

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.

92. The Bureau received no comments on this issue. The Bureau adopts the proposals regarding packages.

iii. Reserve Price or Minimum Opening Bid

93. For Auction No. 51, the Bureau proposed the following license-by-license formula for calculating minimum opening bids: $\$.00001 * \text{kHz} * \text{License Area Population}$, rounded.

94. For a package, the Bureau proposed to calculate the minimum opening bid by adding together the minimum opening bids of the individual licenses that make up the package.

95. The Bureau received no comments on this issue. Consequently, the Bureau adopts its proposed minimum opening bids for Auction No. 51. The minimum opening bids the Bureau adopts for Auction No. 51 are reducible at the discretion of the Bureau. The Bureau emphasizes, however, that such discretion will be exercised, if at all, sparingly and early in the auction, *i.e.*, before bidders lose all waivers and begin to lose substantial eligibility. During the course of the auction, the Bureau will not entertain any requests to reduce the minimum opening bid on specific licenses.

96. The specific minimum opening bids for each license available in Auction No. 51 are set forth in Attachment A of the *Auction No. 51 Procedures Public Notice*.

iv. Minimum Acceptable Bids and Bid Increments

97. In the *Auction No. 51 Comment Public Notice*, the Bureau proposed 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 proposed 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.

98. Current price estimates are estimates of the individual prices of the 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. For a provisionally winning package, the current price estimates for the licenses that make up the package are set such that the sum of those current price estimates equals the provisionally winning bid on 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 F of the *Auction No. 51 Procedures 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.

99. The Bureau proposed 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 $w\%$, where the Bureau will specify the value of w in each round.

100. The result of the minimum acceptable bid calculation will be rounded using our standard rounding procedure. The Bureau proposed to initially set x at ten, z at five and w at five, and to retain the discretion to adjust these variables during the course of the auction.

101. For bids higher than the minimum acceptable bid—*i.e.*, multi-increment bids—the Bureau proposed to define the amount of the additional bid increments as $v\%$ of the minimum acceptable bid, where the minimum acceptable bid is determined. The Bureau proposed to initially set v at ten and 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%.

102. The Bureau received no comments on these issues. The Bureau adopts the proposals. 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. If the Bureau exercises this discretion, it will announce any change in the Automated Auction System.

v. Winning and Provisionally Winning Bids

103. In the *Auction No. 51 Comment Public Notice*, the Bureau proposed the procedures set forth.

104. *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.

105. Since there can be more than one set of consistent bids that produces the maximum revenue, we proposed 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*.

106. 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.

107. Selection numbers will be generated for each license in each bid in each round. In the event that more than one set of consistent bids produces the maximum revenue, the second step of the tie breaking procedure will determine the provisionally winning bid set. Computer software will be used to