

***Ex Parte* Comments on Auction No. 31:  
Now There is Time for Serious Consideration of the Novel  
Auction Rules**

by

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We are pleased that the FCC continues to plan to hold a combinatorial auction, and that it has now delayed the start of that auction<sup>1</sup> long enough to follow an appropriate process for the determination of the auction rules. We were distressed that the rules for the auction promulgated by the FCC on July 3, 2000 were largely based upon a completely new proposal posted on the afternoon of the last day of the period allowed for reply comments. Hence, this proposal was not subjected to the kind of review that the importance of the topic warrants or that previous auction rules have enjoyed. Indeed, many of the rules were not clearly spelled out even at the time they were announced. Now that the auction has been postponed for six months, there is time for review and thoughtful consideration of the rules. We recommend that the FCC reopen the proposed rules for comments.

It is critical that the FCC get right the details of the rules of its first combinatorial auction. There are valuable rights and large amounts of money at stake, and the situation is complex. If the rules are not appropriate, the allocation of the spectrum, appropriate government revenue, and the reputation of combinatorial auctions may all suffer.

The rules announced on July 3, 2000 are so novel that there is a risk of serious error from aspects that have not been considered or fully thought out. In addition, we have some specific concerns and questions about these rules. In our opinion, (a) the mutual exclusivity of bids placed by the same bidder in different rounds, and (b) the rule for determining minimum bid increment, are the problematic cornerstones of the proposed auction model. We are concerned that the negative aspects of the auction design built around these cornerstones may outweigh potential benefits and believe that any such benefits can be achieved by alternative rules that do not carry a heavy load of potential inefficiencies. In particular, we are concerned that the auction according to July 3 rules:

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<sup>1</sup> Public Notice 00-282.

- Fares unfavorably when compared to the non-combinatorial auction format used by the Commission. In other words, if no bidder in the auction submitted a package bid, would the Commission regret using the July 3 auction rather than the old auction?
- Does not easily generalize to auctions with (slightly) larger number of licenses due to complexity of the winner determination problem.
- Is highly nontransparent (e.g., the provisional winner determination algorithm).
- Allows for acceptance of noncompetitive bids and allows bidders to abandon bids too easily. We fear that this will facilitate insincere bidding and undesirable signaling between bidders. This could undermine the fairness and effectiveness of the auction. Furthermore, the pace of the auction could be far from appropriate. While some improvements of the proposed minimum bid increment are possible<sup>2</sup>, the bidder-specific minimum bid increment (rather than the increment based on the current high bid) seems to be unavoidable as long as one insists on the mutual exclusivity of the bids placed by the same bidder in different rounds.
- Does not properly contemplate the high probability of ties<sup>3</sup> and provides insufficient mechanisms for resolving them. The randomization process announced by the FCC for the treatment of tie bids will not work fairly in the way the FCC envisions<sup>4</sup>. Furthermore, the “best and final offer” approach to avoiding final ties is inferior to mechanisms proposed in the comments on the NOPR and has not been subject to review and comments.
- Requires the Commission to have state of the art expertise in underlying combinatorics, combinatorial optimization, and computational complexity that it appears to lack. The claims made in the second paragraph on page 25 of DA 00-1486, suggest that the Commission lacks sufficient understanding of the combinatorial and computational issues that come into play with combinatorial bidding.<sup>5</sup> Similarly, the proposed randomization process for the treatment of tie bids indicates that the Commission does not have full understanding of the underlying algorithmic issues.<sup>6</sup>

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<sup>2</sup> For example, using measure more appropriately related to economic forces as expressed by the bids (e.g., the measure we proposed in our comments) than the minimum \$/bidding unit of provisionally winning bids that is based on an artificial quantity (bidding unit). Furthermore, competitiveness and overcoming the threshold problem is more likely to be achieved by using some sort of an average (e.g. mean), rather than the minimum. Also the choice of the number of recent rounds under consideration seems to be arbitrary.

<sup>3</sup> The probability of ties is considerably increased because of the package bidding in conjunction with click-box bidding.

<sup>4</sup> While randomization could resolve ties in the case of identical bids on identical licenses/packages, this approach is bound for failure in more complicated situations. Randomizing the input of an algorithm for determining a (provisionally) winning collection of licenses/packages does not necessarily guarantee a random choice of an optimal solution from the set of all optimal solutions.

<sup>5</sup> What reasons lead the Commission to determine that considering all bids is beyond their computational limit while the announced method where only last two active rounds of each bidder plus provisional winners are considered is not? Also, the claim about permitting unrestricted “or” bids being computationally complicated is false.

<sup>6</sup> See footnote 4.