PUBLIC NOTICE

FEDERAL COMMUNICATIONS COMMISSION
1919 M STREET, N.W.
WASHINGTON, D.C. 20554

News Media Information: (202) 418-0500
Fax-On-Demand: (202) 418-2830
Internet: http://www.fcc.gov
ftp.fcc.gov

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LOCATION AND MONITORING SERVICE SPECTRUM AUCTION SCHEDULED FOR DECEMBER 15, 1998

COMMENT SOUGHT ON RESERVE PRICES OR MINIMUM OPENING BIDS AND OTHER AUCTION PROCEDURAL ISSUES

Report No. AUC-98-21-A (Auction No. 21)

By this Public Notice, the Wireless Telecommunications Bureau ("Bureau") announces the auction of 528 multilateration Location and Monitoring Service ("LMS") licenses set to begin on December 15, 1998.[1] Three blocks of spectrum are allocated for multilateration LMS systems:

(1)	Block A	904.000-909.750 MHz and 927.750-928.000 MHz
(2)	Block B	919.750-921.750 MHz and 927.500-927.750 MHz
(3)	Block C	921.750-927.250 MHz and 927.250-927.500 MHz

One license will be awarded for each of these spectrum blocks in each of 176 Economic Areas (EAs) designated for LMS. The 176 EAs designated for the LMS auction comprise the following areas: (1) the continental United States, Hawaii and Alaska (Alaska to be licensed in

[1] The Commission recently adopted service and competitive bidding rules for the Location and Monitoring Service. *See* Amendment of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Second Report and Order*, FCC 98-157 (rel. July 14, 1998) ("*LMS Second Report and Order*").

a single area); (2) Guam and the Northern Mariana Islands (to be licensed in a single area); (3) Puerto Rico and the U.S. Virgin Islands (to be licensed in a single area); (4) America Samoa; and (5) the Gulf of Mexico. Thus, there are a total of 528 multilateration LMS licenses to be auctioned. Future public notices will include further details regarding application filing and payment deadlines, a seminar, and other pertinent information. In this Public Notice, we seek comment on procedural issues relating to the LMS auction.

I. Reserve Price or Minimum Opening Bid

The Balanced Budget Act of 1997 calls upon the Commission to prescribe methods by which a reasonable reserve price will be required or a minimum opening bid established when FCC licenses are subject to auction (*i.e.*, because they are mutually exclusive), unless the Commission determines that a reserve price or minimum bid is not in the public interest.[2] Consistent with this mandate, the Commission has directed the Bureau to seek comment on the use of a minimum opening bid and/or reserve price prior to the start of each auction.[3] The Bureau was directed to seek comment on the methodology to be employed in establishing each of these mechanisms. Among other factors the Bureau should consider is the amount of spectrum being auctioned, levels of incumbency, the availability of technology to provide service, the size of the geographic service areas, issues of interference with other spectrum bands, and any other relevant factors that reasonably could have an impact on valuation of the spectrum being auctioned. The Commission concluded that the Bureau should have the discretion to employ either or both of these mechanisms for future auctions.[4]

Normally, a reserve price is an absolute minimum price below which an item will not be sold in a given auction. Reserve prices can be either published or unpublished. A minimum opening bid, on the other hand, is the minimum bid price set at the beginning of the auction below which *no bids* are accepted. It is generally used to accelerate the competitive bidding process. Also, in a minimum opening bid scenario, the auctioneer generally has the discretion to lower the amount later in the auction.

In anticipation of this auction and in light of the Balanced Budget Act, the Bureau proposes to establish minimum opening bids for the LMS auction, and retain discretion to lower the

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[2] Section 3002(a), Balanced Budget Act of 1997, Pub. L. 105-33, 111 Stat. 251 (1997) ("Budget Act"); 47 U.S.C. § 309(j)(4)(F). The Commission's authority to establish a reserve price or minimum opening bid is set forth in 47 C.F.R. § 1.2104(c) and (d).

[3] *See*Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, 4660-4685 MHz, WT Docket No. 97-82, ET Docket No. 94-32, FCC 97-413, *Third Report and Order and Second Further Notice of Proposed Rule Making*, 13 FCC Rcd 374, 454-455, ¶ 141 (1998) (*"Part 1 Third Report and Order"*).

[4] *Id*.

minimum opening bids. The Bureau believes a minimum opening bid, which has been utilized in other auctions,[5] is an effective bidding tool. A minimum opening bid, rather than a reserve price, will help to regulate the pace of the auction and provides flexibility.

Specifically, the Commission proposes the following formulas for calculating minimum opening bids on a license-by-license basis in Auction No. 21:

(1) Block A $0.004*MHz*Pops (rounded up to the next dollar and no less than $2,850 per license)

(2) Block B $0.004*MHz*Pops (rounded up to the next dollar and no less than $2,500 per license)

(3) Block C $0.004*MHz*Pops (rounded up to the next dollar and no less than $2,800 per license)

Comment is sought on this proposal. If commenters believe that the formula proposed above for minimum opening bids will result in substantial numbers of unsold licenses, or is not a reasonable amount, or should instead operate as a reserve price, they should explain why this is so, and comment on the desirability of an alternative approach. Commenters are advised to support their claims with valuation analyses and suggested reserve prices or minimum opening bid levels or formulas. In establishing the formula for minimum opening bids, we particularly seek comment on such factors as, among other things, the amount of spectrum being auctioned, levels of incumbency, the availability of technology to provide service, the size of the geographic service areas, issues of interference with other spectrum bands and any other relevant factors that could reasonably have an impact on valuation of the LMS spectrum. Alternatively, comment is sought on whether, consistent with the Balanced Budget Act, the public interest would be served by having no minimum opening bid or reserve price.

II. Other Auction Procedural Issues

The Balanced Budget Act of 1997 requires the Commission to "ensure that, in the scheduling of any competitive bidding under this subsection, an adequate period is allowed. . . before issuance of bidding rules, to permit notice and comment on proposed auction procedures. . ."[6] Consistent with the provisions of the Balanced Budget Act and to ensure that potential bidders have adequate time to familiarize themselves with the specific provisions that will govern the day-to-day conduct of an auction, the Commission directed the Bureau, under its

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[5] *See, e.g.*, Auction of 800 MHz SMR Upper 10 MHz Band, Minimum Opening Bids or Reserve Prices, DA 97-2147, *Order*, 12 FCC Rcd 16354 (1997).

[6] Budget Act, § 3002(a)(E)(i).

existing delegated authority,[7] to seek comment on a variety of auction-specific issues prior to the start of each auction.[8] We therefore seek comment on the following issues.

a. Auction Sequence and License Groupings

Because it is most administratively appropriate, and allows bidders to take advantage of any synergies that exist among licenses, we propose to award the 528 multilateration LMS licenses in a single, simultaneous multiple-round auction.[9] We seek comment on this proposal.

b. Structure of Bidding Rounds, Activity Requirements, and Criteria for Determining Reductions in Eligibility

We propose to divide the auction into three stages: Stage One, Stage Two and Stage Three. The auction will start in Stage One. We propose that the auction will generally advance to the next stage (*i.e.*, from Stage One to Stage Two, and from Stage Two to Stage Three) when the auction activity level, as measured by the percentage of bidding units receiving new high bids, is below ten percent for three consecutive rounds of bidding in each Stage. However, we further propose that the Bureau retain the discretion to change stages unilaterally by announcement during the auction. In exercising this discretion, the Bureau will consider a variety of measures of bidder activity including, but not limited to, the auction activity level, the percentages of licenses (as measured in bidding units) on which there are new bids, the number of new bids, and the percentage increase in revenue. We seek comment on these proposals.

In order to ensure that the auction closes within a reasonable period of time, an activity rule requires bidders to bid actively on a percentage of their maximum bidding eligibility during each round of the auction rather than waiting until the end to participate. A bidder that does not satisfy the activity rule will either lose bidding eligibility in the next round or use an activity rule waiver.

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[7] *See* Amendment of Part 1 of the Commission's Rules—Competitive Bidding Proceeding, WT Docket No. 97-82, FCC 97-60, *Order, Memorandum Opinion and Order, and Notice of Proposed Rule Making*, 12 FCC Rcd 5686, 5677, ¶ 16 (1997) ("*Part 1 Order, Memorandum Opinion and Order, and Notice of Proposed Rule Making")* ("We also clarify that pursuant to Section 0.131 of our rules, the Chief, Wireless Telecommunications Bureau, has delegated authority to implement all of the Commission's rules pertaining to auctions procedures.")

[8] *Part 1 Third Report and Order*, 13 FCC Rcd at 448, ¶ 124. The Commission directed the Bureau to seek comment on specific mechanisms related to day-to-day auction conduct including, for example, the structure of bidding rounds and stages, establishment of minimum opening bids or reserve prices, minimum accepted bids, initial maximum eligibility for each bidder, activity requirements for each stage of the auction, activity rule waivers, criteria for determining reductions in eligibility, information regarding bid withdrawal and bid removal, stopping rules, and information relating to auction delay, suspension or cancellation. *Id*. ¶ 125.

[9] *See LMS Second Report and Order*, ¶ 16.

For the LMS auction, we propose that, in each round of Stage One of the auction, a bidder desiring to maintain its current eligibility is required to be active on licenses encompassing at least 60 percent of its current bidding eligibility. Failure to maintain the requisite activity level will result in a reduction in the bidder's bidding eligibility in the next round of bidding (unless an activity rule waiver is used). During Stage One, reduced eligibility for the next round will be calculated by multiplying the current round activity by five-thirds (5/3). In each round of the second stage of the auction, a bidder desiring to maintain its current eligibility is required to be active on at least 80 percent of its current bidding eligibility. During Stage Two, reduced eligibility for the next round will be calculated by multiplying the current round activity by five-fourths (5/4). In each round of Stage Three, a bidder desiring to maintain its current eligibility is required to be active on 98 percent of its current bidding eligibility. In this final stage, reduced eligibility for the next round will be calculated by multiplying the current round activity by fifty forty-ninths (50/49). We seek comment on these proposals.

c. Minimum Accepted Bids

Once there is a standing high bid on a license, a bid increment will be applied to that license to establish a minimum acceptable bid for the following round. For the LMS auction, we propose, as described immediately below, to use an exponential smoothing methodology to calculate minimum bid increments. The Bureau retains the discretion to change the minimum bid increment if it determines that circumstances so dictate. The exponential smoothing methodology has been used in previous auctions, including the LMDS auction,[10] and will be used in the upcoming 220 MHz auction.[11] We seek comment on this proposal.

Exponential Smoothing

The exponential smoothing formula calculates the bid increment based on a weighted average of the activity received on each license in the current and all previous rounds. This methodology will tailor the bid increment for each license based on activity, rather than setting a global increment for all licenses. For every license that receives a bid, the bid increment for the next round for that license will be established as a percentage increment that is determined using the exponential smoothing formula.

Using exponential smoothing, the calculation of the percentage bid increment for each license will be based on an activity index, which is calculated as the weighted average of the current activity and the activity index from the previous round. The activity index at the start of the auction (round 0) will be set at 0. The current activity index is equal to a weighting factor

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[10] *See* "Auction of Local Multipoint Distribution Licenses," *Public Notice*, DA 98-230 (rel. Feb. 6, 1998).

[11] *See* "Auction of the Phase II 220 MHz Service Licenses," *Public Notice*, DA 98-1010 (rel. May 29, 1998).

times the number of new bids received on the license in the current bidding period plus one minus the weighting factor times the activity index from the previous round. The activity index is then used to calculate a percentage increment by multiplying a minimum percentage increment by one plus the activity index with that result being subject to a maximum percentage increment. The Commission will initially set the weighting factor at 0.5, the minimum percentage increment at 0.1, and the maximum percentage increment at 0.2.

Equations

$A_i = (C * B_i) + ((1-C) * A_{i-1})$
$I_i =$ smaller of $((1 + A_i) * N)$ and M

where,
A_i = activity index for the current round (round i)
C = activity weight factor
B_i = number of bids in the current round (round i)
A_{i-1} = activity index from previous round (round i-1), A_0 is 0
I_i = percentage bid increment for the current round (round i)
N = minimum percentage increment
M = maximum percentage increment

Under the exponential smoothing methodology, once a bid has been received on a license, the minimum acceptable bid for that license in the following round will be the new high bid plus the dollar amount associated with the percentage increment (variable I_i from above times the high bid). This result will be rounded to the nearest thousand if it is over 10,000 or to the nearest hundred if it is under 10,000.

Examples

License 1
C = 0.5, N = 0.1, M = 0.2

<u>Round 1 (2 new bids, high bid = $1,000,000)</u>

1. Calculation of percentage increment using exponential smoothing:
   $A_1 = (0.5 * 2) + (0.5 * 0) = 1$
   The smaller of $I_1 = (1 + 1) * 0.1 = 0.2$ or 0.2
   (the maximum percentage increment)

2. Minimum bid increment using the percentage increment (I_1 from above)
   0.2 * $1,000,000 = $200,000]

3. Minimum acceptable bid for round 2 = 1,200,000

Round 2 (3 new bids, high bid = 2,000,000)

1. Calculation of percentage increment using exponential smoothing:
   A_2 = (0.5 * 3) + (0.5 * 0) = 1.5
   The smaller of I_2 = (1 + 1.5) * 0.1 = 0.25
   or 0.2 (the maximum percentage increment)

2. Minimum bid increment using the percentage increment is (I_2 from above)
   0.2 * $2,000,000 = $400,000

3. Minimum acceptable bid for round 3 = 2,400,000

Round 3 (1 new bid, high bid = 2,400,000)

1. Calculation of percentage increment using exponential smoothing:
   A_3 = (0.5 * 1) + (0.5 * 0.5) = 0.75
   The smaller of I_3 = (1 + .75) * 0.1 = 0.175
   or 0.2 (the maximum percentage increment)

2. Minimum bid increment using the percentage increment (I_3 from above)
   0.175 * $2,400,000 = $420,000

3. Minimum acceptable bid for round 4 = 2,820,000

d. Initial Maximum Eligibility for Each Bidder

The Bureau has delegated authority and discretion to determine an appropriate upfront payment for each license being auctioned, taking into account such factors as the population in each geographic license area, and the value of similar spectrum.[12] With these guidelines in mind, we propose for the LMS auction the following upfront payments:

(1) Block A $0.002*MHz*Pops (rounded up to the next dollar and no less than $2,850 per license)

(2) Block B $0.002*MHz*Pops (rounded up to the next dollar and no less than $2,500 per license)

[12] *See Part 1 Order, Memorandum Opinion and Order, and Notice of Proposed Rule Making*, 12 FCC Rcd at 5697-98, ¶ 16 (1997).

(3) Block C $0.002*MHz*Pops (rounded up to the next dollar and no less than $2,800 per license)

We seek comment on this proposal. For the LMS auction, we further propose that the amount of the upfront payment submitted by a bidder will determine the initial maximum eligibility (as measured in bidding units) for each bidder. Upfront payments will not be attributed to specific licenses, but instead will be translated into bidding units to define a bidder's initial maximum eligibility, which cannot be increased during the auction. Thus, in calculating the upfront payment amount, an applicant must determine the maximum number of bidding units it may wish to bid on (or hold high bids on) in any single round, and submit an upfront payment covering that number of bidding units. We seek comment on this proposal.

e. Activity Rule Waivers and Reducing Eligibility

Use of an activity rule waiver preserves the bidder's current bidding eligibility despite the bidder's activity in the current round being below the required minimum level. An activity rule waiver applies to an entire round of bidding and not to a particular license. Activity waivers are principally a mechanism for auction participants to avoid the loss of auction eligibility in the event that exigent circumstances prevent them from placing a bid in a particular round.

The FCC auction system assumes that bidders with insufficient activity would prefer to use an activity rule waiver (if available) rather than lose bidding eligibility. Therefore, the system will automatically apply a waiver (known as an "automatic waiver") at the end of any bidding period where a bidder's activity level is below the minimum required unless: (1) there are no activity rule waivers available; or (2) the bidder overrides the automatic application of a waiver by reducing eligibility thereby meeting the minimum requirements.

A bidder with insufficient activity that wants to reduce its bidding eligibility rather than use an activity rule waiver must affirmatively override the automatic waiver mechanism during the bidding period by using the reduce eligibility function in the software. In this case, the bidder's eligibility is permanently reduced to bring the bidder into compliance with the activity rules as described above. Once eligibility has been reduced, a bidder will not be permitted to regain its lost bidding eligibility.

A bidder may proactively use an activity rule waiver as a means to keep the auction open without placing a bid. If a bidder submits a proactive waiver (using the proactive waiver function in the bidding software) during a bidding period in which no bids are submitted, the auction will remain open and the bidder's eligibility will be preserved. An automatic waiver invoked in a round in which there are no new valid bids will not keep the auction open.

We propose that each bidder in the LMS auction be provided with five activity rule waivers

that may be used in any round during the course of the auction as set forth above. We seek comment on this proposal.

f. Information Regarding Bid Withdrawal and Bid Removal

For the LMS auction, we propose the following bid removal and bid withdrawal procedures. Before the close of a bidding period, a bidder has the option of removing any bids placed in that round. By using the remove bid function in the software, a bidder may effectively "unsubmit" any bid placed within that round. A bidder removing a bid placed in the same round is not subject to withdrawal payments.

Once a round closes, a bidder may no longer remove a bid. However, in the next round, a bidder may withdraw standing high bids from previous rounds using the withdraw bid function. A high bidder that withdraws its standing high bid from a previous round is subject to the bid withdrawal payment provisions.[13] We seek comment on these bid removal and bid withdrawal procedures.

In the *Part 1 Third Report and Order*, the Commission recently explained that allowing bid withdrawals facilitates efficient aggregation of licenses and the pursuit of efficient backup strategies as information becomes available during the course of an auction. The Commission noted, however, that in some instances bidders may seek to withdraw bids for improper reasons, including to delay the close of the auction for strategic purposes. The Bureau, therefore, has discretion, in managing the auction, to limit the number of withdrawals to prevent strategic delay of the close of the auction or other abuses. The Commission stated that the Bureau should assertively exercise its discretion, consider limiting the number of rounds in which bidders may withdraw bids, and prevent bidders from bidding on a particular market if the Bureau finds that a bidder is abusing the Commission's bid withdrawal procedures.[14]

Applying this reasoning, we propose to limit each bidder in the LMS auction to withdrawals in no more than two rounds during the course of the auction. To permit a bidder to withdraw bids in more than two rounds would likely encourage insincere bidding or the use of withdrawals for anti-competitive strategic purposes. The two rounds in which withdrawals are utilized will be at the bidder's discretion; withdrawals otherwise must be in accordance with the Commission's rules. There is no limit on the number of standing high bids that may be withdrawn in either of the rounds in which withdrawals are utilized. Withdrawals will remain subject to the bid withdrawal payment provisions specified in the Commission's rules. We seek comment on this proposal.

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[13] *See* 47 C.F.R. §§ 1.2104(g); 1.2109.

[14] *Part 1 Third Report and Order*, 13 FCC Rcd at 460, ¶ 150.

g. Stopping Rule

For the LMS auction, the Bureau proposes to employ a simultaneous stopping approach. The Bureau has discretion "to establish stopping rules before or during multiple round auctions in order to terminate the auction within a reasonable time."[15] We therefore have the discretion to adopt for the LMS auction an alternative stopping rule to the simultaneous stopping rule if we deem it appropriate. Thus, unless circumstances dictate otherwise, bidding would remain open on all licenses until bidding stops on every license. The auction would close for all licenses when one round passes during which no bidder submits a new acceptable bid on any license, applies a proactive waiver, or withdraws a previous high bid.

We propose that the Bureau retain the discretion to keep an auction open even if no new acceptable bids or proactive waivers are submitted and no previous high bids are withdrawn. In this event, the effect will be the same as if a bidder had submitted a proactive waiver. The activity rule, therefore, will apply as usual and a bidder with insufficient activity will either lose bidding eligibility or use a remaining activity rule waiver.

Finally, we propose that the Bureau, reserve the right to declare that the auction will end after a specified number of additional rounds ("special stopping rule"). If the Bureau invokes this special stopping rule, it will accept bids in the final round(s) only for licenses on which the high bid increased in at least one of the preceding specified number of rounds. The Bureau proposes to exercise this option only in circumstances such as where the auction is proceeding very slowly, where there is minimal overall bidding activity, or where it appears likely that the auction will not close within a reasonable period of time. Before exercising this option, the Bureau is likely to attempt to increase the pace of the auction by, for example, moving the auction into the next stage (where bidders would be required to maintain a higher level of bidding activity), increasing the number of bidding rounds per day, and/or increasing the amount of the minimum bid increments for the limited number of licenses where there is still a high level of bidding activity. We seek comment on these proposals.

h. Information Relating to Auction Delay, Suspension or Cancellation

For the LMS auction, we propose that, by public notice or by announcement during the auction, the Bureau may delay, suspend or cancel the auction in the event of natural disaster, technical obstacle, evidence of an auction security breach, unlawful bidding activity, administrative or weather necessity, or for any other reason that affects the fair and competitive conduct of competitive bidding.[16] In such cases, the Bureau, in its sole discretion, may elect to: resume the auction starting from the beginning of the current round; resume the

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[15] 47 C.F.R. § 1.2104(e).

[16] *See* 47 C.F.R. § 1.2104(i).

auction starting from some previous round; or cancel the auction in its entirety. Network interruption may cause the Bureau to delay or suspend the auction. We emphasize that exercise of this authority is solely within the discretion of the Bureau, and its use is not intended to be a substitute for situations in which bidders may wish to apply their activity rule waivers. We seek comment on this proposal.

III. Conclusion

Comments are due on or before September 2, 1998, and reply comments are due on or before September 9, 1998. To file formally, parties must submit an original and four copies to the Office of the Secretary, Federal Communications Commission, Room 222, 1919 M Street N.W., Washington, D.C. 20554. In addition, parties must submit one copy to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, Room 5202, 2025 M Street N.W., Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Public Reference Room, Room 239, 1919 M Street N.W., Washington, D.C. 20554.

For further information concerning this proceeding, contact Kenneth Burnley or Bob Reagle, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, at (202) 418-0660.

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