 105, we have used the 1992 CMA markets, adjusted for changes to county boundaries since that time. See *2018 3.5 GHz Order*, 33 FCC Rcd at 10621, para. 40, n.162. For a representation of the (continued....)

of counties are likely to be less significant, we propose to maintain procedures for county-level bidding only. Accordingly, we propose to allow a bidder to elect CMA-level bidding for the 172 CMAs that are classified as Metropolitan Statistical Areas (MSAs) and that incorporate multiple counties.⁶⁸ A bidder that does not elect CMA-level bidding for a given CMA would be able to bid for any or all of the counties in the CMA individually. A bidder would only be able to bid for all other counties—those in CMAs classified as Rural Service Areas (RSAs) and single-county MSAs—on a county-by-county basis.

31. Under this proposal to permit CMA-level bidding, a bidder would be permitted to elect CMA-level bidding for a given CMA only if it has selected all the counties in that CMA on its Form 175. Further, its initial eligibility must be sufficient to bid for at least one block within the CMA (i.e., one block in each county in the CMA).

32. We clarify that under this proposal, prices will be determined on a county-by-county basis, consistent with the basic clock mechanism. Prices in a particular county would depend upon whether the aggregate demand for blocks in that county exceeds the supply, regardless of whether the demand comes from bidders bidding on a CMA level, on a county level, or both.

33. We seek comment on this proposal for CMA-level bidding generally. In particular, we ask for comment on the proposal to make eligible for CMA-level bidding the multi-county CMAs that are classified as MSAs, to require a bidder to make an irrevocable election to bid at the CMA level or the county level, and on the specific implementation procedures we propose. We seek comment on how this proposal, including the proposed implementation procedures described below, would affect auction participation by bidders that seek licenses for individual counties. We also seek comment on whether there are modifications that should be made to our proposal for CMA-level bidding that would assist auction participation by smaller entities interested in county-sized licenses.⁶⁹

C. Bidding Rounds

34. Under the proposed clock auction format, Auction 105 would consist of sequential bidding rounds, each followed by the release of round results. The initial bidding schedule would be announced in a public notice to be released at least one week before the start of bidding.

35. We will conduct Auction 105 over the Internet. Bidders will upload bids in a specified file format for processing by the FCC auction bidding system.

36. Under our proposal, OEA would retain the discretion to adjust the bidding schedule 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 adjustments may include changes in the amount of time for bidding rounds, the amount of time between rounds, or the number of rounds per day, and would depend upon bidding activity and other factors. We seek comment on this proposal. Commenters should address the role of the bidding schedule in managing the pace of the auction and should specifically discuss the tradeoffs in managing auction pace by bidding schedule changes, by changing the activity requirement percentage or bid increment parameters, or by using other means.

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counties and the CMA-level bid proposals, including which counties are in each CMA, *see* <https://www.fcc.gov/35-ghz-band-overview>.

⁶⁸ Not including the Gulf of Mexico, 305 CMAs are classified as MSAs (Metropolitan Statistical Areas). Of these, 133 encompass a single county. Each of the remaining 172 MSAs comprises multiple counties.

⁶⁹ Letter from Elizabeth Andron, Senior Vice President, Regulatory Affairs, Charter Communications, to Marlene H. Dortch, Secretary, FCC, AU Docket No. 19-244; GN Docket Nos. 17-258 and 18-122, at 1-2 (filed Sept. 17, 2019); *see also* Letter from Elizabeth Andron, Senior Vice President, Regulatory Affairs, Charter Communications, to Marlene H. Dortch, Secretary, FCC, AU Docket No. 19-244; GN Docket Nos. 17-258 and 18-122, at 1-2 (filed Sept. 20, 2019); Letter from Louis Peraertz, Vice President of Policy, Wireless Internet Service Providers Association, to Marlene H. Dortch, Secretary, FCC, AU Docket No. 19-244; WT Docket. No. 18-353, at 1-2 (filed Sept. 20, 2019).

D. Stopping Rule

37. We propose a simultaneous stopping rule for Auction 105, under which all blocks in all counties would remain available for bidding until the bidding stops in every county.⁷⁰ Specifically, we propose that bidding close for all blocks after the first round in which there is no excess demand in any county.⁷¹ Consequently, under this approach, it is not possible to determine in advance how long Auction 105 would last. We seek comment on our proposed simultaneous stopping rule.

E. Information Relating to Auction Delay, Suspension, or Cancellation

38. For Auction 105, we propose that, at any time before or during the bidding process, OEA, in conjunction with the Bureau, may delay, suspend, or cancel bidding in Auction 105 in the event of a natural disaster, technical obstacle, network interruption, administrative or weather necessity, evidence of an auction security breach or unlawful bidding activity, or for any other reason that affects the fair and efficient conduct of competitive bidding.⁷² In such a case, OEA would notify participants of any such delay, suspension, or cancellation by public notice and/or through the FCC auction bidding system's announcement function. If the bidding is delayed or suspended, OEA, in its sole discretion, may elect to resume the auction starting from the beginning of the current round or from some previous round, or it may cancel the auction in its entirety. We emphasize that OEA and the Bureau would exercise this authority solely at their discretion. We seek comment on this proposal.

F. Upfront Payments and Bidding Eligibility

39. 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.⁷³ As described below, the upfront payment is a refundable deposit made by an applicant to establish its eligibility to bid on licenses. Upfront payments 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.⁷⁴ With these considerations in mind, the Commission proposes upfront payments based on \$0.01 per MHz-pop, with a minimum of \$500 per county.⁷⁵ The proposed upfront payments equal approximately half the proposed minimum opening bids, which are established as described in section IV.H.1, below. We seek comment on these upfront payment amounts, which are specified in the Attachment A files.

⁷⁰ The Commission has discretion to establish stopping rules before or during multiple round auctions in order to complete the auction within a reasonable time. 47 CFR § 1.2104(e); *see also, e.g., Auction 97 Procedures Public Notice*, 29 FCC Rcd at 8434-36, paras. 172-78; *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*, AU Docket No. 13-178, Public Notice, 28 FCC Rcd 13019, 13061, paras. 161-63 (WTB 2013) (*H Block Procedures Public Notice*).

⁷¹ Excess demand is calculated as the difference between the number of blocks of aggregate demand (from both county-level and CMA-level bids) and supply (equal to 7 blocks in all counties).

⁷² *See* 47 CFR § 1.2104(i).

⁷³ *See id.* § 1.2106.

⁷⁴ *See Implementation of Section 309(j) of the Communications Act—Competitive Bidding*, Second Report and Order, 9 FCC Rcd 2348, 2377-79, paras. 169-176 (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% more than the amount that otherwise would be required." 47 CFR § 1.2106(a).

⁷⁵ 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.

40. We further propose that the amount of the upfront payment submitted by a bidder would determine its initial bidding eligibility in bidding units, which are a measure of bidder eligibility and bidding activity. We propose to assign each block in a given county a specific number of bidding units, equal to one bidding unit per \$10 of the upfront payment listed in Attachment A. The number of bidding units for one block in a given county is fixed, since it is based on the MHz-pops in the block, and does not change during the auction as prices change. To the extent that bidders wish to bid on multiple generic blocks simultaneously, whether within the same county or in different counties, they would need to ensure that their upfront payment provides enough eligibility to cover multiple blocks.

41. Under our proposed approach, a bidder's upfront payment would not be attributed to blocks in a specific county or counties. A bidder may place bids on multiple blocks in counties that it selected for bidding in its FCC Form 175, provided that the total number of bidding units associated with those blocks does not exceed its eligibility-based limit for the round. 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.

G. Activity Rule, Activity Upper Limit, and Reducing Eligibility

42. 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 this clock auction, a bidder's activity in a round for purposes of the activity rule would 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 (the *activity requirement percentage*) of their current bidding eligibility during each round of the auction. Failure to maintain the requisite activity level would result in a reduction in the bidder's eligibility, possibly curtailing or eliminating the bidder's ability to place additional bids in the auction.

43. We propose to require that bidders maintain a fixed, high level of activity in each round of Auction 105 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. 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 for the next round. If the activity rule is not met in a round, the bidder's eligibility would be reduced. We propose to calculate bidding activity based on the bids that are accepted by the FCC auction bidding system. That is, if a bidder requests a reduction in the quantity of blocks it demands in a county, but the FCC auction bidding system does not accept the request because demand would fall below the available supply, then the bidder's activity would reflect its unreduced demand.⁷⁶

44. Because a bidder's eligibility for the next round is calculated based on the bidder's demands as applied by the auction system during bid processing, a bidder's eligibility may be reduced even if the bidder submitted bids with activity that exceeds the required activity for the round.⁷⁷ To help a

⁷⁶ Under the ascending clock auction format, the FCC auction bidding system will not allow a bidder to reduce the quantity of blocks it demands in an individual county if the reduction would result in aggregate demand falling below (or further below) the available supply of blocks in the county. Section IV.I.1 (No Excess Supply Rule) proposes a limited exception for CMA-level bids.

⁷⁷ This may occur, for example, if the bidder bids to reduce its demand in county A by two blocks (with 10 bidding units each) and bids to increase its demand by one block (with 20 bidding units) in county B. If the bidder's demand can only be reduced by one block in county A (because there is only one block of excess demand), the increase in county B cannot be applied, and absent other bidding activity the bidder's eligibility would be reduced. See sections IV.I.1 and 3 (No Excess Supply Rule; and Processed Demands), for further details on bid processing.

bidder avoid having its eligibility reduced as a result of submitted bids that could not be accepted during bid processing, we propose to allow a bidder to submit bids with associated bidding activity greater than its current bidding eligibility.⁷⁸ However, under our proposed procedures, the bidder's activity as applied by the auction system during bid processing would not exceed the bidder's current bidding eligibility. That is, a bidder may submit bids with associated bidding units exceeding 100% of its current bidding eligibility, but its processed activity may never exceed its eligibility.

45. Specifically, we propose that after Round 1 a bidder may submit bids with bidding units totaling up to an *activity upper limit* equal to the bidder's current bidding eligibility for the round times a percentage (the *activity limit percentage*) equal to or greater than 100%.⁷⁹ We propose an initial activity limit percentage of 120% and a range of potential percentages between 100% and 140% to apply to Round 2 and subsequent rounds. In any bidding round, the auction bidding system will advise the bidder of its current bidding eligibility, its required bidding activity, and its activity upper limit.

46. Under our proposed procedures, OEA would retain the discretion to change the activity requirement percentage and the activity limit percentage during the auction. The bidding system would announce any such changes in advance of the round in which they would take effect, giving bidders adequate notice to adjust their bidding strategies.

47. We invite comment on this proposal and, in particular, on using an activity upper limit to address the potential for loss of bidding eligibility under some circumstances. We also encourage commenters to address specifically whether to set the activity requirement percentage between 90% and 100% and whether to set the activity limit percentage between 100% and 140%. Further, we seek comment on where to set these percentages initially. We also seek comment on the relationship between the proposed activity rules and the ability of bidders to switch their demands across counties. We encourage any commenters that oppose the proposed ranges for the activity requirement percentage and the activity limit percentage to explain their reasons with specificity.

48. We point out that under the proposed clock auction format, 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 county or CMA (if the bidder is bidding at the CMA level). If these requests are applied, or applied partially, then a bidder's bidding activity, and its bidding eligibility for the next round, may be reduced.⁸⁰

49. For Auction 105, we do not propose to provide for activity rule waivers to preserve a bidder's eligibility. We note that our proposal to permit a bidder to submit bids with bidding activity greater than its eligibility, within the precise limits set forth above, would address some of the circumstances under which a bidder risks losing bidding eligibility and otherwise could wish to use a bidding activity waiver, while minimizing any potential adverse impacts on bidder incentives to bid sincerely and on the price setting mechanism of the clock auction.⁸¹ This approach not to allow waivers is

⁷⁸ For example, under this proposal, and depending upon the bidder's overall bidding eligibility and the activity limit percentage, a bidder could submit an "additional" bid or bids that would be considered (in price point order with its other bids) and applied as available eligibility permits during the bid processing. See Auction 105 Technical Guide, sections 4.3 (Activity Upper Limit) and 7.1 (Processed Demand and Next Round Activity) for further details and an example.

⁷⁹ For Round 1, the activity upper limit would be 100% of the bidder's initial bidding eligibility.

⁸⁰ See sections IV.I.1 and 3 (No Excess Supply Rule; and Processed Demands) regarding partial application of bids. A CMA-level bid may be applied partially with respect to the number of blocks specified in the bid, not for fewer than the full number of counties in the CMA.

⁸¹ We acknowledge AT&T's concern that, absent appropriate limits, an activity upper limit could "enable bidders to use the relief for purposes other than the Commission intends," and ask that commenters take such considerations (continued....)

consistent with the ascending clock auction procedures used in Auction 1002 and 102 and with the procedures adopted for Auction 103.⁸² The clock auction relies on precisely identifying the point at which demand decreases to equal supply to determine winning bidders and final prices. Allowing waivers would create uncertainty with respect to the exact level of bidder demand and interfere with the basic clock price-setting and winner determination mechanism. Moreover, uncertainty about the level of demand would affect the way bidders' requests to reduce demand are processed by the bidding system, as addressed below.⁸³ We seek comment on this approach.

H. Acceptable Bids

1. Reserve Price or Minimum Opening Bids

50. As part of the pre-bidding process for each auction, we seek comment on the use of a minimum opening bid amount and/or reserve price, as mandated by section 309(j) of the Communications Act of 1934, as amended.

51. We propose to establish minimum opening bid amounts for Auction 105. The bidding system will not accept bids lower than these amounts. Based on our experience in past auctions, setting minimum opening bid amounts judiciously is an effective tool for accelerating the competitive bidding process.⁸⁴ In the first bidding round of Auction 105, a bidder would indicate how many generic license blocks in a county (or CMA, if applicable) it demands at the minimum opening bid price. For Auction 105, we propose to establish initial clock prices, or minimum opening bids, by county, as set forth in the following paragraph. For CMA-level bids, we propose minimum opening bids that are the sum of the minimum opening bids for all of the counties in the CMA. There are no circumstances associated with Auction 105 that suggest we should propose a separate aggregate reserve price in this auction. Accordingly, we do not propose to establish an aggregate reserve price⁸⁵ or block reserve prices that are different from minimum opening bid amounts for the licenses to be offered in Auction 105.

52. For Auction 105, we propose to calculate minimum opening bid amounts using a formula based on bandwidth and license area population, which is similar to our approach in many previous spectrum auctions. We propose to use a calculation based on \$0.02 per MHz-pop, with a minimum of \$1,000.⁸⁶ We seek comment on these minimum opening bid amounts, which are specified in the Attachment A files. If commenters believe that these minimum opening bid amounts would result in unsold licenses, are not reasonable amounts, or should instead operate as reserve prices, they should explain their reasoning and propose an alternative approach. Commenters should support their claims with valuation analyses and suggested amounts or formulas for reserve prices or minimum opening bids.

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into account in their feedback. See Letter from Michael P. Goggin, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258; AU Docket No. 19-244, at 2 (filed Sept. 16, 2019).

⁸² See *Auction 1000 Bidding Procedures Public Notice*, 30 FCC Rcd at 9077, para. 213; *Auction 101-102 Procedures Public Notice*, 33 FCC Rcd at 7650, para. 245; *Auction 103 Procedures Public Notice* at 60, para. 195. In previous FCC simultaneous multiple round auctions for frequency-specific licenses (as opposed to generic blocks), 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. See, e.g., *H Block Procedures Public Notice*, 28 FCC Rcd at 13060, paras. 157-60.

⁸³ See sections IV.I.1 and 3 (No Excess Supply Rule; and Processed Demands), below.

⁸⁴ See, e.g., *Auction 97 Procedures Public Notice*, 29 FCC Rcd at 8440, para. 193.

⁸⁵ A reserve price is an amount below which an item, or group of items, may not be won. A reserve price may be higher than the minimum opening bid, or for a group of items, the sum of minimum opening bids.

⁸⁶ See note 74 (concerning rounding), above.

53. In establishing minimum opening bid amounts, we particularly seek comment on factors that could reasonably affect bidders' valuation of the spectrum, including the type of service offered, market size, population covered by the proposed facility, and any other relevant factors.

54. 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 changing the bidding schedule, the activity requirement percentage, or the bid increment parameters.

2. Clock Price Increments

55. Under our proposed clock auction format for Auction 105, after bidding in the first round and before each subsequent round, the FCC auction bidding system would announce the start-of-round price⁸⁷ and the clock price for the upcoming round—that is, the lowest price and the highest price at which bidders can specify the number of blocks they demand during the round. As long as aggregate demand for blocks in the county exceeds the supply of blocks, the start-of-round price would be equal to the clock price from the prior round.⁸⁸ If demand equaled supply at a price in a previous round, then the start-of-round price for the next round would be equal to the price at which demand equaled supply. If demand was less than supply in the previous round, then the start-of-round price for the next round would not increase.

56. We propose to set the clock price for blocks in a specific county for a round by adding a percentage increment, which may be county-specific, to the start-of-round price.⁸⁹ We further propose that the total dollar amount of the increment (the difference between the clock price and the start-of-round price) would not exceed a certain amount. We propose that this cap on the increment initially be set at \$10 million, and we propose to retain the discretion to adjust this cap as rounds continue.

57. Under our proposed procedures, the percentage increment for a county would depend upon whether the county is in a CMA for which CMA-level bids are allowed.

58. *For counties not subject to CMA-level bidding.* We propose to set the clock price for blocks in a county not subject to CMA-level bidding (counties in CMAs 307–734 and counties in single-county MSAs) by adding a fixed increment—the *basic increment percentage*—to the start-of-round price. We propose to set the basic increment percentage within a range of 5% to 20% inclusive, to set the initial basic increment percentage at 10%, and potentially to adjust the increment as rounds continue. The proposed 5% to 20% increment range will allow us to set a percentage that manages the auction pace and takes into account bidders' needs to evaluate their bidding strategies while moving the auction along quickly.

59. *For counties subject to CMA-level bidding.* We propose to set the clock price for counties that are subject to CMA-level bidding using a formula that attempts to equalize aggregate demand across the counties in the CMA, thereby discouraging excess supply that can occur with CMA-level bids.⁹⁰ Under our proposal, when there is significant variation in the extent of aggregate demand

⁸⁷ The start-of-round price is also referred to as the posted price of the previous round.

⁸⁸ Aggregate demand for a county is equal to the number of blocks that are bid on a county-level plus the number of blocks that are bid on a CMA-level.

⁸⁹ For example, if the start-of-round price for a block in a given county is \$10,000, and the percentage increment is 20%, then the clock price for the round will be \$12,000. As in other Auction 103, the result will be rounded as follows: results above \$10,000 will be rounded up to the nearest \$1,000; results below \$10,000 but above \$1,000 will be rounded up to the nearest \$100; and results below \$1,000 will be rounded up to the nearest \$10.

⁹⁰ Because of the exception to the “no excess supply” rule, one unit of a CMA-level bid to reduce demand may be applied even if that causes aggregate demand to drop below supply in some counties. Thus, the aggregate demand (continued....)

across the counties in a CMA, the increment percentage will be larger for counties with greater aggregate demand, increasing prices more quickly. As a result, aggregate demand for those counties will tend to fall relative to aggregate demand for counties in which prices are increasing less quickly. As aggregate demand across the counties in the CMA tends to equalize, it becomes less likely that there will be excess demand in one county but not in others, a situation which under our proposed procedures may allow a CMA-level bidder to reduce demand such that demand falls below supply in one or more counties.

60. Under this proposal, the bidding system would set the clock price for counties subject to CMA-level bidding using an algorithm. The algorithm would first consider the extent of variation in excess demand across the counties in the CMA. If the variation does not exceed a given basic threshold, the increment percentage for all counties in the CMA would be set equal to the basic increment percentage. Then the clock price would be determined by adding the basic increment percentage to the start-of-round price for each county in the CMA, as it would be for counties not subject to CMA-level bidding.

61. If instead the algorithm shows that the extent of variation in aggregate demand across the counties in a CMA exceeds the basic threshold, indicating that there is significantly more demand for blocks in some counties than others, the algorithm would calculate an increment percentage for each county based on how aggregate demand in that county compares to aggregate demand in the other counties. The increment percentage for counties with relatively high demand would be greater than the increment percentage for counties with relatively low demand. The county-specific percentage increment calculated by the algorithm would then be added to the start-of-round price to determine the clock price for the county. The increment percentages would be no greater than a maximum, which we propose to set within a range of 5% to 20% and no less than a minimum, which we propose to set within a range of 2% to 20%. We propose to set the initial maximum increment percentage at 15%, and the initial minimum increment percentage at 5%.

62. The specific algorithm proposed for calculating the increment percentage in counties subject to CMA-level bidding is set forth in the Auction 105 Technical Guide. We seek comment on these proposed procedures for setting the clock increment under various circumstances, including the variable pricing algorithm and the use of the algorithm with CMA-level bids.⁹¹ As an alternative to our proposal to use a variable price increment for counties subject to CMA-level bidding to help avoid creating excess supply, should we apply the basic increment to all counties? In particular, we ask for feedback on the proposed 5% to 20% range for the basic increment percentage, with an initial basic increment percentage of 10%. We also ask for specific feedback on the proposed 2% to 20% range for the minimum increment percentage, with an initial minimum increment percentage of 5%, and on the proposed 5% to 20% range for the maximum increment percentage, with an initial maximum increment percentage of 15%.

3. Intra-Round Bids

63. We propose generally to permit a bidder to make intra-round bids by indicating a point between the start-of-round price and the clock price at which its demand for blocks 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 should increase beyond that price.

64. We also propose an exception to this general rule. In the case of a CMA-level bid to reduce demand, the bid could only be made at the start-of-round price. This proposed exception would

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in a county can drop below supply in later rounds even if the aggregate demand in that county initially exceeded supply. See section IV.I below (Bids to Change Demand and Bid Processing).

⁹¹ See Auction 105 Technical Guide, section 7.2 (Clock Prices for the Next Round).

help to ensure that the price does not increase above the start-of-round price when there is excess supply (that is, unsold blocks), which may result from a CMA-level bid to reduce demand.⁹²

65. 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 increments, thereby speeding the auction, 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. We seek comment on the proposal to allow intra-round bids.

I. Bids to Change Demand and Bid Processing

66. Under the ascending clock format we propose for Auction 105, a bidder would indicate in each round the number of blocks in each county and/or CMA (if bidding at a CMA level) that it demands at a given price. A bidder that wishes to change the quantity it demands (relative to its demands from the previous round as processed by the bidding system) would express its demands at the clock price or at an intra-round price.⁹³ A bidder that is willing to maintain the same demand in a county at the new clock price would bid for that quantity at the clock price, indicating that it is willing to pay up to that price, if need be, for the specified quantity. Bids to maintain demand would always be applied by the auction bidding system.

67. We propose bid processing procedures that the auction bidding system would use, after each bidding round, to process bids to change demand to determine the *processed demand* of each bidder and a *posted price* for each county that would serve as the start-of-round price for the next round.

1. No Excess Supply Rule

68. Under the ascending clock auction format, the FCC auction bidding system will not allow a bidder to reduce the quantity of blocks it demands in an individual county if the reduction would result in aggregate demand falling below (or further below) the available supply of blocks in the county. Therefore, if a bidder bids to reduce the number of blocks that it holds as of the previous round, the FCC auction bidding system will treat the bid as a request to reduce demand that will be applied only if the “no excess supply” rule would be satisfied.⁹⁴

69. We propose a limited exception to the “no excess supply” rule for CMA-level bids only. Under this proposed modification, for CMA-level bids, if there is excess demand in at least one county of the CMA at the time a CMA-level bid to reduce demand is processed, then a reduction of one block would be applied even if that creates excess supply in other counties of the CMA. Once the first unit of a CMA-level bid to reduce demand has been applied, the “no excess supply” rule then would be in effect for any further reduction requested in that bidder’s CMA-level bid that has not yet been applied. CMA-level bids to reduce demand would only be allowed at the lowest price associated with the round (the start-of-round price). We note that the price incrementing rules for CMAs for which CMA-level bidding is permitted make it more likely that aggregate demands would be equalized across the counties in the CMA, thus making it less likely that the “no excess supply” exception would be triggered.⁹⁵

2. Partial Application of Bids

70. Under our proposed bid processing procedures, a bid that involves a reduction from the bidder’s previous demands could be applied partially—that is, reduced by fewer blocks than requested in the bid—if excess demand is insufficient to support the entire reduction. A bid to increase a bidder’s

⁹² See *id.*, section 3.1 (Bid Definition for Rounds After Round 1).

⁹³ However, CMA-level bids to reduce demand must be made at the start-of-round price.

⁹⁴ We use the term “hold” in this context to refer to the number of generic blocks for which the bidder has processed demand, either as of a given point during the bid processing or after the round’s processing is completed.

⁹⁵ See section IV.H.2 below (Clock Price Increments).

demands could be applied partially if the total number of bidding units associated with the bidder's demand exceeds the bidder's bidding eligibility for the round.

3. Processed Demands

71. We propose to process bids to change demand in order of price point after a round ends,⁹⁶ where the price point represents the percentage of the bidding interval for the round.⁹⁷ Under this proposal, the FCC auction bidding system would process bids to change demand 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 would consider bids at the lowest price point across all counties and all CMAs subject to CMA-level bidding, then look at bids at the next price point in all areas, and so on.⁹⁸ As it considers each submitted bid during bid processing, the FCC auction bidding system would determine the extent to which there is excess demand in each county at that point in the processing in order to determine whether a bidder's request to reduce demand can be applied. Likewise, the auction bidding system would evaluate the activity associated with the bidder's most recently determined demands at that point in the processing to determine whether a request to increase demand can be applied.

72. Because in any given round some bidders may request to increase demands for licenses 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 increasing order of 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 supply or sufficient eligibility later in the processing after other bids are processed.

73. Therefore, under our proposed procedures, once a round closes, the auction system would process bids to change demand by first considering the bid submitted at the lowest price point and determining the maximum extent to which that bid can be applied given bidders' demands as determined at that point in the bid processing. If the bid can be applied (either in full or partially), the number of licenses the bidder holds at that point in the processing would be adjusted, and aggregate demand would be recalculated accordingly. If the bid cannot be applied in full, the unfulfilled bid, or portion thereof, would be held in a queue to be considered later during bid processing for that round. The FCC auction bidding system would then consider the bid submitted at the next highest price point, applying it in full, in part, or not at all, given the most recently determined demands of bidders. Any unfulfilled requests would again be held in the queue, and aggregate demand would again be recalculated. Every time a bid or part of a bid is applied, the unfulfilled bids held in the queue would 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 would not carry over unfulfilled bid requests to the next round, however. The bidding system would advise bidders of the status of their bids when round results are released.

4. Price Determination

74. We further propose bid processing procedures that would determine, based on aggregate demand, the posted price for each county for the round that will serve as the start-of-round price for the next round. Under our proposal, the uniform price for all of the blocks in a county would increase from round to round as long as there is excess demand for blocks in the county but would not increase if aggregate demand does not exceed the available supply of blocks.

⁹⁶ Bids to maintain demand are always applied before the bidding system considers bids to change demand.

⁹⁷ For example, if the start-of-round price is \$5,000 and the 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.

⁹⁸ We propose that, if there are multiple bids at a single price point, the system will process bids in order of a bid-specific pseudo-random number.

75. We propose that if, at the end of a round, the aggregate demand for blocks in the county (considering both county-level and CMA-level bids) exceeds the supply of blocks (7), the posted price would equal the clock price for the round. If a reduction in demand was applied during the round and caused demand in the county to equal (or fall below) supply, the posted price would be the price at which the reduction was applied. If aggregate demand is less than supply and no bid to reduce demand was applied for the county, then the posted price would equal the start-of-round price for the round. The range of acceptable bid amounts for the next round would be set by adding the percentage increment to the posted price.

76. When a county-level bid to reduce demand can be applied only partially, the uniform price for the county would stop increasing at that point, since the partial application of the bid would result in demand falling to equal supply. Hence, a bidder that makes a county-level bid to reduce demand that cannot be fully applied would not face a price for the remaining demand that is higher than its bid price. A bidder that makes a CMA-level bid to reduce demand that is partially applied may face a price for the remaining demand that is higher than its bid price for some of the counties.⁹⁹

77. After the bids of the round have been processed, if the stopping rule has not been met, the FCC auction bidding system would announce clock prices to indicate a range of acceptable bids for the next round. Each bidder would be informed of its processed demand and the extent of excess demand for blocks in each county.

78. We seek comment on our proposals regarding bid processing for Auction 105.

J. Winning Bids

79. Under our proposed clock auction format for Auction 105, bidders that are still expressing demand for a quantity of blocks in a county—either on an individual county basis or through a CMA-level bid—at the time the stopping rule is met would become the winning bidders of licenses corresponding to that number of blocks. The final price for a generic block in a county would be the posted price for the final round.¹⁰⁰

K. Bid Removal and Bid Withdrawal

80. 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.

81. Unlike an auction conducted using the Commission’s standard simultaneous multiple-round auction format for bidding on frequency-specific licenses (as opposed to generic blocks), there are no provisionally winning bids in a clock auction. As a result, the concept of bid withdrawals does not apply to a clock auction. As proposed above, however, bidders in Auction 105 may request to reduce demand for generic blocks.¹⁰¹

V. POST-AUCTION PROCESS

A. Deficiency Payments and Additional Default Payment Percentage

82. 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

⁹⁹ This is the case when some counties in the CMA still have excess demand, which will cause the prices in those counties to increase.

¹⁰⁰ This and other Auction 105 bid processing details are addressed in the *Auction 105 Technical Guide*.

¹⁰¹ See sections IV.I.1,2, and 3 (No Excess Supply Rule; Partial Application of Bids; and Processed Demands) (discussing how the system would process requests to reduce demand), above.

payment under section 1.2104(g)(2) of the rules.¹⁰² 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.

83. *Deficiency payment for CMA-level bidding.* Under the CMA-level bidding procedures we propose, a CMA-level bid requests a quantity of blocks in each county at a price equal to the sum of the per-block prices in the individual constituent counties times the number of blocks demanded. Accordingly, in the event of default on a CMA-level bid, the deficiency payment for each individual county-based license will be calculated using the per-block price for the specific county, and the deficiency payment for the CMA will be the sum of the payment for each county.

84. *Additional Default Payment Percentage.* The percentage of the bid that a defaulting bidder must pay in addition to the deficiency will depend on the auction format ultimately chosen for a particular auction. Without combinatorial bidding, the amount can range from 3% up to a maximum of 20%, established in advance of the auction and based on the nature of the service and the inventory of the licenses being offered.¹⁰³ In auctions with combinatorial bidding, the additional payment is set, pursuant to section 1.2104(g)(2)(ii), at 25% of the applicable bid. This higher level reflects the fact that a defaulted winning bid in an auction with combinatorial bidding may affect the award of other licenses in the auction and may be used to effectuate anti-competitive strategies; hence a stronger deterrent against insincere bidding and strategic default is warranted.¹⁰⁴ If adopted, under our proposed procedures, bidders would be permitted to bid for a group of counties that comprise a CMA. Thus, we propose an approach consistent with past auctions where the bidding procedures allowed for bidders to package their bids.¹⁰⁵ Specifically, we propose to establish for Auction 105 an additional default payment of 25% for a default on any winning CMA-level bid.

85. For winning county-level bids, we propose an additional default payment of 20% of the relevant bid. 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% should be more effective in deterring defaults than the 3% used in some earlier auctions.¹⁰⁶ Given the large number of PALs available for bidding in Auction 105, we believe that a 20% default payment is necessary to ensure that entities only bid on those licenses that they reasonably expect to use. We seek comment on this proposal.

86. In case they are needed for post-auction administrative purposes, the bidding system will calculate individual per-license prices that are separate from a bidder's final auction payment, which is calculated on an aggregate basis. In calculating the per-license prices, the bidding system will apportion to individual licenses any capped bidding credit discounts,¹⁰⁷ since a single amount may apply to multiple licenses.

¹⁰² 47 CFR § 1.2104(g)(2).

¹⁰³ See *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, 903-4, para. 31 (2006) (*CSEA/Part 1 Report and Order*).

¹⁰⁴ *Amendment of Part 1 of the Commission's Rules - Competitive Bidding Procedures*, Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration of the Fifth Report and Order, 18 FCC Rcd 10180, 10198-202, paras. 25-29 (2003).

¹⁰⁵ See, e.g., *Auction of 700 MHz Band Licenses Scheduled For January 24, 2008; Notice and Filing Requirements, Minimum Opening Bids, Reserve Prices, Upfront Payments, and Other Procedures for Auctions 73 and 76*, AU Docket No. 07-157, DA 07-4171, Public Notice, 22 FCC Rcd 18141, 18219-21, paras. 301-305 (WTB 2007).

¹⁰⁶ *CSEA/Part 1 Report and Order*, 21 FCC Rcd at 902-03, para. 29.

¹⁰⁷ See section III.B (Bidding Credit Caps), above.

B. Tutorial and Additional Information for Applicants

87. The Commission intends to provide additional information on the bidding system and to offer demonstrations and other educational opportunities for applicants in Auction 105 to familiarize themselves with the FCC auction application system and the auction bidding system. For example, the Commission intends to release an online tutorial for Auction 105 that will help applicants understand the procedures to be followed in the filing of their auction short-form applications (FCC Form 175) for Auction 105 and in their use of the auction bidding system.

VI. PROCEDURAL MATTERS

88. *Supplemental Initial Regulatory Flexibility Analysis.* As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹⁰⁸ the Commission has prepared this Supplemental Initial Regulatory Flexibility Analysis (Supplemental IRFA) of the possible significant economic impact on small entities of the proposed policies and rules addressed in this Public Notice to supplement the Commission's Initial and Final Regulatory Flexibility Analyses completed in the *2017 NPRM*¹⁰⁹ and *2018 3.5 GHz Order*, respectively. 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. The Commission will send a copy of this Public Notice, including this Supplemental IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).¹¹⁰ In addition, this Public Notice and Supplemental IRFA (or summaries thereof) will be published in the *Federal Register*.¹¹¹

89. *Need for, and Objectives of, the Proposed Rules.* This Public Notice seeks comment on proposed auction procedures for those entities that seek to acquire Priority Access Licenses in Auction 105. This process is intended to provide notice of and adequate time for potential applicants to comment on proposed auction procedures.¹¹² To promote the efficient and fair administration of the competitive bidding process for all Auction 105 participants, the Commission seeks comment on the following proposed procedures:

- use of anonymous bidding/limited information procedures which will not make public: (1) the licenses or license areas that an applicant selects for bidding in its auction application (FCC Form 175); (2) the amount of any upfront payment made by or on behalf of an applicant for Auction 105; (3) an applicant's bidding eligibility; and (4) any other bidding-related information that might reveal the identity of the bidder placing a bid, until after bidding has closed;
- establishment of bidding credit caps for eligible small businesses and rural service providers in Auction 105;
- retention by OEA of discretion to adjust the bidding schedule in order to manage the pace of Auction 105;
- use of a simultaneous stopping rule where all blocks in all counties will remain open for bidding until bidding has stopped in every county;

¹⁰⁸ 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).

¹⁰⁹ *See generally Promoting Investment in the 3500-3700 MHz Band et al.*, GN Docket No. 17-258 et al., *Notice of Proposed Rulemaking and Order Terminating Petitions*, 32 FCC Rcd 8071 (2017) (*2017 NPRM and Termination Order*, respectively).

¹¹⁰ *See* 5 U.S.C. § 603(a).

¹¹¹ *See id.*

¹¹² *See* 47 U.S.C. § 309(j)(3)(E)(i) (requiring the Commission to seek comment on auction procedures).

- provision of discretionary authority to OEA, in conjunction with the Bureau, to delay, suspend, or cancel bidding in Auction 105 for any reason that affects the ability of the competitive bidding process to be conducted fairly and efficiently;
- use of a clock auction format for Auction 105 under which each qualified bidder will indicate in successive clock bidding rounds its demands for generic blocks in specific counties, and associated bidding and bid processing procedures to implement the clock auction format;
- procedures to permit a bidder to elect to bid at a CMA level, rather than a county level, for certain large, multi-county CMAs, and procedures to implement CMA-level bidding;
- use of an activity rule, which requires a bidder to bid actively during the auction on a high percentage of its bidding eligibility, including a modification that would allow a bidder to submit bids, but not to be assigned bids, that exceed its bidding eligibility;
- use of an activity rule that does not include a waiver of the rule to preserve a bidder's eligibility;
- a specific minimum opening bid amount for generic blocks in each county available in Auction 105;
- a specific upfront payment amount for generic blocks in each county available in Auction 105;
- 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;
- establishment of acceptable bid amounts, including clock price increments and intra-round bids, along with a proposed methodology for calculating such amounts;
- use of bid processing procedures that the auction bidding system will use, after each bidding round, to process bids to determine the processed demand of each bidder and a posted price for each county that would serve as the start-of-round price for the next round; and
- establishment of additional default payments of 20% for county-level bids and 25% for CMA-level bids pursuant to section 1.2104(g)(2) of the rules in the event that a winning bidder defaults or is disqualified after the auction.

90. *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 105.¹¹³

91. *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.¹¹⁴ The RFA generally defines the term "small entity" as having the same meaning as the terms "small business,"

¹¹³ 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, Appx (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, Appx. C (1997); *2015 Part 1 Report and Order*, 30 FCC Rcd at 7613-28, Appx. B.

¹¹⁴ 5 U.S.C. § 603(b)(3).

“small organization,” and “small governmental jurisdiction.”¹¹⁵ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.¹¹⁶ A “small business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.¹¹⁷

92. As noted above, Regulatory Flexibility Analyses were incorporated into the *2017 NPRM* and *2018 3.5 GHz 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 Regulatory Flexibility Analyses completed in the *2017 NPRM*¹¹⁸ and *2018 3.5 GHz Order*.¹¹⁹

93. *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.¹²⁰ 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 or provide the additional showings and more detailed demonstrations required of a winning bidder.

94. We do not expect that the processes and procedures proposed in this Public Notice will require small entities to hire attorneys, engineers, consultants, or other professionals for compliance or to participate in Auction 105 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 the auction short-form application (FCC Form 175). We also intend to make information on the bidding system available and to offer demonstrations and other educational opportunities for applicants in Auction 105 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 that use the available resources to experience lower participation and compliance costs. Nevertheless, while we cannot quantify the cost of compliance with the proposed procedures, we do not believe that the costs of compliance will unduly burden small entities that choose to participate in the auction because the proposals for Auction 105 are similar in many respects to the procedures in recent auctions conducted or to be conducted by the Commission.¹²¹

95. *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

¹¹⁵ *Id.* § 601(6).

¹¹⁶ *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.”

¹¹⁷ 15 U.S.C. § 632.

¹¹⁸ *2017 NPRM*, 32 FCC Rcd at 8101-04, Appx. B.

¹¹⁹ *2018 3.5 GHz Order*, 33 FCC Rcd at 10674-85, Appx. B.

¹²⁰ See *Competitive Bidding Second Report and Order*, 9 FCC Rcd 2348, 2376-77, paras. 163-66.

¹²¹ See, e.g., *Auction 101-102 Procedures Public Notice*; *Auction 103 Procedures Public Notice*.

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 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.”¹²²

96. The Commission has taken steps to minimize any economic impact of its auction procedures on small entities through, among other things, the many resources it provides 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 that provides technical assistance to applicants, including small 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.

97. The Commission also makes 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 105, the Commission will post public notices on the Auction’s website, which articulate the procedures and deadlines for the respective auction. The Commission makes this information easily accessible and without charge to benefit all Auction 105 applicants, including small entities, thereby lowering their administrative costs to comply with the Commission’s competitive bidding rules.

98. Prior to the start of bidding in Auction 105, eligible bidders are given an opportunity to become familiar with auction procedures and the bidding system by participating in a mock auction. Further, the Commission intends to conduct Auction 105 electronically over the Internet using its web-based auction system, which eliminates the need for bidders to be physically present in a specific location. These mechanisms are made available to facilitate participation in Auction 105 by all eligible bidders and may result in significant cost savings for small 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 entities.

99. For Auction 105, 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. We also propose a \$10 million cap on the overall amount of bidding credits that any winning small business bidder may apply to winning licenses in counties located within any PEA with a population of 500,000 or less. Based on the technical characteristics of the 3550-3650 MHz band and our analysis of past auction data, we anticipate that our proposed caps will allow the majority of small businesses and rural service providers to take full advantage of the bidding credit program, thereby lowering the relative costs of participation for small businesses.

100. These proposed procedures for the conduct of Auction 105 constitute the more specific implementation of the competitive bidding rules contemplated by Parts 1 and 96 of the Commission’s rules and the underlying rulemaking orders, including the *2018 3.5 GHz Order* and relevant competitive bidding orders, and are fully consistent therewith.¹²³

¹²² 5 U.S.C. § 603(c)(1)-(4).

¹²³ See generally *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2360-75, paras. 68-159.

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

102. *Deadlines and Filing Procedures.* Pursuant to sections 1.415 and 1.419 of the Commission's rules,¹²⁴ 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. 19-244. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.¹²⁵ We strongly encourage interested parties to file comments electronically, and to specify the particular auction (i.e., Auction 105) to which their comments are directed.

- *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the ECFS at www.fcc.gov/ecfs.
- *Paper Filers:* Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the captions of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

103. 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.

104. *E-mail:* We also request that a copy of all comments and reply comments be submitted electronically to the following address: auction105@fcc.gov.

105. *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 or call the Consumer and Government Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (TTY).

106. This proceeding has been designated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.¹²⁶ 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*

¹²⁴ 47 CFR §§ 1.415, 1.419.

¹²⁵ See generally *Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24121 (1998).

¹²⁶ See 47 CFR §§ 1.1200(a), 1.1206.

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* 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.

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

Mobility Division, Wireless Telecommunications Bureau

3.5 GHz questions: Jessica Quinley at (202) 418-1991

Auctions Division, Office of Economics and Analytics

Auction legal questions: Mary Lovejoy or Kelly Quinn 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

Action by the Commission on September 26, 2019: Chairman Pai and Commissioners O'Rielly, Carr, Rosenworcel and Starks issuing separate statements.

- FCC -

ATTACHMENT A

Summary of Licenses to Be Auctioned

Due to the large number of licenses available in Auction 105, the complete lists of licenses and markets available for this auction will be provided in electronic format only, available as separate “Attachment A” files at www.fcc.gov/auction/105.

Block	Frequencies	Geographic Area Type	Number of Licenses
1 of 7	10 MHz within 3550-3650 MHz band	County	3,233
2 of 7	10 MHz within 3550-3650 MHz band	County	3,233
3 of 7	10 MHz within 3550-3650 MHz band	County	3,233
4 of 7	10 MHz within 3550-3650 MHz band	County	3,233
5 of 7	10 MHz within 3550-3650 MHz band	County	3,233
6 of 7	10 MHz within 3550-3650 MHz band	County	3,233
7 of 7	10 MHz within 3550-3650 MHz band	County	3,233
Total	70 MHz within 3550-3650 MHz band	3,233 Counties	22,631 Licenses

Auction 105 — Proposed Aggregate Bidding Units, Upfront Payments, and Minimum Opening Bids

	Bidding Units	Upfront Payments	Minimum Opening Bids
Per Block	3,134,463	\$31,344,630	\$62,683,700
Total for 4 Blocks	12,537,852	\$125,378,520	\$250,734,800

**STATEMENT OF
CHAIRMAN AJIT PAI**

Re: *Auction of Priority Access Licenses for the 3550-3650 MHz Band; Comment Sought on Competitive Bidding Procedures for Auction 105; Bidding in Auction 105 Scheduled to Begin June 25, 2020, AU Docket No. 19-244*

On this date in 1969, the Beatles' album *Abbey Road* was released. The lead song of that album, "Come Together," was the subject of much controversy. Did Paul McCartney sing backup on the verses, or did John Lennon dub over them? Why did John take over the electric piano riffs from Paul on the final recording? Was there a political inspiration for the song? Did John borrow from Chuck Berry's "You Can't Catch Me"? But while John and Paul and others debated, even litigated, these questions, "Come Together" took off, reaching number 1 in the United States and number 4 in the United Kingdom.

Fifty years later, we come together today to seek comment on the procedures for the 3.5 GHz auction and take another step forward in our work to promote American leadership in 5G wireless services. Making more spectrum available for the commercial marketplace is a central plank of our 5G FAST Plan. We've already completed two successful high-band spectrum auctions this year. And on December 10, we will start an incentive auction in the upper 37 GHz, 39 GHz, and 47 GHz bands; this will be the largest spectrum auction in U.S. history, with 3,400 megahertz available.

But a key Commission priority regarding spectrum has also been to free up more mid-band spectrum for next-generation wireless services. A good example is the 2.5 GHz band. With almost 200 megahertz, it's the largest contiguous band of terrestrial, flexible use spectrum below 3 GHz in the United States. And this summer, the FCC majority finally liberalized the rules for the band, allowing more entities to access the spectrum, eliminating unnecessary restrictions, and moving toward an auction next year of wide swaths of unused spectrum in the band. We're also working on the complicated task of freeing up spectrum for 5G in the 3.7-4.2 GHz band, commonly called the C-Band. This is going to be a critical band for 5G, and I'm optimistic that later this fall we'll be voting on an order to make a significant amount of spectrum in the C-Band available for 5G.

But today we come together to focus on the 3.5 GHz band. Like the 2.5 GHz band, the 3.5 GHz band is prime mid-band spectrum that holds particular promise for 5G. But when I became Chairman, we didn't have the right rules in place to encourage 5G deployment in the band. However, thanks to Commissioner O'Rielly's leadership, last year we changed key characteristics of the band's Priority Access Licenses and our approach to competitive bidding. These reforms have made 3.5 GHz licenses much more appealing for 5G operations and will encourage the rapid deployment of next-generation wireless networks in the band.

Moreover, together with stakeholders, we've been doing the hard work necessary to make the band's unique dynamic sharing model work. And just last week, we reached a milestone, as the Commission authorized five Spectrum Access System administrators to begin initial commercial deployments in the band. This is great news, and together with this Public Notice, it makes September a big month for the 3.5 GHz band. It also means that auction winners should be well-positioned to start providing service in the band quickly.

I thank Commissioner O'Rielly and his staff again for their efforts. And thanks also to the staff who worked on this item: Craig Bomberger, Jonathan Campbell, Rita Cookmeyer, Patrick DeGraba, Ian Forbes, Jill Goldberger, Amanda Hilfiger, William Huber, Shabnam Javid, Mary Lovejoy, Giulia McHenry, Gary Michaels, Kelly Quinn, Linda Sanderson, Debbie Smith, Martha Stancill, Sue Sterner, and Margaret Wiener from the Office of Economics and Analytics; Keith Harper, Chris Miller, Roger Noel, Matthew Pearl, Paul Powell, Milton Price, Jessica Quinley, Rebecca Schwartz, Dana Shaffer, Sean Spivey, Donald Stockdale, Cecilia Sulhoff, and Joel Taubenblatt from the Wireless Telecommunications

Bureau; David Horowitz, Anjali Singh, and Bill Richardson from the Office of the General Counsel; LaVonia Proctor from the Office of the Managing Director; and Chana Wilkerson and Sanford Williams from the Office of Communications Business Opportunities.

**STATEMENT OF
COMMISSIONER MICHAEL O'RIELLY**

Re: *Auction of Priority Access Licenses for the 3550-3650 MHz Band; Comment Sought on Competitive Bidding Procedures for Auction 105; Bidding in Auction 105 Scheduled to Begin June 25, 2020, AU Docket No. 19-244*

Hallelujah!

With every passing day, CBRS is becoming more of a reality and now we have an auction date! I am delighted to vote in favor of today's Public Notice seeking comment on the procedures for the June 25, 2020, priority access license, or PAL, auction. This item provides interested parties not only the opportunity to comment on the proposed auction structure, but also a necessary heads-up so that they can formulate their bidding strategies and business plans to actively participate in the auction.

It has been a great two weeks for CBRS. Last week started out with a public notice announcing that the first group of Spectrum Access System providers could initiate commercial service in the band, which was followed by a very well-attended and enormously successful CBRS, rebranded as OnGo, launch event. I was honored to be invited, represent the Commission, and address such a broad cross-section of esteemed industry professionals. But, the best – and most memorable – part was to experience the excitement in the room about the future of 3.5 GHz. After all this time, it was great to see everyone's hard work come to fruition, especially the Commission's. Now, the true fun begins: We get to see what America's innovators, entrepreneurs, and creative minds will make of this band.

Until the completion of the PAL auction, CBRS spectrum will be available under our unlicensed-like General Authorized Access rules. This will allow industry to prove that this new sharing mechanism will work to protect incumbents when clearing is not an option. Hopefully, in the near future, we can review and improve the protection zones, technical rules, and power limits to ensure that they are not larger or more protective than necessary. Such tweaks will make it easier for industry to provide services to the millions of Americans clamoring for more wireless services and devices. We don't know the full panoply of possible offerings to come – that is something the market will ultimately decide – but with 5G standards on the way, 3.5 GHz is likely to be one of the first 5G bands deployed, despite the previous naysayers.

As far as the Public Notice before us, it is fairly straightforward in seeking comment and providing initial details on the upcoming auction. Some parties asked questions about and sought clarification on the CMA-level bidding concept, and I am comfortable with that. The truth is that allowing such bidding in only the largest markets doesn't skew the outcome, favor any particular auction participants, or have any real impact on rural markets. It merely provides a bidding tool to ease participation for entities that seek larger geographic areas and was part of the balanced, negotiated agreement that resulted in county-sized licenses, rather than larger units.

In the grand scheme, the great step forward we take today doesn't eliminate the need for more mid-band spectrum. In fact, I look forward to Commission action on 3.7 to 4.2 GHz in the coming months: Let's get C-Band done! And, I was pleased to hear the Chairman recently say that Commission staff is studying how commercial services can be introduced into to the 3.1 to 3.55 GHz band. We should also be doing all we can to promote the global harmonization of these frequencies, particularly 3.1 to 3.4 GHz, which does not have a mobile allocation, so that offerings will be cost effective and internationally available. Additionally, we must expedite our work on the 6 GHz band to ensure there is enough spectrum for unlicensed services, and we should start actively pursuing 7 GHz, which Representatives Doyle and Latta implicated earlier this week as well.

Finally, I thank the Chairman for making this band a priority and providing me with the opportunity to lead the PAL review, my fellow Commissioners for working with me to get us to this point, and the dedicated Commission staff who have put in – and continue to dedicate – countless hours to make this band a success.

**STATEMENT OF
COMMISSIONER BRENDAN CARR**

Re: *Auction of Priority Access Licenses for the 3550-3650 MHz Band; Comment Sought on Competitive Bidding Procedures for Auction 105; Bidding in Auction 105 Scheduled to Begin June 25, 2020, AU Docket No. 19-244*

Yankees, Red Sox. Cowboys, Redskins. Democrats, Republicans. Those who say “aye” when voting for FCC items and those who (correctly) say “approve.” In this time of division, what can bring such bitter rivals together? The answer is right in front of us: 3.5.

You see, last week, on the same stage appeared a cast of characters not often known for holding hands and singing kumbaya. Verizon, AT&T. Google, Charter. A group that runs trains, and a group that flies planes. Even the FCC, NTIA, and DOD.

They were celebrating the launch of OnGo, a private certification effort to commercialize the 3.5 GHz band. It’s a sign that the private sector is ready to put this spectrum to use and has confidence in the band’s potential. It’s also a milestone on this Commission’s road to freeing up more mid-band spectrum. Commissioner O’Rielly deservedly was on stage to celebrate last week, and I want to join in the chorus that is rightly thanking him for his continued work on this effort.

5G services will rely on every spectrum band—low, mid, and high. Low-band will provide the coverage needed to bring 5G to every corner of America. Mid-band will provide mobility at fast speeds. And high-band will provide the fiber-like connections needed to support a full range of 5G offerings. All three bands are essential. And so I am proud of this Commission’s all-of-the-above approach to spectrum, which we continue in this Public Notice.

I want to thank the Office of Economics and Analytics and the Wireless Telecommunications Bureau for their work on this item. It has my support.

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Auction of Priority Access Licenses for the 3550-3650 MHz Band; Comment Sought on Competitive Bidding Procedures for Auction 105; Bidding in Auction 105 Scheduled to Begin June 25, 2020, AU Docket No. 19-244*

Earlier this year I wrote in WIRED that if the United States wants to lead in the next generation of wireless service, we have work to do. It starts with this agency making it a priority to auction mid-band spectrum. It is the only way we can extend the promise of competitive 5G wireless service to everyone, everywhere across the country. So I support today's decision, which—at long last—kicks off a process to bring mid-band spectrum to market.

In fact, the 3.5 GHz band is a terrific place to start. That's because our policies in this band build on a long tradition of spectrum innovation in the United States. When it comes to wireless policy, we have a history of embracing the ideas that are cool, kooky, and new before anyone else. After all, it was more than two decades ago that we took the academic ideas of Ronald Coase and ushered in a whole new era of spectrum auctions. We also pioneered the use of unlicensed spectrum—the airwaves we now know and use every day as Wi-Fi. More recently, we blazed a trail for two-sided incentive auctions. With each of these efforts we reoriented ourselves from what was to what could be. In doing so, we changed the way that wireless systems are developed and distributed not just domestically, but worldwide.

Four years ago, this agency recognized that our traditional spectrum auctions needed an update too—and that the 3.5 GHz band was the perfect place to test a new framework. Instead of relying on the traditional binary choice between licensed and unlicensed, the agency adopted an unprecedented three-tiered model for spectrum sharing and management. Under this three-tiered system, incumbent government users have a primary and preemptive right. But we know they do not need access all the time, everywhere, so we created a secondary license opportunity, custom-built for small cells. Then to the extent the demand for licenses is limited, opportunistic use is permitted by rule. To coordinate this grand effort, we proposed dynamic spectrum access systems.

Here's the best part. The framework we put in place for the 3.5 GHz band was ideal for 5G, too. The very structure of this band recognized that the smartphone might be the least interesting thing about our 5G future. Instead, it was designed for innovation. It recognized that we are on the verge of a new networked world with connectivity built into everything around us.

So in addition to the familiar carriers, we saw early interest in this band from entities that support industrial operations and wanted to use this spectrum for intelligent manufacturing, power generation and distribution, and healthcare. Our record supported its use for advanced inspection and sensor technologies, including aerial drones, terrestrial crawlers, and robotics. The American Petroleum Institute expressed interest in its use for updating drilling operations. The Port of Los Angeles wanted to explore its use for sharing shipping data. Rural interests saw a unique opportunity to bring more service and more competition to remote areas of the country that are too often left behind.

All of this required the agency to operate with regulatory humility. Because at the heart of our initial plan for the 3.5 GHz band was the recognition that the FCC could not know who will realize the best use cases for 5G, who will have the best business models for deploying it, or who will have the best ways to extend 5G service to rural communities. So instead of choosing winners and losers in this band—instead of adopting rules that were biased toward certain uses or the same-old, same-old carriers—we designed rules to balance the services we know today with the ones that may be coming our way tomorrow.

But in key ways—and over my objection—we retreated from this early and inspired vision for this band. In a decision last year, we revisited some of the fundamentals of this framework. We lost our nerve and reverted back to the old. Most notably, we expanded license sizes from census tracts to counties, shutting out new spectrum interests that cannot compete at that scale. To make matters worse, in today's Public Notice we ask about even larger service territories at auction. I think that continuing down this road, narrowing the range of spectrum interests that could use these airwaves, would be a grave mistake. At a minimum, we must honor the hard-fought compromise that kept service areas in this band defined by counties. To do otherwise, would unacceptably risk the opportunities for innovation in this band and new entry points for 5G.

In addition, it is important to remember that we didn't get this far alone. It wasn't that long ago that the 3.5 GHz band was coveted military spectrum. Creating this opportunity—combining incumbent use with new commercial licensed and unlicensed use—took effort. It took working with our federal partners to reach a shared goal. We will need a lot more of this cooperation if we want to realize greater success in securing mid-band spectrum for new mobile use. But lately it feels like our relationships with our federal partners with spectrum interests have soured. I worry that our ability to make progress with other agencies has devolved under this Administration into very public disputes. We see it in the 24 GHz band, the 5.9 GHz band, the 2.5 GHz band, and elsewhere. For the sake of our shared digital future, I hope we can get back on track.

We need to do that because while today we put our first mid-band auction on the calendar, we have a lot more work to do to regain our wireless leadership. Sixteen countries are way ahead of us, already having auctioned mid-band spectrum specifically for 5G. South Korea held the first mid-band spectrum last year. Australia, Finland, Germany, Italy, Ireland, Japan, Kuwait, Latvia, Mexico, Oman, Qatar, Saudi Arabia, Spain, the United Arab Emirates, and the United Kingdom have already followed. In addition, China allocated mid-band spectrum specifically for 5G use last year.

This delay in the United States has consequences. While we have focused all our early energies on high-band spectrum auctions, the rest of the world has left us behind. Moreover, our slow pace of bringing mid-band spectrum to market for 5G will only deepen the digital divide that already plagues too many rural communities nationwide. That's because recent commercial launches of 5G service across the country using millimeter wave spectrum are confirming what we already know—that commercializing high-band spectrum will not be easy or cheap, given its propagation challenges. The network densification these airwaves require is substantial. That means high-band 5G service is unlikely outside only the most populated urban areas.

So if I had one request, it would be that we speed the day when this agency holds the 3.5 GHz auction. In fact, I believe this is vitally important for both our economic and national security—and given my druthers, I would hold this auction this year before we bring to market any more high-band spectrum, including the 37, 39, and 47 GHz bands.

Nonetheless, today's Public Notice represents progress—and it has my support. I appreciate my colleagues' willingness to ask more questions in this item about the consequences of auctioning the 3.5 GHz band in larger blocks. I look forward to the record that develops, and I thank the staff for their creative work—and a special shout out to John Leibovitz, formerly of the FCC for his early vision for these airwaves and my colleague Commissioner O'Rielly for his efforts to follow through.

**STATEMENT OF
COMMISSIONER GEOFFREY STARKS**

Re: *Auction of Priority Access Licenses for the 3550-3650 MHz Band; Comment Sought on Competitive Bidding Procedures for Auction 105; Bidding in Auction 105 Scheduled to Begin June 25, 2020, AU Docket No. 19-244*

Today we take another step on the long road to full commercial service in the 3.5 GHz band. With last week's authorization of initial commercial deployments, this Public Notice continues our progress towards making this valuable mid-band spectrum fully available. Already, handset manufacturers are incorporating it into their devices, and the initial commercial deployments will include private wireless networks for airports, city governments, and wind and solar farms. I will be following their progress closely and look forward to when we can grant approval to full operations across the country.

This item proposes rules governing the auction of Priority Access Licenses in the 3.5 GHz band, scheduled for June 25, 2020. It will be one of the most complex auctions we've conducted to date, with about 3,200 license areas available for bidding. I'm excited to move the ball forward on distributing these licenses, but I must express some concern. While I was not a Commissioner when the agency voted last year to revise the geographic configuration of the PALs from census tracts to counties, I share Commissioner Rosenworcel's point about whether the current approach will adequately encourage the innovative uses and new entrants that were the focus of the original 3.5 GHz order in 2015.

Specifically, today's Public Notice seeks comment on a proposal to permit Cellular Market Area (CMA)-level bidding for blocks within the counties in the top 305 markets. I appreciate the Office of Economic Analysis's efforts to propose rules that level the playing field between CMA-level bidders and those who will bid on a county basis, but I also want to avoid unintended consequences. For example, will county-level bidders be able to compete effectively with CMA-level bidders for blocks in counties within the same CMA as a large city? Notwithstanding limits on the number of blocks a CMA-level bidder can obtain in a single county, how likely is it that two CMA-level bidders could take up all 7 available PALs in all the counties within that CMA? To address these issues, should we limit the number of CMAs that are subject to CMA-level bidding? If so, what limits would we impose? I encourage commenters to share their views on these questions.

In addition, these procedures can be confusing for new entrants with limited resources. All parties that want to participate in the auction should be able to understand its workings – I consistently hear from parties how complex it is to participate in our auctions. At my request, this item includes language clarifying the relationship between CMA-level and county-level bids. Hopefully this language will help participants clearly understand how we're running this auction, and how to execute on their goals. Thank you to my colleagues and OEA for their support for this edit.

My thanks to the Office of Economic Analysis for their work on this item.