Incentive Auctions for Repurposing Broadcasting Spectrum

Evan Kwerel
Federal Communications Commission

May 23, 2011
Problem

- Develop a *voluntary* market mechanism to efficiently repurpose broadcast spectrum
Repurposing Broadcast Spectrum: Two Auction Designs

- Sequential auctions
  - Incentive auction – binding offers to sell spectrum (supply curve)
  - “Forward” auction – binding bids to buy spectrum (demand curve)
  - Determine amount of spectrum cleared (supply = demand)
  - Repack broadcasters and consummate winning offers

- Double auction (Exchange)
  - Conduct first three steps above simultaneously
  - Repack broadcasters and consummate winning offers

- Approaches essentially equivalent
  - Amount of spectrum cleared, winning sellers and buyers determined using full information about both supply and demand
  - But sequential approach is easier to implement
Incentive auction to clear spectrum

- Incumbents make voluntary binding offers to release spectrum
  - Share a channel in same market through multicasting with other broadcasters, while retaining must-carry rights for primary program stream
  - Discontinue OTA broadcasting
  - Move to upper VHF or lower VHF band

- Find the least costly way to clear various amounts of contiguous spectrum in each market based on the price offers from incumbents (create supply curves)
  - FCC can involuntarily repack TV channels within each band to clear contiguous blocks
“Forward” auction for cleared spectrum

- Determine alternative band plans (depending on amount of spectrum made available) for new flexible uses, e.g., mobile broadband
- Participants make binding bids to buy spectrum licenses (create demand curves)
Determine amount of spectrum cleared

- Price
- Spectrum

- Broadcaster Supply
- Wireless Demand
A Market Where Target Achieved When Clearing Cost Less Than Auction Revenue

![Graph showing the relationship between price, target, spectrum, broadcaster supply, government revenue, and wireless demand.](image)
Consummate winning offers and repack broadcasters

- Collect payments from winners of forward auction and assign licenses
- Make payments to winners of incentive auction
- Reassign channels to broadcasters remaining on the air and compensate for moving cost
- Deposit remaining auction revenue in Treasury
Alternative – Double Auction (Exchange) to Simultaneously Clear and License

- FCC conducts an exchange in which broadcasters offer spectrum (by channel sharing, discontinuing OTA broadcasting or moving to VHF) and mobile operators bid on new unencumbered licenses simultaneously.

- Exchange simultaneously determines winning sellers, winning buyers and the amount of spectrum cleared.
Thank You

For further information

evan.kwerel@fcc.gov