

In the Matter of)
)
Competitive Bidding Procedures for) AU Docket No. 18-85
Auction 101 (28 GHz) and Auction 102 (24 GHz))

United States Cellular Corporation (“USCC”) submits these reply comments in response to the Public Notice released April 17, 2018 in the above-captioned proceeding and the comments filed in response to that notice.¹ In the Public Notice, the Commission announces auctions of Upper Microwave Flexible Use Service (“UMFUS”) licenses in the 27.5-28.35 GHz (“28 GHz”) and 24.25-24.45 and 24.75-25.25 GHz (“24 GHz”) bands, and seeks comment on proposed procedures for these auctions, which are designated Auction 101 and Auction 102, respectively. In these reply comments, USCC again focuses on several actions it believes will help ensure the success of Auctions 101 and 102 and provide a reasonable opportunity for small and regional carriers to acquire UMFUS licenses in these auctions.

Significantly, every commenter joined USCC in urging the Commission to wait to open the application window for Auction 102 until after Auction 101 concludes in order to allow the release of the non-public information from Auction 101 prior to the Auction 102 application window, and so that applicants are not subject to the prohibited communications rule for a

¹ See *Auctions of Upper Microwave Flexible Use Licenses for Next-Generation Wireless Services; Comment Sought on Competitive Bidding Procedures for Auctions 101 (28 GHz) and 102 (24 GHz)*, Public Notice, AU Docket No. 18-85, FCC 18-43 (Apr. 17, 2018) (“Public Notice”). All comments cited herein were filed in response to the Public Notice on May 9, 2018 in AU Docket No. 18-85.

prolonged, uninterrupted period of time.² USCC explained in its comments how releasing the non-public information from Auction 101 prior to the Auction 102 application window would provide crucial information to Auction 102 participants. Similarly, T-Mobile noted how the “outcome of the 28 GHz auction could significantly influence bidders’ behavior in the 24 GHz auction.”³ For instance, with access to the results of Auction 101, bidders would be able “to analyze and understand price levels and demand for millimeter wave spectrum.”⁴ USCC further explained how the availability of this information will be especially important for smaller bidders, who are more reliant on external sources of information given that they have fewer resources to devote to auction preparation.

In addition, CTIA discussed how keeping the Auction 101 results confidential until after the close of Auction 102 “may undermine the ability of bidders interested solely in participating in Auction 102, as these participants will not know the results of Auction 101 before having to determine whether to participate in Auction 102.”⁵ USCC again notes that smaller bidders are more likely to be disadvantaged in this way because they are less likely to participate in Auction 101 given that the 28 GHz band consists of only two large – and thus, likely expensive – blocks and the fact that a large number of 28 GHz licenses will not be made available in Auction 101 as a result of incumbent Local Multipoint Distribution Service (“LMDS”) licensees. The Commission therefore should release the results of Auction 101 prior to the Auction 102

² See Comments of CTIA at 2; Comments of Competitive Carriers Association (“CCA”) at 5; Comments of T-Mobile USA, Inc. (“T-Mobile”) at 4; Comments of Verizon at 2; Comments of the Blooston Rural Carriers at 1; Comments of AT&T Services, Inc. (“AT&T”) at 5; Comments of Charter Communications, Inc. at 1.

³ Comments of T-Mobile at 4; *see* Comments of CCA at 10.

⁴ Comments of T-Mobile at 6; *see* Comments of CCA at 4 (“[E]ntities will acquire a clear understanding of price levels and license differences after Auction 101...”).

⁵ Comments of CTIA at 9.

application window in order to “help mitigate the information deficits and asymmetries that could result in less competitive bidding and a less efficient allocation of spectrum resources.”⁶

Commenters also emphasized the importance of applying a distinct quiet period to each auction, which the Commission proposes to do only if the Auction 102 application window occurs after the close of Auction 101. For instance, CCA explained how a single quiet period for the duration of both auctions would “unduly burden[] providers from entering into unrelated business ventures during an extensive period.”⁷ As CTIA elaborated, “[g]iven the ambiguity of the Commission’s anti-collusion rules, longer application of the rules could have a chilling effect on the wireless industry’s ability to conduct non-auction related business negotiations, as providers traditionally have shied away from any such discussions to avoid the appearance of impropriety.”⁸

Moreover, USCC again notes that distinct quiet periods for each auction would benefit all bidders, regardless of whether they participate in Auction 101, Auction 102, or both auctions. CTIA likewise explained how, if the Commission implements a separate quiet period for each auction, “entities that may not wish to participate in both auctions will not be affected by a prolonged anti-collusion quiet period, but instead will only be subject to the period associated with the auction in which they are bidding.”⁹ Similarly, Verizon stressed that “an Auction 101 applicant should be able to decide, based on its results in that auction, whether to apply to

⁶ Comments of T-Mobile at 6.

⁷ Comments of CCA at 6.

⁸ Comments of CTIA at 9; *see* Comments of T-Mobile at 1-2 (“[S]cheduling Auctions 101 and 102 in an overlapping or back-to-back manner [] could impair commercial wireless market activity during the course of the prolonged quiet period.”).

⁹ Comments of CTIA at 9.

participate in Auction 102 ... without remaining subject to the prohibited communications rule for an indeterminate amount of time while Auction 102 runs its course.”¹⁰

Notably, while a prolonged quiet period would lead to various harms, it would not advance the objective of the Commission’s anti-collusion rule to any greater extent than implementing an individual quiet period for each auction. As Verizon explained, “there is no reason to enmesh these two auctions for prohibited communications rule purposes” given that the Commission intends to “use separate application and bidding processes for the licenses available in the 28 GHz and 24 GHz bands.”¹¹

II. ADDITIONAL BANDS SHOULD BE INCLUDED IN AUCTION 102

USCC joins a majority of commenters in urging the Commission to also include the Upper 37 GHz band (37.6-38.6 GHz), the 39 GHz band (38.6-40 GHz), and the 47 GHz band (47.2-48.2 GHz) in Auction 102, so long as doing so would not cause substantial delay and the Commission resolves all of the outstanding issues related to these bands well in advance of the auction.¹² While these bands are not identical (*e.g.*, lower frequencies have better propagation characteristics), they have sufficient similarities (*e.g.*, identical service rules and license area size) to make them complements to one another. Consequently, various benefits would arise from offering licenses for all of these bands in the same auction.

For instance, T-Mobile explained how a single auction for these bands “would provide potential bidders a better understanding of price levels and license differences across bands and allow tradeoffs between the spectrum bands.”¹³ Auctioning these bands together also would

¹⁰ Comments of Verizon at 3.

¹¹ *Id.*

¹² See Comments of CTIA at 7; Comments of CCA at 3; Comments of T-Mobile at 7; Comments of AT&T at 4.

¹³ Comments of T-Mobile at 8.

facilitate the acquisition of both contiguous blocks and contiguous license areas, which would allow for “more cost-effective and functional wireless 5G deployments.”¹⁴ T-Mobile further explained how a single auction would reduce exposure risks for bidders. For instance, with sequential auctions for complementary spectrum, bidders “must take into account the option value of acquiring some alternative spectrum in subsequent auctions and the risk of not being able to acquire the ‘missing pieces’ in those subsequent auctions.”¹⁵ The result is restrained bidding in the initial auction, which, in addition to leading to lower auction revenue, increases the likelihood that bidders with no true intent to put the spectrum to use “will succeed in securing blocking positions for speculative gain.”¹⁶

Perhaps most importantly, offering licenses for all of these bands in Auction 102 would help level the playing field between the two largest carriers and the rest of the industry.¹⁷ Verizon and AT&T already are authorized to deploy flexible use services in large swaths of the 28 GHz and 39 GHz bands, respectively, as a result of their secondary market acquisitions of LMDS and Fixed Service licenses. In contrast, if the Commission does not include these additional bands in Auction 102, the rest of the industry will be forced to compete for the rather limited number of blocks in the 24 GHz band and what spectrum remains in the 28 GHz band in order to acquire flexible use rights in the relatively near future. As T-Mobile observed, the result would be to further “entrench the commanding positions the largest providers currently hold in the two millimeter wave bands furthest along in development.”¹⁸

¹⁴ *Id.*

¹⁵ *Id.* at 10.

¹⁶ *Id.*

¹⁷ *See* Comments of CCA at 4.

¹⁸ Comments of T-Mobile at 13; *see* Comments of CCA at 3 (“Delaying auction of this spectrum will ... effectively giv[e] dominant carriers a head start in 5G deployment.”).

III. EVERY UNENCUMBERED 24 GHz BLOCK SHOULD BE INCLUDED IN A SINGLE CATEGORY OF GENERIC LICENSES

USCC again urges the Commission to include all of the unencumbered 24 GHz blocks in each PEA in a single category of generic licenses. USCC begins by noting that, while it applauds the Commission for including a requirement for device operability throughout the 24 GHz band in its draft *Third Report and Order* in the *Spectrum Frontiers* proceeding,¹⁹ such action does not address USCC's concern that creating separate categories for the unencumbered blocks in the lower and upper segments of the 24 GHz band would significantly curtail bidding flexibility.

As USCC explained in its comments, over the course of a clock auction, price disparities inevitably arise between two categories of licenses in the same market as bidders switch their demands between the categories whenever one category becomes overpriced relative to the other. While this by-product of rational bidding in a clock auction was seen during the Incentive Auction with respect to the reserved and unreserved licenses, a bidder holding one reserved and one unreserved license for the same market at the end of the clock phase nevertheless could be assigned contiguous blocks because the distinction between these categories of licenses did not carry over to the assignment phase.

In contrast, under the Commission's proposed procedures for Auction 102, bidders would only have the flexibility to switch their demands between the two categories of unencumbered licenses if they were willing to risk acquiring one block in each category (*i.e.*, non-contiguous blocks) as a result of a partially-accepted switch bid and subsequent lack of excess demand in

¹⁹ See *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking [*as circulated*], GN Docket No. 14-177, FCC-CIRC1806-01, ¶ 13 (circ. May 17, 2018) ("This requirement will support competition by ensuring a robust device ecosystem throughout the band.").

one of the categories. As a consequence, many bidders would feel compelled to focus on licenses in either the lower *or* upper segment of the 24 GHz band. USCC also previously described the other benefits recognized by the Commission related to having fewer categories of generic licenses in a clock auction, including a more manageable bidding process, a simpler auction interface, and a quicker auction.²⁰

USCC again notes that, even if all of the unencumbered blocks are included in a single category, every winning clock phase bidder of multiple licenses in a PEA could be assigned at least two contiguous blocks, with the possible exception of the very small number of PEAs where an incumbent licensee will be relocated to the upper block of the lower segment of the 24 GHz band. Even in those PEAs, however, every winning bidder potentially could be assigned only contiguous blocks, depending on the specific number of winning bidders and the specific number of generic licenses won by each bidder. Moreover, to the extent feasible, winning bidders of three or more generic licenses in a PEA could be assigned only contiguous blocks.

Notably, only AT&T opposed including all of the unencumbered 24 GHz blocks in each PEA in a single category.²¹ AT&T's opposition, however, rests solely on the scenario of two bidders both acquiring three generic licenses for the same PEA in the clock phase. AT&T is correct that, in this situation, only one of the bidders could be assigned three contiguous blocks. But even with separate categories for the lower and upper segments, two bidders could not both acquire three contiguous blocks. The only difference would be that the bidding between these two bidders for three contiguous blocks would shift from the clock phase to the assignment

²⁰ See Comments of USCC at 10-11 (quoting *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, 9051 (2015) and *Comment Sought on Competitive Bidding Procedures for Broadcast Incentive Auction 1000, Including Auctions 1001 and 1002*, Public Notice, 29 FCC Rcd 15750, 15797 (2014)).

²¹ See Comments of AT&T at 5-6.

phase. More importantly, the Commission should not adopt procedures for Auction 102, or any auction, that are intended to accommodate only two bidders dominating an entire spectrum band, particularly when an alternative approach would greatly benefit both small and large bidders, as well as the auction process itself.

Finally, if, despite the benefits of including all of the unencumbered 24 GHz blocks in a single category, the Commission nevertheless creates separate categories for these licenses, USCC again urges it to permit bidders to make “all-or-nothing” bids in addition to simple and switch bids. As USCC explained in its comments, the use of an all-or-nothing bid would eliminate the risk that a bidder seeking to switch all of its demand for a given PEA from one category to the other would end up with one license in each category (*i.e.*, end up with no contiguous blocks) as a result of a switch bid being applied only partially due to insufficient aggregate demand for licenses in the “from” category.

IV. THE COMMISSION SHOULD REDUCE ITS PROPOSED UPFRONT PAYMENTS AND MINIMUM OPENING BIDS

USCC agrees with CCA and T-Mobile that the FCC should consider decreasing its proposed upfront payments and minimum opening bids for Auctions 101 and 102,²² which are based on \$0.001 per megahertz of bandwidth per population (per “MHz-pop”) and \$0.002 per MHz-pop, respectively. As T-Mobile explained, lower minimum opening bids facilitate price discovery during the course of an auction, which is particularly important here given that flexible use licenses for mmW spectrum have not previously been awarded via competitive bidding.²³ Although recent secondary market transactions for 28 GHz and 39 GHz licenses provide some guidance with respect to the value of mmW spectrum, one such transaction was for a per MHz-

²² See Comments of CCA at 6; Comments of T-Mobile at 13.

²³ See Comments of T-Mobile at 15-16.

pop price lower than the Commission's proposed minimum opening bids, while another is widely believed to have been for an amount above fair market value.²⁴

Moreover, even if those transactions reflected the true market value of the subject licenses, USCC agrees with T-Mobile that basing minimum opening bids on secondary market prices "can be problematic" because such prices "reflect *average* MHz-pop prices," and thus, fail to account for the differences in license valuations between markets.²⁵ In particular, average prices generally "exceed the fair market value in many rural areas where demand is reduced."²⁶ Importantly, the typical differential in per MHz-pop price between urban and rural markets will be more pronounced in the UMFUS auctions because the propagation characteristics of mmW band spectrum "make deployments in rural areas considerably less cost effective than deployments in urban areas," as well as cause deployment costs to be "considerably higher in areas of low population density than comparable deployments using lower-band spectrum."²⁷

For these reasons, USCC agrees with T-Mobile that lower upfront payments and minimum opening bids "would expand auction participation, encourage spectrum acquisition in rural areas, and allow for price discovery during the auctions."²⁸ USCC therefore supports T-Mobile's proposed three-tiered approach, under which the upfront payments and minimum opening bids would be reduced for all but the 50 most populous markets, and reduced further for markets below the top 100.²⁹ Otherwise, "[a]t a minimum, if the opening bid and upfront prices

²⁴ See *id.* at 14.

²⁵ *Id.* (emphasis in original).

²⁶ *Id.*

²⁷ *Id.* at 15.

²⁸ *Id.* at 4; see Comments of CCA at 6 (explaining that lowering these amounts "will encourage robust participation by providers of all sizes").

²⁹ See Comments of T-Mobile at 15.

prove to be excessive in Auction 101, the Commission should adjust those amounts prior to Auction 102 to better reflect market realities.”³⁰

V. CONCLUSION

As USCC detailed in its initial comments, and as USCC further discusses herein, with a few minor revisions, the Commission's proposed procedures should ensure successful auctions of UMFUS licenses for the 24 GHz and 28 GHz bands, in part by providing small and regional service providers with a reasonable opportunity to acquire these licenses and to use this spectrum to provide next-generation mobile broadband services to rural and other underserved areas.

Respectfully submitted,

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May 23, 2018

³⁰ Comments of CCA at 6; *see* Comments of T-Mobile at 15.