

Federal Communications Commission.  
**William F. Caton,**  
*Deputy Secretary.*  
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**FEDERAL COMMUNICATIONS COMMISSION**

[Report No. AUC-03-51-A (Auction No. 51); DA 03-1065]

**Auction of Regional Narrowband PCS Licenses Scheduled for September 24, 2003; Comment Sought on Package Bidding Procedures, Reserve Prices or Minimum Opening Bids, and Other Auction Procedures**

**AGENCY:** Federal Communications Commission.

**ACTION:** Notice.

**SUMMARY:** This document announces the auction of six regional Personal Communications Service (PCS) licenses in the 900 MHz band ("narrowband PCS" scheduled to commence on September 24, 2003 (Auction No. 51). This document also seeks comment on package bidding procedures, reserve prices or minimum opening bids and other auction procedures.

**DATES:** Comments are due on or before April 17, 2003 and reply comments are due on or before April 24, 2003.

**ADDRESSES:** Comments and reply comments must be sent by electronic

mail to the following address:  
*auction51@fcc.gov.*

**FOR FURTHER INFORMATION CONTACT:**

Auctions and Industry Analysis Division: *For legal questions:* Christopher Shields at (202) 418-0660. *For general auction questions:* Lisa Stover at (717) 338-2888. *For questions about package bidding:* Martha Stancill at (202) 418-0660 or Craig Bomberger at (202) 418-0660. Commercial Wireless Division: *For service rule questions:* Amal Abdallah at (202) 418-7307, Evan Baranoff at (202) 418-7142, JoAnn Epps at (202) 418-0620 or Dwain Livingston at (202) 418-0620.

**SUPPLEMENTARY INFORMATION:** This is a summary of the *Auction No. 51 Comment Public Notice* released on April 3, 2003. The complete text of the *Auction No. 51 Comment Public Notice*, including the attachments, is available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY-B402, Washington, DC 20554. The *Auction No. 51 Comment Public Notice* may also be purchased from the Commission's duplicating contractor, Qualex International, Portals II, 445 12th Street, SW., Room CY-B402, Washington, DC, 20554, telephone (202) 863-2893, facsimile (202) 863-2898, or via e-mail *qualexint@aol.com.*

**I. General Information**

1. By the *Auction No. 51 Comment Public Notice*, the Wireless

Telecommunications Bureau ("Bureau") announces the auction of six regional Personal Communications Service (PCS) licenses in the 900 MHz band ("narrowband PCS") scheduled to commence on September 24, 2003 ("Auction No. 51"). These licenses were previously included as part of the inventory for Auction No. 50, *Auction No. 50 Comment Public Notice*, 67 FR 72417 (December 5, 2002). The one comment that the Bureau received in response to the *Auction No. 50 Comment Public Notice* stated that the regional licenses are uniquely complimentary and proposed a combinatorial (package bidding) auction, *Auction No. 50 Procedures Public Notice*, 68 FR 15174 (March 28, 2003). The commenter noted that these regional licenses effectively constitute a nationwide license and suggested that they would be more highly valued as a combined package by prospective auction participants intending to deploy nationwide service. After consideration of the issues raised by the comments, the Bureau determined that it may be appropriate to use package bidding for the regional licenses. Accordingly, the Bureau removed the six regional licenses from the Auction No. 50 inventory and announced that they would be included in Auction No. 51.

2. The following table describes the licenses that will be included in Auction No. 51:

Region	Channel no.	Channel description	Frequency bands (MHz)	Bandwidth (kHz)
Northeast .....	17	12.5 kHz/50 kHz paired .....	901.8250-901.8375, 930.70-930.75	62.5
South .....	16	12.5 kHz/50 kHz paired .....	901.8125-901.8250, 930.65-930.70	62.5
South .....	17	12.5 kHz/50 kHz paired .....	901.8250-901.8375, 930.70-930.75	62.5
Midwest .....	17	12.5 kHz/50 kHz paired .....	901.8250-901.8375, 930.70-930.75	62.5
Central .....	17	12.5 kHz/50 kHz paired .....	901.8250-901.8375, 930.70-930.75	62.5
West .....	17	12.5 kHz/50 kHz paired .....	901.8250-901.8375, 930.70-930.75	62.5

3. 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 \* \* \*." Consistent with the provisions of the Balanced Budget Act and to ensure that potential bidders have adequate time to familiarize

themselves with the specific rules that will govern the day-to-day conduct of an auction, the Commission directed the Bureau, under its existing delegated authority, to seek comment on a variety of auction-specific procedures prior to the start of each auction. The Bureau therefore seeks comment on the proposed Auction No. 51 procedures as set forth in sections following the "II. Introduction to Package Bidding."

**II. Introduction to Package Bidding**

4. "Package bidding" refers to an auction design in which bidders may place bids on groups, or *packages*, of licenses. A bid on a package is an all-or-nothing bid for all of the licenses in that package. This is a departure from the Bureau's usual simultaneous multiple-round (SMR) design, in which bidders only have the ability to submit individual bids for each license. Like the Bureau's existing SMR design, its

current implementation of package bidding uses a simultaneous multiple-round design. In addition to submitting bids on packages, bidders may also submit bids on individual licenses.

#### A. License Complementarities

5. Under certain circumstances, package bidding may be desirable for bidders that wish to aggregate licenses. Bidders have aggregated licenses under our SMR auction design. However, package bidding may be appropriate when bidders have strong and divergent complementarities among licenses, and when package bidding rules do not introduce other undue difficulties. Complementarities exist when the value of the whole is greater than the sum of the parts. In the context of spectrum auctions, complementarities could result in a bidder being willing to pay more for two licenses together than the sum of the amounts it would be willing to pay for either license individually. That is, a bidder willing to pay \$1 million for a license covering Washington, DC, or \$1 million for a license covering Baltimore, Maryland, would be willing to pay more than \$2 million for both licenses together.

6. Divergent complementarities exist when the patterns of complementarities are different for different bidders. For example, if one bidder has complementarities for a geographic aggregation and another bidder has complementarities for a bandwidth aggregation, then either of these bidders achieving its desired aggregation would prevent the other bidder from doing so. That is, if there are two licenses available in each of two markets, a bidder successfully aggregating both licenses in one market (bandwidth aggregation) precludes another bidder from aggregating one license in each market (geographic aggregation).

#### B. Exposure Problem

7. The *exposure problem* is a financial risk that occurs when a bidder, in hopes of also winning complementary items, bids more for a single object than the object alone is worth to that bidder. Package bidding allows bidders to mitigate the exposure problem by placing all-or-nothing bids on packages of licenses.

8. The following builds upon the previous example of a bidder willing to pay \$1 million for a license covering Washington, DC, or \$1 million for a license covering Baltimore, Maryland, but willing to pay more than \$2 million for both licenses together. For purposes of this explanation, assume that the bidder is willing to pay \$3 million for both licenses together.

9. In an SMR auction in which bids are submitted on individual licenses, the bidder would clearly be willing to bid \$1 million for each of the Washington and Baltimore licenses, for a total of \$2 million. If the auction price of one of those licenses exceeds \$1 million, the bidder faces a dilemma. The bidder can stop bidding for a license when the license price exceeds what the bidder is willing to pay for that license alone, or the bidder can keep bidding in hopes of winning both licenses. This exposes the bidder to a financial risk. On the one hand, if the bidder wins both licenses by bidding \$1 million for Washington and \$1.5 million for Baltimore, it will pay a total of \$2.5 million for both licenses, which is less than the \$3 million it is willing to pay for both licenses together. Thus, the bidder would be satisfied with its decision to bid \$1.5 million for the Baltimore license even though that license alone is only worth \$1 million to the bidder. On the other hand, if the bidder bids \$1.5 million for the Baltimore license (again, in hopes of winning both licenses) but wins only that license and not the Washington license as well, the bidder would have to pay more for the Baltimore license than the license is worth to the bidder.

10. In a package bidding auction, the bidder in the example could submit package bids to avoid such a risk. The bidder could create a package of the Washington and Baltimore licenses and submit a bid for the package. The bidder would either win the package—*i.e.*, both licenses—at the amount it bid for the package, or it would not win the package. By placing a bid on a package, the bidder would not have to worry about the possibility of only winning part of the package. That is, the bidder could bid up to \$3 million for the package and thereby express what it is willing to pay not only for the licenses but also for the complementarity of the licenses.

#### C. Threshold Problem

11. Allowing package bidding potentially introduces a *threshold problem*—the difficulty that multiple bidders for the single licenses (or smaller packages) that constitute a larger package may have in outbidding a single bidder on the larger package, even though the multiple bidders may value the sum of the parts more than the single bidder values the whole. This may occur because bidders for parts of a larger package each have an incentive to hold back in the hope that a bidder for another part will increase its bid sufficiently for the bids on the pieces collectively to beat the bid on the larger

package. The package bidding procedures that the Bureau proposes are designed to facilitate the emergence of bids that will overcome this problem. Specifically, the Bureau proposes to allow bids on licenses and packages that individually are not high enough to enter immediately into the provisionally winning set. This allowance is meant to facilitate price discovery and diminish the threshold problem. Effectively, bidders can take “baby steps” toward getting into the provisionally winning set. Additionally, under these proposed package bidding procedures, the auction will close after two consecutive rounds with no new bids. Thus, after a round with no new bids, bidders will be notified that if no new bids are placed in the subsequent round, the auction will close.

#### D. Other Package Bidding Highlights

12. Implementing package bidding requires changes in some of the procedures used in the Bureau’s SMR auctions. Some of the main differences are introduced in this section in order to highlight the differences between the Bureau’s proposed package bidding procedures for Auction No. 51 and the Bureau’s SMR auction procedures. Later in this public notice, in the “Auction Structure” and “Bidding Procedures” sections, the Bureau seeks comment on the package bidding procedures for Auction No. 51.

##### i. Provisionally Winning Bids

13. In an SMR auction it is a simple matter to determine high bids. At the end of a bidding round, the high bids are determined based on the highest gross bid amount received for each license. A high bid from a previous round is sometimes referred to as a “standing high bid.” A “standing high bid” remains the high bid until there is a higher bid on the same license at the close of a subsequent round.

14. In a package bidding auction, provisionally winning bids are similar to standing high bids. Provisionally winning bids are the set of bids that maximizes revenue at the end of a particular round. The set of provisionally winning bids cannot include overlapping bids; each license may be assigned only once. In the event of tied bids or tied sets of bids, ties are broken randomly. The set of provisionally winning bids may, of course, include package bids as well as individual license bids.

15. Unlike in an SMR auction, a provisionally winning bid does not necessarily remain a provisional winner until there is a higher bid on the same license or package at the close of a

subsequent round. That is, a bid on a license that is a provisionally winning bid at the end of a round might not be a provisionally winning bid at the end of a subsequent round even if no other bids are received for that license. Determining the provisionally winning bids in a package bidding auction is more complex than determining the standing high bids in an SMR auction. In a package bidding auction, whether a bid is a provisional winner depends on both the amount of the bid and the amount of revenue generated in the auction when that bid is combined with other bids submitted in the auction. With package bidding it is possible that, because of an increase in the bids

submitted by one or more other bidders, a previous round's provisionally winning bid may cease to be a provisional winner in a subsequent round even though no higher bid has been placed on that license or package. In a package bidding auction, competing bids for a license or package consist of not only other bids for the same license or package, but also bids on packages that include any of the same licenses. Moreover, because of this, a bid that is not a provisionally winning bid at the end of a given round could become a provisionally winning bid at the end of a subsequent round. This is explained further in the following section.

ii. All Bids Considered

16. Under the Bureau's proposed package bidding procedures, all bids placed in an auction are considered throughout the course of the auction. This is in contrast with the SMR procedures under which, at the conclusion of a round, only new bids placed in that round and standing high bids are considered. Bidders in a package bidding auction must therefore be mindful that even if a bid did not become a provisional winner when placed, it could become a provisionally winning bid later in the auction.

17. The following table portrays the six licenses available in Auction No. 51:

Channel	Region				
	West	Central	Midwest	South	Northeast
16 .....				CN-RPC002-16 (South-16)	
17 .....	CN-RPC005-17 (West-17)	CN-RPC004-17 (Central-17)	CN-RPC003-17 (Midwest-17)	CN-RPC002-17 (South-17)	CN-RPC001-17 (Northeast-17)

18. For purposes of this example, assume that bidders place the following bids in a round: \$50,000 for each of the six licenses and \$200,000 for the package South-16/South-17/Northeast-

17 (the northeast region license and both licenses in the south region). The resulting provisionally winning bids following the round would be as follows (the individual license bids of \$50,000

for each of South-16, South-17 and Northeast-17 are not provisionally winning bids and are not shown):

Channel	Region				
	West	Central	Midwest	South	Northeast
16 .....					
17 .....	\$50,000	\$50,000	\$50,000	\$200,000	

Total revenue = \$350,000

19. Next, assume that a bidder places a bid of \$160,000 for the package South-16/South-17 (both licenses in the south

region) in the next round, and no other new bids are placed.

Channel	Region				
	West	Central	Midwest	South	Northeast
16				\$160,000	
17					

20. Then, the provisionally winning bids following that round would be as follows:

Channel	Region				
	West	Central	Midwest	South	Northeast
16				\$160,000	
17	\$50,000	\$50,000	\$50,000		

Total revenue = \$360,000

21. Note that in this example the bid of \$50,000 for the northeast region license was not a provisionally winning bid after the first round but became a provisionally winning bid after the next round. The new bid of \$160,000 for package of both licenses in the south region, when considered with the previous \$50,000 bid for the northeast region license, was able to beat the previous \$200,000 bid for the package of the northeast region license and both licenses in the south region.

22. Considering bids from all rounds allows more potential combinations of bids, and therefore, potentially greater flexibility for bidders to submit bids that may become part of the provisionally winning set. As in the example, it helps ensure that bids on single licenses or small packages can combine with other bids to become winners, even when a different combination of bids has comprised the provisionally winning set for a number of rounds. Considering bids from all prior rounds also permits the bids of bidders no longer eligible to

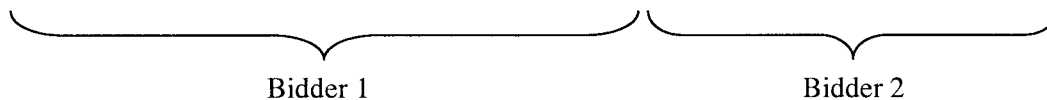
participate in the auction to become part of the provisionally winning set when that is the most economically efficient outcome. Moreover, considering all bids throughout the auction encourages sincere bidding.

iii. Mutually Exclusive Rounds

23. As explained in the previous section, all bids placed throughout the course of the auction are considered when determining the winning bids. However, the proposed procedures restrict how the bids are considered. Bids placed by a bidder in one round are considered mutually exclusive of that bidder's bids placed in all other rounds. If a bidder places a bid for one license in one round and for another license in another round, one bid or the other could be a provisionally winning bid, but not both at the same time. Likewise, if a bidder places several bids in one round and several bids in another round, any or all of the bids from one round or the other could be provisionally winning bids, but not bids from both rounds at the same time.

24. Using the example from the previous section, assume that in the first round of the example the \$50,000 bid for each of the six licenses was placed by Bidder 1 and the \$200,000 bid for the package of the northeast region license and both licenses in the south region was placed by Bidder 2. In the next round of the example, the bid of \$160,000 for the package of both licenses in the south region was placed by Bidder 1. Under these assumptions, the provisionally winning bids at the end of the second round could include Bidder 1's bids from one round or the other, but not both—i.e., any or all of Bidder 1's \$50,000 bids for each of the six licenses from the first round, or Bidder 1's bid of \$160,000 for the package of both licenses in the south region from the second round. Since the choice of Bidder 1's bids in the first round achieves greater revenue, the provisionally winning bids after the second round would remain the same as after the first round:

Channel	Region				
	West	Central	Midwest	South	Northeast
16					
17	\$50,000	\$50,000	\$50,000	\$200,000	



Total revenue = \$350,000

25. This treatment of bids as mutually exclusive across rounds is done on a per bidder basis. The provisionally winning bids could include Bidder 1's bids from one round and Bidder 2's bids from a different round.

26. This mutually exclusive treatment of bids—for each bidder, allowing its bids from only one round to become provisionally winning bids—allows bidders to mind budget constraints and to pursue backup strategies. For example, if a bidder wants the license in the west region or the license in the central region but not both, the bidder could place a bid for one of the licenses in one round and a bid for the other license in the next round. Because the bids are considered mutually exclusive, only one could become a provisionally winning bid.

iv. Renewing Bids

27. The proposed procedures include bid renewal to provide a mechanism

that bidders can use so that their bids from different rounds are not considered mutually exclusive. For example, assume a bidder places a bid for the west region license in one round. In the following round, the bidder places a bid for the central region license and renews its bid on the west region license. Then, after that round, either bid or both could become a provisionally winning bid.

28. This concludes the "II. Introduction to Package Bidding." In the following "Auction Structure" and "Bidding Procedures," sections, the Bureau seeks comment on the specific package bidding procedures for Auction No. 51.

III. Auction Structure

A. Simultaneous Multiple Round With Package Bidding

29. The Bureau proposes to award all licenses included in Auction No. 51 in a simultaneous multiple-round with

package bidding (SMR-PB) auction. This methodology offers every license for bid at the same time with successive bidding rounds in which bidders may place bids. Bidders will be able to submit bids on individual licenses, as in the Bureau's simultaneous multiple round auction design, but may also submit all-or-nothing bids on packages of licenses. The Bureau seeks comment on this proposal.

B. Upfront Payments and Initial Maximum Eligibility

30. The Bureau has delegated authority and discretion to determine an appropriate upfront payment for each license being auctioned. Upfront payments related to the specific spectrum subject to auction 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 the auction. The total upfront payment does

not affect the dollar amount a bidder may bid on licenses.

31. For Auction No. 51 the Bureau proposes to calculate upfront payments on a license-by-license basis using the following formula:

$$$.00001 * \text{kHz} * \text{License Area Population, rounded.}$$

The Bureau seeks comment on this proposal.

32. The amount of the upfront payment submitted by a bidder will determine the initial maximum eligibility (as measured in bidding units) for each bidder. Each license is assigned a specific number of bidding units equal to the upfront payment, on a bidding unit per dollar basis. This number does not change during the auction. A bidder's upfront payment is not attributed to specific licenses or packages. Rather, a bidder may place bids on licenses and packages as long as the total number of bidding units associated with those licenses and packages does not exceed the bidder's eligibility. For a package, the Bureau proposes to calculate the bidding units by adding together the bidding units of the individual licenses that make up the package. Eligibility cannot be increased during the auction. Thus, in calculating its upfront payment amount, an applicant should determine the maximum number of bidding units (either individually or in a package) it may wish to bid on in any single round and submit an upfront payment covering that number of bidding units. The Bureau seeks comment on this proposal. The Bureau lists the proposed bidding units and upfront payments for all licenses in Attachment A of the *Auction No. 51 Comment Public Notice*.

**C. Activity and Eligibility Rules**

33. In order to ensure that the auction closes within a reasonable period of time, an activity rule provides incentives for bidders to participate throughout the auction. The activity rule requires each bidder to have active bids in each round that account for a specified fraction of the bidder's current eligibility, as measured in bidding units. A bidder that does not satisfy the activity rule will either use an activity rule waiver (if any remain) or lose bidding eligibility for the next round. Losing eligibility matters to bidders because a bidder's bidding activity cannot exceed its current eligibility.

**i. Measuring Activity**

34. In SMR auctions, a bidder's activity in a round is determined by adding the bidding units associated

with licenses on which the bidder is active. A bidder is considered active on a license in the current round of an SMR auction if it is either the high bidder at the end of the previous bidding round (and did not withdraw the high bid in the current round), or if it submits a bid in the current round (and does not subsequently remove the bid). In a package bidding auction, calculating activity levels in a round is not as simple because a bidder can submit bids on different packages that contain one or more of the same licenses. To illustrate this, suppose a bidder submits bids on the following packages in round *t*:

Package/Licenses	Bidding units
Package A:	
South-16 (38,000 bu)	76,000 bu
South-17 (38,000 bu)	
Package B:	
Northeast-17 (34,000 bu)	108,000 bu
South-17 (38,000 bu)	
Central-17 (36,000 bu)	

35. For Auction No. 51, the Bureau proposes to measure a bidder's bidding activity in a round as the maximum number of bidding units the bidder can win considering new bids placed and provisionally winning bids renewed in that round. Thus, when a bidder submits bids in a round the FCC Automated Auction System will determine the set of bids, among the bidder's new bids and renewed provisionally winning bids, that contains the most bidding units and has no overlap among the licenses. For instance, in the example, the two bids contain four distinct licenses. The sum of the bidding units associated with these four licenses is 146,000. However, since both packages contain license South-17, this bidder cannot win both packages at the same time. Under the Bureau's proposal the maximum number of bidding units that the bidder can win is the 108,000 associated with Package B, so the bidder's bidding activity is 108,000 bidding units. The Bureau seeks comment on this proposal.

36. A bidder is also considered to be active if the bidder has provisionally winning bids from the previous round. A bidder's bids made in different rounds will be considered mutually exclusive, so the bidding units associated with provisionally winning bids must be viewed independently from the bidding units associated with current round bids. The Bureau proposes to define a bidder's eligibility activity in a round as the greater of (i) its bidding activity in the round and (ii) the bidding units associated with the

bidder's provisionally winning bids from the prior round. To illustrate how eligibility activity will be calculated in a round the Bureau continues with its example. Suppose this bidder has provisionally winning bids on the following licenses from round *t-1*:

License	Bidding units
South-16 .....	38,000 bu
South-17 .....	38,000 bu

37. The number of bidding units associated with this bidder's provisionally winning bids is 76,000. Recall that the bidder's bidding activity for the round is 108,000 bidding units. The eligibility activity for this bidder in round *t* is therefore 108,000, the greater of its bidding activity (108,000 bidding units) and the bidding units associated with its bids in the provisionally winning set (76,000 bidding units).

**ii. Auction Requirement**

38. For Auction No. 51, the Bureau proposes that, in each round of the auction, a bidder desiring to maintain its current eligibility would be required to have eligibility activity equal to sixty percent (three-fifths) of its current eligibility. For a bidder that failed to meet the activity requirement in a given round, the Automated Auction System would reduce the bidder's eligibility for the next round to five-thirds times its eligibility activity in the current round. Thus, a bidder's eligibility in the current round is equal to either its eligibility in the previous round (bidder met the activity requirement) or five-thirds of its eligibility activity in the previous round (bidder did not meet the activity requirement), whichever is less:

$$\text{Eligibility (t)} = \text{Min (Eligibility (t-1), } \frac{5}{3} * \text{Eligibility Activity (t-1))}$$

39. Activity rule waivers provide an exception to this rule and are discussed in the next section, "Activity Rule Waivers and Reducing Eligibility."

40. In addition, the Bureau proposes to retain the discretion to increase to eighty percent (four-fifths) the proportion of bidding units on which bidders must be active to retain their current eligibility. Any such change will be announced to bidders prior to the beginning of the round in which the change takes effect. The Bureau seeks comment on these proposals. Commenters that believe these activity rules should be modified should explain their reasoning and comment on the desirability of an alternative approach. Commenters are advised to support their claims with analyses and suggested alternative activity rules.

### iii. Activity Rule Waivers and Reducing Eligibility

41. For Auction No. 51, the Bureau proposes that each bidder be provided with five activity rule waivers that may be used at the bidder's discretion during the course of the auction as set forth. Use of an activity rule waiver preserves the bidder's current bidding eligibility despite the bidder's eligibility 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 or package. Activity rule 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.

42. The Automated Auction System assumes that bidders with insufficient eligibility 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 round in which a bidder's eligibility activity is below the activity requirement unless: (i) The bidder has no activity rule waivers remaining; or (ii) the bidder overrides the automatic application of a waiver by reducing eligibility, thereby meeting the minimum requirements. **Note:** If a bidder has no waivers remaining and does not satisfy the activity requirement, its current eligibility will be permanently reduced, possibly eliminating the bidder from further bidding in the auction.

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

44. The activity rule waivers described are automatic waivers. Under the Bureau's SMR auction design, bidders can submit automatic or proactive waivers. Unlike automatic waivers, proactive waivers keep the auction open absent other bidding activity. The Bureau proposes not to allow bidders to submit proactive waivers in the context of package

bidding for Auction No. 51. As part of the package bidding design for Auction No. 51 the Bureau is proposing a two-round simultaneous stopping rule, in which the bidding on all licenses remains open until the second consecutive round in which no new bids are placed. After the second consecutive such round, bidding closes simultaneously on all licenses. The two-round stopping rule affords bidders some additional time to consider their current status, and eliminates the need for bidders to use a proactive activity rule waiver to prevent the auction from closing in the current round. The Bureau seeks comment on this proposal.

### D. Information Relating to Auction Delay, Suspension, or Cancellation

45. For Auction No. 51, the Bureau proposes that, by public notice or by announcement during the auction, it 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 efficient conduct of competitive bidding. 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 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. The Bureau emphasizes that exercise of this authority is solely within its discretion, and its use is not intended to be a substitute for situations in which bidders may wish to apply their activity rule waivers. The Bureau seeks comment on this proposal.

## IV. Bidding Procedures

### A. Round Structure

46. The Commission will conduct this auction over the Internet. Telephonic Bidding will also be available, and the FCC Wide Area Network will be available as well.

47. The initial bidding schedule will be announced in a public notice listing the qualified bidders, which is released approximately 10 days before the start of the auction. The package bidding format will consist of sequential bidding rounds, each followed by the release of round results. Details regarding the location and format of round results will also be included in a subsequent public notice.

48. The Bureau has discretion to change 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. The Bureau may increase or decrease the amount of time for the bidding rounds and review periods, or the number of rounds per day, depending upon the bidding activity level and other factors. The Bureau seeks comment on this proposal.

### B. Reserve Price or Minimum Opening Bid

49. The Balanced Budget Act calls upon the Commission to prescribe methods for establishing a reasonable reserve price or a minimum opening bid when FCC licenses are subject to auction, unless the Commission determines that a reserve price or minimum opening bid is not in the public interest. 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.

50. 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, the auctioneer often has the discretion to lower the minimum opening bid amount later in the auction. It is also possible for the minimum opening bid and the reserve price to be the same amount.

51. In light of the Balanced Budget Act's requirements, the Bureau proposes to establish minimum opening bids for Auction No. 51. The Bureau believes a minimum opening bid, which has been used in other auctions, is an effective bidding tool.

52. Specifically, for Auction No. 51, the Commission proposes the following license-by-license formula for calculating minimum opening bids:

$$\$0.00001 * \text{kHz} * \text{License Area Population, rounded.}$$

53. For a package, the Bureau proposes to calculate the minimum opening bid by adding together the minimum opening bids of the individual licenses that make up the package. The Bureau lists the proposed minimum opening bids for all licenses in Attachment A of the *Auction No. 51 Comment Public Notice*. The Bureau seeks comment on this proposal.

### C. Packages

54. The Bureau proposes that, in addition to bidding on individual

licenses, bidders be permitted to create and bid on up to twelve different packages of their own choosing during the course of the auction. Bidders will not be required to identify or create their packages before the start of the auction, but may create their packages as the auction progresses. A bidder may modify or delete a package it has created up until the point where it has bid on the package and the round has closed. If the bidder submits a bid on a package and subsequently removes the bid during the same round, the bidder has the option of also deleting or modifying the package. However, once a bidder bids on a package and the round closes, the package may not be modified or deleted and counts as one of the bidder's twelve allowable packages. A bid on an individual license does not count as a bid on a package; packages consist of two or more licenses. The Bureau seeks comment on this proposal.

#### *D. Winning and Provisionally Winning Bids*

55. Winning bids in a package bidding auction are the set of "consistent" bids (non-overlapping, and for each winning bidder, only bids made or renewed in the same round) on individual licenses and packages that maximizes total revenue when the auction closes. Provisionally winning bids are the set of consistent bids that maximizes total revenue in a particular round (they would win if the auction were to close in that round), assigning each license to either a bidder or the FCC. When determining winning and provisionally winning bids, all bids made in every round throughout the course of the auction (except for bids that are placed and subsequently removed during the same round) will be considered. In addition, each license is treated as having a bid placed by the FCC at \$1000 less than the minimum opening bid. This procedure will ensure that a bid on a license or package at the minimum opening bid always beats the FCC bid.

56. Since there can be more than one set of consistent bids that produces the maximum revenue, the Bureau proposes to use a procedure that randomly selects among these tied sets when determining the provisionally winning bids. This tie breaking procedure involves two steps: (i) The assignment of a selection number to each bid, and (ii) the determination of, among all tied bid sets, the set that produces the maximum sum of selection numbers. The Bureau seeks comment on this proposal.

57. A bid's selection number is the sum of  $n$  pseudo-random numbers where  $n$  is the number of licenses comprising the bid's package. A bid's

selection number will be included in the publicly-available round results released after each round.

58. Once the selection numbers have been generated for each bid, the second step of the tie breaking procedure will decide the provisionally winning bids. Computer software is used to determine, among all tied bid sets, the set that produces the maximum sum of selection numbers. Thus, the set of provisionally winning bids is the set of consistent bids that maximizes revenue and maximizes the sum of selection numbers. Each bid will be assigned a new selection number in every round. Consequently, if there are ties, the set of provisionally winning bids may change even after a round in which there are no new bids. The solver will not be run after the last round of the auction, so that the winning set is the same as the set of provisional winners generated after the next-to-the-last round (*i.e.*, there won't be any surprise winners).

59. Please note that it is possible that a provisionally winning bid might not be the highest bid on the particular license or package. This possibility is primarily due to each bidder's bids being considered mutually exclusive across rounds. For example, if one bidder has placed the highest bid on each of two different licenses in two different rounds (and did not renew the earlier of the two bids), then those two bids are considered as mutually exclusive and only one of them can be a provisionally-winning bid.

#### *E. Minimum Acceptable Bids and Bid Increments*

60. The Bureau proposes that in each round, eligible bidders will be able to place bids on a given license or package in any of nine different amounts. The Automated Auction System interface will list the nine acceptable bid amounts for each license and package. In the first round of the auction, the minimum acceptable bid for a license or package will be equal to its minimum opening bid. The Bureau proposes that in all subsequent rounds, the minimum acceptable bid for a license or package will be the greatest of: (i) The minimum opening bid; (ii) the bidder's own previous high bid on a license or package plus  $x\%$ , where the Bureau will specify the value of  $x$  in each round; and (iii) the current price estimate of the license plus  $z\%$ , or for a package, the sum of the current price estimates for the licenses in the package plus  $z\%$ , where the Bureau will specify the value of  $z$  in each round.

61. Current price estimates are estimates of the prices of the individual licenses being auctioned. The estimates

take into account the minimum opening bids for the licenses as well as all the bids placed in the auction and, therefore, reflect all available information that has been revealed in the auction about the relative demands for the licenses. Current price estimates for the component licenses of a package that is provisionally winning are constrained to sum to the provisionally winning bid for the package. These estimates are generated during round results following every round of the auction as part of the mathematical optimization process used by the Bureau to determine the provisionally winning bids. The precise methodology used to calculate current price estimates is described in Attachment B of the *Auction No. 51 Comment Public Notice*. Until a bid is placed on a license or on a package containing that license, by any bidder in any round, the current price estimate is the FCC bid amount.

62. The Bureau proposes to retain an exception to part (iii) for calculating the minimum acceptable bid for a "global" package—a package consisting of all six of the licenses available in the auction. After the first round of the auction, part (iii) of the minimum acceptable bid rule for a global package will always be the revenue generated by the provisionally winning bid set in the previous round plus  $w\%$ . The Bureau makes this distinction in order to retain the ability to ensure that bids for the global package will continue to increase even if it employs a percentage  $z$  that does not guarantee that outcome.

63. The result of the minimum acceptable bid calculation will be rounded using the Bureau's standard rounding procedure. Initially, the Bureau proposes to set  $x$  at ten,  $z$  at five and  $w$  at five, but retains the discretion to adjust these variables during the course of the auction.

64. For bids higher than the minimum acceptable bid—*i.e.*, multi-increment bids—the Bureau proposes to define the amount of the additional bid increments as  $v\%$  of the minimum acceptable bid, where the minimum acceptable bid is determined as discussed. Initially, the Bureau proposed to set  $v$  at ten, but proposes to retain the discretion to adjust the amount during the course of the auction. Thus, when  $v$  equals ten, a bidder will be able to place multi-increment bids of the minimum acceptable bid plus approximately 10%, 20%, etc. with the maximum bid being approximately equal to the minimum acceptable bid plus 80%.

65. The Bureau retains the discretion to change minimum acceptable bids, and to do so on a license-by-license and package-by-package basis, if

circumstances so dictate. The Bureau will do so by announcement in the Automated Auction System. The Bureau seeks comment on these proposals.

#### F. Last and Best Bids

66. The Bureau proposes to allow bidders that wish to drop out of the auction or that believe they are about to lose their bidding eligibility to have an opportunity before they drop out to place up to two mutually exclusive sets of "last and best" bids on any licenses or packages for which they remain eligible. This is a limited exception to minimum acceptable bids and to click-box bidding. Such bids may be of any amount (in thousand dollar increments) between the bidder's previous high bid on the license or package and the amount of the highest acceptable bid for the license or package in the current round (the eighth increment above the minimum acceptable bid). If a bidder chooses this option, it will not be permitted to make any further bids during the auction. The Bureau seeks comment on this proposal.

#### G. Renewed Bids

67. Without regard to the minimum acceptable bid requirement, the Bureau proposes to allow a bidder to "renew" in the current round the highest previous bid it made on any license or package; that is, it may resubmit the bid without increasing the amount bid. No eligibility activity or bidding activity is conferred for renewing a non-provisionally winning bid. Renewed provisionally winning bids confer bidding activity (non-renewed provisionally winning bids count toward eligibility activity). Renewed bids will be treated as being made in the current round.

68. Renewals provide bidders a means to ensure that bids from previous rounds are considered in addition to the bids placed in the current round. Otherwise, bids made in different rounds are treated as mutually exclusive, so that the bidder may win some or all of the bids from the current round, or a previous round, but not both. The Bureau seeks comment on this proposal.

#### H. Information Regarding Bid Removal and Bid Withdrawal

69. For Auction No. 51, the Bureau proposes the following bid removal procedures. Before the close of a bidding period, a bidder has the option of removing any bid placed in that round. By removing selected bids in the bidding system, 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 a withdrawal payment. Once a round closes, a bidder may no longer remove a bid.

70. The Bureau proposes for Auction No. 51 that bidders not be permitted, in any round, to withdraw bids made in previous rounds. With the implementation of package bidding, bidders should not face exposure risks as they might in a simultaneous multiple round auction design. Bid withdrawal was designed to allow bidders to back out of failed aggregations—to avoid winning some licenses that are worth little to them without the others they need to implement their business plan. Therefore, to the extent that bids are allowed on all packages of licenses with significant complementarities, the use of withdrawals to mitigate such risk is no longer necessary. The Bureau seeks comment on this proposal.

#### I. Stopping Rule

71. The Bureau has discretion "to establish stopping rules before or during multiple round auctions in order to terminate the auction within a reasonable time." For Auction No. 51 the Bureau proposes to employ a two-round simultaneous stopping rule. A two-round simultaneous stopping rule means that all licenses remain open until two consecutive rounds have occurred in which no new bids are received. After the second consecutive such round, bidding closes simultaneously on all licenses. Thus, unless circumstances dictate otherwise, bidding would remain open on all licenses until bidding stops on every license. Renewed bids are not considered new bids for purposes of the stopping rule; in other words, a round in which the only bids that are placed are renewed bids is considered a round with no new bids for purposes of the stopping rule. Last and best bids are considered new bids for purposes of the stopping rule. The Bureau seeks comment on this proposal.

72. The Bureau proposes to reserve the right to declare that the auction will end after a specified number of additional rounds ("special stopping rule"). The Bureau proposes to exercise this option only in certain circumstances, such as, for example, where the auction is proceeding very slowly, there is minimal overall bidding activity, or 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, increasing the number of bidding rounds per day,

and/or increasing the minimum acceptable bids. The Bureau seeks comment on these proposals.

#### V. Conclusion

73. Comments are due on or before April 17, 2003, and reply comments are due on or before April 24, 2003. Because of the disruption of regular mail and other deliveries in Washington, DC, the Bureau requires that all comments and reply comments be filed electronically. Comments and reply comments must be sent by electronic mail to the following address: [auction51@fcc.gov](mailto:auction51@fcc.gov). The electronic mail containing the comments or reply comments must include a subject or caption referring to Auction No. 51 Comments. The Bureau request that parties format any attachments to electronic mail as Adobe® Acrobat® (pdf) or Microsoft® Word documents. Copies of comments and reply comments will be available for public inspection during regular business hours in the FCC Public Reference Room, Room CY-A257, 445 12th Street, SW., Washington, DC 20554. Copies of comments and reply comments will also be available from the Commission's copy contractor: Qualex International, 445 12th Street, SW., Room CY-B402, Washington, DC 20554; phone (202) 863-2893; fax (202) 863-2898; e-mail [qualexint@aol.com](mailto:qualexint@aol.com).

74. In addition, the Bureau requests that commenters fax a courtesy copy of their comments and reply comments to the attention of Kathryn Garland at (717) 338-2850.

75. This proceeding has been designated as a "permit-but-disclose" proceeding in accordance with the Commission's ex parte rules. Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. Other rules pertaining to oral and written *ex parte* presentations in permit-but-disclose proceedings are set forth in § 1.1206(b) of the Commission's rules.

Federal Communications Commission.

**Margaret Wiener,**

*Chief, Auctions and Industry Analysis Division, WTB.*

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