



To,
Shri Akhilesh Kumar Trivedi,
Advisor (Networks, Spectrum and Licensing),
Telecom Regulatory Authority of India

Subject: Comments/Observations on behalf of Hathway Cable and Datacom Limited on the TRAI Consultation Paper titled “Assignment of Spectrum for Space-based Communication Services” dated 4th April, 2023 (“CP”).

Dear Sir,

We would like to express our gratitude for providing us with the opportunity to share our comments on this consultation paper.

This consultation paper is very timely since the liberalization of space segment and the new Spacecom Policy would aid greater participation of private players to provide space based communication services. As more private players enter the space communication sector, the demand for spectrum is expected to rise. Spectrum serves as the lifeline for communication services, allowing for the transmission of data, voice, and other types of communication signals. With the increased participation of private players, the spectrum requirements are likely to expand in the future.

We support that assigning spectrum in all the bands to satellite service providers would aid the space sector in providing best quality of services. However, it is very important to ensure that a fair and transparent method is adopted in assigned such spectrum resource.

In the consultation paper, we broadly see two ways of spectrum assignment is deliberated for views from stakeholders i.e. auction vs. administrative allocation. The consultation paper also highlights that DoT has requested views on auction based assignment of spectrum for both user and feeder links for the successful bidder. It has been a long standing debate over which mode should be used for spectrum assignment among various stakeholder. We are of the strong view that a limited, finite and important resource like spectrum must always only be assigned through auctioned.

This is because auction is not only a process that is transparent, open for all and efficient but also because auction promotes innovation and competition. An auction ensures two most important aspects, amongst others – level playing field for all stakeholders and a market mechanism for a finite natural resource. This position has also been endorsed by the courts of India, especially the Apex Court.

Hathway Cable and Datacom Limited

Regd. Off: 805/806, “Windsor”, 8th Floor, Off CST Road, Kalina, Santacruz (East), Mumbai 400098.

Tel: 022 40542500, Fax: 022 40542700

CIN: L64204MH1959PLC011421

Website: www.hathway.com Email: info@hathway.net



In the landmark 2G case (Centre for Public Interest Litigation v. UOI & Ors., CWP 423 of 2010), the Supreme Court held that - *“74. 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. Like any other State action, constitutionalism must be reflected at every stage of the distribution of natural resources. ... **Spectrum has been internationally accepted as a scarce, finite and renewable natural resource which is susceptible to degradation in case of inefficient utilisation.** It has a high economic value in the light of the demand for it on account of the tremendous growth in the telecom sector. Although it does not belong to a particular State, right of use has been granted to States as per international norms.*

Therefore, assignment of spectrum must only be through the process of **open-for-all auction and not through administrative allocation** which could be influenced by bias and discretion. Hence, we suggest spectrum assignment for user and links must be on exclusive basis. Apart from being transparent and open-for-all, auctions serve another essentiality – auctions offer an equal footing to all enterprises and are driven by the market mechanism.

Since auction is in itself a market mechanism and if spectrum for user links is assigned exclusively, the regulator must create a well-defined auction model that permits sharing, trading and leasing of spectrum. Spectrum sharing between operators is recommended not only because it brings greater efficiency but also because it would require a coordinated effort on part of the entire industry ultimately leading to increased harmony and unity between operators.

With this background, we broadly suggest the following:-

- **Assigning spectrum for both user links and feeder links through the auction method is the appropriate method.**
- **Administrative assignment of spectrum, which involves allocating spectrum on a first-come, first-served basis or through direct government decisions, has been subject to criticism and legal challenges in our country.**
- **The spectrum in all possible bands as identified in consultation paper be kept in auction for user and feeder links in GSO & NGSO.**

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- Allowing auction assigned spectrum to be used flexibly by the service provider for any type of service i.e. "technology-neutral" or "service-neutral" regime should be promoted.
- Permit sharing, trading and leasing of spectrum among service providers as per their mutual agreements.

Specific response to key issues raised in the consultation paper are detailed below:-

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:

With increased number of players in the market, it is critical that all available spectrum blocks are put to auction for use by service providers in a flexible manner. It is also imperative that spectrum bands identified for satellite services should be made available for both gateway links and user links through auctions. Including all available spectrum in the band during auctions avoids fragmenting the spectrum and enables bidders to have a comprehensive view of the available resources. This facilitates better planning, deployment and optimization of services.

With the advancements in technology and the convergence of different communication services, the traditional distinction between Fixed Satellite Service (FSS) and Mobile Satellite Service (MSS) is becoming less relevant. In light of this, there is a growing recognition that efforts to create an artificial distinction between the two may no longer be necessary.

Embracing the principle of technology-neutrality in spectrum auctions acknowledges the evolving nature of communication services and enables greater flexibility for the utilization of assigned spectrum. This approach allows bidders to adapt to changing market demands, deploy innovative technologies, and offer a wide range of services without being constrained by outdated categorizations.

By adopting technology-neutrality in spectrum auctions, regulatory authorities can promote a more efficient and dynamic use of spectrum resources. It encourages innovation, competition, and investment in the communication sector, ultimately benefiting consumers and the overall development of the industry.

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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.

Q9. In case you are of the opinion that the frequency spectrum in higher frequency bands such as C band, Ku band and Ka band for space-based communication services should be assigned on shared (non-exclusive) basis,

(a) Whether a broad framework for sharing of frequency spectrum among satellite communication service providers needs to be prescribed or it should be left to mutual coordination? In case you are of the opinion that broad framework should be prescribed, kindly suggest the framework and elements to be included in such a framework.

(b) Any other suggestions may kindly be made with detailed justification. Kindly justify your response.

Response:

We do not see any challenges in getting exclusive assignment of spectrum in higher bands such as C band, Ku band and Ka band. The non-exclusive based assigned should be avoided since the utilization of same user link frequencies would result in severe interference issues. Hence, it is recommended to award the user link spectrum on exclusive basis through auction.

Q5. In case it is decided to assign spectrum in higher frequency bands such as C band, Ku band and Ka band for space-based communication services to licensees on an exclusive basis,

(a) What should be the block size, minimum number of blocks for bidding and spectrum cap per bidder? Response may be provided separately for each spectrum band.

(b) Whether intra-band sharing of frequency spectrum with other satellite communication service providers holding spectrum upto the prescribed spectrum cap, needs to be mandated?

(c) Whether a framework for mandatory spectrum sharing needs to be prescribed? If yes, kindly suggest a broad framework and the elements to be included in the guidelines.

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(d) Any other suggestions to ensure that that the satellite communication ecosystem is not adversely impacted due to exclusive spectrum assignment, may kindly be made with detailed justification.

Kindly justify your response.

Q7. Whether any entity which acquired the satellite spectrum through auction/assignment should be permitted to trade and/or lease their partial or entire satellite spectrum holding to other eligible service licensees, including the licensees which do not hold any spectrum in the concerned spectrum band? If yes, what measures should be taken to ensure rationale of spectrum auction and to avoid adverse impact on the dynamics of the spectrum auction? Kindly justify your response.

Response:

The sharing of spectrum acquired in auction should be primarily left to the service providers, who can enter into agreements on mutually agreed terms and conditions. By allowing service providers to engage in spectrum sharing, they have the flexibility to optimize the use of spectrum resources based on their operational needs and market demands. The DoT should establish guidelines and incentives to encourage efficient spectrum utilization, network deployment, and service coverage.

We agree that service providers should be permitted to trade and/or lease their partial or entire satellite spectrum holding to other eligible service licensees, including the licensees which do not hold any spectrum in the concerned spectrum band. Encouraging service providers to make efficient use of auctioned spectrum through sharing, trading and leasing and promoting the timely rollout of services is indeed an important consideration.

Q6. What provisions should be made applicable on any new entrant or any entity who could not acquire spectrum in the auction process/assignment cycle?

(a) Whether such entity should take part in the next auction/ assignment cycle after expiry of the validity period of the assigned spectrum? If yes, what should be the validity period of the auctioned/assigned spectrum?

(b) Whether spectrum acquired through auction be permitted to be shared with any entity which does not hold spectrum/ or has not been successful in auction in the said band? If yes, what measures should be taken to ensure

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rationale of spectrum auction and to avoid adverse impact on the dynamics of the spectrum auction?

(c) In case an auction based on exclusive assignment is held in a spectrum band, whether the same spectrum may again be put to auction after certain number of years to any new entrant including the entities which could not acquire spectrum in the previous auction? If yes,

(i) After how many years the same spectrum band should be put to auction for the potential bidders?

(ii) What should be the validity of spectrum for the first conducted auction in a band? Whether the validity period for the subsequent auctions in that band should be co-terminus with the validity period of the first held auction? Kindly justify your response.

Response:

The smaller entities who cannot participate or could not acquire spectrum in auction, should be encouraged to have spectrum sharing, trading and leasing agreements with the service providers who have acquired the spectrum in auction. Such mechanisms will promote fair access to spectrum resources and enable smaller entities to participate in the communication market.

The spectrum auction should be conducted at regular intervals ensuring that the new entrants and other entities have opportunity to acquire the spectrum in upcoming auctions. The auction should include all available spectrum in the band at that point of time. The spectrum validity should be for 20 years time frame, similar to the terrestrial spectrum with option of surrendering the spectrum after specific time period.

Q10. In the frequency range 27.5-28.5 GHz, whether the spectrum assignee should be permitted to utilize the frequency spectrum for IMT services as well as space-based communication services, in a flexible manner? Do you foresee any challenges arising out of such flexible use? If yes, in what manner can the challenges be overcome? Kindly elaborate the challenges and the ways to overcome them.

Q12. Whether there is a requirement for permitting flexible use between CNPN and space-based communication services in the frequency range 28.5-29.5 GHz? Kindly justify your response.

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Response:

The utility of these spectrum bands is for a range of services and hence the assignment of frequencies in these bands to service providers should enable them to use for any service (i.e. IMT/CNPN/Satellite) in a flexible manner. Any artificial restrictions that limit the use of spectrum bands based on specific technologies or network types can indeed hinder efficient spectrum utilization and limit innovation.

Enabling service providers to use assigned frequencies in a flexible manner allows them to adapt to changing technologies, market demands, and consumer preferences and promotes efficient spectrum utilization for deploying the most suitable technology and network type for their specific requirements.

Moreover, the concept of technology or service neutrality in spectrum assignment recognizes the evolving nature of communication services and the convergence of different technologies. By removing artificial restrictions, service providers have the freedom to utilize the spectrum in a manner that best aligns with their business strategies and customer needs.

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?**

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.

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Q17. Whether spectrum for user links should be assigned at the national level, or telecom circle/ metro-wise? Kindly justify your response.

Response:

As explained in the preface of the response, methodology for assigning the user links should be auction-based as it ensures the transparency, market-driven pricing, and fair competition in process of spectrum resources to service providers. The user links should be exclusively assigned through auction to each of the service providers using GSO & NGSO constellations to provide space based communication services. The user links assignment should be at the national level.

The following principles should be followed for assignment of user links through auction:-

- Service providers using NGSO satellites: Different service providers should be assigned different frequency blocks within a band on exclusive basis.
- Service providers using GSO satellites:- Different service providers should be assigned different frequency blocks within a band on exclusive basis within each angular sector. Among different angular sectors, the same frequency spectrum blocks can be used by multiple GSO satellite systems as long as they are sufficiently apart in terms of angular separation. Hence the same blocks may be assigned to different service providers in auction if GSO satellites are separated with sufficient angular distance as per ITU.

Q19. What should be the methodology for assignment of spectrum for gateway links for space-based communication services, such as

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

Please provide your response in respect of different types of services. Please support your response with detailed justification.

Q34. What could be the likely issues, that may arise, if Option # 2: Assignment of gateway spectrum through auction for identified areas/ regions/ districts is implemented for assignment of spectrum for gateway links? What changes could be made in the proposed option to mitigate any possible issues? In what manner, areas/ regions/ districts should be identified?

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Response:

Unlike user links spectrum, the gateway link needs greater quantum to meet the traffic needs at the gateway terminal and hence the complete spectrum identified for auction should be available for the bidder to acquire for the gateway location. As discussed in the consultation paper in Option #2, the assignment of gateway spectrum through auction for identified areas/ regions/ districts is recommended for assignment of spectrum for gateway links. These locations may be kept exclusive to the gateway operations only.

Q29. What could be the likely issues, that may arise, if the following auction design models (described in para 3.127 to 3.139) are implemented for assignment of spectrum for user links in higher bands (such as C band, Ku band and Ka band)?

- a. **Model #1: Exclusive spectrum assignment**
- b. **Model#2: Auction design model based on non-exclusive spectrum assignment to only a limited number of bidders**

What changes should be made in the above models to mitigate any possible issues, including ways and means to ensure competitive bidding? Response on each model may kindly be made with justification.

Response:

We strongly oppose the non-exclusive spectrum assignment only to a limited number of bidders as it may result in entry barriers to smaller players. The assignment process should given equal opportunity to all the players incl. smaller entities, to participate in the market price discovery of the spectrum band. Hence, we support for Model #1, exclusive spectrum assignment through auction for various bands (such as C band, Ku band and Ka band).

Q39. Should the auction determined prices of spectrum bands for IMT /5G services be used as a basis for valuation of space-based communication spectrum bands

- i. **For user link**
- ii. **For gateway link**

Please support your answer with detailed justification.

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Q42. In case of an auction, should the current method of levying spectrum fees/charges for satellite spectrum bands on formula basis/ AGR basis as followed by DoT, serve as a basis for the purpose of valuation of satellite spectrum

- i. For user link**
- ii. For gateway link**

If yes, please specify in detail what methodology may be used in this regard.

Q52. Should the reserve price for spectrum for user link and gateway link be taken as 70% of the valuation of spectrum for shared as well as for exclusive assignment? If not, then what ratio should be adopted between the reserve price for the auction and the valuation of the spectrum in different spectrum bands in case of (i) exclusive (ii) shared assignment and why? Please support your answer with detailed justification.

Response:

The auction determined price may be used rationally to arrive at the valuation of spectrum bands for space-based communications with considerations given to current market size and revenue potential of the satellite sector. The prices paid by the service providers current on administrative basis may also be considered for arriving at the valuation of satellite spectrum. To aid market price discovery in auction we suggest reserve price should be optimally placed i.e. at 50% of valuation.

Q54. In case of auction based and/or administrative assignment of spectrum, what should the payment terms and associated conditions for the assignment of spectrum for space-based communication services relating to:

- i. Upfront payment**
- ii. Moratorium period**
- iii. Total number of installments to recover deferred payments**
- iv. Rate of discount in respect of deferred payment and prepayment**

Please support your answer with detailed justification.

Response:

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We suggest for a upfront payment of 10% of the bid amount, 5 year moratorium period, followed by equal and quarterly instalments, can be a practical approach for managing the financial obligations associated with spectrum auctions. This payment structure provides flexibility for service providers while ensuring a steady auction payments to the government.

FOR HATHWAY CABLE AND DATACOM LIMITED

A handwritten signature in black ink, appearing to read "Ajay Singh".



AJAY SINGH

Head Corporate Legal, Company Secretary and Chief Compliance Officer
FCS No: 5189

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