

Nelco's Counter Comments to TRAI Consultation paper
on
Assignment of Spectrum for Space-based Communication Services

We would like to thank TRAI for giving opportunity to stakeholders to query or contradict submissions by other respondents through the option to provide counter comments. In the exercise of this option, Nelco contests the assertions by some telcos that 'Spectrum for space-based communication services' ("Satellite Spectrum") can be auctioned and can be made available for "flexible" deployment of terrestrial (IMT) and space communications.

1. The Flaw in Flexible use of Satellite Spectrum

Nelco disagrees that Satellite Spectrum should be allowed to be used in a technology-neutral manner for the following reasons:

- i. IMT services require exclusive access to spectrum. Therefore, allowing them to be deployed using the spectrum assigned for satellite services will hurt the space-based communication industry by depleting the spectrum for space communications.
- ii. The revenue of IMT industry is already multiple times higher than Space-based communication industry. There is no justification to infringe on the spectrum designated for niche Satellite Services. Future needs of IMT players can and should be met without compromising satellite services.
- iii. India follows ITU RR for managing spectrum for different communication services. Any change in spectrum use in any specific band needs to be deliberated at the international level.
- iv. The use of satellite spectrum in a technology-neutral way is anti-competitive. It will benefit IMT service providers at the cost of satellite players and hurt consumers who need access to diverse technologies at affordable prices.

2. Difference between Satellite and Terrestrial Services

It is illogical to reduce support for satellite or fixed-line services just because they, like cellular services, can also provide similar services, e.g., telephony or internet access. Such an approach will reduce competition in the marketplace, hurting consumers and making them vulnerable to abuse.

The assertion of "same service, same rule" does not hold when comparing IMT and Satellite Spectrum due to their unique operational characteristics and spectrum usage requirements. Spectrum allocation policies need to recognize and respect the individual technology contributions and requirements of all services, ensuring a balanced spectrum allocation that considers each telecommunication service's distinct needs and societal value.

3. Method of Spectrum Assignment

We wish to specifically counter specific assertions made by some telcos.

Claim #1: The Supreme Court's verdict of 2012 mandating auctions applies to all natural resources.

Reality: The Supreme Court has explicitly stated that auction is not a constitutional principle, and the Government may use other transparent and fair methods to allocate and price such resources. Satellite Spectrum is assigned on nonexclusive basis to multiple licensees on sharable basis for providing satcom services and thus is most transparent, fair and equitable.

Claim #2: An auction is the fairest and most transparent way of allocation of spectrum for space-based communication systems.

Reality: The current administrative allocation of spectrum for satellite services is already unbiased and transparent. It is non-discriminatory and efficient. It is also in public interest since satellite services are crucial for addressing the current digital divide. Auctioning this spectrum will be unfair and counterproductive since it will benefit IMT players at the expense of satellite players.

Satellite Spectrum for FSS & BSS services is shareable spectrum, which means that same spectrum on different satellite/region can be shared between multiple service providers, as is the practice today. There is therefore no scarcity of Satellite Spectrum, and consequently, no need for exclusive assignment through auctions. Sharing of satellite spectrum is already working well for Geostationary Orbit (GSO) and Non-Geostationary Satellite Orbit (NGSO) operators,

Claim #3: Auction of Satellite Spectrum will promote competition.

Reality: As stated earlier, auction will only help the large deep-pocketed bidders, get exclusive rights to Satellite Spectrum. They will then decide who can use the Satellite Spectrum and on what commercial terms. Thus, Auction of Satellite Spectrum will enable deep-pocketed players to control the overall market by substantially reducing the competition. .

Claim #4: Globally, many countries are undertaking auction of space-based communications.

Reality: Countries around the world allocate shared Satellite Spectrum on administrative basis only. The countries that have tried to auction 28Ghz Spectrum for B2C IMT services have failed and reverted to administrative allocation. Countries, like Thailand & Mexico, have tried to auction satellite orbital slots, but not the Satellite Spectrum. Similarly, USA adopted auctioning for Orbital slot allotment. Later, USA enacted the Orbit Act 2000, to statutorily prohibit the auction. Similarly, Brazil discontinued the auction of orbital slots and enacted statute in 2019 for administrative way of allocation.

The Kingdom of Saudi Arabia has auctioned spectrum in the lower frequency range (2Ghz), which multiple satellite operators cannot share in any case. A comprehensive consultation by the

Communication and Information Technology Commission (CITC) of Saudi Arabia clarified that satellite bands are outside the purview of auctions.

Claim #5: Auction of the Satellite Spectrum will not lead to fragmentation or inefficient use.

Reality: Auction of the Satellite Spectrum will likely require defining block size (of say 10MHz). A player could conceivably end up with $n \times 10\text{MHz}$, in, say, the 3000MHz frequency band, but at different discrete points (say, 27.5 to 27.55GHz, 27.4 to 27.43GHz, 28.0 – 28.05GHz, 28.3-28.31GHz etc). This will inevitably fragment the spectrum, thus making its use impossible or inefficient for Space-based communication services.

Administrative assignment of Satellite Spectrum poses no such problem since multiple service providers can share it.

Claim #6: Administrative assignment is equivalent to delicensing of the spectrum.

Reality: Some respondents have incorrectly equated administrative assignment of the spectrum with delicensing. Service providers deploying administratively assigned spectrum in India will necessarily need to obtain a telecom licence. The use of administratively assigned spectrum is provided in accordance to the terms of the service provider's licence, unlike delicensed spectrum that virtually anyone can use.

Claim #7: Administrative assignment implies 'First come, first serve' and will hurt later entrants to the market.

Reality: The criticism ignores the unique nature of the satellite spectrum. 'First come, First Serve' is a problem only when the spectrum is required for exclusive use, e.g., for IMT services. FCFS is fair, non-discriminatory and a non-issue for satellite spectrum that is shareable.

Claim#8: All type of Space-based communication, in all bands & for all kind of communication have similar characteristic and should be assigned through auction process on exclusive basis.

Reality: In satellite communication, higher (C-band, Ku, Ka & above) bands are shareable. They can be assigned in non-exclusive mode. Only lower band spectrum (L-band & S-band) spectrum needs to be assigned on exclusive basis.

Shareable Satellite Spectrum must be assigned on non-exclusive basis only. Assignment on exclusive basis will unnecessarily give rise to multiple issues like potential monopoly/significant reduction in competition, exclusive assignee abusing its market position to control the fate of Space-based communication Industry etc.

4. Sharing/Leasing/Trading of spectrum

Spectrum for space-based communication services can be shared between different service providers and need not be allocated on an exclusive basis. The issue of sharing/leasing/trading of spectrum is relevant only for IMT services, as the usage require exclusivity of spectrum and any sharing post auction still is done on the basis on exclusive use of subset of the spectrum at specific region/location.

5. 27.5Ghz to 29.5Ghz spectrum

Some respondents claim that 27.5Ghz to 29.5Ghz can be used for Space-based communication services and IMT Services, since both can co-exist. This claim assumes that this spectrum will be allocated for Gateway links, directed towards the satellite(s), and the same spectrum can therefore be used for IMT services with a pre-defined protection zone around the Gateway locations.

We wish to point out that:

- i) This frequency band (27.5Ghz to 29.5Ghz) will be used as 'Earth to Space' for Gateway links and user Links spread across India. Sharing this spectrum with IMT will cause interference making it unviable for satellite user terminals to work. Therefore, reducing the spectrum available (in 27.5Ghz to 31Ghz) for satellite services, will significantly hurt the satellite broadband services.
- ii) Given the poor eco-system and the unique characteristics of 28 GHz band, deployments of IMT/5G systems in this band in South Korea, Japan and USA have been sub-optimal.

Therefore, the spectrum band - 27.5 Ghz to 29.5 GHz should be reserved for satellite services only.