

L&T's Comments on TRAI released Consultation Paper on "Assignment of Spectrum for Space-based Communication Services"

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Sub: Necessity of Administrative Allocation

The allocation of spectrum plays a vital role in the space industry, as it directly influences the capacity of Indian companies and the government to deliver satellite services that are reliable and efficient. In recent times, there has been an increasing discussion regarding the optimal approach for spectrum assignment, with proponents favoring an auction-based model as a more suitable alternative to the traditional administrative approach.

The spectrum dedicated to space-based communication plays a crucial role in facilitating various applications, including high-speed internet, disaster management, and remote sensing. Recognizing the significance of this resource, the TRAI's Consultation Paper on "Assignment of Spectrum for Space-based Communication Services" marks a noteworthy milestone in determining the allocation method for this spectrum.

Space-based communication services make use of shared spectrum resources that are recycled for various purposes. There are multiple justifications for adopting an administrative allocation approach for this spectrum. Firstly, the field of satellite communication is inherently intricate, and utilizing auction-based models may result in outcomes that are less than optimal for the industry as a whole. Unlike conventional telecommunication services that mainly involve point-to-point communication, satellite communication necessitates substantial and contiguous spectrum blocks. An auction-based approach could potentially fragment the available spectrum, posing challenges for operators in delivering efficient services.

Moreover, Satellite Communication is a highly strategic industry, with the ability to impact national security, disaster management, and other critical services. An administrative approach allows the government to ensure that the spectrum is allocated to entities that have the necessary expertise and resources to provide these services effectively. By contrast, an auction-based model may prioritize the interests of the highest bidder, without taking into account broader strategic considerations.

Numerous nations have encountered setbacks in auctioning spectrum for satellite services. As an illustration, the UK government's auction of the 2.3 GHz and 3.4 GHz spectrum for 5G services in 2018 failed to generate bids from prominent mobile operators. This failure was primarily attributed to the government's establishment of lofty reserve prices. Comparable instances of unsuccessful auctions have been witnessed in countries including Australia, Germany, and

Switzerland. These failures can impede the timely implementation of satellite services, fostering uncertainty for both service providers and users.

Finally, administrative allocation offers a degree of certainty and predictability that can prove advantageous for the satellite communication industry. Auctions inherently carry the risk of allocating spectrum to entities that may not be ideally equipped to deliver the necessary services. Such uncertainties can pose challenges for operators in terms of network planning and investment. In contrast, administrative allocation provides a clear and predictable framework for accessing spectrum, enabling satcom operators to plan and invest with confidence in the burgeoning industry.

In conclusion, adopting an administrative approach for the allocation of space-based communication spectrum is a pragmatic and efficient strategy to optimize the utilization of this crucial resource. The administrative approach offers a valuable blend of certainty, security, and predictability, particularly benefiting the emerging Indian private space industry and the nation as a whole. As the communications landscape continues to evolve, policymakers must contemplate various approaches to spectrum allocation, and administrative allocation emerges as a viable and effective option in numerous instances.

Some of the auction challenges specific to satellite services include:

1. **Spectrum sharing among multiple users:** In contrast to terrestrial services, satellite services function within the same frequency bands and orbital slots, leading to multiple users sharing the spectrum. This absence of exclusivity presents a complex situation when allocating and auctioning frequencies, as ensuring interference-free operation becomes a formidable task.
2. **The exclusive allocation of satellite spectrum may result in adverse consequences:** such as fragmentation of spectrum utilization and diminished overall usage and value. Additionally, this approach has the potential to restrict the number of operators able to leverage the spectrum, impede the entry of startups into the industry, and deprive the country of the substantial capacities contributed by satellite operators, thereby inhibiting innovation within the sector.
3. **Spectrum scarcity:** Opting for spectrum auctioning can result in the country missing out on the significant capacities introduced by operators, thereby potentially impeding the growth of the space sector and the overall economy. Furthermore, there is frequently intense competition for this limited spectrum among various satellite service types, including fixed satellite services, mobile satellite services, and broadcasting satellite services.
4. **Globally, administrations have predominantly utilized administrative methods for assigning spectrum to satellite operations:** particularly in the

microwave/mmWave bands, as opposed to conducting auctions. Despite certain administrations' attempts to auction orbital resources in conjunction with spectrum rights, this approach has proven largely unsuccessful. The United States implemented the Orbit Act in 2000, prohibiting the auctioning of orbital resources alongside spectrum. Similarly, countries like Brazil and Mexico have discontinued the practice of auctioning orbital resources. In 2021, Thailand abandoned a satellite spectrum auction due to the presence of only one bidder.

5. **Complexity of Satellite Systems:** The intricate nature of satellite systems poses challenges in designing an auction that effectively caters to the requirements of all stakeholders. Specifically, satellite auctions must address intricate aspects such as orbital slots, interference management, and spectrum sharing among multiple users. The auction process has the potential to restrict the number of operators able to utilize the spectrum, potentially resulting in limited market diversity and impeding innovation.
6. **Global Coordination:** The operation of numerous satellite services on a global or regional scale presents difficulties in coordinating spectrum usage among multiple countries. This complexity can give rise to conflicts and inefficiencies in the utilization of spectrum resources.
7. **Financial Challenges:** The expenses associated with acquiring spectrum through an auction process can pose significant barriers, thereby presenting challenges for smaller satellite operators to enter the market. This cost factor can have a substantial impact on the expansion of the emerging space industry, particularly for new entrants in the field.
8. **Regulatory Complexity:** The regulatory framework for satellite services is complex and can vary significantly between countries & regions. This can create uncertainty for bidders and result in delays in the auction process.
9. **Policy Goals:** The government holds specific objectives concerning the utilization of satellite spectrum, which can encompass initiatives like enhancing rural connectivity or prioritizing national security. However, these policy objectives may clash with commercial interests, presenting a formidable task of striking a balance between these competing priorities.