Auction No. 66 – Advanced Wireless Services (AWS-1)
Attachment C

Smoothing Formula Equations

$A_i = (C * B_i) + ((1-C) * A_{i-1})$

I_{i+1} = smaller of $((1 + A_i) * N)$ and M

$X_{i+1} = I_{i+1} * Y_i$

where,

A_i = activity index for the current round (round i)

C = activity weight factor

B_i = number of bidders submitting bids on the licenses in the current round (round i)

A_{i-1} = activity index from previous round (round i-1), A_0 is 0

I_{i+1} = percentage increment for the next round (round i+1)

N = minimum percentage increment or percentage increment floor

M = maximum percentage increment or percentage increment ceiling

X_{i+1} = dollar amount associated with the percentage increment

Y_i = provisionally winning bid amount from the current round

Examples

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

<u>Round 1 (2 bidders submitting bids, provisionally winning bid = $1,000,000)</u>

1. Calculation of percentage increment for round 2 using the smoothing formula:
   $A_1 = (0.5 * 2) + (0.5 * 0) = 1$
   I_2 = The smaller of $((1 + 1) * 0.1) = 0.2$ or 0.2 (the maximum percentage increment)

2. Calculation of dollar amount associated with the percentage increment for round 2 (using I_2 from above):
   $X_2 = 0.2 * \$1,000,000 = \$200,000$

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

<u>Round 2 (3 bidders submitting bids, provisionally winning bid = $2,000,000)</u>
1. Calculation of percentage increment for round 3 using the smoothing formula:
   $A_2 = (0.5 * 3) + (0.5 * 1) = 2$
   I_3 = The smaller of $((1 + 2) * 0.1) = 0.3$ or 0.2 (the maximum percentage increment)

2. Calculation of dollar amount associated with the percentage increment for round 3 (using I_3 from above):
   $X_3 = 0.2 * \$2,000,000 = \$400,000$

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

<u>Round 3 (1 bidder submitting bids, provisionally winning bid = $2,400,000)</u>

1. Calculation of percentage increment for round 4 using the smoothing formula:
$$A_3 = (0.5 * 1) + (0.5 * 2) = 1.5$$
I_4 = The smaller of $((1 + 1.5) * 0.1) = 0.25$ or 0.2 (the maximum percentage increment)

2. Calculation of dollar amount associated with the percentage increment for round 4 (using I_4 from above):
$$X_4 = 0.2 * \$2,400,000 = \$480,000$$

3. Minimum acceptable bid amount for round 4 = $2,880,000