



# 3800 MHz Spectrum Auction – Overview and Demonstration

CanWISP Conference

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# When do we use auctions?

- ISED manages spectrum to maximize economic and social benefits for Canadians.
- When the demand for spectrum is not expected to exceed the supply, ISED generally uses a first-come, first-served licensing process to award spectrum licences.
- In instances where the demand for spectrum is expected to exceed supply, a competitive licensing process, such as an auction, is generally used.

## **The objective of ISED's auctions is to have a process that:**

- allows spectrum to be acquired by those who value it most and have an incentive to use in a timely fashion
  - gives Canadians a fair return on a valuable public resource
  - gives effect to policy objectives, such as support for competition
  - is efficient and fair
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# Auction Design Considerations

- **Single Round**
  - Bidders submit one (sealed) bid
- **Multiple Rounds**
  - Prices increase as bidding continues

- **Bids on individual licences**
  - Simultaneous
- **Bids on packages**
  - All or nothing

- **Price as you bid**
- **Second Price**
  - Pay the bid of the next-highest bidder (or reserve price)

- **Open Bidding**
  - Bidders see all accepted bids
- **Anonymous Bidding**
  - Bidders know only overall demand and prices

# Auction Formats

## Sealed Bid

- Single round
- Multiple licences
- Second price
- Individual and limited package bids

### When do we use it?

- Value is easy to estimate
- Limited number of licences

## Combinatorial Clock Auction (CCA)

- Multiple rounds
- Multiple licences
- Second price
- Package bids
- Anonymous bidding

### When do we use it?

- Price discovery is important
- Large number of licences
- Packages are important to reduce exposure

## Clock Auction (CA)

- Multiple rounds
- Multiple licences
- Price as-you-bid
- Anonymous bidding

### When we use it?

- Price discovery is important
- Very large number of licences

# 3500 MHz and 3800 MHz - Clock Auctions

- In clock auctions, participants bid on generic products (e.g. unencumbered or encumbered spectrum) within a service area.
- Each product has multiple blocks available.
- Each round has a starting price and higher ending (“clock”) price.
- As prices increase, bidders can respond by reducing the number of blocks they are bidding on for a product at that price, or by switching to other products.
- When the demand (bids) for a product exceeds supply (blocks), the clock price increases in the next round. When demand is less than/equal to supply, the price stops increasing.
- The clock rounds end when demand is less than/equal to supply for all products.
- In the assignment rounds, bidders can submit optional bids for specific frequencies within a service area, or have them automatically assigned.

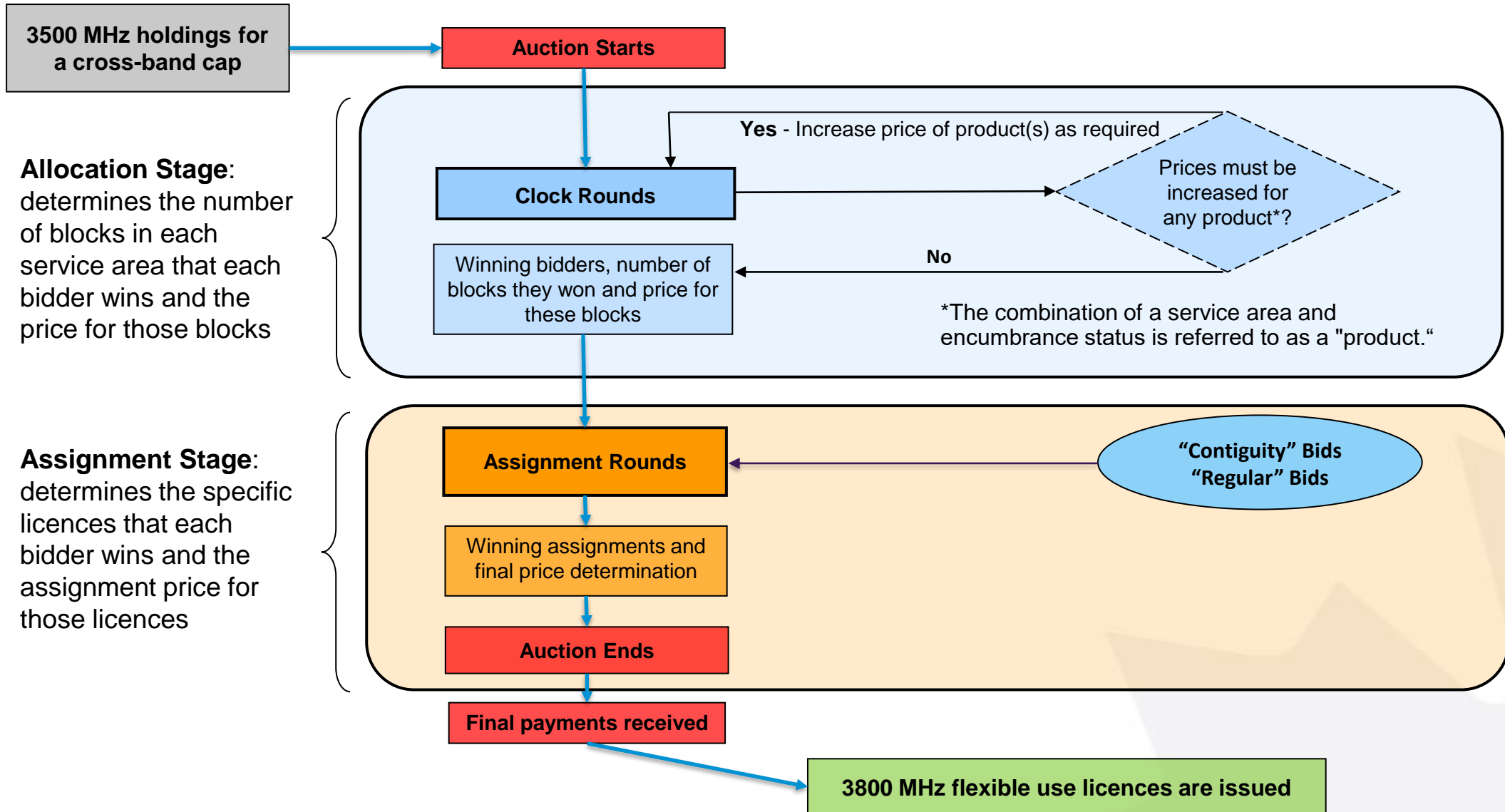
# 3800 MHz Auction Rules

- Auction rules were published in June 2022:
  - 250 MHz available for auction between 3650 MHz and 3900 MHz
  - Cross-band spectrum cap of 100 MHz between 3500 MHz and 3800 MHz
  - Transition of existing licensees by March 2025/2027, except for satellite-dependent areas



- 25 licences of 10 MHz each across 172 Tier 4 service areas
  - 2 products – unencumbered/encumbered (where FSS is protected)
  - In service areas with two products, bidders that won spectrum in both products can submit an optional contiguity bid in the assignment rounds
  - ISED will also open a post-auction window to facilitate licence swaps between 3500 MHz and 3800 MHz licensees to improve contiguity

# 3800 MHz Auction Process



# 3800 MHz Auction: Key Dates

Publication of updates to the list of Tier 4 service areas categorized as encumbered	End of April, 2023
Deadline for the return of 3500 MHz licences to update eligibility	May 26, 2023
Deadline for receipt of applications to participate in the auction and 100% pre-auction financial deposit	<b>By 12:00 noon EDT on July 25, 2023</b>
Publication of final list of qualified bidders	August 16, 2023
Information session for qualified bidders	September 14, 2023
Mock auctions for qualified bidders (up to three separate sessions)	Start September 19, 2023
Auction start – opening of bidding	<b>October 24, 2023</b>
Cessation of bidding	Unknown
Announcement and publication of provisional licence winners	Within five days following cessation of bidding
Initial payment (20% of total final payment)	30 business days following the publication of provisional licence winners
Final payment (80% of total final payment) and issuance of licences	120 business days following the publication of provisional licence winners



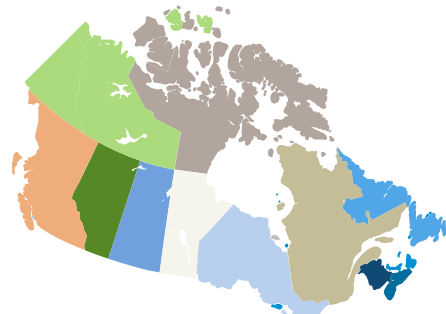
# Annex A: Five tiers for spectrum licensing

Tier 1



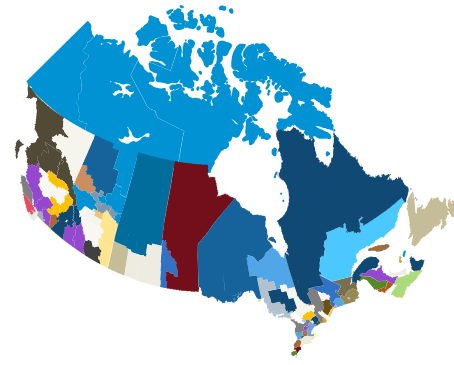
National licence area

Tier 2



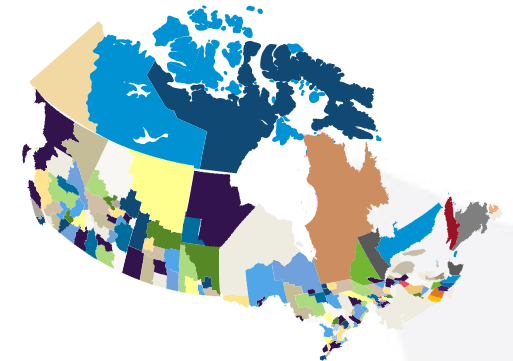
14  
large areas

Tier 3



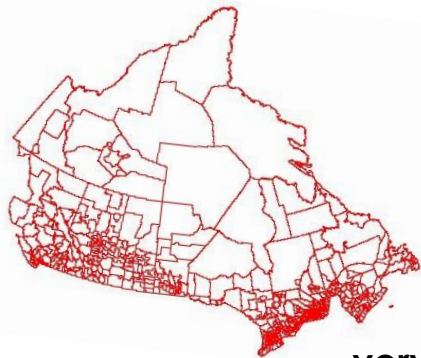
59  
regional areas

Tier 4



172  
local areas

Tier 5



654  
very small local areas