

September 18, 2007

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th St., SW
Washington, DC 20554

Re: Notification of *Ex Parte* Communications
WT Docket Nos. 96-86, 06-150; PS Docket No. 06-229; AU Docket No. 07-157

Dear Ms. Dortch:

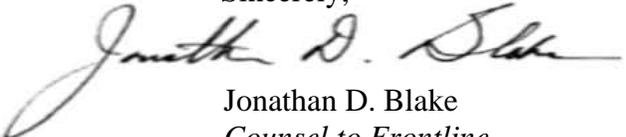
This letter is to report permitted, oral *ex parte* communications of Frontline Wireless, LLC (“Frontline”) and its counsel concerning the above-referenced proceedings.

On September 17, 2007, Janice Obuchowski, Peter Cramton, Greg Rosston, Jon Blake and Gerry Waldron met with Aaron Goldberger, legal advisor to Chairman Kevin J. Martin. In a separate meeting on the same day, Ms. Obuchowski, Dr. Cramton, Dr. Rosston and Matt DelNero met with the following members of the Wireless Telecommunications Bureau: Paul Murray, Walter Strack, William Huber, Martha Stancill, Gary Michaels, and Craig Bomberger. The attached presentation was handed out in both meetings.

In these meetings the parties discussed the reserve prices placed on both the C and D Block and the fact that these prices must be lowered in order to accomplish the Commission’s objectives. Further, the parties discuss other auction issues including the importance of package bidding and allowing substitution from the D to C Block. Finally, the parties spoke about the need to decrease the bidding increments, particularly for the larger blocks. As the attached paper by Mr. Cramton, Mr. Rosston, Andrzej Skrzypacz, and Robert Wilson explains, pacing is essential in an auction and the auction will progress too quickly, particularly in the C and D Blocks, if the increment rule does not account for differences in the block sizes. Consequently, the Commission should include absolute bounds on the C and D Block increments in order to moderate the pace of the prices for these larger blocks.

Please direct any questions concerning this matter to the undersigned.

Sincerely,



Jonathan D. Blake
Counsel to Frontline
Wireless, LLC

COVINGTON & BURLING LLP

Marlene H. Dortch, Secretary

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cc: Aaron Goldberger
Paul Murray
Walter Strack
William Huber
Martha Stancill
Gary Michaels
Craig Bomberger

700 MHz Auction Changes for success

Peter Cramton and Greg Rosston
On behalf of Frontline Wireless

FCC's Reserve Price Theory

- Set reserve = Expected value
- Add constraints
- Then if Revenue < Reserve, remove constraints and re-auction
- Set up to maximize chance of re-auction

Problems with FCC theory

- Even without constraints, reserve should not be set at expected value
- Credit markets affect asset valuation
- Promise of re-auction affects incentives

Expected Value = Bad Reserve Price

- With normal distribution of values, close to 50% chance of not meeting reserve price
- High reserves affect participation
- Opportunity cost is better for FCC since it should not be maximizing revenue

Credit markets affect valuation

- License value depends on expected return
 - Upfront cost for license
 - Upfront capital buildout cost
 - Future stream of revenues
- Change in discount rate from 12% → 15%
 - Nearly 50% decline in expected return
- Increased chance of auction failure

Re-auction affects incentives

- If VZ and AT&T prefer no restrictions then each is a reluctant bidder, and wants to wait for the reauction
- Auction rules with block specific reserves allow more flexibility to hold back
- Threshold problem for those that want to top block reserve

Re-auction → lower revenues

- Desire to reduce auction price
- No new players
- Uncertain changes in rules
- Second high bidders' incentive to leave

Example from Netherlands 3G

- Ratcheting reserve
 - High if bid on license in round 1
 - Medium if no bid in round 1, but bid in round 2
 - 0 if no in in round 1 and 2
- Result
 - All bidders but one did not bid on any license in first two rounds
 - Reserve price set to zero on 4 of 5 licenses
 - Embarrassingly low auction revenues

More rational reserves

	<u>AWS Reserve</u>	<u>15% of estimated revenues</u>	<u>Set Top Box</u>
Block A	\$370M	\$378M	\$270M
Block B	\$282M	\$287M	\$205M
Block C	\$950M	\$969M	\$692M
Block D	\$273M	\$278M	\$198M
Block E	\$185M	\$189M	\$135M
Total	\$2.06 billion	\$2.10 billion	\$1.5 billion

Package bidding is essential

- Incumbents can easily block nationwide new entry without package bid
 - New entrants won't show without package bid
- Issues in hybrid design are readily addressed with single nationwide bid

Substitution is important

- Both C and D provide a chance for a nationwide new entrant
- Current activity rules prevent substitution from D to C
- Activity rule is to promote price discovery
- Counting the Public Safety MHz will
 - Allow substitution
 - Improve price discovery
 - Assure a timely completion

Proposed bid increments are too high on large licenses

- Under the current rules
 - C Block minimum bid could increase by \$3B on day 4
 - C Block bid increments could be over \$1B on day 4
- Smaller bid increments would only slightly slow the auction and would likely increase revenue
 - Set bounds to 5% and 10% early in the auction
 - Set an upper bound on bid increment of
 - \$150 million on nationwide C
 - \$50 million on D

Impact of bid increments on auction completion assuming \$15B auction

Percentage bound		Absolute bound (million \$)		Auction completion Scenario C and D			Auction completion Scenario C then D		
Lower	Upper	C	D	Rounds	Days	Date	Rounds	Days	Date
10%	20%	none	none	12	4	Tue, 22-Jan	20	6	Thu, 24-Jan
5%	15%	none	none	15	5	Wed, 23-Jan	25	8	Mon, 28-Jan
5%	10%	none	none	21	7	Fri, 25-Jan	35	10	Wed, 30-Jan
10%	20%	300	100	22	7	Fri, 25-Jan	26	8	Mon, 28-Jan
5%	15%	300	100	23	7	Fri, 25-Jan	30	9	Tue, 29-Jan
5%	10%	300	100	26	8	Mon, 28-Jan	37	11	Thu, 31-Jan
10%	20%	225	75	28	8	Mon, 28-Jan	32	9	Tue, 29-Jan
5%	15%	225	75	29	9	Tue, 29-Jan	35	10	Wed, 30-Jan
5%	10%	225	75	31	9	Tue, 29-Jan	40	11	Thu, 31-Jan
10%	20%	150	50	41	12	Fri, 1-Feb	44	12	Fri, 1-Feb
5%	15%	150	50	41	12	Fri, 1-Feb	47	13	Mon, 4-Feb
5%	10%	150	50	42	12	Fri, 1-Feb	48	13	Mon, 4-Feb

Pacing of the 700 MHz Spectrum Auction

Peter Cramton, Gregory Rosston, Andrzej Skrzypacz, and Robert Wilson¹

17 September 2007

Proper pacing in a dynamic auction is important to achieve the benefits of the dynamic process. Proper pacing is especially difficult when auctioning many blocks with different geographic schemes. The 700 MHz auction is an excellent illustration of the challenges. It has five blocks and four different geographic schemes: nationwide, REAG, EA, and CMA. To achieve proper pacing, the FCC will need to enhance its bid increment rule to accommodate the difference of multiple schemes. Fortunately, this is readily done.

The main issue is that the blocks sold as nationwide and REAG—the D and C Blocks—will progress at too fast a rate if the increment rule does not account for the differences across the blocks. Experience has shown that it is the small licenses that determine the length of the auction. The reason is that as the eligibility ratio falls, the activity eventually shifts to the smaller licenses and prices tend to ascend much more slowly than one increment per round, since bidders often arbitrage across many small, substitutable licenses. Thus, fairly large percentage increments are needed toward the end of the auction to get a timely closure of the auction. In contrast, the large licenses (nationwide and REAG) are bid up quickly early in the auction.

The AWS auction provides a clear example. In the AWS auction, the REAG blocks (D, E, and F) closed two quickly. The final REAG bid was placed in Round 21 (Day 6) of an auction that lasted 161 rounds (28 bidding days), yet the REAG blocks accounted for 55% of the net auction revenue. This problem of too rapid closing is even more severe in the 700 MHz auction, where the D Block is nationwide and the C Block allows a nationwide package bid.

To examine the implications of various increment parameters we construct a simple model of bidding in the 700 MHz auction for the C and the D Blocks to estimate the round and day of the final bid on these licenses as a function of the bid increment parameters. For simplicity we focus on nationwide bidders for both the C and the D Blocks.

We assume the FCC uses its proposed bid increment rule, possibly enhanced with an absolute upper bound for the C and D blocks. Bidders only place minimum bids.

We consider two scenarios: one in which both the C and D Blocks ascend simultaneously until the price of each surpasses all but the highest valuation, and one in which the bidding starts on the C Block and then later shifts to the D Block. The latter scenario yields a conservative estimate on how long it takes for both the C and D blocks to close.

Scenario C and D. There are four bidders bidding for the C Block (Nationwide Package) and four bidders bidding for the D Block. The value of the second-highest, third-highest, and fourth-highest C Block and D Block bidder are as follows:

¹ This note was funded by Frontline Wireless.

Bidder	As percent of block reserve price		Valuation of bidder (million \$)	
	C	D	C	D
Second-highest	150%	150%	6,957	1,995
Third-highest	140%	140%	6,493	1,862
Fourth-highest	120%	120%	5,565	1,596

These valuations imply auction revenues at the upper end of the government estimates—about \$15 billion.

Scenario C then D. There are four bidders bidding for the C or D Block. Because of the activity rule, these bidders first bid on the C Block and then if unsuccessful shift to the D Block. The bidder valuations are otherwise the same as above, resulting in total auction revenues of about \$15 billion.

In determining how many days the auction lasts, we assume that the FCC adopts a schedule of rounds identical to that of the AWS auction. The FCC begins with two rounds per day for the first two days, then three rounds per day for two days, four rounds per day for twelve days, six rounds for four days, eight rounds for six days, and finally ten rounds per day until the auction ends.

The auction starts on 16 January 2008, as planned, and all legal holidays are observed.

Sample auction progression with benchmark parameters in Scenario C and D

Increment Rule	Parameters (\$M)	C	D	Bid limits	C	D	C	D
upper 20%	Opening bids	1,038	472	Second bidder	150%	150%	6,957	1,995
lower 10%	Reserve price	4,638	1,330	Third bidder	140%	140%	6,493	1,862
current 50%	Absolute upper bound	300	100	Fourth bidder	120%	120%	5,565	1,596
	Absolute upper bound?	0						

12	4	Tue, 22-Jan	<--final	Activity		Activity Index		Increment		Bid (million \$)	
Round	Day	Date	Rnd/Day	C	D	C	D	C	D	C	D
1	1	Wed, 16-Jan	2	4	4	0	0	0	0	1,038	472
2	1	Wed, 16-Jan	2	3	3	2	2	20%	20%	1,246	566
3	2	Thu, 17-Jan	3	3	3	3	3	20%	20%	1,495	680
4	2	Thu, 17-Jan	3	3	3	3	3	20%	20%	1,795	816
5	2	Thu, 17-Jan	3	3	3	3	3	20%	20%	2,153	979
6	3	Fri, 18-Jan	3	3	3	3	3	20%	20%	2,584	1,175
7	3	Fri, 18-Jan	3	3	3	3	3	20%	20%	3,101	1,410
8	3	Fri, 18-Jan	3	3	2	3	3	20%	20%	3,721	1,691
9	4	Tue, 22-Jan	4	3	0	3	2	20%	20%	4,465	2,030
10	4	Tue, 22-Jan	4	3	0	3	1	20%	0%	5,358	2,030
11	4	Tue, 22-Jan	4	2	0	3	1	20%	0%	6,430	2,030
12	4	Tue, 22-Jan	4	0	0	2	0	20%	0%	7,716	2,030

The table above shows the auction progression with the benchmark parameters (an increment floor of 10% and an increment ceiling of 20% with no absolute ceiling) for the case where both C and D ascend simultaneously. The auction of the C and D Blocks lasts just four days. In the fourth day, the C Block bid amount increased by more than \$3 billion. Such a rapid ascent compromises auction efficiency, revenues, and limits price discovery. The difficulties are especially great for a consortium bidder, who would require coordination of multiple investors. Progressions of \$3 billion a day or more are beyond what is reasonable. A useful approximation of the expected revenue loss as a result of large bid increments is 1/2 of the final bid increment. This is on the order of \$300 million for the C Block alone.

Summary of the impact of bid increments on auction completion

Percentage bound		Absolute bound (million \$)		Auction completion Scenario C and D			Auction completion Scenario C then D		
Lower	Upper	C	D	Rounds	Days	Date	Rounds	Days	Date
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5%	10%	150	50	42	12	Fri, 1-Feb	48	13	Mon, 4-Feb

The table above shows a summary of how the auction pacing changes with changes in the percentage increment parameters and with the introduction of an absolute increment ceiling.

The first three rows simply change the percentage bounds. In the benchmark case (10-20%), even when we assume that the bidding does not start on the D block until bidders are displaced from the C block, the auction still is concluded in six days (20 rounds). Reducing the bounds to 5-15% adds just one day in the C and D scenario and two days in the C then D scenario. Reducing the bounds to 5-10% results in a 7 day auction in C and D case and a 10 day auction in the C then D case.

The next three rows show how introducing an absolute bound on the increment of \$300 million for C and \$100 million for D is effective at moderating the pace of the auction. The absolute bound has the further advantage that it provides this moderation of pace even if it is necessary to use large percentage increments (10-20%) on the small licenses in order to achieve a timely completion.

Even when the absolute increments are \$150 million on C and \$50 million on D, the auction of C and D concludes in 12 or 13 days, regardless of the percentage increments or whether both blocks ascend together or in sequence.

Conclusion

We strongly recommend that the FCC include absolute bounds on the C and D Block bid increments—\$150 million and \$50 million seem about right—to moderate the pace of prices for these large blocks. Such an enhancement will improve price discovery, bidder decision-making, auction efficiency, and revenues. It will not lengthen the overall auction in any significant way.