The FCC’s 600 MHz Broadcast Incentive Auction

Tony Veach
Bennet & Bennet PLLC
The Rural Wireless Association
Presentation Agenda

- Incentive Auction Basics
- Anticipating Likely Forward Auction Participants
- 600 MHz Spectrum Valuation
- Joint Bidding Arrangements
- Rural Service Provider and Small Business Bidding Credit
- Bidding Credit Caps
- Post-Auction Transition and Buildout Requirements
- Auction Timing and Application Process
- Reserve Spectrum
- Reverse and Forward Auctions
Incentive Auction Basics
Spectrum – A Connected World

CHEVROLET IS THE FIRST AND ONLY CAR COMPANY TO BRING BUILT-IN 4G LTE WI-FI TO CARS, TRUCKS AND CROSSTERS.
Spectrum – A Connected World

“It’s not just our phones, or our tablets; we are moving towards a world of connected cars, connected homes, connected lives. … It is our job to make sure that these consumers and these innovators have the spectrum they need.” - Rep. Yvette Clarke, D-NY

AT&T Mobility CEO Glenn Lurie reiterated a common theme for him and AT&T – that the carrier wants to help connect everything, from cars, to watches to appliances inside homes. As smartphone adoption slows down, AT&T is looking to the connected car, home and the Internet of Things with enterprise customers to spur new cellular connections -- and revenue growth.
Incentive Auction Basics

What is it? The 600 MHz broadcast incentive auction has been described as a voluntary, market-based tool for repurposing broadcast television spectrum for use by mobile broadband services.

- Two-Sided Auction – First Ever Incentive Auction
- 600 MHz Band is immediately below the 700 MHz Band (former TV Channels 52-69) auctioned in 2008.

Low-band Spectrum (below 1 GHz): In general, the lower the frequency the farther a signal will travel and be useful (propagate) at a given power – better for covering large distances and penetrating buildings.

License Size: 5x5 MHz paired uplink and downlink blocks – flexible use (mobile or fixed).

When: Scheduled to begin March 29, 2016, and is considered providers’ last chance to secure low-band spectrum at auction.
Incentive Auction Basics

The 600 MHz Incentive Auction (Auction 1000) consists of:

**Reverse Auction** (Auction 1001): Broadcasters will offer to voluntarily relinquish some or all of their spectrum usage rights in exchange for payment

**Forward Auction** (Auction 1002): FCC will license the reclaimed 600 MHz spectrum to wireless carriers and other interested parties

**Repacking**: FCC will reorganize or “repack” the broadcast TV spectrum so that the television stations that remain on the air post-Incentive Auction occupy a smaller portion of the UHF band

*Pre-Auction Application and Due Diligence*
All of the 700 MHz band, formerly used by TV channels 52-69, now exclusively for mobile wireless broadband providers.

Broadcasters between Channels 14 and 51 face a major decision:
- “Close Shop” vs. “Go Lower in UHF Band” vs. “Go to High VHF Band” vs. “Go to Lower VHF Band.”
- Broadcasters can also agree to “channel share” (two stations per each 6 MHz channel).

In some areas (hopefully not rural markets), it may be impossible to “repack” all of the existing or dislodged UHF channels into lower UHF channels or VHF channels, even with channel sharing. - Could create impaired licenses (like the lower 700 MHz A block).

All of this impacts forward auction participants

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600 MHz Band Plan

- 600 MHz spectrum will be licensed in 5x5 MHz paired uplink and downlink blocks by Partial Economic Area (PEA).
- Will use “Down from 51” plan (Uplink is above the downlink.)
- Uplink band will begin at Channel 51 (698 MHz), followed by an 11 MHz duplex gap, and the downlink band.
- There will be no less than 2 (5 x 5 MHz) paired spectrum blocks available for forward auctions bidders and no more than 12 (5 x 5 MHz) paired spectrum blocks.
- The specific band plan used will depend on the amount of broadcast spectrum cleared in the reverse auction.

Figure 1: Band Plan Scenarios
Geographic License Areas

FCC Partial Economic Area (PEA) Boundaries

Not Shown:
PEA413 Guam - Northern Mariana Islands
PEA415 American Samoa

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“PEAs” Explained

- PEAs are a new geographic license area created specifically for the 600 MHz auction.
  - Subdivision of EAs based on CMA boundaries.

- FCC initially proposed using 176 Economic Areas.

- FCC wanted:
  - Sufficient geographic granularity;
  - A manageable number of licenses; and
  - License areas to “nest within” larger areas like Major Economic Areas (52) and Regional Economic Areas (12).

- Large carriers favored using large (even nationwide) licenses, small carriers favored using small license sizes like the 734 CMAs.

- Small carriers and rural carrier trade groups later submitted a revised, joint PEA proposal (with 416 areas) that was adopted.
Anticipating Likely Forward Auction Participants
Anticipated Carrier Participation

**AT&T**: Publicly committed to spend at least $9 billion

**T-Mobile**: CFO Braxton Carter said the carrier might have as much as $10 billion it could spend. It “would like to create a nationwide footprint of low-band spectrum.” It “has 700 MHz A Block spectrum covering roughly 190 million POPs, and that T-Mobile plans to purchase 600 MHz licenses that cover the remaining parts of the country it doesn't already cover with 700 MHz licenses.”

**Verizon**: Has been cagey about intentions - "The need for low-band spectrum for us is not a great need.” Don’t believe it.

**Sprint**: Dropped out. “Sprint has concluded that its rich spectrum holdings are sufficient to provide its current and future customers great network coverage and be able to provide the consistent reliability, capacity, and speed that its customers demand.
Anticipated Carrier Participation

Non-traditional Bidders? It’s possible that cable and technology companies such as Comcast, Dish Network, and Google could participate.

Investors / speculators? Yes.

Regional Carriers? Yes

Rural Carriers? Yes
Anticipated Carrier Participation

What happened in the last auction (AWS-3 Auction)?
70 qualified bidders and 37 designated entities. Sprint did not participate.

Gross bids totaled nearly $45 billion

AT&T – $18.2 billion for 251 licenses

DISH – $13.3 billion total for 702 total licenses (bidding as Northstar Wireless and SNR Wireless LicenseCo)

Verizon – $10.4 billion for 181 licenses (Post-auction, Verizon sold wireline assets in California, Florida, and Texas to Frontier Communications for $10.5 billion.)

T-Mobile – $1.8 billion for 157 licenses

U.S. Cellular – $338.3 million for 124 licenses
600 MHz Spectrum Valuation
Recent FCC Auction Valuations

- Low band, paired spectrum is highly sought and quite valuable.

- **Lower 700 MHz Band:** The Lower 700 MHz B Block did not have quirks like the Lower 700 MHz A Block (Channel 51 interference) or the Upper 700 MHz C Block won by Verizon (open app/open device) – it went for $2.65 MHz/POP nationally.

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**Last Auction of Comparable Spectrum Generated Record-Breaking Revenues**

- **Block A:** 12 MHz (698-704 / 728-734) - $1.13 MHz/POP
- **Block B:** 12 MHz (704-710 / 734-740) - $2.65 MHz/POP
- **Block C:** 22 MHz (746-757 / 776-787) - $0.76 MHz/POP
- **Block E:** 6 MHz (722-728) - $0.74 MHz/POP

The 2008 700 MHz auction (Auction 73) raised $19 billion

- Average unit price for all blocks: $1.28 per MHz-Pop
- Average unit price for paired blocks (most comparable to 600 MHz band plan): $1.35 per MHz-Pop

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(1) Cisco Visual Networking Index: Forecast and Methodology, 2013-2018 (June 10, 2014); Compound annual growth rate - year-over-year growth rate of mobile data traffic from 2013 to 2018
(2) Source for all Auction 73 data: FCC
Source: FCC
Recent FCC Auction Valuations: AWS-3 Band

- Even the un-paired B1 Block exceeded the price for paired spectrum in the original 2007 AWS-1 auction.

- Blocks G, H, I and J went for between $2.31 and $2.84 per MHz-POP on a nationwide basis.
The T-Mobile/VZW Lower 700 MHz A Block transaction (post-Interoperability Order) for larger EAs can be seen as a bargain price ($1.85 per MHz/POP) for paired, fully interoperable, low band, large license area spectrum blocks.
Joint Bidding Arrangements
Joint Bidding Arrangement Basics

Why use Joint Bidding Arrangements (JBA)?

- Allow smaller entities to pool resources, and enable them to more successfully compete.
- Allow participants to share auction participation costs (spectrum due diligence, legal and engineering fees, and application).
- Incentive Auction will be the most complicated auction ever attempted.
- PEAs are larger than CMAs and may contain more territory than a single small bidder is seeking. JBAs allow entities to combine to value spectrum licenses as highly as competing regional or national carrier bidders.

Common Joint Bidding Arrangements:

- Bidding Agreements
- Joint Ventures
- Bidding Consortia
Geographic License Areas

FCC Partial Economic Area (PEA) Boundaries

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Not Shown:
PEA413 Guam - Northern Mariana Islands
PEA415 American Samoa
Joint Bidding Arrangement Reform

FCC recently updated its JBA and Designated Entity (DE) rules.

- JBAs include arrangements relating to:
  - the licenses being auctioned that address or communicate bidding at the auction;
  - bidding strategies (including arrangements regarding price or the specific licenses on which to bid);
  - and any such arrangements relating to the post-auction market structure.
- JBAs do not include agreements that are solely operational in nature (agreements regarding roaming, spectrum leasing, assignment/transfer of licenses, or device acquisition, for example).
- BUT carriers should expect commercial activity to slow significantly after the short form application deadline.

In response to stakeholder calls for JBA reform after Auction 97, the FCC prohibited JBAs:

- between auction applicants (including any party that controls or is controlled by, such applicants), regardless of whether the applicants are nationwide or non-nationwide providers;
- involving two or more nationwide providers (including arrangements in which one or more of the nationwide providers is not itself an auction applicant);
- involving a nationwide and non-nationwide provider, where any one of the parties is an applicant for auction.
Joint Bidding Arrangement Reform

What IS Allowed

JBAs between non-nationwide providers will be allowed where only one of the providers is the entity filing an auction application and other is a non-applicant.

While the FCC prohibited JBAs among non-nationwide providers as separate applicants in an auction, the use of joint ventures and consortia by non-nationwide providers will be allowed.

- In order to address the potential for undesirable strategic bidding through the use of these vehicles, the FCC specified that:
  - DEs can participate in only one consortium in an auction, which shall be the exclusive bidding vehicle for its members in that auction; and
  - Non-nationwide providers may participate in an auction through only one joint venture, which also shall be the exclusive bidding vehicle for its members in that auction.
- Joint ventures between nationwide and non-nationwide providers will not be permitted.

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JBA Take Aways

Exception to Anti-Collusion Rules:

- All JBAs and the parties thereto must be disclosed on the auction short form application regardless of the form chosen for the JBA.
- Special application requirements for consortia.
- Anti-collusion rules prohibit communications related to bids, bid strategies, and markets in the absence of a JBA. Prohibition lasts from filing of short form until down payment made on licenses won at auction.
  - The rules apply even if an applicant drops out of auction or chooses never to bid. The rules also prohibit bid-related communications with any non-applicant nationwide provider.

JBA choice can affect eligibility for bidding credits.

- Consortia
- Joint Ventures

- Know your markets of interest.
- Identify potential competitors and bidding partners.
- Work out the terms of JBAs early and reduce to writing if possible.
- Prepare for contingencies and have an exit strategy.
Rural Service Provider
Bidding Credit

Small Business
Bidding Credit
Rural Service Provider Bidding Credit

The FCC has a statutory obligation to ensure that small businesses and rural telephone companies (designated entities) have an opportunity to participate in the provision of spectrum-based services.

The FCC uses bidding credits to help ensure designated entities win spectrum at auction.

Bidding credits operate as a percentage discount on the winning bid amounts of a qualifying small business. By making the acquisition of spectrum licenses more affordable for new and existing small businesses, bidding credits facilitate their access to needed capital.
Rural Service Provider Bidding Credit

**Auction 97 (AWS-3) results**

Despite being a financial success, and significant participation by rural carriers, Auction 97 yielded dismal results for rural bidders and their subscribers.

- Of the 70 qualified bidders in the AWS-3 Auction, more than half were rural telcos or their affiliates.
- Only 28.9% of rural telco entities were successful in winning any AWS-3 licenses.
- Less than half of the rural telcos that were successful bidders were able to qualify under the Commission’s Designated Entity rules as small businesses (and receive bidding credits).
- At the close of the AWS-3 Auction, rural bidders accounted for just $871,350 (or 0.024%) of the total $3.57 billion in bidding credits awarded.
Rural Service Provider Bidding Credit Overview

- As a result of the lobbying efforts of rural carriers and trade groups, the Commission adopted a 15% bidding credit for eligible rural service providers.

- Eligible rural service providers must provide commercial communications services to a customer base of fewer than 250,000 combined wireless, wireline, broadband, and cable subscribers and serve primarily rural areas.

- The FCC will only permit an eligible small and rural entity to claim one bidding credit, not both the Small Business and Rural Service Provider Bidding Credits.
Rural Service Provider Bidding Credit Eligibility

An applicant must be in the business of providing commercial communications services to fewer than 250,000 combined wireless, wireline, broadband, and cable subscribers.

- A subscriber receiving both wireline telephone service and broadband would be counted only as a single subscriber.

To determine whether a provider has fewer than 250,000 subscribers, the FCC will follow an approach similar to how it attributes revenues in the Small Business Bidding Credit context. It will determine eligibility by attributing the subscribers of the applicant, its controlling interests, its affiliates, and the affiliates of its controlling interests.

- Like small businesses seeking eligibility for bidding credits, the Commission will allow rural service providers to form a consortium. Under the rules for a rural service provider consortium, the FCC will not aggregate each consortium member’s subscribers, but will instead determine the consortium’s eligibility based on each individual member’s bidding credit eligibility.
Rural Service Provider Bidding Credit Eligibility

The FCC adopted an exception to its attribution rules for existing rural partnerships.

- For rural partnerships providing service as of the date of July 16, 2015, the FCC will determine eligibility for the Rural Service Provider Bidding Credit by evaluating whether the members of the rural wireless partnership each individually have fewer than 250,000 subscribers.
- This exception will permit eligible rural service providers to receive the benefit of a bidding credit without having to interrupt their existing business relationships or the provision of service to consumers.

An applicant must also certify in its short-form application that it serves predominantly rural areas.

- While the Communications Act does not include a statutory definition of what constitutes a rural area, the Commission has used a “baseline” definition of rural as a county with a population density of 100 persons or fewer per square mile.
- It will use this same definition for purposes of determining whether a carrier serves predominantly rural areas.
Small Business Bidding Credit

FCC has adopted the same small business bidding credit percentages as it did for the 700 MHz auction:

- 15% for small businesses (entities with average annual gross revenues of less than $55 M for the preceding 3 years).
- 25% for very small businesses (entities with average annual gross revenues of less than $20 M for the preceding 3 years).

It increased the gross revenue thresholds (from $40 to $55 M and $15 to $20 M respectively).
Bidding Credit Caps
Bidding Credit Caps

The FCC established a $150 million bidding credit cap for small businesses and a $10 million bidding credit cap for rural service providers.

To create parity in the Incentive Auction among small businesses and eligible rural service providers competing against each other in smaller markets, the Commission established a ceiling on the overall amount of bidding credits that any winning DE bidder may receive in connection with winning licenses in markets with a population of 500,000 or less.

- Specifically, no winning DE bidder will be able to obtain more than $10 million in bidding credits for licenses won in PEAs 118-416, with the exception of PEA 412 (Puerto Rico), which exceeds the 500,000 pop threshold.
- To the extent a small business does not claim the full $10 million in bidding credits in the smaller markets, it may apply the remaining balance to its winning bids on larger licenses, up to the aggregate $150 million cap.
Post-Auction Transition and Buildout Requirements
License Period

- Initial *12-year* term.
- Subsequent *10-year* renewal terms.
- Licensed under Part 27 of FCC’s rules.
Transition Period:
39 Months from Public Notice

- After the auction, the FCC will release a *Channel Reassignment Public Notice (“PN”)* announcing auction results, repacking, and specifying new channel assignments and technical parameters of reassigned channels.

- Broadcasters turning in their spectrum have up to 39 months after the *Channel Reassignment PN* is released to vacate the 600 MHz Band and/or transition to reassigned channels. Some broadcasters—those relinquishing and channel sharing—must vacate within three months of receiving payment. Though broadcasters may seek extensions to construct new facilities, they may not operate on pre-auction channels beyond the 39-month transition period.

- 600 MHz licensees may commence operations at varying times during and after the 39-month transition period, depending on when spectrum becomes available and licensees’ deployment plans.
Transition Period: Other 600 MHz Operations

- Certain operations (e.g., secondary and unlicensed users such as LPTV and TV translator stations, fixed broadcast auxiliary service (BAS) operations, and unlicensed TV white space devices) may continue operating until a 600 MHz Band wireless licensee “commences operations” in the operator’s licensed spectrum and provides proper notice.

- BAS licensees must vacate by the end of the Transition Period or earlier upon 30 days’ advance notice that they are likely to cause harmful interference to a 600 MHz licensee in an area in which it intends to commence operations.

- LPTV and TV translator stations may operate in the 600 MHz Band indefinitely on a secondary basis except upon 120 days’ advance written notice that they are likely to cause harmful interference to a 600 MHz licensee in an area in which it intends to commence operations.

- Unlicensed TV white space devices may operate indefinitely until notice is provided to a TV band database administrator by a 600 MHz licensee intending to commence operations. This process is being finalized in a separate TV white spaces proceeding.
Construction Requirements: Population-Based

- Section 27.14(t) of FCC’s rules.

- *Interim buildout requirement* to cover 40% of population of the PEA within 6 years of *license grant* (not from the date the 600 MHz band is cleared).

- *Final coverage requirement* to cover 75% of population of the PEA by end of 12-year license term.

- Failure to meet the interim buildout requirement will accelerate both the license term and final buildout requirement by two years (12 years → 10 years).

- Failure to meet the final buildout requirement will result in automatic termination without being able to regain the license.
Construction Requirements: Renewal Showing

- Section 27.14(t)(6) of FCC’s rules requires renewal showing independent of performance requirements.

- The renewal showing must describe applicant’s provision of service during the entire license period and address:
  - The level and quality of service provided by the applicant (including population served, the area served, number of subscribers, services offered);
  - Dates of service commencement, interruptions, and outages;
  - Service provided to rural areas;
  - Service provided to qualifying Tribal lands; and
  - Any other factors associated with the level of service to the public.

- FCC assures that, absent extraordinary circumstances, licensees are likely to obtain renewal if they satisfactorily demonstrate that the level of coverage and service shown at the final buildout benchmark has been maintained or exceeded.
Impaired Licenses

- Some 600 MHz licenses will be considered “impaired,” meaning that areas within the license area may cause interference to, or receive interference from, broadcast television operations.

- Licensees with impaired licenses will be required to satisfy buildout requirements in the license’s unimpaired areas.

- At each of the interim and final construction benchmarks, a licensee with an impaired license must provide with its construction notification an explanation of the impairment (i.e., why it cannot serve its entire license area and/or meet its performance requirements within the entire PEA).
Other Licensing Provisions

- **Flexible Use.** Licenses may be used for common carrier, non-common carrier, private internal communications or any combination of these services, and may be used for any fixed or mobile service.

- **Technical Rules.** 600 MHz licenses will be subject to essentially the same Part 27 technical requirements for the Lower 700 MHz Band, including out-of-band emissions, antenna height, co-channel interference, and slightly modified power limits.

- **Interoperability.** User equipment certified to operate in any portion of the 600 MHz Band must be capable of operating, using the same technology that the licensee has elected to use, throughout the entire 600 MHz Band.

- **Secondary Markets; Partitioning and Disaggregation.** Licensees will be permitted to lease, partition and disaggregate 600 MHz spectrum pursuant to the existing policies set forth in Part 27 of the FCC’s rules.
Auction Timing and FCC Application Process
Auction Timing/Application

Auction is scheduled to begin on March 29, 2016.

Public Notice this week (?) detailing auction application process and post-auction procedures.

- Application filing window dates, filing deadline, mock auction dates
- FCC Chairman indicated the application window for January 2016

Short form auction applications (FCC Form 175).

- Electronic certification and filing is mandatory
- Applicant & contact info
- Authorized Bidders/Bidding options/Bidding Credit eligibility
- License Selection
- Agreements to which the applicant is a party
- Ownership Information
Qualifying to Bid

FCC will set minimum opening bids at $5000 per bidding unit for all spectrum blocks offered in the forward auction, regardless of category.

- The Application Procedures PN will include the final table of bidding units and minimum opening bids for the 5x5 MHz generic blocks for each PEA so that potential applicants can plan for their upfront payments.

After applications are filed and broadcasters make initial commitments:

- **Determination of the Initial Clearing Target.** Auction system will determine the initial clearing target and associated band plan; reverse mock auction takes place; then the reverse auction bidding rounds begin.

- **Upfront Payments.** Forward auction applicants with complete applications that want to be qualified to bid must make upfront payments after the clearing target and band plan are announced. After upfront payments are made, qualified forward auction bidders will also have an opportunity to participate in a mock auction. The first round of the forward auction will commence no sooner than 15 business days after FCC releases list of qualified forward auction bidders.
Qualifying to Bid

In order to qualify to bid, forward auction applicants must:

- Submit a timely auction application that is deemed complete; and
- Timely make a sufficient upfront payment.

**Bidding Units:** FCC will assign a specific number of bidding units to each spectrum block, and will use them to calculate minimum opening bids, upfront payments, and bidder eligibility, and to measure bidding activity.

**Bidding Eligibility:** Upfront Payments determine a bidder’s initial bidding eligibility in terms of bidding units.

- *i.e.*, the maximum number of blocks a bidder may demand in the clock phase of the forward auction.
- Bidders will not be able to increase eligibility during the auction. An applicant must determine the maximum number of bidding units on which it may wish to bid in any single round and submit an upfront payment covering that total number of bidding units.
- FCC adopted an upfront payment amount of $2,500 per bidding unit, which is half of the $5000 amount of the minimum opening bid for each spectrum block.
- Upfront payments expected to be larger than in Auction 97.
Bidding

The forward auction will utilize an ascending clock auction format under which each qualified bidder will indicate in successive clock bidding rounds its demands for categories of generic license blocks in specific geographic areas. There will be several types of bids:

- Simple Bid.
- All-or-Nothing Bid.
- Switch Bid.

Watch the FCC’s forward auction webinar on its LEARN website

Bidding eligibility will be reduced as the auction progresses if a bidder does not meet the activity requirement.

- Bidders must be active on at least 95 percent of their bidding eligibility in all regular clock rounds to maintain their bidding eligibility.
- Activity rule waivers to preserve a bidder’s eligibility will not be available.
Taking Advantage of Reserve Spectrum
Spectrum Reserve Basics

- **WHAT is the Spectrum Reserve?** Up to 30 MHz of spectrum will be reserved in each PEA for carriers that lack significant low-band spectrum holdings.
  - The precise amount of available reserve spectrum will depend on how much broadcast spectrum is cleared.
  - FCC rejected calls from many stakeholders to increase reserve to a possible 40 MHz.

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<th>100</th>
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- **WHO is Reserve-Eligible?** Nationwide carriers that hold an attributable interest in less than 1/3 of the low-band spectrum (45 MHz) in a particular PEA AND non-nationwide carriers.
  - If Verizon or AT&T exceeds the 45 MHz threshold, it is not reserve eligible in that PEA.
  - All other carriers can bid on all spectrum. (Neither Sprint nor T-Mobile own much more than 20 MHz of low-band spectrum in any market.)

- **WHEN can eligible bidders bid on reserve spectrum?** Reserve spectrum will be made available when auction bidding hits a spectrum reserve trigger (the point when the reserve price or “Final Stage Rule” is satisfied).
  - The demand determining the actual amount of reserve at the time the spectrum reserve is triggered will be the demand by reserve-eligible bidders for Category 1 blocks.

- **WHY is the Spectrum Reserve important?** Verizon and AT&T currently hold nearly 75% of available low-band spectrum.

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Reserve Spectrum Bidding

- Spectrum Reserve bidding by eligible bidders will begin after the Final Stage Rule is met.

- The reserve will consist only of Category 1 (largely unimpaired) blocks.

- When only one reserve-eligible entity is bidding on Category 1 blocks at the time the spectrum reserve is triggered, the reserve will be no more than 20 MHz.

- FCC established a 20 MHz cap on the total amount of reserve spectrum that any entity can acquire in PEAs with populations of 500,000 or less.

- Reserve-eligible bidders can bid on both reserved and unreserved licenses.

- Bidders that win reserved 600 MHz spectrum licenses cannot assign, transfer, or lease those licenses to entities that were not reserve-eligible for six years after license grant.
Verizon Wireless Incentive Auction
Bidding Restrictions

- In the top 100 U.S. markets, as of mid-2014, Verizon owned an average of 47 MHz of low-band spectrum.

- Eligibility rules effectively prevent Verizon from bidding on reserved blocks in about 5/6 of the country.

- Verizon will be reserve-eligible in parts of Texas, the Great Lakes, and the Northwest.
AT&T Incentive Auction
Bidding Restrictions

- In the top 100 U.S. markets, as of mid-2014, AT&T owned an average of 57 MHz of low-band spectrum.

- Eligibility rules effectively prevent AT&T from bidding on reserved blocks in about 1/3 of the country (parts of California, Texas and large sections of the Northeast).

- However, AT&T will be free to bid on reserve spectrum without restrictions across wide swaths of the Western United States.
PEAs in Which AT&T and/or Verizon are Reserve Eligible
Interplay Between Reverse and Forward Auctions
Auction Structure

- The Incentive Auction will take place in stages, with each stage consisting of a reverse and forward bidding process.
  - It is possible (and preferable) that only one stage will be necessary.

- Broadcasters will indicate willingness to relinquish spectrum at opening prices during the pre-auction process.

- Commission will set the initial spectrum clearing target based on this collective willingness.

- Reverse auction bidding will determine the broadcaster incentive payment total required to clear the initial spectrum clearing target.
Auction Structure Continued

- Initial forward auction bidding will begin 2 business days after reverse auction bidding concludes.
  - Before the forward auction begins, bidders will know:
    - The supply of generic spectrum blocks in each license category.
    - Detailed information about the location of impairments in specific license blocks.
    - Revenue amount that must be generated to cover the second component of the Final Stage Rule.

- Stages will continue until a reserve price consisting of both an average price per MHz-pop and total revenue benchmark (the “Final Stage Rule” or “FSR”) is reached.
  - If forward auction proceeds satisfy the FSR during the first stage, bidding will continue until there is no excess demand for licenses, and then clock round bidding will close.
  - If the FSR is not satisfied, additional stages will be run, with progressively lower reverse auction spectrum targets and less spectrum available in the forward auction, until the rule is satisfied.
Final Stage Rule

The FSR is a reserve price consisting of:
- A price per MHz-pop benchmark; and
- A total revenue requirement.

Both components must be satisfied.

FCC has set:
- Average price per MHz-pop benchmark of $1.25 for “Category 1” (largely unimpaired) spectrum in the 40 most populous (high-demand) PEAs; and
- Spectrum benchmark of 70 MHz – a figure that corresponds to a broadcast spectrum clearing target of 84 MHz.

The first component will be satisfied if –
- At clearing targets at or below the benchmark clearing target: forward auction average price per MHz-pop for Category 1 licenses in “high-demand” PEAs equals or exceeds $1.25 per MHz-pop; or
- At clearing targets above the spectrum benchmark: forward auction proceeds exceed the product of the price benchmark, the spectrum clearing benchmark, and the total number of pops associated with the Category 1 blocks in high-demand PEAs (this relaxes the price requirement below $1.25).
Final Stage Rule (Continued)

- Average prices in rural PEAs outside of the 40 most populous would not be considered in determining whether FSR has been satisfied.

- The second component of the FSR requires that forward auction proceeds meet mandatory costs and expenses set forth in the Spectrum Act and any Public Safety Trust Fund amounts needed in connection with FirstNet.

- Mandatory costs and expenses include:
  - payments to winning reverse auction bidders (determined by reverse auction);
  - $1.75B in eligible broadcaster relocation costs; and
  - the Commission’s auction administrative costs ($226M proposed).

- AWS-3 Auction bidding far surpassed the $7B required to fund FirstNet.
Auction Mechanics Flow Chart
Forward Auction Clock and Assignment Bidding Phases
Forward Auction Mechanics

The Forward Auction will consist of a **clock phase** and an **assignment phase**.

The clock phase will identify the prices that bidders will pay for generic spectrum blocks.

The Commission will offer spectrum blocks in two license categories.

- A **“Category 1”** license is defined as any license with potential interference impairments that affect zero to 15% of the PEA’s population.

- A **“Category 2”** license is any license with potential interference impairments that affect greater than 15% of the PEA’s population.

- The auction system will display the impairment percentage for each block in each category during bidding.

- Blocks where more than 50% of the population is impaired will not be offered.

There will not be package bidding.
Forward Auction Mechanics

Ascending Clock Auction

Clock phase determines a price for generic blocks at which demand does not exceed supply.

There will be a separate price clock in each category in each PEA.

- Uniform price applies to all blocks in a category/PEA.
- Simultaneous bidding in all PEAs.

Price clocks tick up as long as demand exceeds supply in a category and PEA.
Forward Auction Mechanics

Ascending Clock Auction

- Each bidding round will begin with an announced clock price.
- Bidders indicate the number of blocks they want at a per-block price.
  - A bid indicates that the bidder is willing to pay the specified price for that quantity of blocks.
  - No “provisional winners” – only bidders that are still “in” at a specified price.
    - Each bidder needs to bid in every round if it is still willing to accept clock price – even if clock price hasn’t changed.
- If bidders demand more blocks than are available, the clock price ticks up for the next round.
- Winners are those bidders still demanding blocks when total demand does not exceed supply.
Forward Auction Mechanics

Extended Round Bidding

- Auction system will evaluate whether forward auction proceeds are sufficient to satisfy the FSR after each round.

- If bidding stops (and demand does not exceed supply) in “high demand” markets before FSR is met, FCC will implement “extended round bidding” in which bidders will have the opportunity to increase their bids to make up any shortfall in meeting the FSR.

- Purpose of an extended round is to attempt to satisfy the FSR without moving to a new stage.
  - Moving to a new stage would mean a lower clearing target, and this would result in the availability of fewer licenses.

- Small and rural carriers are unlikely to participate in any extended round bidding. The FCC will conduct extended round bidding only for Category 1 blocks in the “high-demand” (40 most populous) PEAs.
Forward Auction Mechanics

Assignment Phase

- Assignment phase will follow the clock phase when: (1) forward auction bidding satisfies the FSR; and (2) the clock phase concludes.

- Clock phase winning bidders that have a preference for specific frequencies can submit sealed bids for frequency blocks for each PEA or group of PEAs.

- The assignment phase is voluntary – clock phase winning bidders need not participate in order to be assigned the number of licenses won.

- In determining specific frequency assignments, the auction system will consider bid amounts as well as other efficiency objectives, such as maximizing contiguity for winners of multiple blocks in an area.
Forward Auction Mechanics

Final License Prices

- FCC will incorporate a price adjustment to account for predicted license impairment.

- The final clock price will be discounted by 1% for each 1% of predicted impairment.
  - **Example**: 10% discount would be applied to a license that is 10% impaired.

- For a specific license, the final price will be:
  - The winning clock phase price for the category/PEA;
  - Adjusted for impairment percentage;
  - Plus any assignment round bid;
  - Reduced by any bidding credit.
Timeline – What’s Next?
Other Licensing Provisions

Start Planning Now

October 28: FCC Webinar on Part 1 Rules

November: Other FCC Incentive Auction Webinars

January: Deadline for Applications to Participate in the Auction

March 29, 2016: Incentive Auction Commences
Questions / Comments / Concerns

Tony Veach
Bennet & Bennet, PLLC
tveach@bennetlaw.com
202-631-9190