



THE BUZZWORD

TELECOM USERS
ASSOCIATION OF INDIA

30th May 2023

Ref: To,
Shri Akhilesh Kumar Trivedi,
Advisor (Networks, Spectrum and Licensing),
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
Jawaharlal Nehru Marg,
New Delhi, Delhi 110002
adv.mn@trai.gov.in

Date:

Subject: Response to TRAI's Consultation Paper on "Assignment of Spectrum for Space-based Communication Services"

Preamble

We express our heartfelt appreciation to the Authority for releasing this imminent consultation paper especially at a time when there is increased convergence in the industry. India is at a point of technological triumphs that are enabled by the growing convergence between terrestrial and satellite networks that can be used for achieving the vision of connected society. Due to such convergence, it is feasible to employ the same spectrum simultaneously both for satellite & terrestrial network and has made possible integrated terrestrial and satellite networks.

Technological advancements in satellite technologies has not only bolstered reliability and capacity of space based communication networks but has also enhanced their efficiency and latency. Thus, the boundaries between the networks are reducing where the satellites are providing similar services as provided by the terrestrial service providers including low latency broadband services, IoT/M2M, and direct two-way satellite-to-mobile phone services.

In a fast-moving world like ours, technological advancements are playing a huge role in the convergence of terrestrial and satellite networks leading to increased coverage, better efficiency and greater economic feasibility. Terrestrial and satellite networks are both equally important for making India a digital superpower – satellite networks are essential to provide coverage in remote unconnected areas while also supplementing the existing coverage provided by terrestrial networks in urban areas. Therefore, both terrestrial and satellite networks are at par in terms of potential use-cases, reliability and quality of service.

Keeping the above pointers in mind and attempting to realise the true potential of India as a digital superpower, we have presented our views in two key takeaways (central arguments), namely:



Natra

formulated by the government for most efficient utilisation of spectrum in the absence of which the resource is susceptible to degradation.

Issues for consultation

Q1. For space-based communication services, what are the appropriate frequency bands for (a) gateway links and (b) user links that should be considered under this consultation process for different types of licensed telecommunications and broadcasting services?

Kindly justify your response with relevant details.

Response:

We suggest that spectrum is a precious resource and all the bands identified by DoT/TRAI for allocation of space based services should be put to auction. The spectrum identified should be allocated to both the user and feeder links. The assigned spectrum should be permitted to use by the bidder in a technology agnostic manner. Further, due to the increasing convergence of various networks and services, the spectrum assigned should be permitted for serving any type of service by the bidder based on their license scope.

Q4. For space-based communication services, whether frequency spectrum in higher bands such as C band, Ku band and Ka band, should be assigned to licensees on an exclusive basis? Kindly justify your response. Do you foresee any challenges due to exclusive assignment? If yes, in what manner can the challenges be overcome? Kindly elaborate the challenges and the ways to overcome them.

Response:

It is recommended that the assignment of spectrum for user links/terminals be exclusive in nature. This is because there would be interference between NGSO satellite systems due to their simultaneous operations. The only way out of this through the exclusive assignment of spectrum between two satellite operators which would allow for efficient service delivery.

Q15. What should be the methodology for assignment of spectrum for user links for space-based communication services in L-band and S-band, such as-

- (a) Auction-based
- (b) Administrative
- (c) Any other?

Please provide your response with detailed justification.

&

Q16. What should be the methodology for assignment of spectrum for user links for space-based communication services in higher spectrum bands like C-band, Ku-band and Ka-band, such as

- (a) Auction-based
- (b) Administrative
- (c) Any other?



natural resource that is finite, limited and a public good is most effectively assigned through spectrum. This view has been established and endorsed by the Hon'ble Supreme Court of India in various judgments by taking the view that while distributing natural resources, the state must always ensure equality and preservation of public interest. In Union of India & Ors. v. Centre for Public Interest Litigation [Writ Petition (Civil) No. 423 OF 2010], it was held that "*Natural resources belong to the people but the State legally owns them on behalf of its people and from that point of view natural resources are considered as national assets, more so because the State benefits immensely from their value. The State is empowered to distribute natural resources. However, as they constitute public property/national asset, while distributing natural resources, the State is bound to act in consonance with the principles of equality and public trust and ensure that no action is taken which may be detrimental to public interest.*"

Further, in the same judgment, the Supreme Court observed that "*Spectrum has been internationally accepted as a scarce, finite and renewable natural resource which is susceptible to degradation in case of inefficient utilisation*". As per the Apex Court, spectrum must be assigned in a way that is in public interest and hinges on equality. The Court has further held "*In our view, a duly publicised auction conducted fairly and impartially is perhaps the best method for discharging this burden and the methods like first-come-first-served when used for alienation of natural resources/public property are likely to be misused by unscrupulous people who are only interested in garnering maximum financial benefit and have no respect for the constitutional ethos and values. In other words, while transferring or alienating the natural resources, the State is duty bound to adopt the method of auction by giving wide publicity so that all eligible persons can participate in the process.*"

The observations of the Apex Court of India are clear:

- a) that spectrum is a national resource that is scarce and finite;
- b) that spectrum is susceptible to degradation due to inefficient utilization; and
- c) auction is the best process for alienation of public property/resources.

Therefore, it is beyond reasonable doubt that auction of spectrum is indeed the most transparent, non-arbitrary and efficient method for the assignment of spectrum/any other natural resource.

Exclusive Assignment of Spectrum for User Links

It is recommended that the assignment of spectrum for user links/terminals be exclusive in nature. This is because there would be interference between NGSO satellite systems due to their simultaneous operations. To mitigate the interference between user links among NGSO systems, the satellites will have to be several kilometres apart. The only way out of this through the exclusive assignment of spectrum between two user links which would allow for efficient service delivery.

Additionally, since spectrum is a scarce and finite resource, spectrum sharing, leasing and trading through exclusive agreements can be allowed between operators without any government intervention (except when the market fails). Spectrum sharing has two important benefits – sharing and use of a scarce natural resource and coordinated industry collaborations to prevent interference. Incentives for the promotion of spectrum sharing/trading/leasing models should be



- i) Assignment of spectrum through auction as against administrative allocation of spectrum;
- ii) Assignment of spectrum for user links must be exclusive in nature with the flexibility of sharing or trading the spectrum subject to conditions agreed to between the respective parties;

Assignment of Spectrum through Auction as against Administrative Allocation of Spectrum

Traditionally, there have been two approaches for the assignment of spectrum, namely – spectrum auction and administrative allocation of spectrum. The satellite spectrum is traditionally assigned through administrative assignment, whereas the terrestrial access spectrum is assigned through auction. However, with increased convergence of both these networks, there is a need to remove such distinction maintained with spectrum assignment method.

With the leap in technological advancements and the growing convergence enabling similar services by multiple networks, this distinction between satellite and terrestrial networks for selection of assignment method doesn't hold any ground. Proponents creating this distinction have more often than not based their arguments on the emergence of new technology and global precedents but that would not be in conformity with the principle of "Same Service, Same Rule". This is because in the instance of this shrinking distinction, terrestrial networks and satellite networks would be substitutable goods which should be under the same regulatory framework. The principle basically calls for uniform applicability of law in a manner that is transparent, rational and cohesive in nature and treats equals equally.

An argument that is often levied against assignment of spectrum for satellite through auction is that satellite spectrum authorization is possible only through the ITU and NRAs have no other option but to administratively auction spectrum. While this is a widely held perspective, it is important to understand and note that spectrum access within national borders is a sovereign function and right and the ITU doesn't impose any restrictions on the assignment method for the same.

Additionally, it has been extensively argued that auctioning of spectrum will result in use by a few stakeholders and will be inherently exclusionary since it will be used only by a few gateway stations and preventing gateways from accessing the complete band of spectrum. Spectrum for user terminals will be used across the country meaning thereby that the allocation will have to be across the length and breadth of the country. Also, by its very nature, gateways will have full access through geographic segmentation.

There seems to be a public perception that auctions may increase the digital divide as a result of the exclusive and exclusionary aspect described above. Nothing can be farther away from the truth but this – auctions are not only neutral, fair and non-discriminatory but also efficient and competitive thereby leading to greater innovation and better consumer/user service delivery. It is also illogical to assume that administrative allocation boosts investor sentiment and investments because the assignment method that is closest to the market mechanism is auction and not administrative allocation. As an investor, economic feasibility and economic proofing of the investment are most important and both of those are characteristic of auctions. Assignment of any



Natra

Please provide your response in respect of different types of services (as mentioned in Table 1.3 of this consultation paper). Please support your response with detailed justification.

Response:

The assignment of spectrum for user links in all the identified bands by DoT/TRAI for assignment to space based communication services must be solely through auction methodology. Space based communication services provided through use of NGSO/GSO satellite are commercial in nature and hence it is important to assign the spectrum through auction methodology which is a neutral, transparent and the most efficient for the assignment of a scarce resource such as spectrum. The service providers who acquired spectrum in auction must be encouraged for efficient and equitable use of spectrum through sharing/leasing/trading agreements based on mutual coordination.

Q38. In case it is decided for assignment of spectrum on administrative basis, what should be the spectrum charging mechanism for assignment of spectrum for space-based communications services

- i. For User Link
- ii. For Gateway Link

Please support your answer with detailed justification.

Response:

We would like to place on record that we do not support administrative allocation of spectrum for both user links and gateway links. The price of spectrum should be discovered through the auctions as being done for mobile services.

Thanking You

Yours sincerely


Nimai Charan Patra,
General Manager

