



भारतीय दूरसंचार विनियामक प्राधिकरण
Telecom Regulatory Authority of India



**Recommendations on
Terms and Conditions for the Assignment of Spectrum for
Certain Satellite-Based Commercial Communication Services**

(Response to the Back Reference dated 12.11.2025
Received From the Department of Telecommunications
on the Recommendations Dated 09.05.2025 of TRAI)

New Delhi, India
8th December 2025

Tower F, NBCC World Trade Centre, Nauroji Nagar, New Delhi-110029

CONTENTS

Chapter I: Introduction and Background	1
Chapter II: Response to the Back Reference	4
Annexures	42

Chapter I: Introduction and Background

A. Background

- 1.1. Through the letter No. J-19034/003/2024-SAT dated 11.07.2024 (**Annexure-1.1**), the Department of Telecommunications (DoT), Ministry of Communications, Government of India sent a reference to Telecom Regulatory Authority of India (hereinafter, also referred to as "TRAI", or "the Authority"), in terms of Section 11(1)(a) of the TRAI Act, 1997, on the subject - seeking TRAI recommendations on terms and conditions of spectrum assignment including spectrum pricing for certain satellite-based commercial communication services. The DoT's reference dated 11.07.2024 is reproduced below:

"TRAI in its letter No. C-15/2/(2)/2022-NSL-II dated 08 February 2024 requested DoT to review its earlier reference No. L-14006/01/2021-NTG dated 13/09/2021 to TRAI seeking their recommendations for auction of spectrum for space-based communication services in view of the provisions of the Section 4 & First Schedule of the Telecommunications Act 2023.

2. It is to inform that a reference dated 21/06/2024 has already been sent to TRAI for seeking recommendations on terms and conditions, including fees or charges, for authorization to provide telecommunication services (including satellite-based communication services) as per the provisions of the Telecommunications Act, 2023.

3. Since the last reference dated 13/09/2021 to TRAI on spectrum for space-based communication services, a few Unified Licenses with VSAT CUG, Global Mobile Personal Communication by Satellite (GMPCS), NLD and ISP Category 'A' authorizations have been issued by DoT for providing satellite-based communication services through Non-Geostationary Orbit (NGSO) satellites. For assignment of spectrum to such licensees, terms and conditions of spectrum assignment including spectrum pricing need to be finalized.

4. *Keeping in view the provisions of Section 4 and the First Schedule of the Telecommunications Act-2023, in terms of Section 11(1)(a) of TRAI Act 1997, TRAI is requested to provide its recommendations on terms and conditions of spectrum assignment including spectrum pricing while accounting for level playing field with terrestrial access services for the following satellite-based communication services:*

- 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.”*

1.2. In this regard, the Authority, on 27.09.2024, issued a consultation paper¹ on the 'Terms and Conditions for Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' dated 27.09.2024 for soliciting comments from stakeholders on various issues related to the subject matter. After a comprehensive consultation with stakeholders, the Authority, on 09.05.2025, sent its recommendations on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-based Commercial Communication Services' (hereinafter, also referred to as, "the Recommendations dated 09.05.2025")² to DoT.

B. Back Reference from DoT

1.3. Lately, DoT, through its letter No. J-19045/013/2025-SAT dated 12.11.2025 (**Annexure-1.2**) on the subject - back reference on TRAI recommendations dated 09.05.2025 on "Terms and Conditions for the Assignment of Spectrum

¹ The consultation paper dated 27.09.2024 is available on the TRAI's website at the following URL:
https://traai.gov.in/sites/default/files/2024-10/CP_27092024_0.pdf

² the Recommendations dated 09.05.2025 are available on the TRAI's website at the following URL:
https://traai.gov.in/sites/default/files/2025-05/Recommendation_09052025.pdf

for Certain Satellite-Based Commercial Communication Services” (hereinafter, also referred to as “the Back Reference”), has referred back some of the TRAI’s recommendations and requested TRAI to provide reconsidered recommendations on such recommendations. The relevant extract from the Back Reference is reproduced below:

“... refer to TRAI letter No. R-24/2(1)/2024-NSL-II (E 14742) dated 09.05.2025 vide which TRAI has provided their recommendations on “Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services”. These recommendations have been considered by the Department and the following has been decided:

(i) There is a need to seek reconsidered recommendations from TRAI in respect of some of the recommendations/ sub-sections of recommendations. These recommendations/ sub-sections of recommendations and views of the DoT thereupon are enclosed as Annexure.

(ii) Rest of the recommendations/ sub-sections of recommendations are accepted.

2 In view of the above, TRAI is requested to provide reconsidered recommendations, in accordance with the provisions of Section 11 of the TRAI Act 1997 (as amended) on the recommendations listed in Annexure.”

C. Present Response

- 1.4. The Authority has carefully examined the views expressed by DoT in the Back Reference. Based on a conscientious analysis, the Authority has arrived at the present response to the Back Reference. The response to the Back Reference comprises two chapters. This chapter provides an introduction and background to the subject. Chapter II provides the response of the Authority to the DoT’s views in respect of the recommendations on which the Government has sought reconsidered recommendations of the Authority.

Chapter II: Response to the Back Reference

- 2.1. This chapter provides the response of the Authority to the views expressed by DoT in the Back Reference in respect of the recommendations on which the Government has requested the Authority to provide its reconsidered recommendations. Such recommendations have been presented sequentially, and descriptions thereon have been organized in the following manner:
- (a) First, the text of the TRAI's recommendation has been reproduced.
 - (b) Then, the views expressed by DoT in the Back Reference in respect of such recommendation has been reproduced.
 - (c) Thereafter, the response of the Authority based on its analysis of the matter has been provided.
- 2.2. **Recommendation No. 4.1:** *The Authority recommends that subject to alignment with the allocations in NFAP 2022, -*
- (a) *For assigning frequency spectrum for user links and feeder links for NGSO-based FSS for data communication and Internet service, frequency spectrum in Ku band, Ka band, and Q/ V band should be considered.*
 - (b) *For assigning frequency spectrum for GSO/ NGSO-based MSS for providing voice, text, data communication and Internet service, the following frequency bands should be considered:*
 - i. *L band and S band for user links; and*
 - ii. *C band, Ku band, Ka band and Q/ V band for feeder links.*
- 2.3. **DoT's Views on the Recommendation No. 4.1:** *This recommendation may be accepted with the following modifications:*
- (i) *NFAP is updated from time to time in line with the ITU Radio Regulations and national spectrum requirements. Hence, frequency assignment should be subject to alignment with the allocations in NFAP, as amended from time to time.*

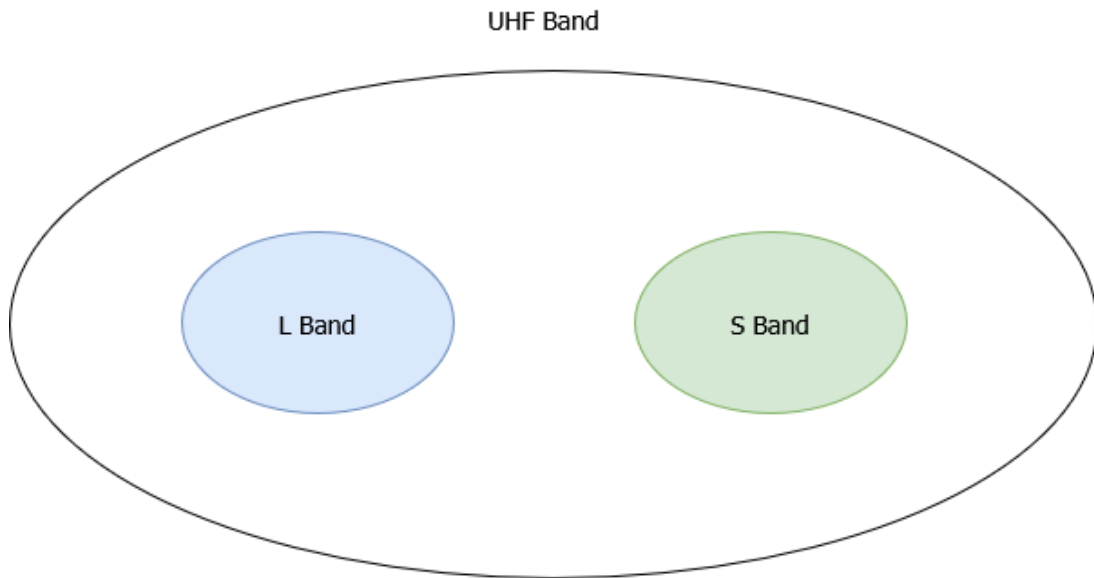
- (ii) *For MSS based services, IN-SPACE has received applications seeking authorizations for establishment of Gateways for provision of services in UHF bands. Hence, UHF band may also be considered for MSS.*

2.4. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.1:**

- 2.4.1. The Authority notes the DoT's views that "*NFAP is updated from time to time in line with the ITU Radio Regulations and national spectrum requirements. Hence, frequency assignment should be subject to alignment with the allocations in NFAP, as amended from time to time*".
- 2.4.2. DoT has also expressed a view that "*[f]or MSS based services, IN-SPACE has received applications seeking authorizations for establishment of Gateways for provision of services in UHF bands. Hence, UHF band may also be considered for MSS*". In this regard, the following aspects are noteworthy:
- (a) Through the Recommendation No. 4.1(b), the Authority recommended that *for assigning frequency spectrum for GSO/ NGSO-based MSS for providing voice, text, data communication and Internet service, L and S bands should be considered for user links.*
 - (b) Section 4(4) of the Telecommunications Act, 2023 provides that the assignment of spectrum for the entries listed in the First Schedule shall be done by administrative process. "*Mobile Satellite Service in L and S band*" is covered under the entry 16 of the First Schedule of the Telecommunications Act, 2023.
- 2.4.3. As per the ITU's recommendation No. ITU-R V.431-8 (08/2015)³ on 'nomenclature of frequency and wavelength bands used in telecommunications', the nominal designations for L-band and S-band used in space radiocommunications are 1.5 GHz band and 2.5 GHz band respectively.

³ Source: https://www.itu.int/dms_pubrec/itu-r/rec/v/r-rec-v.431-8-201508-!!!pdf-e.pdf

As per the ITU's recommendation, the frequency range for Ultra High Frequency (UHF) band is 300 MHz to 3,000 MHz. Clearly, UHF band is a superset of both L band and S band, as depicted in the following Venn diagram:



2.4.4. The request of DoT that “*UHF band may also be considered for MSS*” requires to be seen in the above context. As the First Schedule of the Telecommunications Act, 2023 does not expressly contain any entry on ‘Mobile Satellite Service in UHF band’, the Authority is of the opinion that the Government may examine as to whether MSS in UHF band is covered under the First Schedule of the Telecommunications Act, 2023.

2.5. **Recommendation No. 4.3:** *The Authority recommends that-*

(a) To control interference, the relevant provisions of ITU-RR should be made applicable to the authorised entities, and other entities which have been authorised by the Central Government. Further, the ITU framework for coordination among NGSO-based satellite systems, as may be laid down by ITU in the future, should also be made applicable.

(b) The frequency spectrum identified by the Government for satellite-based telecommunication services in the higher frequency bands such as C, Ku,

Ka, and Q/ V bands that are assigned on a shared basis, should be assigned with a condition that each Authorised Entity and all other entities which have been authorized by the Central Government to use such shared frequency spectrum, will coordinate among themselves in good faith.

(c) A provision should be included in the terms and conditions of the assignment of frequency spectrum that in case the need arises, the Government may prescribe a framework for sharing of spectrum in higher frequency bands such as C, Ku, Ka, and Q/ V bands, which will be binding on the authorised entities and all other entities which have been authorized by the Central Government to use such shared frequency spectrum.

(d) The Government, with the help of the Telecom Engineering Center (TEC), should examine the need for prescribing the framework for the sharing of spectrum. The framework may include conditions on the maximum equivalent power flux density (EPFD) etc. With a view to nudging the satellite operators to coordinate among themselves in good faith at the earliest, the Government may also consider introducing a provision for splitting of spectrum as a last resort in line with the provision created by FCC in its 'Spectrum Sharing Rules for Non-Geostationary Orbit, Fixed-Satellite Service Systems' in case two or more NGSO-based FSS satellite systems fail to complete coordination.

2.6. **DoT's Views on the Recommendation No. 4.3:** *This recommendation may be accepted with the following modifications:*

Notwithstanding the provisions related to applicability of ITU framework for coordination among NGSO-based satellite systems, following additional provisions may also be made applicable:

(i) The authorised entity(ies) shall ensure that its concerned satellite system/ network operator or owner will collaborate, negotiate and enter into frequency coordination agreement or coexistence arrangements with the incumbent and any other new entrant satellite system/ network operators

or owners (providing or planning to provide services over India) to ensure that the operations of these latter satellite systems/ networks can operate over India without harmful interference.

(ii) The Government reserves the right to make appropriate interventions including terminating/ suspending the frequency assignment issued to the authorised entity(ies) if in its view the above provision to ensure operation without harmful interference of incumbents/ new operators/ owners has not been complied with.

2.7. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.3:** Noted

2.8. **Recommendation No. 4.5 (c):** *In the frequency range(s) already identified for IMT such as 42.5-43.5 GHz, the satellite earth station gateways should be permitted to be established at uninhabited or remote locations on case-to-case basis, where there is a less likelihood of IMT services to come up. For this purpose -*

(i) DoT should prescribe the exclusion zone requirement for co-existence of IMT and satellite earth station gateways.

(ii) DoT should create a software defined automated process on a portal having the database of coordinates of the IMT base stations in these frequency ranges. The geofencing coordinates of the proposed earth station in such frequency ranges can provide the feasibility results through the portal for establishing the earth station.

2.9. **DoT's Views on the Recommendation No. 4.5(c):** *With regard to recommendation 4.5(c), it may be noted that TRAI in recommendations dated 04.02.2025 on "Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT" have recommended that:*

"4.1 (c) Owing to the non-availability of the device ecosystem in 42.5- 43.5 GHz frequency range, it will be prudent that the frequency range 42.5-43.5 GHz is not put to auction in the forthcoming spectrum auction. The DoT may

send a separate reference for seeking the Authority's recommendations for 42.5-43.5 GHz frequency range for IMT at an appropriate time."

In view of the above, TRAI Rec 4.5(c) may be accepted with the modification that satellite earth station gateways may be permitted to be established at uninhabited or remote locations on case-to-case basis, in 42.5-43.5 GHz band which is already identified for IMT, and at the time of deployment of IMT stations in this band in future, necessary steps towards co-existence of Satellite Earth Station Gateways and IMT may be taken.

2.10. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.5 (c):** Noted

2.11. **Recommendation No. 4.6:** *The Authority recommends that with a view to mitigate the risk of scarcity of gateway sites, Satellite Earth Station Gateway(s) should be installed and commissioned within 12 months from the date of permission granted to the authorised entities by the Central Government for the establishment of the Satellite Earth Station Gateway(s).*

2.12. **DoT's Views on the Recommendation No. 4.6:** *A provision has been included in the draft rules under Section 3(1)(a) of the Telecommunications Act 2023, based on the TRAI recommendations dated 18.09.2024 on service authorization, that in case of roll out obligations for providing services through satellite technology in addition to 12 months for roll out, a period of 30 days after the expiry of the due date is permitted for fulfillment of rollout obligations.*

In view of the above, TRAI may reconsider this recommendation with a view to ensure consistency in the applicable provisions.

2.13. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.6:**

2.13.1 While examining the DoT's views on the Recommendation No. 4.6, the Authority has taken note of the following aspects:

- (a) Through the Recommendation No. 4.6, the Authority recommended that a satellite earth station gateway should be installed and commissioned within 12 months from the date of permission granted to the authorised entities for the establishment of the satellite earth station gateway.
- (b) Through the Recommendations dated 18.09.2024 on the Framework for Service Authorisations to be Granted Under the Telecommunications Act, 2023, the Authority recommended, *inter-alia*, the following provisions in respect of the roll-out obligations for the provision of Satellite-based Telecommunication Services (on page No. 607 and 608 of the Recommendations dated 18.09.2024):
 - (i) For the provision of Satellite-based Telecommunication Services, the Authorised Entity shall roll out the network within 12 months from the date of frequency assignment, unless otherwise stipulated in the terms and conditions of the assignment of spectrum.
 - (ii) If the rollout of the network is effected within 30 calendar days of the expiry of the due date, then the Central Government shall accept the rollout of network without levy of LD charges.

2.13.2 As may be seen from the above, the afore-mentioned recommendations deal with the following obligations:

- (a) The obligation for installing and commissioning a satellite earth station gateway at a particular location after obtaining permission from the Central Government for the establishment of the satellite earth station gateway; and
- (b) The obligation for rolling out the satellite-based telecommunication network after obtaining frequency assignment from the Central

Government for the establishment of satellite-based telecommunication network.

2.13.3 In both afore-mentioned cases, the Authority recommended a period of 12 months for the fulfilment of the obligation. The grace period (of 30 calendar days after the expiry of the period of 12 months) which has been proposed to be allowed by the Authority for the fulfilment of the roll-out obligations in respect of the satellite-based telecommunication network is only a special dispensation to exempt authorised entities from the levy of civil penalty for a short-term delay.

2.13.4 The Authority notes that DoT has requested TRAI to reconsider the Recommendation No. 4.6 with a view to ensure consistency in the applicable provisions. Based on the foregoing description, it may be seen that there is no inconsistency between the substantive provisions, as in both the cases, a period of 12 months has been recommended for the fulfilment of obligations. As far as the matter related to the grant of a grace period after the expiry of 12 months in case of default in the fulfilment of the obligation for installing and commissioning a satellite earth station gateway at a particular location after obtaining permission from the Central Government for the establishment of the satellite earth station gateway is concerned, the Authority is of the view that the Central Government may permit a grace period of 30 days for this purpose similar to that proposed for the roll-out obligations in respect of satellite-based telecommunication network.

2.13.5 Accordingly, based on a reconsideration of the Recommendation No. 4.6, **the Authority, recommends that the Recommendation No. 4.6 may be read as below:**

'The Authority recommends that with a view to mitigate the risk of scarcity of gateway sites, satellite earth station gateway(s) should be installed and commissioned within 12 months from the date of permission granted to authorised entities by the Central

Government for the establishment of the satellite earth station gateway(s):

Provided that if the satellite earth station gateway is installed and commissioned by the Authorised Entity within thirty days of the expiry of the due date for complying with such obligations, the Central Government should consider the same as fulfilment of the obligation, without treating it as a breach of terms and conditions of the authorisation.'

2.14. **Recommendation No. 4.7:** *The Authority recommends that entities authorised to provide satellite-based telecommunication services should be permitted to surrender the right to use of frequency spectrum assigned to them before the expiry of the validity period. For this purpose, the following should be the broad terms and conditions:*

(a) The Authorised Entity should provide a notice period to the Central Government and TRAI of at least 30 days prior to the proposed date of surrender of right to use the frequency spectrum along with the relevant details, including the precise frequency range(s) proposed to be surrendered. However, in case the surrender of right to use of spectrum by an Authorised Entity is likely to result in a disruption or closure of services for the consumers, the service provider should be required to serve an advance notice to the Central Government and TRAI as well as each of its subscribers, 60 days prior to the proposed date of surrender of the right to use of frequency spectrum.

(b) DoT may charge a reasonable processing fee to recover administrative charges, if any, for the surrender of the right to use of frequency spectrum.

2.15. **DoT's Views on Recommendation No. 4.7:** *TRAI recommendation 4.7(a) may be accepted with the following modification:*

As per the license/ authorization conditions, continuity of service is required to be maintained by the licensee/authorized entity.

Accordingly, if a licensee/ authorized entity intend to surrender the spectrum which may lead to discontinuation of services then it shall submit an application to the Central Government, at least 60 days prior to the intended date of discontinuation of the relevant telecommunication service, together with reasons for such intended discontinuation.

The Central Government may, within a period of thirty days of receipt of such application:

- i. approve such application; or*
- ii. reject such application on grounds of public interest or national security or due to occurrence of national emergency or war.*

If application is approved by the Central Government, then the licensee/ authorised entity shall issue a notice of discontinuation of the relevant telecommunication service, to users of such telecommunication service, at least thirty days in advance of the intended date of discontinuation, clearly stating the options available to such users.

With regard to TRAI recommendation 4.7(b), this is to inform that at present, Rs. 1000/- is being levied as amendment charges for issue of revised frequency assignment due to various activities including surrender of spectrum on all the existing wireless licensees (including satellite-based licensees); same may continue to be levied.

2.16. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No.**

4.7: Noted

- 2.17. **Recommendation No. 4.8:** *The Authority recommends that there should be a defined timeline, not exceeding 30 days from the date of application, within which the frequency spectrum should be assigned to an Authorised Entity for provision of satellite-based communication services, provided that the in-principle clearance of satellite network has been given by the Central Government. In case of any objection, the same may be communicated to the concerned Authorised Entity within such window of 30 days from the date of application, for necessary action.*

- 2.18. **DoT's Views on the Recommendation No. 4.8:** *This recommendation of TRAI may be accepted with the modification that for assignment of spectrum, separate in-principle clearance of satellite network may not be required once IN-SPACe authorization and DoT service licenses have been obtained by the licensees.*
- 2.19. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.8:** Noted
- 2.20. **Recommendation No. 4.9:** *The Authority recommends that the Central Government should explore the possibility of assigning frequency spectrum for satellite-based telecommunication services on a block basis rather than on a carrier-by-carrier basis.*
- 2.21. **DoT's Views on the Recommendation No. 4.9:** *This recommendation of TRAI may be accepted with the modification that all the combinations of the emission bandwidths and start and stop of the frequency ranges to be operated by an authorized entity may be mentioned in the frequency assignment letter.*
- 2.22. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.9:** Noted
- 2.23. **Recommendation No. 4.12:** *The Authority recommends the following:*
- i. Spectrum charges for NGSO based Fixed Satellite Services should be levied at 4% of the Adjusted Gross Revenue (AGR).*
 - ii. NGSO-based Fixed Satellite service providers should also pay an additional per subscriber charge of Rs. 500 per annum in urban areas while exempting the rural and remote areas from this additional charge.*

2.24. **DoT's Views on the Recommendation No. 4.12:** *It is felt that prioritising areas based on rural vs. urban poses implementation challenges and needs a relook because this distinction does not take advantage accruing from LEO/ MEO technology, which would accrue if the service is prioritized or incentivised in hard-to-connect areas such as border/ hills/ islands.*

TRAI may thus re-examine the following instead:

1. Areas to be incentivised are to be based on capitalising on the advantages of superior reach of LEO/ MEO over conventional technologies such as in border/ hill/ islands areas of the country.

2. An annual spectrum charge of 5% (instead of 4%) with a discount of 1% if a certain percentage (say 5%) of overall customers enrolled in the year are from the above areas as in (1.) above and notified by Government. This would be in lieu of Rs. 500 disincentive in Urban areas as recommended by TRAI.

In view of the above, TRAI may reconsider this recommendation accordingly.

2.25. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.12**

2.25.1 DoT vide its reference dated 11.07.2024 had *inter alia* stated that:

"TRAI is requested to provide its recommendations on terms and conditions of spectrum assignment including spectrum pricing while accounting for level playing field with terrestrial access services for the following satellite-based communication services:

- 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."*

2.25.2 The matter of spectrum charges for NGSO-based FSS was analysed by the Authority vide para no. 3.107 to 3.120 of TRAI's Recommendations dated 09.05.2025. The salient observations and grounds in reference to Recommendations no. 4.12 were as under:

- (i) DoT vide its reference dated 11.07.2024 has inter alia requested TRAI to provide recommendations on spectrum pricing for NGSO based Fixed Satellite Services providing data communication and Internet services. The DoT reference further stated that TRAI may take into account services provided by GSO-based satellite communication service providers.
- (ii) The Authority had in para 3.106 of the Recommendations dated 09.05.2025 recommended that spectrum charges for GSO based Fixed Satellite Services should be levied at 4% of Adjusted Gross Revenue. The Authority was of the view that a similar percentage of AGR i.e. 4% of AGR should be levied as spectrum charges for NGSO based FSS also, due to the following reasons:
 - Both GSO and NGSO based FSS service providers are utilizing spectrum in similar bands.
 - There is a need to encourage the uptake of satellite communication services in underserved areas, especially rural and remote areas. A higher AGR percentage as spectrum charge may discourage proliferation and adoption of satellite communications (NGSO based FSS).
 - This will also deter any situation of arbitrage between GSO FSS and NGSO FSS if it may arise in the future.
- (iii) NGSO satellite operators hold a competitive advantage over GSO satellite providers for the following reasons:
 - Coverage: NGSO constellations can offer more comprehensive global coverage, including in polar and remote areas where GSO

satellites may have limited or no coverage due to their equatorial orbits.

- Latency: NGSO constellations particularly those in LEO, have a latency closer to terrestrial networks due to their closer proximity to Earth, which is advantageous for real-time applications like video conferencing, VPN or cloud services. NGSO systems are known for a number of key features such as lower propagation delay, smaller size, and lower signal losses in comparison to the conventional geostationary orbit (GSO) satellites, which will enable latency-critical applications such as gaming to be provided through satellites.
- NGSO promises a dramatic boost in communication speed and energy efficiency, and thus, tackling the main inhibiting factors of commercializing GSO satellites for broader utilizations.
- Resilience and flexibility: with multiple satellites in a constellation, NGSO systems can offer improved redundancy and resilience against system failures. NGSO satellites can also be more easily repositioned, making it possible to adapt to changing service demands or to respond to emergency situations more quickly.

(iv) NGSO-based Fixed Satellite Service is yet to commence operations in India. To gain comparative insights, the subscriber base, quantum of spectrum of the largest NGSO satellite operator in the developed NGSO FSS market of the USA can be compared with one of the major VSAT operator in India based on subscriber base. The data cited in the Recommendations dated 09.05.2025 indicated that in terms of subscriber base, an NGSO operator is larger than the largest VSAT operator in India. This significant difference in scale may provide NGSO operators with a distinct competitive advantage, driven by economies of scale. Larger operations may allow NGSO operators to optimize costs,

improve operational efficiency, and potentially offer more competitive pricing, further strengthening their position in the market.

- (v) Considering the characteristics of NGSO services, as discussed in preceding paras viz. better coverage, lower latency, better speed and increased flexibility, NGSO operators are likely to capture a larger market share and generate higher revenue compared to GSO operators. Consequently, the economic value of spectrum for NGSO operators is expected to be higher than that for GSO operators.
- (vi) Given the higher economic value that spectrum holds for NGSO operators, it is essential to ensure a balanced and equitable framework that safeguards the interests of existing GSO operators. To achieve this, the Authority was of the opinion that an additional charge should be introduced for NGSO operators in the form of a per-subscriber charge, ensuring a fair contribution from NGSO operators, at least in the near to medium term (say about 5 years).
- (vii) Also, it can be anticipated that, during an initial finite period following their market entry, large NGSO operators may adopt a market penetration strategy. This strategy typically involves increasing product sales within a market segment, often by reducing prices to attract new customers. Given the lower prices due to promotional offers, it is reasonable to expect reduced revenue. In such a scenario, implementing a per-subscriber charge would also ensure a fair return or revenue for the exchequer, considering the significant economic value of spectrum for NGSO operators.
- (viii) Given the higher economic value that spectrum holds for NSGO operators and considering the competitive advantage NGSO hold over GSO based FSS, the Authority was of the view that an additional charge should be introduced for NGSO operators in the form of a per-subscriber charge,

ensuring a fair contribution from NGSO operators. The Authority was of the view that a User Fee of Rs 500 as applicable on very small aperture terminals as per DoT order dated 11th December 2023 shall be levied per subscriber of NGSO based FSS for near to medium term (say about 5 years).

- (ix) It was noted that one of the principal objectives behind the expansion of satellite services is to extend reliable connectivity to rural, remote, unserved and underserved areas. Based on the projections of population from the 'Report of the Technical Group on Population Projections for India and States 2011 – 2036', the rural population comprises of 903.67 million out of a total population of 1405.84 million, as on 30th of September 2024. This implies that the rural population still comprises almost 65% of the total population of India.
- (x) By reaching rural, remote, unserved and underserved areas, satellite services can play a crucial role in bridging the digital divide, enhancing economic participation, and improving access to critical information and services. Achieving this goal requires a focused strategy to attract entry and investment by NGSO based fixed satellite service providers into these regions, where connectivity gaps remain substantial.
- (xi) Given the relatively higher purchasing power of subscribers in urban areas compared to rural areas and hence the high demand/ consumption of data in these regions, it is possible that NGSO-based FSS providers may focus more on urban areas. This could potentially undermine the goal of bridging the digital divide in rural and remote areas. To address this, imposing a per subscriber charge of Rs 500 per annum in urban areas, while exempting rural and remote areas, may provide an incentive for operators to expand their services into rural and remote areas and if required this per subscriber charge may be reviewed in future.

- (xii) Therefore, the Authority held the view that NGSO based FSS operators shall be levied a spectrum charge at 4% of AGR and an additional per subscriber charge of Rs 500 per annum in urban areas. However, the users in rural and remote areas shall be exempted from the per subscriber charge. Further, the classification of areas into rural, urban and remote is available with Census of India and relevant orders of Ministry of Finance. Accordingly, the Authority was of the view that DoT may suitably adopt an unambiguous definition and criteria for defining rural, urban, and remote areas.

2.25.3 In respect to the Recommendation No. 4.12, DoT, through the Back Reference, has stated that:

"It is felt that prioritising areas based on rural vs. urban poses implementation challenges and needs a relook because this distinction does not take advantage accruing from LEO/ MEO technology, which would accrue if the service is prioritized or incentivised in hard-to-connect areas such as border/ hills/ islands. TRAI may thus re-examine the following instead:

- 1. Areas to be incentivised are to be based on capitalizing on the advantages of superior reach of LEO/ MEO over conventional technologies such as in border/hill/islands areas of the country.*
- 2. An annual spectrum charge of 5% (instead of 4%) with a discount of 1% if a certain percentage (say 5%) of overall customers enrolled in the year are from the above areas as in (1.) above and notified by Government. This would be in lieu of Rs. 500 disincentive in Urban areas as recommended by TRAI."*

2.25.4 In this regard, the Authority notes that the service providers are submitting various periodic reports to DoT as well as to TRAI as part of their regulatory reporting obligations. These reports viz. wireless subscribers' report, wireline subscribers' report, internet subscribers' report, separately capture rural and

urban bifurcation. This bifurcation is mandated by DoT and TRAI, enabling detailed analysis and monitoring of services across different geographic segments. Thus, rural and urban bifurcation is well-established in the Indian telecom regulatory framework, providing a reliable basis for policy implementation and compliance monitoring.

2.25.5 Further, as per Clause 66 on Security Conditions of Chapter 7: Specific Conditions for Provision of Telecommunication Services Using Satellite System of the draft Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules issued by DoT on 05.09.2025 which, *inter alia*, states that:

(10) An authorised entity shall bind stationary type Fixed Satellite Service (FSS) user terminals to the geolocation of the premises of the user, including in respect of any relocation.

(11) An authorised entity shall ensure that no user relocates the stationary type FSS user terminal except with the prior written approval from such authorised entity.

(12) An authorised entity shall discontinue the provision of telecommunication services to a user who attempts to, or relocates its FSS user terminal, without its prior written approval.

2.25.6 As can be inferred from the above, the geolocation binding rules (clauses 10-12) mandate that stationary FSS user terminals remain fixed at registered premises coordinates, with relocation requiring prior written approval from the authorized entity and service discontinuation for non-compliance. These rules ensure that the exact physical location of the user terminals is recorded and maintained by the authorized entity from where each and every connection is identifiable and it can be ascertained whether the user terminal is installed in rural or in urban areas.

2.25.7 Thus, the Authority does not find any significant implementation challenge in prioritizing areas based on rural versus urban classifications. Furthermore, the

Authority feels that apprehended implementation challenges, if any, would apply equally to 'hard-to-connect' regions such as border, hill, and island areas as well.

2.25.8 It is observed that as on 30th June 2025, the internet tele-density is 46.73% in rural as against 113.83% in urban and the broadband users (wired & wireless)⁴ are 415.64 million in rural as against 564.07 million in urban. These are clear indicators of a digital divide between rural and urban, which in turn creates inequalities in access to digital technologies and internet connectivity. It may be correct to say that the LEO/ MEO technology indeed offers superior reach in hard-to-connect geographies such as border, hill, and island regions, but these areas constitute a relatively small proportion (~5%) of the population, while rural and remote areas collectively represent the much larger population segment (~65%). Rural and remote areas form a broader superset that includes several types of hard-to-connect regions, such as hilly, border and island areas, as well as deserts, deltas and forests etc. Within this broader category, hilly, border and island areas can be treated as a specific subset of rural and remote areas that are particularly difficult to serve due to terrain, security considerations and isolation. While there is a case to incentivize connectivity to hard-to-connect areas such as border/ hills/ islands, this is not a substitute to incentivize connectivity to the larger base of millions of rural customers, undermining the broader policy goal of equitable access.

2.25.9 The Authority also notes that the capacity of an NGSO satellite constellation is distributed over the entire geographical area. However, a limited variation in local distribution of capacity is presently possible by steering beams. Therefore, it was considered necessary to build a deterrent against diversion of the satellite broadband capacity to urban area to the detriment of rural areas. Therefore, an additional Rs. 500 per subscriber charge for the urban areas was recommended in this context within the overall necessity of differentiating the spectrum pricing of GSO/ NGSO. Incidentally, it is observed

⁴ Source: https://traai.gov.in/sites/default/files/2025-07/YIR_08072025_0.pdf

if the tariffs to be offered by FSS operators are taken at about the present base level tariffs of FWA services, this Rs. 500 per subscriber charge will amount to 4-6% of AGR of urban connections.

2.25.10 The Authority is of the view that the framework recommended by TRAI ensures that the benefits of NGSO technology extend to all rural, remote, unserved and underserved populated areas, not just hilly, border and island areas, thereby maximizing social and economic impact. Furthermore, the rural-urban classification aligns with the existing telecom policy structures, making implementation simpler and reducing compliance complexity for service providers.

2.25.11 TRAI's Recommendation of a fixed additional charge for urban subscribers was made to differentiate the spectrum cost between rural and urban areas as well as between GSO-based and NGSO-based service, while maintaining the portion charged as percentage of AGR same between all these categories, for reasons as cited at para 2.25.2 above. It is considered transparent, predictable, and administratively simple, ensuring certainty for operators and fairness for subscribers. The framework proposed by DoT not only differentiates between the percentage of AGR to be charged to GSO-based and NGSO-based FSS but also leaves aside incentive for coverage to larger rural population. Exempting rural areas from the additional subscriber charge was intended to accelerate adoption in regions most affected by the digital divide, thereby advancing the national objective of universal service. The Authority is of the view that satellite internet will provide ubiquitous broadband connectivity to rural areas, foster inclusive digital growth and help in reducing the digital divide. Restricting incentives only to border, hill, or island areas would exclude millions of households in rural areas from the incentive, undermining the broader policy goal of inclusive connectivity.

2.25.12 In view of the above, the Authority does not concur with the DoT's proposal to charge the spectrum @ 5% of AGR with conditional discounts for providing connectivity to hard-to-connect areas such as border/ hills/ islands.

2.25.13 In view of the foregoing analysis, **the Authority reiterates its Recommendations no. 4.12. However, the Government may adopt any additional schemes to take advantage of FSS for faster and economical expansion of broadband services in identified hard-to-connect areas, including but not limited to hills, border areas and islands, particularly addressing affordability of user terminals.**

2.26. **Recommendation No. 4.13:** *For the targeted subscribers in unserved/ underserved regions of the rural and remote areas, the Authority recommends the following:*

- (a) The Government may consider provision of a subsidy for each NGSO-based FSS user terminal in such regions at an appropriate amount. The amount of subsidy may be decided by the Government.*
- (b) The subsidy may be disbursed either as a lump sum payment or in installments by devising a suitable model.*
- (c) The subsidy may be given either through Direct Benefit Transfer (DBT) to eligible subscribers in underserved/ unserved regions of rural and remote areas, for target segments OR as a direct payment to NGSO-based FSS service provider through the Digital Bharat Nidhi Fund.*
- (d) The amount of the subsidy may be subject to a periodic review by the Government in accordance with technological and market developments taking place.*

2.27. **DoT's Views on the Recommendation No. 4.13:** This recommendation may not be accepted, in view of the following:

- 1. As per the DBN Rules, funding from the DBN shall be provided to Implementers to implement schemes and projects for the purpose of achieving the objectives of the DBN as specified under section 25 of the*

Act. Further, DBN is not doing DBT and no mechanism is established for the same.

- 2. As per act & rules, DBN requires area wise targeted approach to bridge the digital divide. The present approach is the individual approach - which will mean providing schematic subsidy to already covered areas.*
- 3. Saturation of 4G mobile services in uncovered villages across the country and other targeted mobile schemes are under implementation by DBN to provide mobile, internet/ data & other related services. The proposed recommendations will mean duplicity.*
- 4. On 04.08.2023, the Union Cabinet has approved the Amended BharatNet Program (ABP) under Design, Built, Operate and Maintain (DBOM) model, for up-gradation of existing network of BharatNet Phase-I and Phase-II, creation of network in balance, Operation and Maintenance for 10 years and utilization. The connectivity to remaining non-GP villages is proposed to be provided on demand basis from their respective GPs. BSNL has been nominated as the Project Management Agency and will have target of providing 1.50 crore FTTH connections to households in next five years. Remote & mountainous region will be connected by using any efficient alternate last mile technology (radio/satellite) including Low Earth Orbit/Medium Earth Orbit (LEO/MEO) satellite communication services, when matured may be considered for deployment based on the requirement and cost effectiveness in cases where the implementation of OFC may not be feasible.*
- 5. The ongoing projects in DBN means committed liability of approx. Rs 1.73 lakh crore. The availability of fund is approx. Rs 90909.09 crore. Hence, there is limited space for sanctioning any new project under DBN fund.*
- 6. Regarding use of satellite, the recommendation is the area wise approach which will raise issue of adverse selection and type-1(false positive) and type-2 (false negative) error in the selection process.*

2.28. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.13**

2.28.1 The matter regarding provision of subsidy for NGSO-based FSS user terminal was analysed by the Authority vide para no. 3.122 to 3.125 of TRAI's Recommendations dated 09.05.2025. The salient observations and grounds in reference to Recommendations no. 4.13 were as under:

- (i) Non-Geostationary Satellite Orbit (NGSO) communication systems require one-time hardware cost of the User Terminals at the subscribers' end. The hardware cost levied by one of the largest NGSO operators across various countries ranges between US\$200 and US\$450. Given the relatively low purchasing power of consumers in rural and remote areas, this high cost may act as a significant barrier to adoption, potentially impeding the uptake of NGSO-based Fixed Satellite Services (FSS) in such regions. Consequently, this could pose a challenge to the effective expansion of satellite communication services in underserved and unserved areas, in the near term until terminal costs come down significantly.
- (ii) To mitigate this issue, a strategy could be to reduce the financial burden on unserved and underserved subscribers in the rural and remote areas. Subsidizing the cost of NGSO-based FSS user terminals for targeted subscribers in such regions would lower entry barriers and promote the adoption of satellite-based services. Accordingly, the Authority is of the view that the Government may consider provision of suitable subsidy on each NGSO-based FSS user terminal in the unserved and underserved regions of the rural and remote areas for target segments, which may be disbursed either as a lump sum payment or in instalments by devising a suitable model.

- (iii) The Government may consider the options of providing subsidy through Direct Benefit Transfer (DBT) to eligible subscribers in underserved, or unserved regions of rural and remote areas for target segments OR the subsidy may be provided directly to NGSO-based FSS service providers via the Digital Bharat Nidhi Fund.
- (iv) Furthermore, the Authority recommends that the Government may periodically review the subsidy amount to align with technological advancements and market developments.

2.28.2 Relevant extracts of Section 25 of the Telecommunications Act, 2023, are as under: -

25. *The sums of money received towards the Digital Bharat Nidhi under section 24, shall first be credited to the Consolidated Fund of India, and the Central Government may, if Parliament by appropriation made by law in this behalf so provides, credit such proceeds to the Digital Bharat Nidhi from time to time for being utilised exclusively to meet any or all of the following objectives, namely:—*

(a) support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas;

2.28.3 Relevant extracts of Rule 4 and Rule 5 of Telecommunications (Administration of Digital Bharat Nidhi) Rules, 2024 are as under:-

4. Funding from Digital Bharat Nidhi. – *(1) Funding from the Digital Bharat Nidhi shall be provided to Implementers to implement schemes and projects for the purpose of achieving the objectives of the Digital Bharat Nidhi as specified under section 25 of the Act.*

.....

(3) The modalities for funding provided from the Digital Bharat Nidhi for schemes and projects, may be determined by the Administrator on a

case-to-case basis, including but not limited to full funding, partial funding, cofunding, market risk mitigation or risk capital.

(4) The Digital Bharat Nidhi shall fund schemes and projects for providing targeted access to telecommunication services for underserved groups of the society, such as, women, persons with disabilities and economically and socially weaker sections.

(5) The funds shall be released to the Implementers in such manner, at such intervals and subject to such conditions, as may be specified in the agreement.

5. Criteria for undertaking schemes and projects under Digital Bharat Nidhi.— *The schemes and projects for the purposes of achieving the objectives of the Digital Bharat Nidhi, shall meet one or more of the following criteria, namely:—*

(a) to provision telecommunication services, including mobile and broadband services and telecommunication equipment required for delivery of telecommunication services, and enhancing telecom security in underserved rural, remote and urban areas;

(b) to create telecommunication network for provisioning of telecommunications services, including mobile and broadband services, in underserved rural, remote and urban areas;

(c) to introduce next generation telecommunication technologies in underserved rural, remote and urban areas;

(d) to provide or improve access to advanced telecommunication services in underserved rural, remote and urban areas;

(e) to improve affordability of telecommunication services in underserved rural, remote and urban areas;

.....

2.28.4 The Authority has examined its Recommendation number 4.13 in the light of the views communicated by the DoT, provisions of the Telecommunications Act 2023 and the Telecommunications (Administration of Digital Bharat Nidhi)

Rules. The Authority observes that: (i) Section 25(a) of the Telecommunications Act lists support of universal services through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas as one of the objectives for utilization of Digital Bharat Nidhi; (ii) The Rule 4(3) empowers the administrator to determine the modality for funding provided from the Digital Bharat Nidhi on a case to case basis; (iii) Rule 4(4) of the Telecommunication (Digital Bharat Nidhi) Rules, 2024 provides that the Digital Bharat Nidhi shall fund schemes and projects for providing targeted access to telecommunication services for underserved groups of the society, such as women, persons with disabilities and economically and socially weaker sections.

2.28.5 The Authority's recommendation to provide subsidy for NGSO based FSS user terminals for targeted subscribers in unserved/ underserved regions of the rural and remote areas aligns with the objective laid down in the Section 25(a) of the Telecommunication Act 2023 read with rules 4 (3) and 4 (4). However, the recommendation 4.13 provides for provision of subsidy either to the eligible subscriber or to the NGSO based FSS service provider. Rule 4(1) of the Digital Bharat Nidhi Rules though stipulates that funding from the Digital Bharat Nidhi shall be provided to Implementers to implement schemes and projects. Rule 4(3) provides for administrator to devise modality for funding schemes and projects. Having considered its recommendations in the light of views communicated by the DoT, the Authority is of the view that the funding (whether full, partial or co-funding) can also be provided through a third party implementor who may be assigned the project to provide subsidized terminals to the targeted under-served groups of the society in the unserved/ underserved regions of rural and remote areas.

2.28.6 Further, it is clarified that the recommendation at 4.1.3(c) for DBT to eligible subscribers in unserved/ underserved regions of rural and remote areas for targeted segments is not essentially linked to Digital Bharat Nidhi. The linkage to funding from Digital Bharat Nidhi was recommended in case of direct

payment to NGSO based FSS service providers. Thus, the Government can utilize the central DBT mechanism for providing subsidy to individual eligible subscribers in case the Government decides to exercise this option among the various alternatives suggested by the Authority.

2.28.7 In a similar recommendation dated 31.08.2021 on “Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed”, the Authority had undertaken a detailed review of demand side measures to improve broadband adoption and recommended for launching a pilot DBT scheme for prospective fixedline broadband subscribers at places in rural areas.

2.28.8 The merits of considering NGSO based FSS for achieving universal connectivity lies in the following: (i) cost effectiveness vis-à-vis terrestrial broadband particularly in case of remote and sparsely populated regions where expansion of terrestrial broadband would be a costlier alternative. (ii) difficult terrains where laying of terrestrial broadband infrastructure is challenging and many times not feasible. The NGSO based FSS becomes immediately available throughout the geography of the country as soon as the services are commissioned by a service provider. Therefore, it becomes a ready solution for pockets of unserved and underserved regions in remote areas. It also provides a substitute/ option in case a remote area is served only by one of the terrestrial broadband services (4G or fibre) and there is no redundancy in terms of service provider options. However, the high cost of terminal remains an entry barrier for socio-economically weaker sections of the society. In other words, in spite of NGSO based FSS services becoming available in unserved/underserved regions of remote and rural areas, immediately upon commissioning of services in India, the socio-economically weaker sections of the society residing in such areas may not be able to avail these services for want of affordability of the terminal cost. The proposal for subsidy should not be seen as causing any duplicacy (it is assumed that the word ‘duplicity’ has been used inadvertently while the intended word was ‘duplacacy’ in the back reference) as it provides a ready alternative to the terrestrial broadband in

view of the ready universal availability of NGSO based FSS and its cost effectiveness in terms of infrastructure cost (limited to terminal cost) vis-à-vis the cost of expansion of terrestrial broadband in remote or difficult terrains.

2.28.9 It is evident from para 4 of DoT's views that: (a) connectivity to remaining non GP villages is proposed to be provided on demand basis from their respective GPs; (b) BSNL will have target of providing 1.50 crore FTTH connections to household in next 5 years; (c) remote and mountainous regions will be connected by using any efficient alternate last mile technology (radio/satellite) including LEO/ MEO satellite communication services, when matured may be considered for deployment based on the requirement and cost effectiveness in cases where the implementation of OFC may not be feasible.

2.28.10 It is clear from para 4 of DoT's views that the Amended Bharat Net Programme (ABP) does not connect all the villages with fibre by default and such connectivity will be based on demand. Further, the BSNL has a project time frame of five years to provide 1.50 crore FTTH connections to households. Thus, the implementation of ABP through expansion of fibre does not ensure immediate availability of broadband in all the villages. Further, the ABP scheme itself provides for connectivity to remote and mountainous regions through NGSO based satellite communication services based on the requirement and cost effectiveness. Therefore, the proposed subsidy for NGSO based FSS user terminals in unserved/underserved regions of the rural and remote areas in-effect bridges the gap left by the ABP scheme while also ensuring immediate availability of the broadband to all such regions while the expansion of fibre network would take time.

2.28.11 The stated constraint of funds by the DoT in the face of committed liability of 1.73 lakh crore can be addressed, if the Government so decides, by suitable re-allocation of funds between different projects to meet the objectives. The Authority notes that the option of NGSO based FSS services was earlier not available for achieving the goal of universal connectivity. The fact that this

also now becomes a ready option to meet the stated objectives of the Digital Bharat Nidhi indicates that Government may suitably review the allocation of funds between schemes/ projects to address the target groups/ areas with the twin objectives of (i) expediting the whole process; (ii) bringing down the cost of expansion to remote or difficult terrains.

2.28.12 Para 6 of DoT's views seems to contradict views contained at para 2 of the view in back reference on Recommendation No. 4.13. At para 2, the DoT has stated that "Digital Bharat Nidhi requires area wise targeted approach" whereas at para 6, DoT has stated that "area wise approach will raise issue of adverse selection". A plain reading of the Rules 4(1), (3), (4), and (5)(a), (b), (c), (d) and (e) shows that the rules adequately provide for utilizing Digital Bharat Nidhi to fund schemes and projects for providing targeted access to telecommunication services for underserved groups of society and in underserved rural, remote and urban areas. Hence the rules adequately provide for addressing target groups of the society as well as target areas.

2.28.13 It is further noted that Rule 3(2) empowers the Administrator for the following:

.....

- (f) to monitor, evaluate or verify the work done by Implementers through any competent body including any third-party agencies;
- (g) to specify procedures and records, along with formats, to be maintained and furnished by Implementers;
- (h) to engage persons including consultants, advisors or an entity for the purpose of planning, formulation, contract management, midterm review, verification, monitoring, financing, evaluation, impact assessment and management of schemes and projects;
- (i) to specify the terms and conditions relating to the assets created from the funds disbursed from the Digital Bharat Nidhi;

.....

- (k) to create a digital portal to enable Implementers and other stakeholders to provide services, facilitate interaction, reporting and monitoring of schemes and projects.

2.28.14 Thus, adequate powers are available with the Administrator for laying down requisite procedures for monitoring, evaluation and verification. Thus, the apprehension of type-1 (false positive) and type-2 (false negative) errors in the selection process seems presumptive. With adequate criteria for selection of the target sections of the society and its monitoring, evaluation and verification, such presumptive apprehension should not deter a scheme intended for facilitating universal connectivity. Moreover, the Authority notes that the DoT is already implementing a scheme to establish 1.5 crore fibre to home connections through Implementers under the ABP project. This indicates that adequate mechanism can be established to take care of apprehended errors.

2.28.15 In view of the discussion above, **the Authority reiterates its Recommendation No. 4.13 with the modification that the Government may also consider funding (either full, partial or co-funding) of the cost of NGSO based FSS user terminals for the target group of subscribers in unserved/ underserved regions of the rural or remote areas by engaging third party Implementers.**

2.29. **Recommendation No. 4.14:** *The Authority recommends that the spectrum charges for GSO/ NGSO-based Mobile Satellite Services should be levied at 4% of Adjusted Gross Revenue (AGR).*

2.30. **DoT's Views on the Recommendation No. 4.14:** *This recommendation of TRAI may be accepted with the following modification:*

For GSPS (sui generis) license of BSNL, spectrum charges may continue to be levied at 1% of AGR, as BSNL is mainly providing services for strategic purposes.

Further, TRAI may provide views on treatment of IoT devices.

2.31. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.14**

2.31.1 The Authority, had previously vide its Recommendations dated 27.12.2018, recommended that Spectrum Charges for provision of Satellite based Services using Gateway installed in India under '*sui-generis*' category should be levied at 1% of the AGR. These Recommendations were made in 2018 when there was only a single operator i.e. BSNL providing such services. Global Satellite Phone Service was majorly being used by the government agencies and that was the only way to avail telecom connectivity in far-flung areas and water bodies. At that time, this service was not considered as premium service but was akin to emergency services.

2.31.2 Further, the Authority also takes note of the DoT's order dated 06.05.2022 vide which the scope of the '*sui-generis*' license granted to BSNL for satellite-based services has been expanded to provide satellite-based data connectivity to IoT devices/ aggregator devices.

2.31.3 Subsequent to the TRAI's recommendations in 2018, significant developments have taken place in the Indian telecom landscape, evolving satellite service technologies and changing market dynamics. Vide its reference dated 11.7.2024, DoT has sought recommendations of TRAI on terms and conditions of spectrum assignment including spectrum pricing while accounting for level playing field with terrestrial access services for GSO/ NGSO based Mobile Satellite Services providing voice, text, data, and internet services (besides NGSO based Fixed Satellite Services). In the same Reference, while seeking

recommendations on terms and conditions of spectrum assignment including spectrum pricing for NGSO based FSS, DoT asked for taking into account services provided by GSO-based satellite communication service providers. It is evident that DoT wanted fresh examination of the issue of terms and conditions for spectrum assignment for MSS in view of the evolving technological and market developments. The Reference leaves it open for entry of additional service providers in the MSS segment and it would be reasonable to assume that the terms and conditions to be prescribed will be applicable to all such service providers.

2.31.4 The DoT has in its back reference proposed to continue levy of spectrum charges at 1% of AGR for GSPS (*sui-generis*) license of BSNL citing that BSNL is mainly providing services for strategic purposes. Such a proposition would now be unfair and unreasonable in view of the following:

- (i) DoT's proposal provides for lesser spectrum charges to a specific service provider i.e. BSNL, a PSU which would be discriminatory in the scenario of multiple service providers for MSS;
- (ii) The ground cited i.e. provision of service for strategic purposes is applicable to other telecom service providers also who are providing different telecom services for strategic use also besides commercial use. However, presently there is no scheme for differential charging of lesser spectrum charges across services and across service providers for providing services for strategic purposes. On this count also such a preferential treatment would be discriminatory.

2.31.5 It will not be out of place to mention that DoT in its Reference dated 11.07.2024 had asked for accounting for level playing field with terrestrial access services for the satellite-based communication services and also to take into account services provided by GSO based satellite communication services while recommending terms and conditions for NGSO based fixed satellite services. The preferential treatment to GSPS services of BSNL appears *prima facie* contrary to these terms stated in DoT's Reference.

2.31.6 Further, in respect of the DoT's comment that TRAI may provide views on treatment of IoT devices, it is observed that TRAI in its spectrum charging framework across services has not differentiated between the type of services (end use) offered (like IoT) by the service providers. Hence, a different treatment for charging spectrum for end use of IoT devices is not contemplated at this stage. Such a requirement of differential treatment of spectrum charges based on end use was also not a point of reference in DoT's Reference dated 11.07.2024.

2.31.7 In view of the foregoing discussions, the Authority does not agree with the DoT's view that for GSPS (*sui-generis*) license of BSNL, spectrum charges may continue to be levied at 1% of AGR or for providing a fresh view on treatment of IoT devices.

2.31.8 Accordingly, **the Authority reiterates its Recommendation no. 4.14. A differential treatment for spectrum charges for end use by IoT devices is not contemplated at this stage.**

2.32. **Recommendation No. 4.16:** *The Authority recommends that the annual spectrum charges should be calculated as following:*

i. GSO-based Fixed Satellite Services and GSO/NGSO-based Mobile Satellite Services:

Max (4% of AGR, Annual minimum spectrum charge)

ii. NGSO-based Fixed Satellite Services:

Max {(4% of AGR + 500 X N_u), Annual minimum spectrum charge}

where N_u refers to Number of subscribers in urban areas.

2.33. **DoT's Views on the Recommendation No. 4.16:** *This recommendation may not be accepted in light of the views of the Government on TRAI Rec 4.12 and 4.14 above.*

2.34. **Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.16**

2.34.1 The Response of TRAI to the DoT's back reference on Recommendation No. 4.12 and 4.14 may please be seen.

2.34.2 Accordingly, the Authority does not agree with the DoT's view and **reiterates its Recommendation No. 4.16.**

2.35. **Recommendation No. 4.17:** The Authority recommends the following payment terms:

- i. The annual spectrum charges for GSO/ NGSO-based Fixed Satellite Services, GSO/ NGSO-based Mobile Satellite Services, as specified in paras 3.106, 3.121 and 3.143 above, should be paid on advance quarterly basis and payable within 15 days of the commencement of the respective quarter.*
- ii. The minimum charges should be paid in advance at the time of the assignment of spectrum and at the beginning of every year. The quarterly/annual adjustment of payment due shall be made with the minimum spectrum charge for the particular year only.*
- iii. The per subscriber charges should be paid by NGSO-based FSS service providers on a quarterly basis equal to $125 \times N_u$, where N_u refers to total number of subscribers in urban areas at the end of the previous quarter.*

2.36. **DoT's Views on the Recommendation No. 4.17:** This recommendation may be accepted with the following modification:

TRAI may refer to Chapter 4: Financial Conditions, and in particular Rule 27, of Draft Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules, 2025, circulated on 09.09.2025 for public consultation, to ensure that the payment terms are in sync with the authorization rules being framed. If there are changes in the payment terms

of authorization rules after public consultation, corresponding changes will also be made there.

In view of the above, TRAI may reconsider this recommendation with a view to ensure consistency in the applicable provisions.

2.37. Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4.17

2.37.1 The matter regarding payment terms of annual spectrum charges for GSO/ NGSO-based FSS, GSO/ NGSO-based MSS were analysed by the Authority vide para no. 3.153 to 3.156 of TRAI's Recommendations dated 09.05.2025. The salient observations and grounds in reference to Recommendations no. 4.17 were as under:

- (i) Presently, as per the DoT's circular no. R-11014/9/2001-LR dated 16th April 2003, the spectrum charges on AGR basis are being paid by commercial VSAT operators on advance quarterly basis and are payable within 15 days of the commencement of the respective quarter. The annual spectrum charges for GSO/NGSO based FSS as well as GSO/NGSO based MSS shall be paid in a similar manner.
- (ii) However, the minimum charges as recommended shall be paid upfront at the time of assignment of spectrum and at the beginning of every year. The quarterly/annual adjustment of payment due shall be made with the minimum spectrum charge for the particular year only.
- (iii) The NGSO operators should also pay an additional per subscriber charge of Rs 500 per annum in urban areas while the rural and remote areas should be exempted from this additional charge.
- (iv) Since the spectrum charge is being paid on quarterly basis, the Authority is of the view that the additional per user charge shall also be paid by NGSO-based FSS service providers, on a quarterly basis, as follows:

$$\text{Quarterly per user charge} = (500 / 4) \times N_u = 125 \times N_u$$

where N_u refers to total number of subscribers in urban areas at the end of the previous quarter.

2.37.2 Draft Rule 27 on Schedule of Payment of Chapter 4: Financial Condition of Draft Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules, 2025 *inter alia* states that

27. Schedule of Payment

(1) The authorisation fee or spectrum charges linked to AGR determined under these rules shall be payable in four quarterly instalments during each financial year commencing first of April, and fee for any duration of authorisation that is less than a quarter shall be calculated on a pro-rata basis based on actual number of days in the relevant quarter.

(2) An authorised entity shall make payment of the quarterly instalments of the authorisation fee and spectrum charges linked to AGR in the following manner:

(a) the quarterly instalment in respect of each of the first three quarters of a financial year shall be paid within fifteen days of completion of the relevant quarter; and

(b) the quarterly instalment for the last quarter shall be paid in advance by the twenty-fifth of March, calculated on the basis of expected revenue for that quarter, subject to a minimum amount equal to the authorisation fee and spectrum charges linked to AGR paid for the previous quarter:

Provided that an authorised entity shall adjust and pay the difference between the advance payment made for the last quarter and the actual amount duly payable for such quarter by the fifteenth of April of the next financial year.

2.37.3 The Authority notes that the above Rules prescribe the schedule of payment for the authorisation fee and spectrum charges linked to AGR to be paid by an authorised entity to the Central Government.

2.37.4 The Authority vide Recommendations dated 09.05.2025 had recommended the following spectrum charges to be paid by GSO/NGSO-based FSS and GSO-NGSO-based MSS: -

- a. AGR-based spectrum charges: 4% of AGR for GSO/NGSO-based FSS and GSO/NGSO-based MSS
- b. Fixed per subscriber charge: Additional per subscriber charge of Rs. 500 per annum in urban areas for NGSO-based FSS services
- c. Minimum spectrum charges: Annual minimum spectrum charges of Rs. 3500 per MHz for GSO/NGSO-based FSS and GSO/NGSO-based MSS

2.37.5 Regarding the AGR-based charges (as mentioned at (a) above), the Authority takes note of the schedule of payment prescribed by DoT in the Draft Rules and agrees with DoT that instead of advance payment, the schedule of payment as given in the Draft Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules, 2025 framed by DOT, can be followed to be in sync with the authorisation Rules.

2.37.6 The Authority further notes that the Draft Rules on Schedule of payment notified under Section 3 of the Telecommunications Act, 2023 prescribe only for the schedule of payment related to the minimum spectrum charges or the spectrum charges that are linked to AGR. These Rules do not cover the minimum spectrum charges based on per MHz or the fixed charge recommended by the Authority.

2.37.7 The Authority, therefore, is of the view that the payment condition related to minimum spectrum charges based on per MHz and fixed per subscriber charge be suitably inserted while finalizing the Draft Rules on Schedule of payment notified under Section 3 of the Telecommunications Act, 2023 and / or the yet to be framed Rules for Section 4 of the Telecommunication Act, 2023, as applicable.

2.37.8 In view of the foregoing discussion, **the Authority agrees with DoT's views on Recommendations 4.17(i) and reiterates its Recommendations 4.17(ii) and 4.17(iii).**

Annexures


Annexure 1.1: DoT's reference letter dated 11.07.2024

J-19034/003/2024-SAT
Government of India
Ministry of Communications
Department of Telecommunications
WPC Wing, Sanchar Bhawan, New Delhi-110001

11 July, 2024

To

**The Secretary,
Telecom Regulatory Authority of India
4th to 7th Floor, Tower-F World Trade Centre, Nauroji Nagar
New Delhi-110029**



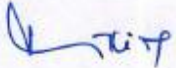
Subject: Seeking TRAI recommendations on terms and conditions of spectrum assignment including spectrum pricing for certain satellite-based commercial communication services.

Sir,

TRAI in its letter No. C-15/2/(2)/2022-NSL-II dated 08 February 2024 requested DoT to review its earlier reference No. L-14006/01/2021-NTG dated 13/09/2021 to TRAI seeking their recommendations for auction of spectrum for space-based communication services in view of the provisions of the Section 4 & First Schedule of the Telecommunications Act 2023.

2. It is to inform that a reference dated 21/06/2024 has already been sent to TRAI for seeking recommendations on terms and conditions, including fees or charges, for authorization to provide telecommunication services (including satellite-based communication services) as per the provisions of the Telecommunications Act, 2023.

3. Since the last reference dated 13/09/2021 to TRAI on spectrum for space-based communication services, a few Unified Licenses with VSAT CUG, Global Mobile Personal Communication by Satellite (GMPCS), NLD and ISP Category 'A' authorizations have been issued by DoT for providing satellite-based communication services through Non - Geostationary Orbit (NGSO) satellites. For assignment of spectrum to such licensees, terms and conditions of spectrum assignment including spectrum pricing need to be finalized.



4. Keeping in view the provisions of Section 4 and the First Schedule of the Telecommunications Act-2023, in terms of Section 11(1)(a) of TRAI Act 1997, TRAI is requested to provide its recommendations on terms and conditions of spectrum assignment including spectrum pricing while accounting for level playing field with terrestrial access services for the following satellite-based communication services:

- 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.



(M Revathi)

Joint Wireless Adviser

Annexure-1.2: DoT's Back Reference letter dated 12.11.2025

Government of India
Ministry of Communications
Department of Telecommunications
Wireless Planning & Coordination Wing

6th floor, Sanchar Bhawan,
20, Ashoka Road, New Delhi-110001

No.: J-19045/013/2025-SAT

Date: 12.11.2025

To,

The Secretary
Telecom Regulatory Authority of India
7th Floor, Tower-F, World Trade Centre, Nauroji Nagar,
New Delhi-110029.



Subject: Back reference on TRAI recommendations dated 09.05.2025 on "Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services" - regarding.

Sir,

The undersigned is directed to refer to TRAI letter. No. R-24/2(1)/2024-NSL-II (E 14742) dated 09.05.2025 vide which TRAI has provided their recommendations on "Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services". These recommendations have been considered by the Department and the following has been decided:

- (i) There is a need to seek reconsidered recommendations from TRAI in respect of some of the recommendations/sub-sections of recommendations. These recommendations/sub-sections of recommendations and views of the DoT thereupon are enclosed as **Annexure**.
- (ii) Rest of the recommendations/sub-sections of recommendations are accepted.

2 In view of the above, TRAI is requested to provide reconsidered recommendations, in accordance with the provisions of Section 11 of the TRAI Act 1997 (as amended) on the recommendations listed in **Annexure**.

3 This issues with approval of competent authority.

Encl: As above.

(M K. Pattanaik)

Joint Wireless Adviser

Tel. No.: 2303 6893

E-mail: pattanaik_mr@gov.in

TRAI recommendations dated 09.05.2025 (on "Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services") for reconsideration

TRAI rec. no.	TRAI Recommendation	DoT's view
4.1	<p>The Authority recommends that subject to alignment with the allocations in NFAP 2022,</p> <p>(a) For assigning frequency spectrum for user links and feeder links for NGSO-based FSS for data communication and Internet service, frequency spectrum in Ku band, Ka band, and Q/V band should be considered.</p> <p>(b) For assigning frequency spectrum for GSO/ NGSO-based MSS for providing voice, text, data communication and Internet service, the following frequency bands should be considered:</p> <ol style="list-style-type: none"> L band and S band for user links; and C band, Ku band, Ka band and Q/V band for feeder links. <p align="right">[Para 2.70]</p>	<p>This recommendation may be accepted with the following modifications:</p> <ol style="list-style-type: none"> NFAP is updated from time to time in line with the ITU Radio Regulations and national spectrum requirements. Hence, frequency assignment should be subject to alignment with the allocations in NFAP, as amended from time to time. For MSS based services, IN-SPACe has received applications seeking authorizations for establishment of Gateways for provision of services in UHF bands. Hence, UHF band may also be considered for MSS.
4.3	<p>The Authority recommends that</p> <p>(a) To control interference, the relevant provisions of ITU-RR should be made applicable to the authorised entities, and</p>	<p>This recommendation may be accepted with the following modifications:</p>

Qns

TRAI rec. no.	TRAI Recommendation	DoT's view
	<p>other entities which have been authorised by the Central Government. Further, the ITU framework for coordination among NGSO-based satellite systems, as may be laid down by ITU in the future, should also be made applicable.</p> <p>(b) The frequency spectrum identified by the Government for satellite-based telecommunication services in the higher frequency bands such as C, Ku, Ka, and Q/V bands that are assigned on a shared basis, should be assigned with a condition that each Authorised Entity and all other entities which have been authorized by the Central Government to use such shared frequency spectrum, will coordinate among themselves in good faith.</p> <p>(c) A provision should be included in the terms and conditions of the assignment of frequency spectrum that in case the need arises, the Government may prescribe a framework for sharing of spectrum in higher frequency bands such as C, Ku, Ka, and Q/V bands, which will be binding on the authorised entities and all other entities which have been authorized by the Central Government to use such shared frequency spectrum.</p> <p>(d) The Government, with the help of the Telecom Engineering Center (TEC), should examine the need for prescribing the framework for the sharing of spectrum. The</p>	<p>Notwithstanding the provisions related to applicability of ITU framework for coordination among NGSO-based satellite systems, following additional provisions may also be made applicable:</p> <ol style="list-style-type: none"> The authorised entity(ies) shall ensure that its concerned satellite system/network operator or owner will collaborate, negotiate and enter into frequency coordination agreement or coexistence arrangements with the incumbent and any other new entrant satellite system/network operators or owners (providing or planning to provide services over India) to ensure that the operations of these latter satellite systems/networks can operate over India without harmful interference. The Government reserves the right to make appropriate interventions including terminating/suspending the frequency assignment issued to the authorised entity(ies) if in its view the above provision to ensure operation without harmful interference of incumbents/new operators/owners has not been complied with.

Qns

TRAI rec. no.	TRAI Recommendation	DoT's view
	framework may include conditions on the maximum equivalent power flux density (EPFD) etc. With a view to nudging the satellite operators to coordinate among themselves in good faith at the earliest, the Government may also consider introducing a provision for splitting of spectrum as a last resort in line with the provision created by FCC in its 'Spectrum Sharing Rules for Non-Geostationary Orbit, Fixed-Satellite Service Systems' in case two or more NGSO-based FSS satellite systems fail to complete coordination. [Para 2.110]	
4.5	The Authority recommends that (c) In the frequency range(s) already identified for IMT such as 42.5-43.5 GHz, the satellite earth station gateways should be permitted to be established at uninhabited or remote locations on case-to-case basis, where there is a less likelihood of IMT services to come up. For this purpose (i) DoT should prescribe the exclusion zone requirement for co-existence of IMT and satellite earth station gateways. (ii) DoT should create a software defined automated process on a portal having the database of coordinates of	With regard to recommendation 4.5 (c), it may be noted that TRAI in recommendations dated 04.02.2025 on "Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT" have recommended that: <i>"4.1 (c) Owing to the non-availability of the device ecosystem in 42.5- 43.5 GHz frequency range, it will be prudent that the frequency range 42.5-43.5 GHz is not put to auction in the forthcoming spectrum auction. The DoT may send a separate reference for seeking the Authority's recommendations for 42.5-43.5 GHz frequency range for IMT at an appropriate time."</i>

Don

TRAI rec. no.	TRAI Recommendation	DoT's view
	the IMT base stations in these frequency ranges. The geofencing coordinates of the proposed earth station in such frequency ranges can provide the feasibility results through the portal for establishing the earth station. [Para 2.133]	In view of the above, TRAI Rec 4.5(c) may be accepted with the modification that satellite earth station gateways may be permitted to be established at uninhabited or remote locations on case-to-case basis, in 42.5-43.5 GHz band which is already identified for IMT, and at the time of deployment of IMT stations in this band in future, necessary steps towards co-existence of Satellite Earth Station Gateways and IMT may be taken.
4.6	The Authority recommends that with a view to mitigate the risk of scarcity of gateway sites, Satellite Earth Station Gateway(s) should be installed and commissioned within 12 months from the date of permission granted to the authorised entities by the Central Government for the establishment of the Satellite Earth Station Gateway(s). [Para 2.144]	A provision has been included in the draft rules under Section 3(1)(a) of the Telecommunications Act 2023, based on the TRAI recommendations dated 18.09.2024 on service authorization, that in case of roll out obligations for providing services through satellite technology in addition to 12 months for roll out, a period of 30 days after the expiry of the due date is permitted for fulfillment of rollout obligations. In view of the above, TRAI may reconsider this recommendation with a view to ensure consistency in the applicable provisions.
4.7	The Authority recommends that entities authorised to provide satellite-based telecommunication services should be permitted to surrender the right to use of frequency spectrum assigned to them before the expiry of the validity period. For	TRAI recommendation 4.7(a) may be accepted with the following modification:

Don

TRAI rec. no.	TRAI Recommendation	DoT's view
	<p>this purpose, the following should be the broad terms and conditions:</p> <p>(a) The Authorised Entity should provide a notice period to the Central Government and TRAI of at least 30 days prior to the proposed date of surrender of right to use the frequency spectrum along with the relevant details, including the precise frequency range(s) proposed to be surrendered. However, in case the surrender of right to use of spectrum by an Authorised Entity is likely to result in a disruption or closure of services for the consumers, the service provider should be required to serve an advance notice to the Central Government and TRAI as well as each of its subscribers, 60 days prior to the proposed date of surrender of the right to use of frequency spectrum.</p> <p>(b) DoT may charge a reasonable processing fee to recover administrative charges, if any, for the surrender of the right to use of frequency spectrum.</p> <p>[Para 2.160]</p>	<p>As per the license/authorization conditions, continuity of service is required to be maintained by the licensee/authorized entity.</p> <p>Accordingly, if a licensee/authorized entity intend to surrender the spectrum which may lead to discontinuation of services then it shall submit an application to the Central Government, at least 60 days prior to the intended date of discontinuation of the relevant telecommunication service, together with reasons for such intended discontinuation.</p> <p>The Central Government may, within a period of thirty days of receipt of such application:</p> <ol style="list-style-type: none"> approve such application; or reject such application on grounds of public interest or national security or due to occurrence of national emergency or war. <p>If application is approved by the Central Government, then the licensee/authorised entity shall issue a notice of discontinuation of the relevant telecommunication service, to users of such telecommunication service, at least thirty days in</p>

TRAI rec. no.	TRAI Recommendation	DoT's view
		<p>advance of the intended date of discontinuation, clearly stating the options available to such users.</p> <p>With regard to TRAI recommendation 4.7(b), this is to inform that at present, Rs. 1000/- is being levied as amendment charges for issue of revised frequency assignment due to various activities including surrender of spectrum on all the existing wireless licensees (including satellite-based licensees); same may continue to be levied.</p>
4.8	<p>The Authority recommends that there should be a defined timeline, not exceeding 30 days from the date of application, within which the frequency spectrum should be assigned to an Authorised Entity for provision of satellite-based communication services, provided that the in-principle clearance of satellite network has been given by the Central Government. In case of any objection, the same may be communicated to the concerned Authorised Entity within such window of 30 days from the date of application, for necessary action.</p> <p>[Para 2.164]</p>	<p>This recommendation of TRAI may be accepted with the modification that for assignment of spectrum, separate in-principle clearance of satellite network may not be required once IN-SPACE authorization and DoT service licenses have been obtained by the licensees.</p>
4.9	<p>The Authority recommends that the Central Government should explore the possibility of assigning frequency</p>	<p>This recommendation of TRAI may be accepted with the modification that all the combinations of the emission bandwidths and start and stop of the frequency ranges to</p>

TRAI rec. no.	TRAI Recommendation	DoT's view
	spectrum for satellite-based telecommunication services on a block basis rather than on a carrier-by-carrier basis. [Para 2.168]	be operated by an authorized entity may be mentioned in the frequency assignment letter.
4.12	<p>The Authority recommends the following:</p> <p>i. Spectrum charges for NGSO based Fixed Satellite Services should be levied at 4% of the Adjusted Gross Revenue (AGR).</p> <p>ii. NGSO-based Fixed Satellite service providers should also pay an additional per subscriber charge of Rs. 500 per annum in urban areas while exempting the rural and remote areas from this additional charge.</p> <p>[Para 3.121]</p>	<p>It is felt that prioritising areas based on rural vs. urban poses implementation challenges and needs a relook because this distinction does not take advantage accruing from LEO/MEO technology, which would accrue if the service is prioritized or incentivised in hard-to-connect areas such as border/hills/islands.</p> <p>TRAI may thus re-examine the following instead:</p> <ol style="list-style-type: none"> 1. Areas to be incentivised are to be based on capitalising on the advantages of superior reach of LEO/MEO over conventional technologies such as in border/hill/islands areas of the country. 2. An annual spectrum charge of 5% (instead of 4%) with a discount of 1% if a certain percentage (say 5%) of overall customers enrolled in the year are from the above areas as in (1.) above and notified by Government. This would be in lieu of Rs. 500 disincentive in Urban areas as recommended by TRAI. <p>In view of the above, TRAI may reconsider this recommendation accordingly.</p>

Om

TRAI rec. no.	TRAI Recommendation	DoT's view
4.13	<p>For the targeted subscribers in unserved/underserved regions of the rural and remote areas, the Authority recommends the following:</p> <p>(a) The Government may consider provision of a subsidy for each NGSO-based FSS user terminal in such regions at an appropriate amount. The amount of subsidy may be decided by the Government.</p> <p>(b) The subsidy may be disbursed either as a lump sum payment or in installments by devising a suitable model.</p> <p>(c) The subsidy may be given either through Direct Benefit Transfer (DBT) to eligible subscribers in underserved/unserved regions of rural and remote areas, for target segments OR as a direct payment to NGSO-based FSS service provider through the Digital Bharat Nidhi Fund.</p> <p>(d) The amount of the subsidy may be subject to a periodic review by the Government in accordance with technological and market developments taking place.</p> <p>[Para 3.126]</p>	<p>This recommendation may not be accepted, in view of the following:</p> <ol style="list-style-type: none"> 1. As per the DBN Rules, funding from the DBN shall be provided to Implementers to implement schemes and projects for the purpose of achieving the objectives of the DBN as specified under section 25 of the Act. Further, DBN is not doing DBT and no mechanism is established for the same. 2. As per act & rules, DBN requires area wise targeted approach to bridge the digital divide. The present approach is the individual approach - which will mean providing schematic subsidy to already covered areas. 3. Saturation of 4G mobile services in uncovered villages across the country and other targeted mobile schemes are under implementation by DBN to provide mobile, internet/data & other related services. The proposed recommendations will mean duplicity. 4. On 04.08.2023, the Union Cabinet has approved the Amended BharatNet Program (ABP) under Design, Built, Operate and Maintain (DBOM) model, for up-gradation of existing network of BharatNet Phase-I and Phase-II, creation of network in balance, Operation and Maintenance for 10 years and utilization. The connectivity

Om

TRAI rec. no.	TRAI Recommendation	DoT's view
		<p>to remaining non-GP villages is proposed to be provided on demand basis from their respective GPs. BSNL has been nominated as the Project Management Agency and will have target of providing 1.50 crore FTTH connections to households in next five years. Remote & mountainous region will be connected by using any efficient alternate last mile technology (radio/satellite) including Low Earth Orbit/Medium Earth Orbit (LEO/MEO) satellite communication services, when matured may be considered for deployment based on the requirement and cost effectiveness in cases where the implementation of OFC may not be feasible.</p> <p>5. The ongoing projects in DBN means committed liability of approx. Rs 1.73 lakh crore. The availability of fund is approx. Rs 90909.09 crore. Hence, there is limited space for sanctioning any new project under DBN fund</p> <p>6. Regarding use of satellite, the recommendation is the area wise approach which will raise issue of adverse selection and type-1(false positive) and type-2(false negative) error in the selection process.</p>
4.14	The Authority recommends that the spectrum charges for GSO/ NGSO-based Mobile Satellite Services should be levied at 4% of Adjusted Gross Revenue (AGR).	This recommendation of TRAI may be accepted with the following modification:

Am

TRAI rec. no.	TRAI Recommendation	DoT's view
	[Para 3.143]	For GPS (sui generis) license of BSNL, spectrum charges may continue to be levied at 1% of AGR, as BSNL is mainly providing services for strategic purposes. Further, TRAI may provide views on treatment of IoT devices.
4.16	<p>The Authority recommends that the annual spectrum charges should be calculated as following:</p> <p>i. GSO-based Fixed Satellite Services and GSO/NGSO-based Mobile Satellite Services:</p> <p>Max (4% of AGR, Annual minimum spectrum charge)</p> <p>ii. NGSO-based Fixed Satellite Services:</p> <p>Max {(4% of AGR + 500 X Nu), Annual minimum spectrum charge} where Nu refers to Number of subscribers in urban areas.</p> <p>[Para 3.152]</p>	This recommendation may not be accepted in light of the views of the Government on TRAI Rec 4.12 and 4.14 above.
4.17	<p>The Authority recommends the following payment terms:</p> <p>i. The annual spectrum charges for GSO/ NGSO-based Fixed Satellite Services, GSO/ NGSO-based Mobile Satellite Services, as specified in paras 3.106, 3.121 and 3.143 above, should be paid on advance quarterly basis and payable within 15 days of the commencement of the respective quarter.</p>	<p>This recommendation may be accepted with the following modification:</p> <p>TRAI may refer to Chapter 4: Financial Conditions, and in particular Rule 27, of Draft Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules, 2025, circulated on 09.09.2025 for public</p>

Am

TRAI rec. no.	TRAI Recommendation	DoT's view
	<p>ii. The minimum charges should be paid in advance at the time of the assignment of spectrum and at the beginning of every year. The quarterly/annual adjustment of payment due shall be made with the minimum spectrum charge for the particular year only.</p> <p>iii. The per subscriber charges should be paid by NGSO-based FSS service providers on a quarterly basis equal to $125 \times Nu$, where Nu refers to total number of subscribers in urban areas at the end of the previous quarter.</p> <p>[Para 3.157]</p>	<p>consultation, to ensure that the payment terms are in sync with the authorization rules being framed. If there are changes in the payment terms of authorization rules after public consultation, corresponding changes will also be made there.</p> <p>In view of the above, TRAI may reconsider this recommendation with a view to ensure consistency in the applicable provisions.</p>

