

Submissions to Consultation Paper on “Assignment of Spectrum for Space-based Communication Services”

1. We express our gratitude to the Telecom Regulatory Authority of India (TRAI) for initiating this consultation paper concerning the auction-based assignment of spectrum for Space-based Communication services. The present spectrum assignment approach, which differentiates between Fixed-Satellite Services (FSS), Mobile-Satellite Services (MSS), Terrestrial Access, and Terrestrial backhaul networks, needs to be re-evaluated. The rapid advancements in technology and the emergence of industry standards are driving the transition towards technology neutral networks. Any distinctions in spectrum assignment rules based on technological differentiations would be artificial and could lead to inefficient utilization of this valuable resource.
2. Currently, spectrum assigned through auctions is permitted to be used in a liberalized and technology-neutral manner. As technologies continue to evolve, it becomes imperative to extend this liberalized approach to satellite-based communications. The significance of the distinction between FSS and MSS is diminishing, and maintaining it could have detrimental consequences for the industry in the long run. Embracing a flexible usage policy promotes efficient utilization, which is crucial for optimizing the allocation of this scarce resource.
3. Non-Geostationary Orbit (NGSO) satellite networks possess capabilities that can effectively compete with terrestrial communication, including the provision of access services. The policy framework and licensing regulations do not impose any restrictions on satellite operators offering services in areas already covered by terrestrial networks. This allows satellite providers to compete with terrestrial providers making it essential to establish uniform and equitable spectrum assignment rules, without granting preferential treatment to any stakeholder solely based on network type. **Auctioning satellite spectrum emerges as the most viable strategy to ensure a balanced competitive landscape among competing service providers.**
4. Space-based communication services have the potential to complement terrestrial coverage in hard-to-reach areas, while also competing for the same subscribers. The 'Same Service Same Rule' principle plays a critical role in establishing transparent, rational, and easily implementable regulations. These regulations should be applied

equitably, without bias, to promote inclusive growth, enable cohesive economic activity, and propel national progress. Failure to adhere to this principle can lead to imbalanced competition, negatively impacting investments, service quality, and fostering monopolistic and anti-consumer practices, which are detrimental in the long run.

5. Technology Neutrality is a key parameter in various auctions conducted till date in India Telecom sector and we believe the same should be continued for the space-based communication services as well. India has emerged as a global leader in spectrum auctions for terrestrial services since 2010. The policy framework and auction methodology implemented by India have been widely adopted by numerous countries worldwide, underscoring its effectiveness and influence in shaping international practices. In contrast, administrative assignments of spectrum have faced criticism and scrutiny, including from the Hon'ble Supreme Court. The Hon'ble Supreme Court's landmark ruling in the 2G case (CWP 423 of 2010 dated 2nd February 2012) unequivocally declared that the right to use such spectrum can only be transferred through a transparent auction process.
6. **It is crucial to maintain the established policy of auctioning spectrum as the only method for acquiring spectrum to provide communication services, regardless of the service scope. Spectrum auctions offer the highest level of transparency in spectrum assignment, empowering service providers to choose their preferred technology, be it terrestrial, satellite, or any other.**
7. Spectrum assignment should be flexible, allowing bidders to utilize it for any service within the scope of their license and WPC rules. Encouraging spectrum sharing and leasing through direct arrangements between operators should encourage by the government with both monetary and non-monetary incentives.
8. Principles and charges for regulatory levies, including license fees, should remain consistent for competing services delivered using different technologies. The spectrum and licensing policy should not rely on regulatory arbitrage in terms of licensing or resource assignment. When determining the value of spectrum, multiple valuation methods should be examined along with factors such as technical efficiency, market growth rate, international benchmarking etc. be considered.
9. Setting a reserve price at 50% of the spectrum valuation would be optimal for facilitating true market price discovery. This approach would benefit the industry in the long run by

minimizing unsold spectrum waste, maximizing overall returns, and simultaneously boosting overall license fee proceeds.

10. **In response to Q1** of the consultation paper, we propose that all spectrum bands allocated for satellite services in various frequency bands (except spectrum within C-Band that serves the current teleport/broadcasting sector), as identified by ITU/Indian NFAP-2022, should be included in this consultation. **It is essential that these spectrum bands are made available for both gateway links and user links through auctions.**
11. **In response to Q2**, we strongly advocate for the Authority to maintain its technology-neutral approach and **avoid supporting service-level differentiation in the auction design**. The upcoming auction should include all available spectrum. The successful bidder should have the **flexibility to utilize the acquired spectrum for any type of network and service, in accordance with the scope of their UL authorizations and in adherence to ITU Radio Regulations (RR) and NFAP-2022.**
12. **In response to Q3**, we would like to clarify that although certain stakeholders have expressed concerns about auctioning spectrum for space-based communication services, arguing that it is a shared resource and should not be exclusively granted to one entity through auction, we firmly believe that these concerns can be mitigated through a well-defined auction model for different types of links and the implementation of spectrum sharing, leasing, and trading policies. Assigning separate frequencies to each operator exclusively through band segmentation optimizes spectrum utilization, and further efficiencies can be achieved by allowing spectrum sharing, similar to terrestrial spectrum. A customized policy on spectrum sharing, trading, leasing, and surrender can be developed for satellite spectrum.
13. **In response to Q5**, the NGSO User Links can be auctioned in a flexible manner along with International Mobile Telecommunications (IMT). However, Geostationary User Links should be auctioned separately for each angular sector. Additionally, the Feeder Link spectrum can be auctioned on a geographical basis. The successful bidder should be responsible for managing interference through private contracts, promoting efficient spectrum usage with a simplified regulatory approach. Another area that needs attention is spectrum sharing and acquisition within group companies, which should be permitted without additional charges/fees and should not be considered crossholding of the spectrum.

14. **In response to Q6 and Q7**, spectrum acquired through auctions should be allowed to be shared with or leased to any entity that currently does not hold spectrum or was not successful in the auction for the particular band. To address the issue of unsold spectrum, the Government may consider conducting an annual auction that includes unsold spectrum from the previous auction, expired spectrum, and newly available spectrum bands for communication services.

The successful bidder should have the ability to trade and/or lease a portion or all of their satellite spectrum holding to other eligible service licensees, including those without any spectrum in the concerned bands. However, the entity acquiring the spectrum must meet eligibility conditions for holding such spectrum and should possess a valid authorization/license or obtain the necessary license before operating services using the acquired spectrum.

15. **In response to Q8**, we recommend that bidders be allowed to select their preferred frequency slot in the band based on their rank in the auction. If a bidder acquires multiple blocks, the entire spectrum should be assigned in a contiguous form. However, if an existing service licensee is unable to acquire spectrum through the auction, they can still obtain the required spectrum through coordination with the successful bidder via spectrum sharing, leasing, or trading provisions.

16. **In response to Q9**, we emphasize that allowing non-exclusive use for all operators based on mutual coordination would result in inefficient resource utilization and may be treated as delicensing mechanism, considering the finite nature of frequency spectrum. Hence we do not support for the non-exclusive assignment.

17. **In response to Q12 and Q13**, we believe that Captive Non-Public Network (CNPN) is a relatively minor use case within the specified band. Reserving a spectrum band exclusively for such CNPN would waste the potential of the entire band, which could be utilized for more greater number of services. The bandwidth requirement for CNPN can be fulfilled by Telecom Service Providers as and when needed.

18. **In response to Q14**, we propose that space-based communication services should not be classified into different service classes that require different treatment for spectrum assignment. Implementing different auctions based on service type would result in inefficient spectrum usage. The Authority should consider all spectrum bands (except spectrum within C-Band that serves the current teleport/broadcasting operations) outlined in consultation paper for conducting auctions and enabling the service

providers to use the assigned frequencies for flexible use. This would promote efficiency and greater usage without any significant interference issues.

19. **In response to Q15 and Q16**, we believe that the administrative assignment should not be the basis for assignment and government should consider auction based method with technology neutrality in place. As highlighted in the preface, auction remains the only legal way of assigning the spectrum resource in India. We submit that assignment of spectrum for user links for space-based communication services should be assigned through auction.
20. **In response to Q21**, we recommend conducting regular auctions to provide operators with ongoing opportunities to acquire spectrum. This approach ensures dynamic allocation of spectrum resources in line with evolving market needs and technological advancements. We further suggest combining the auction of satellite spectrum with terrestrial spectrum and conducting yearly combined auctions. This approach offers bidders the flexibility to select spectrum bands that best align with their business requirements, enabling versatile use across various services. Additionally, it streamlines the auction process by consolidating spectrum offerings and simplifying the bidding process. Once assigned through auction, the spectrum validity can be limited to 20 years, with the option to surrender the spectrum after a minimum of 5 years from the assignment date.
21. **In response to Q24**, we recommend maintaining the existing Minimum Net Worth under the Unified License (UL) as an eligibility condition for bidders. However, we propose dispensing with the requirement for an existing agreement with satellite operator(s).
22. **In response to Q25**, we suggest that the terms and conditions for assigning frequency spectrum for both user links and gateway links in each type of space-based communication service should facilitate flexible utilization without imposing any service-level differentiation. Operators should be granted permission for inter/intra-operator spectrum sharing, leasing, and trading, subject to certain rollout obligations.
23. **In response to Q26**, we recommend that the Crossholding conditions should not be applicable for the service providers while sharing the spectrum resources with the another service providers with common parent entities. For the rest of the service providers, the restriction should be applied. This ensures that spectrum is efficient shared based on the service provider business requirements.

24. **In response to Q33, Q34, Q35, and Q36**, we maintain the view that allocating spectrum to commercial gateway links administratively would not be legally viable. Instead, it is recommended that the assignment of gateway spectrum be exclusively carried out through the auction process, employing a design that allows for non-exclusive spectrum assignment to a limited number of bidders. This approach ensures successful bidders have the necessary spectrum resources for operating gateways without encountering interference issues. Furthermore, the establishment of exclusion zones will provide protection for these gateway operations.
25. **In response to Q38**, we reiterate our opposition to any administrative assignment for user or gateway links. Our earlier submissions in response to Q15 and Q16 also reinforce this stance.
26. **In response to Q39, Q41, Q42, and Q44 & Q45**, we propose that when determining the valuation of spectrum for user links, it is important to consider auction-discovered prices of spectrum with similar propagation characteristics. The existing administrative prices paid by service providers for the gateways can be used as benchmark for valuation. The valuation for user links may also be calculated using international benchmarks provided they do not show greater price differences when compared with other valuation methods.
27. **In response to Q52, and Q54**, Based on the obtained valuation, the reserve price for user links and gateway links should be set at 50% of the spectrum valuation. This approach allows for the operation of competitive market forces and facilitates the discovery of the actual market value of the spectrum. The upfront payment and moratorium period should aid in reduce the financial burden on the operators.