

Nelco's Counter Comments to TRAI Consultation paper on Terms and Conditions for the Assignment of Spectrum for Certain Satellite- Based Commercial Communication Services

We wish to thank authority for giving opportunity to stakeholders to provide counter-comments to the responses submitted by other stakeholders. In our view some of the responses of few stakeholders, are full of misinterpretation, flawed conception, wrong understanding of multiple important aspects related to Satcom Services and in order to clarify these, we are giving our submissions as below in respect of these important points:

1. Level playing field between Satcom & Terrestrial Services

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

Claim #1: Satellite Services compete directly with Terrestrial Services.

Reality: Satcom services does not compete with terrestrial services due to following reasons:

i) Market price for services :

In Geostationary satellites, following are bandwidth cost per Mhz:

- a. Traditional wide-beam satellite (example Ku-band, GSAT14): Approx 18.36Lacs per annum
- b. Spot-beam satellite (example Ku-band GSAT29): Approx 4.22 Lacs per annum

Considering conversion factor of Mhz to Mbps as 2.0; the effective price per Mbps works out to be:

- a. Traditional wide-beam satellite (example GSAT14): **Approx 9.18 Lacs per Mbps per annum**
- b. Spot-beam satellite (example GSAT29): **Approx 2.11 Lacs per Mbps per annum**

In addition to this pure satellite bandwidth cost, there will be additional cost w.r,t VSAT Hub capex, its maintenance, O&M manpower and service provider margins. Please note that more than majority of capacity deployed today by licensed service provider in India is over traditional wide-beam satellites.

The price per Mbps on terrestrial network is significantly lower (to the scale of 1:100 or more) as compared to satellite network.

Considering above, it may be concluded that price per Mbps on terrestrial network is small fraction of cost of per Mbps cost on satcom network. Thus, **Satellite network services is no way in competition to terrestrial network services.** It is also well established that the Satcom services are used only in the areas where the terrestrial networks do not exist. This can be verified from the actual data and also the fact that even for remote village connectivity and for cellular backhails, the GSO based VSAT connections are provided only as the last resort and at a significantly higher cost.

It has also been established in the Enterprise and Govt sectors that GSAO based VSATs are used only in places where there is no terrestrial network available.

Considering all the above, it may be incorrect to say that the GSO based VSATs compete with the terrestrial networks in India.

ii) The industry size is largely different.

- a) The annual revenue of terrestrial network service provider in India is approximately Rs. 3.5Lacs Crore, whereas annual service revenue of VSAT industry is in the range of Rs. 540-600 Cr and total revenue is less than Rs. 2000 Cr.
- b) Thus, VSAT services cannot be compared to terrestrial services.

iii) Size of Customer Premises terminal:

Size of VSAT antenna is way too high as compared to handheld mobile devices used for data communication like CUG network of enterprises or for Internet access. Customer deploys VSAT terminal only if terrestrial network is not feasible/suitable.

Practically there is no level playing field already between VSAT services and terrestrial services. Already existing VSAT industry is too small, niche & complementary to make any adverse impact on terrestrial services rather it complements terrestrial services to complete the service offering & provide option for the customers.

The difference between VSAT services and terrestrial services is also well recognised globally wherein spectrum is administratively allocated for VSAT services. In India, same has been acknowledged through Telecom Act wherein as per schedule 1 of Telecom Act 2023, the spectrum for VSAT services will continue to be assigned administratively.

Claim #2: GSO-FSS satellite operators are also targeting to provide voice, text, low-rate data, and IoT service directly to users using existing/modified mobile phones using satellite and/ or IMT spectrum.

Reality: VSAT service providers in India currently provide GSO-FSS services which are provided in Extended-C band and Ku band currently and expected to provide Ka-band soon. These bands are well recognised by ITU, NFAP-2022 as satcom bands. Moreover, the services provided are B2B services for CUG network and Internet access in combination with ISP license as per prevailing license conditions. The GSO-FSS based VSAT services are in no way targeting to provide voice, text kind of services in competition with the mobile services offered by IMT service providers.

Claim #3: NGSO satellite providers like SpaceX/ Starlink, OneWeb, Amazon Kuiper, and Telesat are positioning themselves as competitors to terrestrial service providers, offering high-speed, low-latency broadband services globally.

Reality: OneWeb & Telesat are positioned to provide B2B services to enterprises and not directly to consumers (B2C). The number of satellites on OneWeb are less than 650 and on Telesat satellite constellation is less than 300. However, at any point in time only one satellite is able to provide service over a specific location and when that satellite moves over, the next one offers the same service. As such it is not correct to look at all satellites of the NGSO constellation as a collective set of satellites offering services to any specific location at the same time. The total capacity is very limited over India which is even less than capacity that may be provisioned on single fiber pair (terrestrial network). Thus, there is no comparison of services planned on such NGSO constellations verse terrestrial network.

Claim #4: Same service, same rule should be applicable for satellite communication services verses terrestrial services

Reality:

1. It is our humble request to TRAI that it should avoid falling into the trap of 'same service, same rules', being canvassed by some of the incumbent telecom operators, as that would derail historic reforms initiated in the space sector and slow the Digital India mission of the Government of India.
2. 'Same service, same rules' is a facade created to **prevent any meaningful room to diverse technologies**. There is no basis for applying such a rule in the sphere of economic regulations. There can be no one size fit all formula when the nature and ecosystem of technologies is so diverse and more particularly when satellite-based service industry is at a very nascent stage and does not possess economies of scale.
3. It is a fictitious argument that 'same service, same rules' will increase competition. **Instead, it will stifle competition by preventing newer players to enter market and squeezing stand-alone players who already find it difficult to compete with big telecom players.**
4. Such an argument is neither factually correct, nor logical on pure regulatory considerations. Rather than applying such a 'same service, same rules' principle, there is an urgent need to preferentially reduce regulatory burdens on new players and diverse technologies, particularly those which do not enjoy economies of scale but at the same time serve critical needs, like in case of space spectrum which supports niche services and remote access, to promote healthy sustainable competition.

5. Undoubtedly, space market is at a nascent stage and is a weaker market when compared to terrestrial communications market and the sound regulatory approach of boosting weaker markets is not new for India or its telecom sector. For example, TRAI mandated free interconnection between fixed and mobile networks several years before interconnection (IUC) were completely abolished.
6. Also, taking a leaf from success of India in solar energy, one would notice that in solar capacity India has grown considerably in the last few years, and this has been made possible largely due to Government policies and regulatory intervention aimed at increasing the uptake of solar energy. Introduction of precise bespoke policies and incentives exclusively for solar energy were critical to ensuring growth of solar industry. Had the Government followed 'same service, same rules' and extended same treatment as given to non-renewable energy (eg. thermal etc.), which have economies of scale and well-built ecosystem, the solar energy adoption would not have grown in India.
7. There already exists a huge gap and deficiencies in India's space-based communication services when compared with the terrestrial wireless communications. Auctioning satellite spectrum will only aggravate gaps and deficiencies which would in turn hinder India's journey towards becoming a global player in satcom.
8. Thus, it is imperative that TRAI takes a rationale view when making recommendation on the subject, which is industry as well as customer friendly, gives them choice of technology and service providers.

2. Satellite Spectrum characteristics of exclusive/non sharable

Claim #1: All type of satellite spectrum is non-sharable among service providers

Reality: Satellite spectrum in higher bands (excluding lower bands like L-band & S-band) is shared by multiple service providers. GSO-FSS services have been using same spectrum, sharing among multiple service providers from last multiple decades without any challenges. This is due to the nature of the technology. There is no need & scope for any misunderstanding on this aspect.

For NGSO services, the same satellite spectrum is assigned by ITU to multiple NGSO constellations and such multiple NGSO constellations are providing the services in same geographic area and co-existing.

It is recognised that L-band & S-band which is primarily used for MSS services are to be assigned exclusively. Thus, the characteristics of L-band and S-band should not be reflected as characteristic of all type of satellite spectrum bands.

3. GSO-FSS services as scope of this Consultation Paper

Claim #1: The requirements of level playing field is not limited to NGSO and IMT/terrestrial access services but is equally relevant for GSO-based Fixed Satellite Services (FSS) that provide data communication and internet services. The Section 4(i) of DoT reference dated 11.07.2024, specifically mentions TRAI to take into account the services provided by GSO based satellite communication services. However, the consultation paper focuses exclusively on NGSO-based Fixed Satellite Services and fails to address spectrum assignment and level playing field between the GSO based Fixed Satellite Services and IMT/terrestrial services altogether. We submit that level playing field should be applicable all across in access communications.

Reality: DOT in its initial reference dated 11.07.2024 has asked TRAI to provide its recommendations for

- i NGSO based Fixed Satellite Services providing data communication and Internet services. In its recommendations, TRAI may take into account services provided by GSO-based satellite communication service providers.
- ii GSO/ NGSO based Mobile Satellite Services providing voice, text, data, and internet services.”

It is clear from the above that DOT ask was for recommendation on terms & conditions of spectrum assignment & pricing for FSS services provided by NGSO and MSS services provided by GSO/NGSO. GSO-FSS is purposefully not the focus of this consultation paper by DOT w.r.t. spectrum assignment & pricing as they are existing services with absolutely no comparison to terrestrial services. Despite that TRAI has taken balanced approach and has relevant points/queries related to GSO system in multiple questions.

It must be understood that GSO-FSS based VSAT services have been operational for the last three decades and providing connectivity in the areas where terrestrial networks are not feasible. It has been fulfilling a requirement which the terrestrial operators have not been able to do.

It is important that the existing VSAT service providers are not adversely impacted from their current position due to any changes in the spectrum pricing.

4. Method of Spectrum Assignment

We wish to specifically counter specific assertions made by some telcos, who have raised the points related to auctioning of satellite spectrum.

After detailed & lengthy process of stakeholder consultation, Government of India has taken final call on method of allocation of spectrum for satellite services. Government of India through Telecom Act 2023 has already concluded that spectrum for satellite services will be assigned administratively. This needs to be accepted by all stakeholders rather than trying to raise the issue again.

Method of spectrum assignment is already concluded and rightly is not the scope of this consultation paper. If any stakeholder still wishes to put its grievance, then that may put separately to appropriate agency.

Please refer to Nelco's comments and counter-comments that were submitted in response to TRAI Consultation paper on "Assignment of Spectrum for Space-based Communication Services dated 06th April 2024" and should be considered as part of Nelco's counter response to this consultation paper.

5. 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 service provider and hurt customers who need access to diverse technologies at affordable prices.

It is important that choice should remain available with the customer to choose technology and service provider. The market should not be artificially limited only for terrestrial technology or large companies primarily focussed on providing terrestrial services.

For the rest of the issues, we reiterate our responses that have been already submitted in our written Comments to the Hon'ble Authority on 25th October .