

Satcom Spectrum in India: Administrative Allocation and Its Impacts

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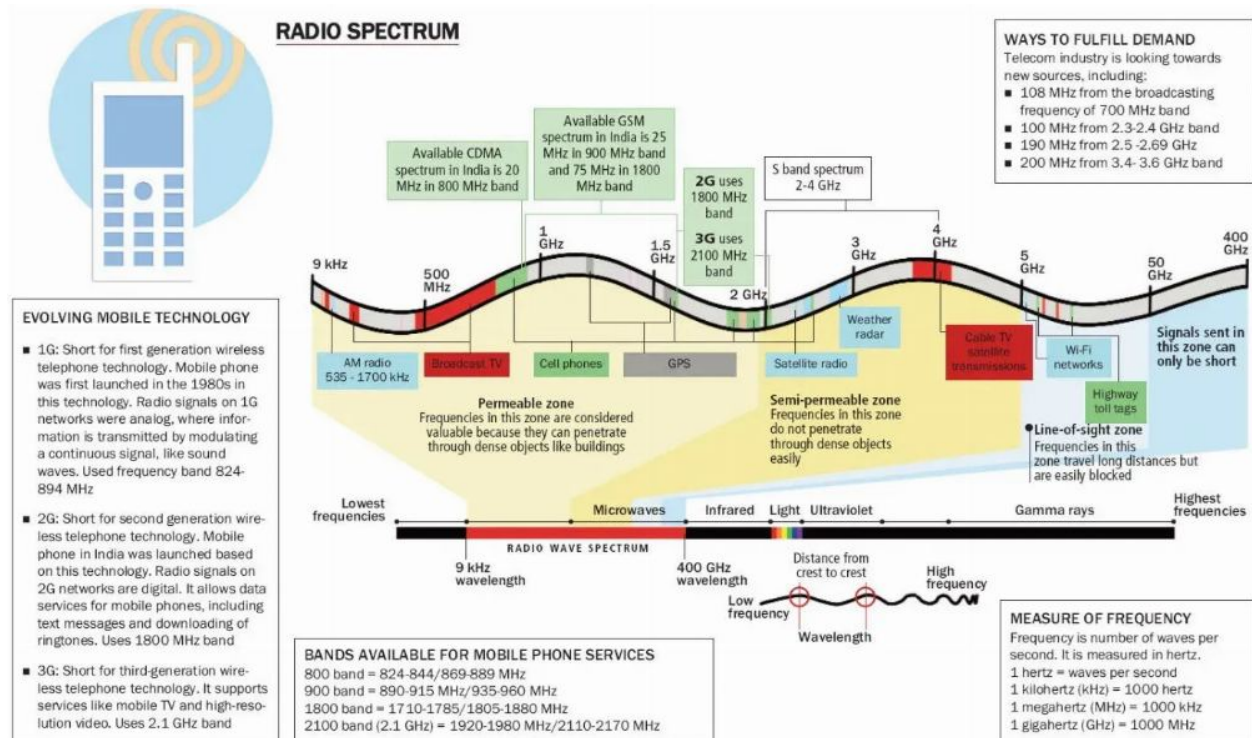
Why in News?

Speaking on the sidelines of the India Mobile Congress, Telecom minister Jyotiraditya Scindia said that satcom spectrum will be allocated administratively but will come at a cost.

As per the announcement, the cost of spectrum and the formula of allocation will be decided by the Telecom Regulatory Authority of India (TRAI).

What is Airwaves/Spectrum?

- Airwaves are radio frequencies within the electromagnetic spectrum that can carry information wirelessly for a range of services including telecommunications.
- The government manages and allocates airwaves to companies or sectors for their use.
- The government auctions a fixed amount of spectrum within specified band/s to be utilised by operators for providing communication services to consumers.



What is Satellite spectrum?

- **About**
 - Satellite spectrum refers to the range of radio frequencies used by satellites to communicate with ground stations, other satellites, and various devices on Earth.
 - These frequencies are part of the electromagnetic spectrum, specifically the radio waves, and are allocated for different satellite services, such as communication, broadcasting, navigation, and Earth observation.
- **Regulation**
 - The use of satellite spectrum is regulated by international bodies like the **International Telecommunication Union (ITU)**.
 - ITU coordinates and allocates frequencies to prevent interference between different satellite systems and other forms of communication.
- **Satellite Frequency Bands**
 - **L-band** (1-2 GHz): Used for GPS and mobile satellite services.
 - **S-band** (2-4 GHz): Used for weather radar, air traffic control, and mobile satellite services.
 - **C-band** (4-8 GHz): Commonly used for satellite TV broadcasting and data communications.
 - **X-band** (8-12 GHz): Used primarily by the military for radar and communication.

- **Ku-band** (12-18 GHz) and **Ka-band** (26-40 GHz): Used for satellite television, internet, and high-throughput data transmission.

Auction vs administrative allocation of spectrum

• Auction

- Auctions involve competitive bidding, where spectrum licenses are sold to the highest bidder, promoting efficient resource allocation and generating revenue for the government.
- This method ensures transparency, reducing the chances of favoritism or corruption, and is commonly used in commercial telecommunications for optimal spectrum usage.
- Auctions are preferred in competitive markets where multiple entities compete for access.

• Administrative allocation

- Administrative allocation involves the government directly assigning spectrum licenses without a bidding process, often for a nominal fee covering administrative costs.
- This method is used when auctions are impractical, offering flexibility for sectors like national security, public services, or emerging industries like satellite communications.
- It is suitable for areas with low competition or where frequency sharing among users is feasible, ensuring easier access to resources for specialized or government-related services.

• Key differences between auction and administrative allocation

- The auction method is competitive, market-driven, and generates significant revenue, ensuring transparency by allocating spectrum to the highest bidder, making it ideal for commercial markets.
- In contrast, administrative allocation is a direct government assignment with lower fees, offering flexibility but less transparency, suited for government services or specialized sectors.
- Both methods are essential in spectrum management, with the choice depending on regulatory goals and market needs.

Satellite spectrum to be allocated administratively in India

• About the news

- The government has chosen to allocate satellite communication (satcom) spectrum through administrative means, rejecting the auction route.
- This development underscores the growing competition for satellite services in the Indian market, which is projected to grow at 36 per cent annually and reach \$1.9 billion by 2030.
- Starlink, Musk's company, advocates for direct licensing, aligning with global practices and arguing that spectrum, as a natural resource, should be shared.
- On the other hand, Reliance, led by Ambani, believes that an auction is necessary to ensure fair competition.

• Rationale behind India's stand

- Unlike terrestrial spectrum which is used for mobile communications, satellite spectrum has no national territorial limits and is international in character.
 - Satellite spectrum is shared spectrum. If the spectrum is shared, then it cannot be priced individually.

- As a result, satellite spectrum across the world is allocated administratively.
- India, being a signatory of ITU, decided to follow the global practice of allocating satellite spectrum administratively.
- **The Telecommunications Act, 2023**, had also added spectrum for satellite communication in the list of administrative allocation.

Spectrum allocation controversies in India

- India's spectrum allocation has been controversial, especially due to the shift from auctions to administrative assignments, highlighted by the 2G spectrum scam.
 - The scam involved allocating licenses on a first-come, first-served basis, resulting in significant financial losses, with alleged damages of Rs 30,984 crore and a presumptive loss of Rs 1.76 trillion.
 - Following this, the **Supreme Court mandated auctions for spectrum allocation in 2012**.
 - Despite this, the Telecommunications Act 2023 introduced a non-auction route for allocating satellite spectrum, marking a shift in the regulatory approach.
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Q.1. Why is India choosing administrative allocation for satellite spectrum?

India opted for administrative allocation because satellite spectrum, shared globally and regulated by the ITU, cannot be auctioned like terrestrial spectrum. This approach aligns with global practices for satellite communication.

Q.2. What are the key differences between auction and administrative allocation of spectrum?

Auctions involve competitive bidding and revenue generation, while administrative allocation assigns spectrum directly for specialized sectors, offering flexibility and lower fees, but less transparency.

Source: [India's position on assigning satcom spectrum sets up an Elon Musk-Mukesh Ambani face-off](#) | [European Space Agency](#) | [Down to Earth](#) | [Business Standard](#)

Source: <https://vajiramandravi.com/current-affairs/satcom-spectrum-in-india/>

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