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TRAI/FY26-27/018  
13<sup>th</sup> May 2026

To,  
**Shri Akhilesh Kumar Trivedi**  
**Advisor (Networks, Spectrum and Licensing)**  
**Telecom Regulatory Authority of India,**  
World Trade Centre, Nauroji Nagar,  
New Delhi – 110029

**Subject:** **Bharti Airtel's Comments on Consultation Paper on *the Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers***

**Reference:** TRAI's Consultation Paper dated 8<sup>th</sup> April 2026

Dear Sir,

This is in reference to TRAI's Consultation Paper on *the Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers* dated 08.04.2026.

In this regard, we are pleased to enclose our comments on the said consultation paper for your kind consideration.

Thanking You,

Yours' Sincerely,  
For **Bharti Airtel Limited**

A handwritten signature in blue ink, appearing to read 'Rahul Vatts', is written over a horizontal line.

**Rahul Vatts**  
Chief Regulatory Officer

Encl: a.a

**Preamble:**

Airtel thanks the Authority for giving it the opportunity to comment on this critical Consultation Paper (“CP”) titled, *The Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers*. Airtel also appreciates the comprehensive manner in which the Authority has framed the issues relating to Direct-to-Device (“D2D”) satellite services and the proposed Satellite Communication Network (“SCN”) authorisation, building on the policy direction provided under the Telecommunications Act, 2023 and the Indian Space Policy, 2023.

The Consultation Paper comes at a pivotal moment for India’s connectivity landscape. The rapid evolution of satellite technologies, NGSO constellations and non-terrestrial networks (“NTN”) is opening up new possibilities for extending broadband and mobile connectivity to remote, rural, hilly and disaster-prone areas that have historically been difficult to serve through purely terrestrial means. At the same time, **the terrestrial operators continue to shoulder the primary responsibility for delivering affordable, high-quality connectivity to more than a billion users, supported by significant long-term investments in spectrum, infrastructure and services.**

In this context, it is critical that the **emerging regulatory framework for satellite communication networks and D2D services: (a) reinforces, rather than undermines, the central role of terrestrial mobile networks; (b) provides clarity and certainty to investors; (c) safeguards the level playing field between different categories of service providers; and (d) remains aligned with India’s national security, consumer-protection and universal service objectives.** Airtel’s submissions are guided by these principles, as well as by its practical experience as an integrated communications service provider operating in India and globally.

Airtel strongly believes that **satellite-based technologies should be positioned as complementary to terrestrial networks, helping close the last remaining coverage gaps and enhancing resilience, rather than as a substitute to the already widespread terrestrial mobile services.** Airtel also believes that the framework for SCN authorisation must recognise the distinct role of network-layer entities, while simultaneously ensuring that consumer-facing obligations and rights remain squarely with service providers.

We also note that several LEO operators are fully prepared to launch SatCom services in India, with adequate satellite capacity already available, infrastructure deployment readiness in place, and requisite licences/authorisations secured. Significant investments have already been made. We therefore urge the Government to expedite spectrum assignment to such operators to commercially launch their services.

Against this backdrop, Airtel’s overarching positions on the three broad themes of the Consultation Paper are as follows:

- **Currently, D2D services should only be permitted through IMT spectrum, limited to FDD mid-bands and harmonised spectrum holdings, as this provides the fastest, most efficient and globally aligned route for rollout by leveraging existing terrestrial mobile networks, harmonised spectrum ecosystems, mature device availability and significant investments already made by licensed mobile operators.**
- **The preferred approach at this stage would be to enable D2D services only through IMT spectrum. However, if the Government decides to also permit D2D services using MSS spectrum, strict regulatory parity with terrestrial mobile operators should be ensured across**

all parameters, including KYC, QoS, lawful interception, security obligations and spectrum assignment framework, so as to maintain a level playing field.

- The proposed SCN authorisation should be designed as a light-touch, network-layer authorisation with feeder-link spectrum assignment, while user-link spectrum should remain with service providers. Additionally, financial and regulatory conditions should avoid arbitrage with existing licensees and continue to support sustainable sectoral growth.

The sections that follow set out Airtel's broad approach on each of these themes. Airtel's detailed question-wise responses then elaborate further on this.

## I. Direct-to-Device (D2D) via IMT Spectrum

Airtel believes that D2D via IMT spectrum represents a significant innovation and submits that **India should not delay its participation in this evolution**, especially where it can directly further the objectives of universal service and Digital India.

We acknowledge that the use of IMT spectrum for D2D is under study in ITU-R and is expected to be discussed at WRC-27. However, the Authority has itself noted in the instant Consultation Paper that **several jurisdictions such as US, UK, Canada, Australia and others are already moving ahead with national frameworks or trials**. Thus, we unequivocally submit that there is no need to wait for the outcome of WRC-27, and D2D via IMT spectrum should be permitted immediately.

At the same time, it is important that D2D is implemented in a manner that: (a) preserves the primacy of terrestrial mobile networks as the foundation of India's digital infrastructure; (b) ensures seamless integration at the network and service levels; and (c) avoids unintended disruption/interference to existing IMT deployments. Airtel, therefore, supports a **carefully scoped and phased introduction of D2D via IMT spectrum, offered mandatorily through access-service providers who already hold the relevant IMT spectrum, rather than through stand-alone satellite operators**.

From a consumer and societal perspective, integrating D2D with terrestrial access networks is essential to deliver a truly ubiquitous and seamless experience. Pure satellite services cannot reliably support indoor usage due to line-of-sight constraints and should, in practice, remain an outdoor or last-resort layer. When D2D is implemented through IMT spectrum held by access-service providers, users can benefit from:

- a single subscription, identity and numbering plan across terrestrial and satellite coverage
- consistent access to emergency and public-safety services
- uniform application of KYC, lawful interception, QoS and consumer-protection obligations.

This integrated approach **maximises the public-interest benefits of D2D while minimising fragmentation of regulatory responsibilities**.

Aligning India's regulatory framework with other countries like US, UK, Canada etc. will ensure that Indian users and networks benefit from **global economies of scale, multi-vendor competition and rapid innovation**, rather than being forced into niche or fragmented device ecosystems.

A prudent band-selection strategy is critical at this early stage. The Consultation Paper recognises that extensive work is still required internationally on the coexistence between D2D and terrestrial IMT, including issues of uplink/downlink synchronisation, guard bands and cross-border coordination. Airtel believes that, at this point, **only FDD-based mid-bands – specifically 1800 MHz and 2100 MHz – should be considered for D2D via IMT spectrum** because:

- FDD inherently separates uplink and downlink in distinct bands, simplifying interference management between satellite and terrestrial links.
- These bands are already widely deployed for nationwide coverage and are well supported by the global handset and chipset ecosystem, reducing implementation complexity and cost.

**Sub-GHz and TDD bands may be revisited at a later stage when robust coexistence frameworks, studies and international experience are available.**

Further, at least at the initial stage, **D2D via IMT spectrum should only can be offered only where a single service provider holds the relevant IMT frequency block across all 22 LSAs, and harmonisation measures should be undertaken to make such pan-India holdings feasible** – to provide a simple and clean basis for early deployment. Finally, Airtel submits that **no additional spectrum-related charges should be levied for using IMT spectrum for D2D**, maintaining a technology-neutral framework to encourage efficient utilisation of scarce IMT spectrum and expansion coverage to underserved areas.

**In summary, Airtel supports the early, carefully-regulated introduction of D2D via IMT spectrum, integrated with terrestrial mobile networks, limited initially to the 1800/2100 MHz FDD bands and to harmonised pan-India holdings, and without additional spectrum charges for the use of IMT spectrum for D2D.**

## **II. D2D via MSS Spectrum**

Airtel fully acknowledges the complementary role that D2D can play in bridging the digital divide and providing vital connectivity to hitherto unserved/underserved areas. However, D2D via IMT spectrum is the ideal approach at this stage, as it would allow faster rollout by leveraging the existing investments of mobile operators and has better device ecosystem.

However, **if the Government nonetheless decides to also allow D2D via MSS spectrum, Airtel strongly believes that there should be strict regulatory parity with terrestrial mobile operators on all parameters including KYC, QoS, lawful interception, spectrum assignment framework etc.** This is essential to preserve competitive neutrality between functionally similar services offered on mobile handsets, whether the last-mile link is terrestrial or satellite.

**Overall, Airtel’s position is that D2D should, for now, be exclusively pursued via IMT spectrum in partnership with access-service providers. If MSS-based D2D is nevertheless introduced, there should be strict regulatory parity with terrestrial mobile operators to avoid regulatory arbitrage and to maintain a level playing field.**

## **III. Satellite Communication Network (SCN) Authorisation**

Airtel supports the introduction of a network-layer authorisation to establish and operate satellite communication networks and offer SCN as a Service (“SCNaaS”) to service providers, subject to appropriate design choices on scope, spectrum assignment and security obligations. The

introduction of SCN Authorisation would align India with international practice where satellite operators often act as wholesale capacity providers to licensed service providers.

Airtel submits that **only feeder-link spectrum (in FSS bands) should be assigned to SCN operators, while user-link spectrum – including FSS, MSS and IMT bands used for access to end users – should remain with service providers.** Further, security and compliance obligations for SCN operators should be calibrated to their network-layer role.

**In essence, Airtel's position is that the SCN authorisation framework should: (a) enable satellite operators to function as network-layer providers with feeder-link spectrum; and (b) leave user-link spectrum and all retail obligations with service providers.**

**In summary:**

- ✓ *D2D via IMT spectrum should be permitted immediately rather than being deferred until after WRC 27.*
- ✓ *D2D via IMT spectrum should only be permitted in FDD-based mid-bands (1800/2100 MHz) at this stage.*
- ✓ *NFAP should be suitably modified to include satellite-based D2D services in the relevant IMT bands identified for this purpose.*
- ✓ *At this stage, D2D via IMT spectrum should only be permitted where a single service provider holds the same spots across all LSAs. Harmonisation should be promptly carried out to enable the same.*
- ✓ *IMT spectrum being used for D2D services should not attract any additional charges.*
- ✓ *The preferred approach at this stage would be to enable D2D services only through IMT spectrum. However, if the Government decides to also permit D2D services using MSS spectrum, strict regulatory parity with terrestrial mobile operators should be ensured across all parameters including KYC, QoS, lawful interception, spectrum assignment framework etc.*
- ✓ *There should be a separate authorisation for installation/operation of SESGs/SNPs, with the provision to obtain feeder link spectrum assignment – either by expanding the scope of the proposed SESG Authorisation or by introducing separate SCN Authorisation.*  
  
*The eligibility conditions for such authorisation should be analogous to those proposed for SESG Authorisation; the area of operation should be National service area; and the validity period should be 20 years.*
- ✓ *The user link spectrum should be allocated to the respective service providers.*
- ✓ *The terms and conditions, as recommended for spectrum assignment to service providers, should apply mutatis mutandis to SCN operators.*
- ✓ *SCN operators and service providers should be responsible for the security and other obligations applicable to network and service layers respectively, while avoiding duplication of compliance requirements.*

- ✓ *The LF framework for an SCN operator should be at par with that of the service providers. Any rationalisation of levies must be applied uniformly across service providers and SCN operators.*
- ✓ *The requirement for BGs (both PBG and FBG) should be done away with. However, if the requirement of BGs is to be retained, an appropriate amount should be recommended by the Authority based on the corresponding requirements for service providers, while taking into account the restricted scope of the SCN authorisation being merely a network-layer authorisation.*
- ✓ *An SESG/SCN operator should also be allowed to connect its SESGs/SNPs with its PoPs without having to acquire any other license/authorisation.*
- ✓ *Only entities holding the UL (Access/Internet/NLD/Commercial VSAT CUG/GMPCS), or equivalent service authorisations for NSOs under the new authorisation regime, and not VNOs, should be permitted to seek SCNaas from SCN operators.*
- ✓ *The SESGs/SNPs established in India should be allowed to be used to provide feeder-link connectivity to satellites that are providing connectivity to customers outside of India.*
- ✓ *There should be no mandatory requirement for SatCom operators to extend control/visibility/resource allocation/management to service providers.*
- ✓ *The agreements between SCN operators and service providers should be left to mutual commercial negotiation and market forces with no mandatory reference agreement.*
- ✓ *The charges payable by service providers to SCN operators for SCNaas, should be left to mutual commercial negotiation and market forces.*
- ✓ *The charges paid for SCNaas should be allowed as deductions from the ApGR for arriving at the AGR for levy of LF/SUC on service providers.*
- ✓ *There is no need for an interconnection framework for satellite-based telecommunications networks with other telecom networks at this stage.*

**Airtel now provides its replies to the specific questions asked in the sections that follow.**

**Q1. What should be the eligibility conditions, area of operation, validity period of authorisation and the scope of the proposed Satellite Communication Network (SCN) authorisation under Section 3(1)(b) of the Telecommunications Act, 2023? Kindly provide a detailed response with justification.**

&

**Q2. What should be the terms and conditions (general, technical, operating, security related etc.) that should be made applicable for the proposed Satellite Communication Network authorisation? Kindly provide a detailed response with justification.**

**Airtel Response:**

There is no separate license/registration for SESG/SCN operators under the extant regime in India. Even satellite operators – who only wish to set up SESGs/SNPs and acquire satellite spectrum to operate the SESG/SNP to provide satellite bandwidth to TSPs and do not intend to provide any retail services to end customers directly – have no choice but to take a UL.

To bridge this gap, there is an immediate need for a network-layer authorisation, with the provision of obtaining feeder-link spectrum. This may be done either through expansion of scope of the proposed SESG Authorisation or through introduction of a separate SCN Authorisation.

The various terms and conditions for such an authorisation should be as follows:

**Eligibility Conditions:**

The Authority has already carefully considered and recommended a set of eligibility conditions for the proposed SESG Authorisation; and the same have been incorporated in the draft rules under the Telecom Act. The applicant must be a company incorporated in India; and should be one of the following: (i) a space segment provider authorised by IN-SPACe, (ii) a subsidiary of such space segment provider, or (iii) a company having an agreement with such space segment provider.

These conditions adequately capture the requirement of the applicant having the requisite access to satellite bandwidth – whether in-house or through contractual arrangements – in order to be technically capable of providing SCNaaS to service providers. With the applicant being a company incorporated in India, DoT may also have adequate oversight over its operations. Accordingly, we submit that **the eligibility conditions envisaged for SESG Authorisation may be considered for SCN Authorisation as well.**

**Area of Operation:**

Due to the large beam size of satellites, **larger service areas are inherently more suited to SatCom networks.** Both the SatCom-specific service authorizations under the UL, i.e. Commercial VSAT CUG and GMPCS, operate at the National service area level. Even the service area for the proposed SESG Authorisation has been envisaged as pan-India. Similarly, the area of operation for the SCN Authorisation should also be **National service area.**

**Validity Period:**

The validity period for the SCN Authorisation should be **20 years** – in line with the validity period across different service/network authorisations, as per the draft rules under the Telecom Act. This would ensure **consistency and regulatory certainty.**

**Scope:**

As per the draft rules under the Telecom Act, the scope of the proposed SESG Authorisation includes establishing, operating, maintaining and expanding SESGs and baseband systems for satellite systems. In addition to the same, we submit that **feeder link spectrum should be assigned to SESG/SCN operators**. This is required to enable them to effectively operate the SESGs/SNPs and provide SCNaaS to service providers. As mentioned above, the Government may decide to either expand the scope of the proposed SESG Authorisation or introduce a separate SCN Authorisation to this effect.

Needless to say, **user link spectrum should be allocated to respective service providers**.

As noted by the Authority itself in the consultation paper preceding the recommendations on SESG License, multiple jurisdictions follow the approach of having a separate registration for SESG operators and allocating feeder link spectrum to SESG operators and user link spectrum to service providers.

It is to be noted that even in the broadcasting sector, teleport operators are allowed to obtain the spectrum required to uplink signals from a teleport to the satellite. Similarly, SESG/SCN operators should also be permitted to obtain spectrum required to operate SESGs/SNPs.

**Security Conditions:**

Service providers should continue to remain accountable for compliance with user-facing service-layer obligations, regardless of whether they use their own infrastructure or obtain SCNaaS from an SCN operator. On the other hand, there are certain network-layer obligations, which may be effectively ensured only by SNP operators. Thus, **SCN operators and service providers should be responsible for the security and other obligations applicable to network and service layers respectively, while ensuring that there is no duplication of compliances** between them. This approach will ensure that security and regulatory compliance are effectively enforced at the appropriate layer.

**Other terms & conditions:**

It is also pertinent to highlight the operating model of global-level NGSO operators – in addition to SESGs/SNPs, they also set up multiple Points-of-Presence (PoPs). It is at the PoP, and not the SESG/SNP, where the traffic is handed back over to the different service providers. Now, a PoP may not necessarily be located at the same location as the SESG/SNP and, when at different locations, they would need to be connected with each other through a fibre/leased line.

Therefore, it follows, that in order to enable such global-level players to efficiently operate in India, it would be essential to allow these operators to also be able to connect the SESG/SNP with the PoP, including through a leased line from licensed/authorised TSPs, without having to acquire any separate license/authorisation. While the Authority had recommended an enabling provision for such connectivity and the same had been accepted by DoT, it seems to have been inadvertently missed from the draft rules under the Telecom Act.

**Therefore, Airtel recommends the following:**

- (i) **There should be a separate authorisation for installation/operation of SESGs/SNPs, with the provision to obtain feeder link spectrum assignment – either by expanding the scope of the proposed SESG Authorisation or by introducing separate SCN Authorisation.**
- (ii) **The eligibility conditions for such authorisation should be analogous to those proposed for SESG Authorisation.**

- (iii) The area of operation for such authorisation should be National service area.
- (iv) The validity period of such authorisation should be 20 years.
- (v) The user link spectrum should be allocated to the respective service providers.
- (vi) SCN operators and service providers should be responsible for the security and other obligations applicable to network and service layers respectively, while avoiding duplication of compliance requirements.
- (vii) An SESG/SCN operator should also be allowed to connect its SESGs/SNPs with its PoPs without having to acquire any other license/authorisation.

**Q3. Which type of authorised entities should be permitted to seek Satellite Communication Network as a Service (SCNaaS) from the entities holding the proposed Satellite Communication Network authorisation? Whether virtual network operators (VNOs) should also be permitted to seek SCNaaS? Kindly provide a detailed response with justification.**

**Airtel Response:**

Only entities holding relevant service authorizations under the Unified License (UL) i.e. Access, Internet, NLD, Commercial VSAT CUG and GMPCS, or equivalent service authorisations for NSOs under the new authorisation regime, should be permitted to seek SCNaaS from the entities holding the proposed SCN authorisation. VNOs should not be permitted to seek SCNaaS.

It may be noted that the **objective of introduction of the VNO regime** was to delink network licensing from service delivery and **facilitate resale at service level** – for enhancing competition and penetration of telecom services within the country. Accordingly, **VNOs are treated as extension of their parent NSOs, for providing services using the latter’s network**. In other words, VNOs are not allowed to provide services on a standalone basis, i.e. without parenting with an NSO.

Sir, SCN Authorisation is envisaged to be a **network-layer authorisation** under Section 3(1)(b) of the Telecom Act. Other network-layer authorisations, as per the Draft Telecommunications (Authorisation for Telecommunication Network) Rules, 2025, include Infrastructure Provider (IP), Digital Connectivity Infrastructure Provider (DCIP), Cloud-hosted Telecommunication Network (CTN) Provider, etc. However, there is a major difference between these other network-layer authorisations and the SCN Authorisation – the former are not allowed to establish/operate core network, whereas the **SCN operators are proposed to establish/operate baseband as well as obtain/utilize spectrum**.

Accordingly, in case VNOs are allowed to obtain SCNaaS from SCN operators, they would be **technically capable of offering services directly to end users**, without the involvement of an NSO. This would essentially **blur the distinction between NSOs and VNOs**, lead to **arbitrage** and **defeat the licensing/authorisation construct**.

**Therefore, Airtel recommends that only entities holding the UL (Access/Internet/NLD/Commercial VSAT CUG/GMPCS), or equivalent service authorisations for NSOs under the new authorisation regime, and not VNOs, should be permitted to seek SCNaaS from SCN operators.**

**Q4. Whether the SCN authorised entity establishing, operating, maintaining, or expanding the baseband system alongwith SCN should be mandated to extend control, visibility, resource allocation and management of the telecommunication services, being provisioned using SCN to users, to the partnering entity on mutually agreed terms and conditions? Please provide a detailed response with justification.**

**Airtel Response:**

**No**, the SCN authorised entity establishing, operating, maintaining, or expanding the baseband system along with SCN should **not** be mandated to extend control, visibility, resource allocation and management of the telecommunication services, being provisioned using SCN to users, to the partnering entity on mutually agreed terms and conditions.

Different SatCom operators across the globe may have **different technical/operational models**, with equipment/systems of proprietary nature. Even the **use cases of SCNaas may differ for different service providers** – ranging from standalone GSO/NGSO-based satellite system to hybrid GSO-NGSO networks. **Not every model/use case would require SatCom operators to extend control/visibility/resource allocation/management to service providers**. In such cases, a mandatory requirement may force SatCom operators to **unnecessarily expose confidential information to external parties**.

The inter-se requirements of exchange of information and extent of control/visibility – depending on the technical/operating model and use case – may be **effectively served through mutual agreements** between SatCom operators and service providers. There is **no market failure necessitating an intervention** from the Authority at this stage.

**Therefore, Airtel recommends that there should be no mandatory requirement for SatCom operators to extend control/visibility/resource allocation/management to service providers.**

**Q5. What provisions should be included in the terms and conditions of Satellite Communication Network (SCN) authorisation considering the policy/Act in the Space sector? Kindly provide a detailed response with justification.**

**Airtel Response:**

The Indian Space Policy 2023 paves the way for India becoming a leader in the SATCOM industry in the South Asian region by laying out a roadmap to encourage Indian entities to provide their services outside of India.

Specifically, the following clauses of the Space Policy mentioned under the head ‘Non-Governmental Entities’ need to be highlighted:

*“NGEs would be encouraged to:*

- 1. offer national and **international** space-based communication services, through self-owned or procured or leased GSO/NGSO communication satellites.*
- 2. ...*

3. use Indian Orbital Resources and/or Non-Indian Orbital Resources to establish space objects for communication services over India and outside India.
4. ...”

The Indian Space Policy gives adequate recognition to the fact that **satellite networks are inherently international**. The same transponders are used to provide services in multiple countries. Further, just one SESG/SNP is capable of serving huge areas. It is, therefore, neither technically nor legally required that a satellite operator establish an SESG/SNP in every country it wishes to serve.

In this regard, the **SESGs/SNPs established in India**, too, could be capable of providing feeder-link connectivity to satellites as far as 2500 km from their locations, including satellites overseas. This means that an operator may be able to provide connectivity to all its customers – not just within the territorial boundaries of India but potentially the **majority of the South Asian region**.

In fact, even the Authority, in its **Recommendations dated 18<sup>th</sup> September 2024** on the ‘Framework for Service Authorisations to be Granted Under the Telecommunications Act, 2023’, has recommended that **operators should be permitted to use the SESGs/SNPs established in India for providing service in foreign countries after obtaining the Central Government’s permission**. Subsequently, DoT also published draft guidelines on the issue, for stakeholder comments. However, the **final guidelines are still awaited**.

In line with the vision of the Government of India encapsulated under the Space Policy as well as the Authority’s Recommendations, the SESGs/SNPs established in India should be permitted to be used for providing feeder-link connectivity to satellites that provide connectivity to customers outside of India – under an **enabling framework with no unnecessarily onerous requirements**. Needless to say, the connectivity services in these other countries would be provided subject to their respective and applicable licensing/regulatory frameworks.

**Therefore, Airtel recommends that the SESGs/SNPs established in India should be allowed to be used to provide feeder-link connectivity to satellites that are providing connectivity to customers outside of India.**

**Q6. Whether there is any need for mandating a reference agreement between the entities holding the proposed Satellite Communication Network authorisation and the authorised entities providing telecommunication service? If yes, what should be the salient features of the reference agreement between such entities? Kindly provide a detailed response with justification.**

**Airtel Response:**

**No**, there is no need for mandating a reference agreement between the entities holding the proposed Satellite Communication Network authorisation and the authorised entities providing telecommunication service.

As mentioned in our response to Q4 above, the technical/operational models as well as use cases for SCNaaS may differ for different satellite operators and service providers. **A reference agreement may not be able to capture the various nuances of each and every model/use case**. The inter-se obligations of parties – depending on the technical/operating model and use case – may be much

more effectively implemented and enforced through mutual agreements. There is **no market failure necessitating an intervention** from the Authority at this stage.

Further, as recognized by the Authority itself in the instant Consultation Paper, reference agreements are **usually required in cases where two networks offer substitute services**, i.e., they are horizontally related, with an operator having the incentive to foreclose or marginalize its opponent through various methods including high interconnection fees.

However, SCN Authorisation is envisaged to be a network-layer authorisation, with services to end users being completely outside of its scope. SCN operators may only provide SCNaas to service providers, who would, in turn, offer services to end users. Hence, **an SCN operator and a service provider would not offer substitute services and would only be vertically related**, thus obviating the need for a reference agreement.

Furthermore, there is **no precedent** for mandating a reference agreement in case of other network-layer authorisations like IP-I, DCIP, CTN Provider, IXP Provider, etc. There is no such requirement even in other B2B arrangements like NSO-VNO relationships, agreements between IFMC operators and UL licensees (Access/ISP/VSAT/NLD), spectrum sharing/trading and infrastructure sharing. In such cases, the parties involved are only required to file an intimation to DoT. A similar requirement may adequately serve the purposes of oversight and monitoring.

**Therefore, Airtel recommends the following:**

- (i) **The agreements between SCN operators and service providers should be left to mutual commercial negotiation and market forces with no mandatory reference agreement.**
- (ii) **If required, SCN operators may be mandated to intimate DoT regarding the agreements entered into with service providers.**

**Q7. With respect to the interconnection with the proposed Satellite Communication Network Authorised Entities, whether there are any other issues in addition to those raised in TRAI's consultation paper on 'Review of existing TRAI Regulations on Interconnection matters' dated 10.11.2025, which require to be addressed in this consultation process? Please provide a detailed response with justification.**

**Airtel Response:**

Currently, satellite-based telecommunications networks operate independently and separately from other telecom networks. There is no interconnection between SatCom and terrestrial networks. In fact, there is no interconnection even among the various SatCom operators inter-se. **Each SatCom network – whether GSO or NGSO and MSS or FSS – operates as a standalone network.**

While technological advancements in the future may require different SatCom networks to interconnect with each other as well as with terrestrial networks, a discussion on interconnection framework at this stage may be too premature.

**Therefore, Airtel recommends that there is no need for an interconnection framework for satellite-based telecommunications networks with other telecom networks at this stage.**

**Q8. Any other inputs or suggestions relevant to the proposed Satellite Communication Network authorisation may kindly provided with detailed justification.**

**Airtel Response:**

No comments.

**Q9. Which of the following services should be permitted to be provided by using the SCNs established by the proposed SCN authorised entities:**

- (a) Fixed Satellite Service (FSS);
- (b) Mobile Satellite Service (MSS);
- (c) Direct-to-Device (D2D) Service via satellite by using MSS spectrum;
- (d) Direct-to-Device (D2D) Service via satellite by using IMT spectrum?

**Kindly provide a detailed response with justification..**

**Airtel Response:**

In order for the SCN Authorisation framework to be effective, it is important to facilitate all kinds of SatCom services, which are otherwise permitted to be provided directly by service providers using their own infrastructure/network, to be permitted while using SCNaaS from SCN operators as well.

In other words, there should be **no difference in the scope of services which may be provided to the end users, by a service provider choosing to obtain SCNaaS from SCN operators, and another service provider establishing its own infrastructure/network**. Any disparity would lead to **level playing field issues and arbitrage**, discouraging the use of SCNaaS and defeating the purpose of introduction of SCN Authorisation.

**Therefore, Airtel recommends that the range of SatCom services which may be provided by a service provider using SCNaaS from SCN operators, should be the same as the services which may be provided by the respective service provider using its own infrastructure/network.**

**Q10. Whether D2D Service via satellite by using IMT spectrum should be permitted at this stage itself, or should this matter be examined after considering the outcome of WRC-2027? Kindly provide a detailed response with justification.**

**Airtel Response:**

**D2D Service via satellite by using IMT spectrum should be permitted at this stage itself. There is no need to wait for the outcome of WRC-27.**

**Alignment with existing global and 3GPP developments:**

D2D via IMT spectrum is not a speculative concept but is actively evolving. India should not delay participation in this evolution. Several international operators and satellite players have already announced or initiated commercial D2D/NTN trials in IMT bands and have demonstrated technical

feasibility and provided a clear direction of travel for the global handset and chipset ecosystem. Early permission in India will ensure that Indian users and networks are not left behind. Such deployments should be allowed on a no interference, no protection basis.

**Consumer and societal benefits:**

D2D via satellite in IMT spectrum can dramatically improve the coverage in remote, rural, hilly and disaster-prone areas where terrestrial roll-out is delayed or uneconomical, thus directly supporting the goals of universal service and Digital India. Allowing D2D now will also strengthen the resilience of communications during natural disasters and other emergencies by providing a backup connectivity layer integrated with the existing mobile networks and devices.

**Regulatory certainty for investments:**

Satellite-based D2D on IMT spectrum requires significant investment in satellite payloads, gateways, network integration and device development. Investors need a clear regulatory signal that such services are permissible in India. Deferring the decision until after WRC-27 would create prolonged uncertainty, potentially causing India to miss out on current investment and partnership opportunities as global operators and vendors move ahead in other markets. As noted by the Authority itself in the instant Consultation Paper, leading regulators such as the USA's FCC, the UK's OfCom, Australia's ACMA, as well as Brazil's ANATEL have already adopted national regimes that give clarity for D2D/NTN investment underlining that proactive domestic regulation is not only feasible but also desirable ahead of WRC-27.

**Manageable coexistence and protection of existing services:**

Since IMT spectrum is already assigned to access service providers and governed by detailed technical conditions, any satellite-based D2D implementation will necessarily be planned and managed by (or in close coordination with) the same licensees, ensuring that terrestrial IMT services are protected. The regulatory framework can allow D2D in IMT bands now, subject to appropriate technical conditions (e.g., power limits, coordination rules, phased roll-out) which can be refined later in light of future WRC-27 decisions, rather than keeping the service completely on hold. International best practice also demonstrates various workable coexistence models. For example, the FCC's 'Supplemental Coverage from Space' framework in the US authorises satellite use of mobile spectrum on a secondary, non-interference, non-protection basis and only via leasing from the existing terrestrial licensees.

**WRC-27 is not a prerequisite:**

ITU/WRC outcomes are important for long-term global harmonisation, but they are not a legal prerequisite for India to permit innovative services within nationally assigned IMT bands, so long as India remains within its ITU obligations on existing allocations. India will be better placed if it has already gained practical experience through controlled deployment rather than starting from zero after WRC-27 concludes. Several countries, including the US, the UK, Brazil, Australia and Canada have already moved ahead with D2D trials or frameworks in IMT-identified bands while WRC-27 preparatory work continues, illustrating that early national action is compatible with ongoing international harmonisation.

**Therefore, Airtel recommends that D2D via IMT spectrum should be permitted immediately rather than being deferred until after WRC-27.**

**Q11. From the perspective of holding spectrum for the feeder link and the user link on SCNs, which of the following combinations should be permitted at the SCNs established by the proposed SCN authorised entities:**

Combination No.	Spectrum for the feeder link held by –	Spectrum for the user link held by –
1	SCN authorised entity	SCN authorised entity
2	SCN authorised entity	Partnering entity (service provider)
3	Partnering entity (service provider)	SCN authorised entity
4	Partnering entity (service provider)	Partnering entity (service provider)

Kindly provide a detailed response with justification.

**Airtel Response:**

Please refer to Airtel’s response to Q1. **SCN operators should be allowed to obtain feeder link spectrum and user link spectrum should be allocated to the respective service providers. Accordingly, from the perspective of holding spectrum for the feeder link and the user link on SCNs, Combination No. 2 should be permitted at the SCNs established by the proposed SCN authorised entities.**

Let us consider each of the suggested combinations separately.

**Combination No. 1 – May not serve the purpose**

In the case of Combination No. 1, both feeder link and user link spectrum are envisaged to be held by the SCN operator. However, as mentioned in Airtel’s response to Q6, SCN Authorisation is envisaged to be a network-layer authorisation with services to end users being entirely outside of its scope. In order for it to effectively carry out the operations permitted under its scope, the SCN operator would only require the spectrum needed for the communication between SESGs and satellites, i.e., the feeder link spectrum. The operator would not need the user link spectrum, i.e., the spectrum needed for communication between UTs and satellites. Thus, Combination No. 1 may not be aligned with the proposed structure of the SCN Authorisation.

Further, assigning user link spectrum to a pure network authorisation would blur the clear separation between “network provider” and “service provider” that TRAI and DoT have sought to achieve through distinct authorisations under Sections 3(1)(a) and 3(1)(b) of the Telecom Act and could complicate consumer-facing obligations such as QoS, lawful interception and customer grievance redressal, which are naturally anchored on the service provider holding user-side spectrum.

**Combination No. 3 – May not serve the purpose**

In the case of Combination No. 3, the feeder link spectrum is envisaged to be held by the service provider, while the user link spectrum lies with the SCN operator. As stated, in the case of Combination No. 1, user link spectrum may not be relevant for the operations of an SCN operator. Similarly, in case a service provider wishes to seek SCNaaS from an SCN operator, it would not be able to establish/operate SESGs and, hence, would not require the feeder link spectrum. Thus, the respective requirements of neither the SCN operators, nor the service providers, would be met under Combination No. 3.

**Combination No. 4 – May not serve the purpose**

In the case of Combination No. 4, both feeder link and user link spectrum are envisaged to be held by the SCN operator. This may not be any different from the extant regime, where there is no separate SCN Authorisation, and both feeder link and user link spectrum is held by service providers themselves. Thus, Combination No. 4 may defeat the very purpose for which SCN Authorisation was introduced.

**Combination No. 2 – Ideal**

This leaves us with Combination No. 2, where feeder link spectrum is envisaged to be held by the SCN operator, whereas user link spectrum lies with the service provider. This is ideal for fulfilling the respective spectrum requirements of both SCN operators and service providers. It would facilitate a clear delineation of responsibilities and enable the efficient use of spectrum.

Internationally, similar “network vs service” separations exist: for example, satellite gateway infrastructure providers in Europe typically hold and manage feeder link spectrum, while individual mobile or broadband service providers hold the spectrum and obligations associated with end-user links and retail services, ensuring that consumer-facing responsibilities and rights to use user-side spectrum are not diluted at the wholesale network layer.

**Therefore, Airtel recommends that SCN operators should be allowed to obtain feeder link spectrum, while user link spectrum should be allocated to the respective service providers.**

**Q12. Which of the following types of spectrum should be assigned to the proposed SCN authorised entities:**

- (a) Spectrum in the frequency bands allocated for FSS**
- (b) Spectrum in the frequency bands allocated for MSS**
- (c) Any other?**

**Kindly provide a detailed response with justification.**

**Airtel Response:**

Please refer to Airtel’s response to Q1 and Q11. **Only feeder link spectrum should be assigned to SCN operators. Accordingly, only spectrum in the frequency bands allocated for FSS may be required to be assigned to the proposed SCN authorised entities.**

As noted by the Authority itself in the instant Consultation Paper, **feeder link spectrum in all kinds of satellite services – FSS, MSS as well as D2D – lies in the FSS bands.** Since SCN operators may only require feeder link spectrum for their operations, only FSS bands may be relevant for them.

**Therefore, Airtel recommends that only spectrum in FSS bands should be assigned to SCN operators.**

**Q13. What should be the broad policy and regulatory framework for the assignment of FSS spectrum and/or MSS spectrum to the proposed SCN authorised entities? Specifically, –**

- (a) **NGSO-based FSS and GSO/NGSO-based MSS:** Whether in respect of NGSO-based FSS and GSO/NGSO-based MSS, TRAI's recommendations dated 09.05.2025 on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' to DoT (read with the TRAI's response dated 08.12.2025 to DoT's back-reference dated 12.11.2025) should be made applicable to SCN authorised entities with necessary modifications? If yes, what modifications would be required in the terms and conditions for the assignment of spectrum for NGSO-based FSS and GSO/NGSO-based MSS? If no, what should be the terms and conditions for this purpose?
- (b) **GSO-based FSS:** Whether the terms and conditions for the assignment of spectrum to SCN authorised entities for GSO-based FSS should be analogous to those recommended by TRAI for NGSO-based FSS and GSO/NGSO-based MSS through its recommendations on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' dated 09.05.2025 (read with the TRAI's response dated 08.12.2025 to DoT's back-reference dated 12.11.2025) with necessary modifications? If yes, what modifications would be required for GSO-based FSS? If no, what should be the terms and conditions for this purpose?

**Kindly provide a detailed response with justification.**

**Airtel Response:**

Please refer to Airtel's response to Q1 and Q11-12. **Only spectrum in FSS bands, specifically for feeder links, should be assigned to SCN operators.**

**Further, the terms and conditions for spectrum assignment, as recommended for service providers, should be made applicable to SCN authorised entities *mutatis mutandis*.**

**Continuity and regulatory certainty:**

The Authority has, after extensive consultation, already provided a comprehensive framework for the assignment of spectrum for SatCom (including feeder link) – albeit for services provided directly by service providers using their own infrastructure/network. Since SCN operators would be facilitating similar SatCom services, extending the same framework to them will ensure continuity, reduce regulatory uncertainty and avoid the reopening of settled issues.

**Level playing field across satellite service providers:**

If SCN operators are subjected to a different or more favourable regime, it would create competitive distortion between service providers using their own infrastructure/network and service providers using SCNaas, even though the services offered to end users may be identical. Applying the same framework to SCN operators ensures that the playing field for all service providers remains level.

**Administrative efficiency and ease of implementation:**

Re-drafting a separate set of rules for SCN operators would duplicate effort and complicate implementation for both DoT and TRAI. Applying the same framework, with only necessary modifications for the SCNaas context (for instance, assignment of only feeder link to SCN operators),

would not only facilitate a faster implementation of the new authorisation, but also lead to administrative efficiency in the longer run.

**Therefore, Airtel recommends that the terms and conditions as recommended for spectrum assignment to service providers should apply mutatis mutandis to SCN operators.**

**Q14. What should be the eligibility conditions for seeking administrative assignment of FSS spectrum and/or MSS spectrum by the proposed SCN authorised entities? Kindly provide a detailed response with justification.**

**Airtel Response:**

Please refer to our response to Q1 and Q11-12 above. **Only spectrum in FSS bands, specifically for feeder link, should be assigned to SCN operators. Such assignment may be done on administrative basis.**

Entry 12 of the First Schedule to the Telecom Act, provides for administrative assignment for “**Radio backhaul for telecommunication services**”. Further, the term ‘radio backhaul’ has been defined as “**the use of radio frequency only to interconnect telecommunication equipment, other than the customer equipment in telecommunication networks**”. Since feeder link spectrum would only be used to connect SESEs with satellites, and not customer equipment, it would fall within the scope of ‘radio backhaul’. Hence, in line with Section 4(4), such assignment may be done through administrative process only.

**Therefore, Airtel recommends that only spectrum in FSS bands, specifically for feeder link, should be assigned to SCN operators, and such assignment may be done administratively.**

**Q15. Whether there are any other inputs or suggestions relevant to the assignment of FSS spectrum and/or MSS spectrum to the entities holding the proposed SCN authorisation? Kindly provide a detailed response with justification.**

**Airtel Response:**

No comments.

**Q16. In case it is decided to permit the proposed SCN authorised entity to utilize the FSS spectrum and/or MSS spectrum assigned to a service authorised entity (“partnering entity”) for the purpose of providing SCNaaS to the partnering entity – whether there is a need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/arrangement with the partnering entity to utilize FSS spectrum and/or MSS spectrum assigned to such partnering entity for the purpose of providing SCNaaS to the partnering entity?**

- (i) If yes, what should be the terms and conditions under such a framework?**
- (ii) If no, in what manner such agreements/arrangements should be enabled and regulated?**

**Kindly provide a detailed response with justification.**

**Airtel Response:**

Please refer to our response to Q1 and Q11 above. **SCN operators should be allowed to obtain feeder link spectrum, and user link spectrum should be allocated to respective service providers. Accordingly, there may be no requirement/use case for spectrum sharing between SCN operators and service providers.**

As mentioned in our response to Q6 above, SCN Authorisation is merely envisaged to be a network-layer authorisation. Services to end users may only be provided by service providers. Thus, assignment of feeder link to SCN operators may adequately serve their purposes. We do not foresee any situation or use case where the FSS/MSS spectrum assigned to service providers for user link, may be required to be used by the SCN operator.

**Therefore, Airtel recommends that there is no need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/arrangement with the partnering entity to utilize FSS spectrum and/or MSS spectrum assigned to such partnering entity for the purpose of providing SCNaaS to the partnering entity.**

**Q17. Whether there are any other inputs or suggestions relevant to the agreement/ arrangement between the proposed SCN authorised entities and service authorised entities (“partnering entities”) to utilize the FSS spectrum and/or MSS spectrum assigned to such partnering entities? Kindly provide a detailed response with justification.**

**Airtel Response:**

No comments.

**Q18. In case it is decided to permit D2D service via satellite by using the spectrum in the frequency bands allocated for MSS such as L-band and S-band, whether there is a need to establish a policy and regulatory framework for enabling and regulating such a service? If yes, kindly suggest a broad framework for this purpose and the key terms and conditions to be included under such a framework? Kindly provide a detailed response with justification.**

**Airtel Response:**

**Please refer to our response to Q10 above. We acknowledge the potential of D2D services in bridging the digital divide, and strongly advocate for immediate introduction of D2D services via IMT spectrum – without unnecessarily deferring it till WRC-27.**

**Why IMT-based D2D is preferable:**

D2D via IMT spectrum (offered mandatorily through terrestrial access operators) would ensure ubiquitous connectivity for users – both indoors and outdoors – across different regions (urban/densely populated as well as rural/remote). It would also ensure compliance with all licensing obligations, like national security, KYC, QoS, etc. In addition, integration of D2D with terrestrial networks via the IMT spectrum would allow seamless mobility, unified numbering, common emergency-services access and consistent consumer protection across both terrestrial and satellite layers.

**D2D via MSS spectrum – Above and beyond the complementary role of SatCom:**

Terrestrial mobile networks form the foundation of the national digital infrastructure and are responsible for the vast majority of communications traffic. SatCom services have traditionally been positioned as complementary to terrestrial mobile networks, rather than as substitutes. However, D2D via MSS spectrum moves beyond this traditional role, and would effectively act as a competing mass-market access layer for retail users on mobile handsets.

**Level playing field:**

Terrestrial mobile operators have invested heavily in long-term network infrastructure, coverage expansion and service innovation. Regulatory approaches to emerging satellite services must therefore safeguard these investments and avoid undermining the sustainability of terrestrial networks. If MSS operators are allowed to offer mass-market D2D to mobile handsets without comparable regulatory obligations, it would create an asymmetry and regulatory arbitrage between functionally substitutable services in the same retail market.

**Ecosystem and standards trajectory is focused on D2D via the IMT spectrum:**

Even global 3GPP NTN standards and device-ecosystem efforts for D2D are focused on the IMT spectrum, not on the MSS spectrum. Forcing D2D via the MSS spectrum would require separate device RF chains and band combinations. It would also fragment the handset ecosystem, raise costs and undermine economies of scale. India's regulatory framework should align with the dominant global standards path, i.e., D2D via the IMT spectrum – rather than encouraging D2D via the MSS spectrum, which will likely have weaker vendor and device support.

This alignment with the mainstream 3GPP trajectory is also important for ensuring that Indian users benefit from globally competitive multi-vendor chipsets and devices. Pushing for MSS-centric D2D risks locking India into niche solutions with limited supplier diversity, higher unit costs and slower feature evolution.

**Recommendations:**

For the reasons mentioned above, D2D should only be allowed via IMT spectrum, at least at this stage.

Notwithstanding, in the event that the Government still believes that it is necessary to permit D2D via MSS spectrum, such operators should be subject to the same licensing and security obligations, including lawful interception, data retention, emergency services priority, domestic routing, KYC compliances and spectrum assignment framework, as the terrestrial mobile operators.

This is critical to maintain level playing field and competitive neutrality.

**Therefore, Airtel recommends the following:**

- (i) Currently, D2D services should only be permitted through IMT spectrum, limited to FDD mid-bands and harmonised spectrum holdings, as this provides the fastest, most efficient and globally aligned route for rollout by leveraging existing terrestrial mobile networks, harmonised spectrum ecosystems, mature device availability and significant investments already made by licensed mobile operators.**
  
- (ii) The preferred approach at this stage would be to enable D2D services only through IMT spectrum. However, if the Government decides to also permit D2D services using MSS spectrum, strict regulatory parity with terrestrial mobile operators should be ensured across all parameters, including KYC, QoS, lawful interception, security obligations and spectrum assignment framework, so as to maintain a level playing field.**

**Q19.** In case with a view to enable D2D service via satellite using IMT spectrum, it is decided to permit the proposed SCN authorised entity to utilize IMT spectrum assigned to a service authorised entity (“partnering entity”) for the purpose of providing SCNaaS to the partnering entity, –

- (a) whether there is a need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/arrangement with the partnering entity to utilize IMT spectrum assigned to such partnering entity for the purpose of providing SCNaaS to the partnering entity? If yes, what should be the terms and conditions under such a framework? If no, in what manner such arrangements should be enabled and regulated?
- (b) Which frequency bands identified for IMT should be considered for this purpose? Specifically, whether only FDD-based frequency bands should be considered?
- (c) For the frequency bands identified for IMT where D2D is decided to be permitted, whether the National Frequency Allocation Plan (NFAP) should be modified to include MSS on a secondary basis? If yes, kindly furnish your suggestion for the proposed modification(s).
- (d) To mitigate the issues related to cross-border interference, whether any other condition in addition to Article 4.4 of the ITU-Radio Regulations is required to be made applicable?
- (e) What regulatory framework should be established for ensuring interference-free operation of D2D service via satellite by using IMT spectrum within the country? Specifically, which of the following methods should be followed:
  - (i) The SCNs established by SCN authorised entities should be permitted to be used to provide D2D service via satellite by using IMT spectrum only if a single partnering entity (access service provider) holds the relevant IMT frequency channel in all the 22 LSAs of the country and agrees to permit the usage of its IMT frequency channel by the SCN authorised entity at its SCN for the purpose of providing SCNaaS; or
  - (ii) The SCNs established by SCN authorised entities should be permitted to be used to provide D2D service via satellite by using IMT spectrum if one or more access service providers – together holding the assignment of the relevant IMT frequency channel across all 22 licensed service areas of the country – agree to allow the usage of their IMT frequency channel by the SCN authorised entity at its SCN for the purpose of providing SCNaaS; or
  - (iii) Any other method?

Kindly provide a detailed response with justification.

**Airtel Response:**

- (a) whether there is a need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/arrangement with the partnering entity to utilize IMT spectrum assigned to such partnering entity for the purpose of providing SCNaaS to the partnering entity? If yes, what should be the terms and conditions under such a framework? If no, in what manner such arrangements should be enabled and regulated?

Please refer to Airtel’s response to Q1 and Q11. **SCN operators should be allowed to obtain feeder link spectrum and user link spectrum should be allocated to the respective service**

**providers. Accordingly, there may be no requirement/use case for spectrum sharing between SCN operators and service providers.**

As mentioned in Airtel's response to Q16, SCN Authorisation is envisaged to be a mere network-layer authorisation. Services to end users should only be provided by service providers. Thus, assigning just a feeder link to SCN operators should serve their purpose adequately. Airtel does not foresee a situation or use case where the user link spectrum (including the IMT spectrum in the case of D2D services) assigned to service providers could be required for use by the SCN operator.

**Therefore, Airtel recommends that there is no need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/arrangement with the partnering entity to utilise IMT spectrum assigned to such partnering entity for the purposes of providing SCNaaS to the partnering entity.**

**(b) Which frequency bands identified for IMT should be considered for this purpose? Specifically, whether only FDD-based frequency bands should be considered?**

**Only FDD-based mid-bands (1800/2100 MHz) should be considered for the purposes of D2D via IMT spectrum at this stage.**

**Technical constraints in TDD and sub-GHz bands:**

Uplink/downlink synchronisation may cause severe interference to terrestrial TDD deployments. Similarly, in sub-GHz bands, for instance 850 MHz band, allowing mass-scale satellite downlinks for D2D may affect the IMT uplink in 900 MHz band. Moreover, with the quantum of spectrum in the sub-GHz bands being very limited, it may not be adequate for being used in both IMT and D2D. Hence, sub-GHz and TDD bands should be excluded, at least at this stage. They could be considered at a later stage, once global standards and coexistence frameworks for D2D in these bands are more mature. This cautious, phased approach is consistent with sound spectrum-management practice: start with bands where interference scenarios are simpler and better understood, and only later expand into more challenging bands once robust coexistence studies, field experience and international guidelines are available.

**Why FDD-based mid-bands are preferable now:**

FDD-based mid-bands are more suitable for D2D via IMT spectrum as they typically offer more predictable interference characteristics. Frequency-division duplexing inherently separates uplink and downlink into distinct bands, which reduces the risk of satellite downlinks desensitising terrestrial uplinks and handset uplinks creating harmful interference in satellite receivers, provided appropriate technical conditions are applied. Further, 1800/2100 MHz bands are already widely used for nationwide mobile coverage and are well supported in global device and chipset ecosystems, making them the most practical candidates when it comes to early D2D implementation, especially since they do not require bespoke hardware or fragmented band support.

**Regulatory prudence and future flexibility:**

Restricting D2D to 1800/2100 MHz bands at this stage also allows the regulator to gather operational experience, refine technical rules (e.g., power limits, beam footprints, protection criteria for terrestrial cells) and monitor any unforeseen interference, while keeping the more sensitive and complex TDD and sub-GHz bands insulated during the learning phase. Once there is sufficient evidence from real-world deployments and clearer international best practices on

D2D in the TDD and sub-GHz bands, the Authority may review this position and consider a carefully controlled expansion, if justified, through a separate consultation.

**Therefore, Airtel recommends that D2D via the IMT spectrum should only be permitted in FDD-based mid-bands (1800/2100 MHz) at this stage.**

- (c) For the frequency bands identified for IMT where D2D is decided to be permitted, whether the National Frequency Allocation Plan (NFAP) should be modified to include MSS on a secondary basis? If yes, kindly furnish your suggestion for the proposed modification(s).

**The National Frequency Allocation Plan (NFAP) should be modified to include satellite-based D2D services on a secondary basis for the frequency bands identified for IMT where it has been decided to permit D2D.**

Since NFAP is the base document governing the use of radio frequencies in the country, a suitable modification therein would provide an official backing for use of relevant bands for D2D via IMT. Further, the recognition of terrestrial IMT services as primary and satellite-based D2D services as secondary would ensure interference-free operations for terrestrial IMT services.

**Therefore, Airtel recommends that NFAP should be suitably modified to include satellite-based D2D services in the relevant IMT bands identified for this purpose.**

- (d) To mitigate the issues related to cross-border interference, whether any other condition in addition to Article 4.4 of the ITU-Radio Regulations is required to be made applicable?

**No condition in addition to Article 4.4 of the ITU-Radio Regulations is required to be made applicable to mitigate the issues related to cross-border interference at this stage.**

Airtel acknowledges the possibility of cross-border interference issues in D2D via the IMT spectrum. However, Airtel believes that the interference mitigation mechanisms under the ITU-RR may be sufficient in this regard at this stage. The same may be reconsidered post the outcome of WRC-27.

**Therefore, Airtel recommends that there may not be any requirement to apply any additional condition beyond the ITU-RR at this stage.**

- (e) What regulatory framework should be established for ensuring interference-free operation of D2D service via satellite by using IMT spectrum within the country? Specifically, which of the following methods should be followed:

- (i) The SCNs established by SCN authorised entities should be permitted to be used to provide D2D service via satellite by using IMT spectrum only if a single partnering entity (access service provider) holds the relevant IMT frequency channel in all the 22 LSAs of the country and agrees to permit the usage of its IMT frequency channel by the SCN authorised entity at its SCN for the purpose of providing SCNaas; or
- (ii) The SCNs established by SCN authorised entities should be permitted to be used to provide D2D service via satellite by using IMT spectrum if one or more access service providers – together holding the assignment of the relevant IMT frequency channel across all 22 licensed service areas of the country – agree to allow the usage of their IMT frequency channel by the SCN authorised entity at its SCN for the purpose of providing SCNaas; or
- (iii) Any other method?

**In order to ensure that D2D services operate interference-free via satellite by using the IMT spectrum within the country, model no. (i) should be followed at this stage, i.e., D2D services should be permitted to operate only if a single partnering entity (access service provider) holds the relevant IMT frequency channel in all the 22 LSAs of the country.**

Model no. (ii) would create complex interference management and coordination challenges. It should be avoided for ease of implementation, at least at this initial stage. In particular, allowing different operators to use the same satellite beams or spots in different LSAs would require intricate, real-time coordination of beam footprints, power levels and handover behaviour at every inter-LSA boundary, substantially increasing the risk of harmful interference, inconsistent user experience and disputes over who is responsible for any degradation of terrestrial IMT services.

Model no. (i) would provide the simplest and cleanest solution for initial deployment, as intra-country border-coordination issues would be avoided and responsibility would be placed clearly on one operator for managing the coexistence between terrestrial and satellite use of its IMT block. The Model also aligns with the general principle seen in other jurisdictions that early D2D/NTN deployments are anchored on nationwide or near-nationwide spectrum holdings held by a single mobile operator in a given band, which simplifies interference management, satellite beam planning and device configuration for that operator's subscribers. Under this model, there is a single point of accountability for ensuring that satellite usage remains strictly within agreed technical limits and does not adversely affect terrestrial networks using adjacent or co-channel spectrum.

However, it may be noted that a single service provider would be holding the same spots across all LSAs in very rare circumstances. Accordingly, harmonisation may be required to facilitate model no. (i).

**Therefore, Airtel recommends the following:**

- (i) At this stage, D2D via the IMT spectrum should only be permitted where a single service provider holds the same spots across all LSAs.**
- (ii) Harmonisation should be promptly carried out to enable the same.**

**Q20. Whether there are any other inputs or suggestions with respect to the delivery of D2D services via satellite through SCNs established by the proposed SCN authorised entities? Kindly provide a detailed response with justification.**

**Airtel Response:**

No comments.

**Q21. Any other inputs or suggestions related to the use of spectrum on SCNs established by the proposed SCN authorised entities may be submitted with proper explanation and justification.**

**Airtel Response:**

No comments.

**Q22. Regarding the agreement between SCN Authorised entity and a Service Authorised entity providing FSS/MSS to the end user, for provision of SCNaaS to the Service Authorised entity, which may or may not include provisions for utilisation of FSS/MSS spectrum assigned to the Service entity, is there a need to regulate charges exchanged between the two entities under such an agreement? If yes, what would be the possible parameters, including SLA parameters, Spectrum utilisation etc., which would form the basis of regulation? Please provide your response with justification.**

&

**Q23. In case of an agreement between an SCN Authorised entity and a Service Authorised entity providing D2D services using MSS spectrum, for provision of SCNaaS to the Service Authorised entity, which may or may not include provisions for utilisation of MSS spectrum assigned to the Service entity amongst other possible spectrum utilisation arrangements, is there a need to regulate charges exchanged between the two entities under such an agreement? If yes, what would be the possible parameters, including SLA parameters, Spectrum utilisation etc., which would form the basis of regulation? Please provide your response with justification.**

&

**Q24. In case of an agreement between an SCN Authorised entity and a Service Authorised entity providing D2D services using IMT spectrum, for provision of SCNaaS to the Service Authorised entity, which may or may not include utilising spectrum for feeder link assigned to the service entity, besides utilising IMT spectrum assigned to the Service Authorised entity, is there a need to regulate charges exchanged between the two entities under such an agreement? If yes, what would be the possible parameters, including SLA parameters, Spectrum utilisation etc., which would form the basis of such regulation? Please provide your response with detailed justification.**

**Airtel Response:**

Please refer to our response to Q16, Q18 and Q19(a) above. **There may be no requirement/use case for SCN operators to utilize the user link spectrum assigned to service providers in FSS/MSS/IMT bands.**

Furthermore, **there is no need to regulate charges exchanged between the two entities under an agreement between SCN Authorised entity and a Service Authorised entity providing FSS/MSS/D2D services (using IMT spectrum) to the end user, for provision of SCNaaS to the Service Authorised entity.**

As mentioned in our response to Q4 above, the technical/operational models as well as use cases for SCNaaS may differ for different satellite operators and service providers. **A uniform regulated charging framework may not be able to capture the various nuances of each and every model/use case.** The inter-se charges to be exchanged between parties – depending on the technical/operating

model and use case – may be effectively negotiated through mutual commercial agreements. There is **no market failure necessitating an intervention** from the Authority at this stage.

Moreover, there is **no precedent** for regulating the charges payable by service providers in case of other network-layer authorisations like IP-I, DCIP, CTN Provider, IXP Provider, etc. There is no regulation of charges even in other B2B arrangements like NSO-VNO relationships, agreements between IFMC operators and UL licensees (Access/ISP/VSAT/NLD), spectrum sharing/trading and infrastructure sharing. In such cases, the parties involved are only required to file an intimation to DoT. A similar requirement may adequately serve the purposes of oversight and monitoring.

**Therefore, Airtel recommends the following:**

- (i) **The charges payable by service providers to SCN operators for SCNaas, should be left to mutual commercial negotiation and market forces.**
- (ii) **If required, SCN operators may be mandated to intimate DoT regarding the agreements entered into with service providers.**

**Q25. Should the charges paid by the Service Authorised entity (providing either FSS, MSS or D2D service to the end user) to SCN Authorised entity for provisioning of Satellite Communication Network as a Service (SCNaas), be permitted to be deducted from ApGR of the Service Authorised entity for the purpose of arriving at AGR for levy of License/Authorisation Fees and Spectrum charges? Please provide your response with justification.**

**&**

**Q26. If the answer to the above question is no, please suggest the methodology for considering such charges in determination of AGR of both the service authorised and SCN authorised entities, for purposes of levying Authorisation/License fees & Spectrum Charges? Please provide your response with justification.**

**Airtel Response:**

**Yes, the charges paid by the Service Authorised entity (providing either FSS, MSS or D2D service to the end user) to SCN Authorised entity for provisioning of Satellite Communication Network as a Service (SCNaas), should be permitted to be deducted from ApGR of the Service Authorised entity for the purpose of arriving at AGR for levy of License/Authorisation Fees and Spectrum charges.**

From a policy and economic perspective, this treatment is necessary to **avoid a cascading “levy-on-levy” effect** on the same underlying revenue stream. If the payments made by a retail service-provider to a network-layer SCN operator for wholesale inputs are not deductible, sectoral levies would effectively apply twice on the same end-user revenue: once when SCNaas revenue is counted in the AGR of the SCN operator, and again when the gross end-user revenue (which embeds the SCNaas input cost) is counted in the AGR of the service provider. This outcome would **artificially inflate the effective levy burden on satellite-backed services, increase end-to-end costs and ultimately make it harder to extend affordable connectivity to remote and underserved areas** where SCN-supported satellite services are most needed.

It has already been recognised in other contexts that payments between licensed entities for wholesale/network inputs – such as interconnection usage charges, roaming charges and certain other pass-throughs – should be eligible for deductions or appropriate treatment so that a particular revenue stream is not subjected to repeated levies as it moves along the value chain. SCNaaS charges are entirely analogous: they represent a **genuine network input purchased from a purely network-layer operator, not additional revenue generated by the service provider**. Denying a deduction here would be inconsistent with the underlying rationale of the existing AGR framework.

The objective of the Government should be to tax or levy the value added at each stage, **not to penalise the use of efficient outsourcing or shared-network models**. Applying this principle to SCNaaS will prevent cascading levies, **promote efficient take-up of SCN by service providers, encourage infrastructure sharing, support faster roll-out of satellite-backed services without distorting investment incentives, and ultimately promote affordable, sustainable satellite-enabled services for Indian consumers**.

**Therefore, Airtel recommends that the charges paid for SCNaaS should be allowed as deductions from the ApGR for arriving at the AGR for levy of LF/SUC on service providers.**

**Q27. What should be the appropriate definition of GR, AGR, and ApGR for SCN Authorisation, including the relevant items of revenue, exclusions and deductions? Additionally, are there any operational or non-operational revenue elements specific to SCN Authorised entities that should be considered within the scope of definitions of GR, AGR and ApGR? Please provide detailed response with specific line items of revenue, exemptions and deductions, and specific definitions for GR/ApGR/AGR.**

**Airtel Response:**

We wish to make certain submissions in respect of the definitions of GR, AGR and ApGR – which may be relevant for the proposed SCN Authorisation, as well as the licensing/authorisation framework in entirety. We request that these definitions be reviewed across all licenses/authorisations, in line with the below suggestions:

**Cabinet Reforms of September 2021:**

In September 2021, the Cabinet brought out structural reforms in the telecom licensing regime. Along with various measures to support the telecom industry, the definition of Adjusted Gross Revenue (“AGR”) was also reformed, by excluding certain non-telecom revenue items from the ambit of revenue for purposes of levying the LF and SUC. Accordingly, the license conditions were amended by DoT in October 2021 – the method of calculation of AGR was modified and the concept of Applicable Gross Revenue (“ApGR”) was brought in. Later, i.e., in July 2023, in order to address various issues raised by the industry, DoT issued a clarification regarding the revised definition of AGR.

**As per the clarification, AGR would now include revenues from all non-licensed telecom activities as well as non-telecom activities if bundled with licensed services or provided by a licensed entity to any other non-licensed/licensed entity as ancillary to a telecom service.**

**Challenges that continue post the September 2021 reforms:**

These changes posed the following key challenges for the industry and require urgent attention of the Authority:

**Definition of Gross Revenue:** Since the definition of Gross Revenue (“GR”) has not been changed and continues to be the same as it was prior to the Cabinet Reforms, many activities which do not require a license under the current section 3 of the Telecom Act (earlier section 4 of the Telegraph Act) continue to form part of the revenue. Additionally, the anomaly within the definition of GR has also not been addressed – **for instance, items that are not revenue in nature, such as forex, set-off of related items of expense, etc. continues to be part of GR.**

**Exclusion of Non-Telecom vs. Non-Licensed Activities:** A concept of ApGR was introduced, wherein the items for exclusion from GR have been listed. However, this did not exclude all non-licensed telecom activities, like sale of user terminals or handsets, standalone OTT subscriptions (other than telecom packs), management support charges or supplementary services, etc. The impact of this is that all such non-licensed and non-telecom activities continued to be part of AGR and thus under the LF/SUC ambit.

**Limited Scope of Deductions:** The deductions allowed from ApGR for the purposes of AGR remained restricted to IUC, Roaming Revenue and GST (if included in revenue). This is despite the fact that IUC has effectively been removed by the Authority and there has been no concept of Domestic Roaming now in the last 7-8 years. Thus, practically, the scope of deduction has been curtailed.

Since these reforms were based on the Authority’s recommendations of 2015 (issued 6-7 years before the reforms), they completely overlooked the technological advancements in the industry and the changes in consumer preferences that had taken place in the meantime. They also overlooked the future technological changes and possibility of emergence of new business opportunities in the larger telecom sector – let alone the SatCom sector.

The cost of regulatory levy being 8-12% on GR, without necessary set-offs for expenses, is a substantial cost, which has the potential to nullify any value creation by an operator. **Therefore, the current definitions of GR/ApGR/AGR need to be reconsidered.**

**Proposal:**

Airtel believes that it is crucial to re-evaluate the definitions of GR, ApGR and AGR.

**The authorities must reconsider these definitions with respect to the following aspects to enable not just the SatCom industry but also the larger telecom industry to transform and compete and be ready to thrive in the future:**

- Align the definitions of GR, ApGR and AGR with the objectives of the Telecom Reforms of September 2021 as granted by the Union Cabinet and allow co-existence of licensed as well as non-licensed telecom/non-telecom services/products.
- Increase the scope of deduction to make it effective and remove the cascading effect of regulatory levy. This can be done by allowing the deduction for charges paid by one operator to another operator for licensed telecom services.

In view of the above, Airtel urges the Authority to recommend a definition of revenue restricting it to the licensed telecom activities as envisaged under Section 3 of the Telecom Act.

**Co-existence of Non-Telecom/Non-Licensed with Licensed Activity and Revenue:**

Simultaneously, Airtel also advocates for the coexistence of other products and services that do not require a license or authorisation with telecom services. **DoT may also wish to protect its share of legitimate revenue for the value arising from the services granted under the License/Authorisation in such scenarios of coexistence of other products and services. This can be ensured by introducing the concept of fair valuation of each product and/or services bundled.**

The Authority may recommend fair valuation of price for telecom services in cases of co-existing telecom + non-telecom products/services, thereby protecting the Government's revenue while allowing the operators a chance to re-position themselves in the market and compete effectively.

**To summarise, with respect to the definition of GR, ApGR and AGR, Airtel recommends the following:**

- (i) The scope of revenue should be limited to revenue from licensed activities only. The activities that do not require authorisation under the Act should be excluded from the ambit of LF/SUC.
- (ii) The scope of deduction should be increased to make it effective and should include charges paid by one operator to another operator to avoid the cascading effect of LF/SUC.
- (iii) Co-existence of licensed telecom services with non-licensed services/products should not attract levy on composite products/services. DoT can protect its legitimate revenue by adopting a fair valuation approach.

**Q28. In case FSS/MSS or any other spectrum is assigned to the Satellite Communication Network (SCN) authorised entities for provisioning of SCNaas to Service authorised entities, what should be the broad financial terms & conditions of such an assignment?**

**Airtel Response:**

Please refer to our response to Q1 and Q11-13 above. **Only feeder link spectrum in FSS bands should be assigned to the SCN authorised entities for provisioning of SCNaas to Service authorised entities. Further, the terms and conditions, including the broad financial terms and conditions, as recommended for spectrum assignment to service providers, should apply mutatis mutandis to SCN operators.**

**Q29. Should the spectrum charges for Satellite Communication Network (SCN) authorised entities be based on the spectrum charging framework as per the Recommendations dated 09.05.2025 applicable for Satellite based commercial communications services? Accordingly, what should be the appropriate spectrum charging framework and spectrum charges applicable for a SCN Authorised entity? Please provide your response with detailed justification.**

**Airtel Response:**

**Yes, the spectrum charges for SCN authorised entities should be based on the spectrum charging framework as per the Recommendations dated 09.05.2025 applicable for Satellite based commercial communications services.**

#### **Continuity and regulatory certainty**

The Authority has, after extensive consultation, already provided a comprehensive framework for the assignment of spectrum for satellite communication services – including feeder link spectrum – albeit for services provided directly by service providers using their own infrastructure and networks. Since SCN operators would be facilitating similar SatCom services (FSS, MSS and D2D) through the same technical infrastructure (SESGs/SNPs, baseband equipment, and feeder-link connectivity to satellites), extending the same spectrum-charging framework to them will ensure continuity, reduce regulatory uncertainty and avoid reopening settled issues that were carefully debated and resolved in the Authority’s earlier recommendations.

As the Authority itself recognized in the instant Consultation Paper, SCN Authorisation is a network-layer authorisation, designed to provide SCNaaS to service providers. Because the network-layer function performed by SCN operators is identical in technical and operational character to the network function performed by vertically integrated service providers (who both own SESGs/SNPs and serve end users), the underlying cost base, interference management considerations and spectrum efficiency objectives are the same. Applying a different spectrum-charging regime to SCN operators would be arbitrary and risk creating economically inefficient distortions.

#### **Level playing field across SatCom providers**

If SCN operators are subjected to a different or more favourable spectrum-charging regime, it would create competitive distortion between service providers using their own infrastructure and networks and service providers using SCNaaS, even though the services offered to end users may be identical. Conversely, if SCN operators face higher or differently structured charges, it would artificially penalize the use of shared network infrastructure and discourage efficient outsourcing, undermining the Government’s policy objective of promoting specialized network providers.

Applying the same framework to SCN operators – specifically with respect to feeder-link spectrum in FSS bands – ensures a level playing field for all service providers, irrespective of whether they choose to invest in their own satellite gateways or to leverage SCNaaS from a specialized network provider. This neutrality is essential to preserving competitive dynamics and allowing market forces, rather than regulatory asymmetry, to determine the optimal industry structure.

#### **Administrative efficiency and ease of implementation**

Redrafting a separate set of spectrum-charging rules for SCN operators would duplicate effort and complicate implementation for both DoT and the Authority. The aforesaid Recommendations already contain detailed provisions on assignment processes, payment terms, minimum spectrum charges, performance conditions, and related obligations tailored to the SatCom sector. Applying the same framework – with only necessary contextual modifications for the SCNaaS model (for instance, assignment of only feeder-link spectrum to SCN operators, and user-link spectrum to service providers) – would facilitate a faster roll-out of the new SCN authorisation and lead to administrative efficiency in the longer run.

**Therefore, Airtel recommends that the spectrum charging framework, as recommended for service providers, should apply to SCN operators – with necessary modifications to reflect that SCN operators hold only feeder-link spectrum in FSS bands.**

**Q30. If spectrum charges are to be levied on the basis of AGR of the SCN Authorised entity, are there any specific operational/non-operational revenue items that should be excluded from AGR for the purpose of determination of spectrum charges? Please provide your response with detailed justification.**

**Airtel Response:**

Please refer to our response to Q27 for suggestions in respect of the definitions of GR/ApGR/AGR. For the purpose of determination of spectrum charges, the operational/non-operational revenue items arising from activities not involving spectrum, should be excluded.

**Q31. If the spectrum charges are not to be levied on basis of AGR of the SCN Authorised entity, what should be the appropriate spectrum charging mechanism and the corresponding level of spectrum charges applicable to Satellite Communication Network (SCN) authorised entities? Please provide your response with detailed justification.**

**Airtel Response:**

Please refer to our response to Q29 above. **The spectrum charging framework, as recommended for service providers, should apply to SCN operators – with necessary modifications to reflect that SCN operators hold only feeder link spectrum in FSS bands.**

**Q32. In case D2D services are permitted to be provided using the MSS frequency bands such as L & S bands, what should be the appropriate spectrum charging framework for such bands when utilised for provision of D2D satellite based services? Please provide detailed justification for your response, including the methodology for determination of such spectrum charges, if required.**

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**Q33. In case D2D services are permitted to be provided using the IMT spectrum assigned to the Service Authorised entity ('partnering entity') providing D2D satellite-based telecommunication services, should any additional spectrum charges be levied on the Service Authorised entity ('partnering entity') for use of IMT spectrum in the provision of satellite based D2D services? If yes, what should be the basis and quantum of such additional spectrum charges payable by the Service Authorised entity to the Government? In either case, please provide detailed justification for your response, including the detailed methodology for determination of such spectrum charges.**

**Airtel Response:**

**No additional spectrum charges should be levied on the Service Authorised entity ('partnering entity') for use of IMT spectrum in the provision of satellite based D2D services.**

**Consistency with existing IMT charging and technology-neutrality:**

IMT spectrum is procured by terrestrial mobile operators after paying auction-determined prices and is allowed to be used in a technology-neutral manner – for different technologies across 2G, 3G, 4G, 5G, and even 6G in future – with no additional spectrum usage charges (SUC) linked to any specific technology or use-case. D2D via IMT spectrum is simply an extension of the technological evolution, with the BTS being on a satellite instead of a tower – it is the same entity using the same spectrum to serve the same user base.

Once spectrum has been auctioned on a liberalised, technology and service-neutral basis, imposing incremental charges for a particular application (such as satellite-based D2D) would amount to retroactive re-pricing of already-paid-for rights and would undermine the predictability of the spectrum framework on which investment decisions have been made. The technology-neutral approach should continue in case of D2D, so that operators can freely choose the most efficient mix of terrestrial and satellite technologies within their existing IMT holdings to serve customers and policy goals like coverage and resilience.

**Avoiding double-charging and promoting efficient use:**

D2D via IMT spectrum is not an additional spectrum resource; it is simply another mode that uses the same licensed IMT carriers already paid for and assigned to the partnering entity. Levying extra spectrum charges for using those carriers to support D2D would amount to double-charging for the same spectrum in the same geography, discouraging operators from adopting innovative technologies that could improve rural and remote coverage. Keeping the charging framework neutral avoids distorting operators' technology choices and supports efficient, high-value use of scarce IMT spectrum, which is in the public interest.

**Alignment of obligations and incentives:**

Service Authorised entities offering D2D on IMT spectrum will remain fully subject to all applicable licence conditions, including QoS, lawful interception, security, KYC, emergency services access and consumer-protection obligations, for the traffic carried via D2D. Imposing additional spectrum charges specifically on D2D, despite the same obligations already applying, would create a disincentive to extend connectivity to remote and disaster-prone areas where D2D has the greatest societal value. A charge-neutral approach ensures that the same obligations and incentives apply regardless of whether the user is served via a terrestrial cell or a satellite link using the operator's IMT spectrum.

**Therefore, Airtel recommends that auctioned IMT spectrum being used for D2D services should not attract any additional charges.**

**Q34. In case spectrum is assigned to Satellite Communication Network (SCN) authorised entities, what should be the appropriate payment terms for spectrum charges payable by Satellite Communication Network (SCN) authorised entities? Please provide your response with justification.**

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**Q35. In case Minimum Spectrum Charges are to be applicable for SCN authorised entities, what should be the payment terms for the minimum spectrum charges for SCN authorised entities? Please provide your response with detailed justification.**

**Airtel Response:**

Please refer to our response to Q29 and Q31 above. **The spectrum charging framework, including the payment terms and minimum spectrum charges, as recommended for service providers, should apply to SCN operators – with necessary modifications to reflect that SCN operators hold only feeder link spectrum in FSS bands.**

**Q36. What should be the minimum equity and minimum network requirements for a Satellite Communication Network (SCN) authorised entity? Please provide detailed justification in support of your response.**

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**Q37. What should be the entry fee for proposed Satellite Communication Network (SCN) authorisation? Please provide detailed justification in support of your response.**

**Airtel Response:**

The Authority may recommend appropriate amounts for minimum equity, minimum network requirements and entry fee for proposed SCN Authorisation – based on corresponding requirements for service providers, while taking into account the restricted scope of SCN Authorisation being merely a network-layer authorisation. The recommended levels should be such that only serious players enter the market, ensuring financial viability, deterring speculative applications, and protecting the efficient allocation of scarce spectrum resources.

**Nature and Scope of SCN Authorisation: A Network-Layer Function**

SCN operators do not provide services directly to end users; they operate exclusively at the wholesale/network layer, providing satellite capacity and SCNaas to licensed service providers, who in turn serve retail customers. This restricted scope distinguishes SCN authorisation from service authorisations, which carry the full range of consumer-facing obligations – including QoS, customer grievance redressal, KYC compliance, lawful interception, universal service obligations and direct regulatory accountability to end users.

At the same time, SCN operators undertake substantial and technically-complex network-infrastructure functions: they invest in and operate SESG/SNP facilities, install and manage proprietary baseband equipment, obtain and coordinate feeder-link spectrum assignments (including ITU filings and interference management), establish connectivity to PoPs, and ensure the availability and quality of satellite capacity for downstream service providers. These functions are capital-intensive, require sustained multi-year investment, and involve operational and financial risks comparable to (though not identical to) those faced by vertically integrated satellite service providers who build and operate their own SESG/SNP infrastructure.

**Principles for Setting Financial Entry Requirements for SCN Operators**

Given this dual character – network-layer scope (no direct retail service) combined with substantial capital and technical requirements (SESG/SNP infrastructure, baseband, spectrum) – the financial entry requirements for SCN authorisation should be calibrated according to the following principles:

**1. Baseline alignment with service provider requirements, adjusted for network-layer scope**

The minimum equity, minimum network and entry fee for SCN operators should take as their starting point the corresponding requirements for service providers offering SatCom services, since both categories undertake analogous network-infrastructure investment. However, recognizing that

SCN operators have a more limited operational scope (wholesale only, no direct retail obligations, no user-link spectrum), the Authority may recommend levels that are appropriately calibrated to reflect this narrower mandate.

This would ensure that financial entry barriers are set in proportion to the operational scope, capital intensity, and regulatory obligations of the license/authorisation category. At the same, the regulatory framework would not artificially favour or disfavour wholesale vs. vertically integrated business models; rather, it would allow the market to determine the most efficient industry structure based on commercial and technical considerations. Thus, this approach ensures proportionality as well as competitive neutrality.

## 2. Ensuring that only serious, financially credible players enter the market

Satellite communication infrastructure – particularly for NGSO constellations and next-generation gateway systems – requires substantial upfront capital investment in SESG/SNP equipment, baseband systems, spectrum coordination, ITU filings, connectivity to PoPs, and ongoing operational costs including maintenance, power and technical personnel.

Setting meaningful minimum equity and networth thresholds ensures that only entities with credible financial backing and the capacity to sustain multi-year investment cycles can obtain SCN authorisation, thereby:

- Reducing the risk of authorisation-holders failing to deploy infrastructure or abandoning projects mid-stream, which would waste scarce spectrum resources and undermine the Government’s policy objectives.
- Deterring speculative or non-serious applications from entities seeking to obtain authorisation and spectrum without genuine intent or capability to deploy, leading to spectrum hoarding and delayed rollout.
- Protecting the integrity of the wholesale market, assuring service providers relying on SCNaas that their wholesale partners are financially stable and capable of delivering reliable, long-term satellite capacity.

**Therefore, Airtel recommends that the minimum equity, minimum networth requirements and entry fee for SCN operators should be benchmarked to the corresponding requirements for service providers, but calibrated to reflect the restricted network-layer scope of SCN Authorisation, while also balancing the need to only allow serious players.**

**Q38. What should be the rate of Authorisation Fee for a Satellite Communication Network (SCN) authorised entity? Please provide detailed justification in support of your response.**

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**Q39. Should a Minimum Authorisation Fee be applicable for the proposed SCN Authorisation? If yes, what should be the Minimum Authorisation Fee be for the proposed SCN Authorisation? Please provide detailed justification in support of your response.**

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**Q40. What should be the appropriate payment terms & conditions for Authorisation Fees?  
Please provide detailed justification in support of your response.**

**Airtel Response:**

**The rate of Authorisation Fee, Minimum Authorisation Fee and payment terms & conditions for Authorisation Fees for an SCN authorised entity should be at par with service licensees.**

**Nature of the SCN authorisation as a network-layer entity**

SCN authorisation is a network-layer authorisation, enabling entities to establish, operate, maintain and expand SCN (specifically, SESGs/SNPs with baseband equipment) and to obtain feeder-link spectrum for the purpose of providing SCNaas to service providers. In this respect, SCN operators perform a critical infrastructure function – managing SESG/SNP equipment, operating satellite feeder links, and ensuring the technical availability of satellite capacity – that is directly analogous to the network-infrastructure function performed by vertically integrated satellite service providers who own and operate both the network layer (SESGs/SNPs, feeder-link spectrum) and the service layer (retail customer relationships).

Because SCN operators undertake the same technical and operational responsibilities, manage the same categories of spectrum (feeder link in FSS bands), and are subject to substantially the same regulatory obligations (e.g., spectrum coordination with ITU, interference management) as the network-infrastructure portion of a vertically integrated service provider's operations, it is appropriate that the license fee (LF) regime applicable to SCN operators should be calibrated at the same rate as that applicable to service licensees. This ensures that the regulatory cost of operating network infrastructure is the same regardless of whether that infrastructure is owned by a vertically integrated service provider or by a specialised wholesale SCN provider.

Imposing a different (higher or lower) LF rate on SCN operators would create an artificial economic distortion. A lower rate would unfairly advantage SCN-based models over vertically integrated models, potentially encouraging inefficient unbundling; conversely, a higher rate would penalise efficient specialisation and discourage the emergence of wholesale SCN providers, undermining the policy objective of introducing a separate SCN authorisation in the first place.

**Consistency with the principle of technology and business-model neutrality**

Indian telecom policy has long adhered to the principle that regulatory levies should be technology-neutral, so that competitive outcomes are determined by efficiency and innovation rather than by asymmetric regulatory treatment. The introduction of the UL regime was itself an effort to harmonise licensing and fee structures across multiple service categories and eliminate historical distortions. Extending this principle to the SCN authorisation means that the percentage-of-AGR LF applicable to SCN operators should match that applicable to service providers who perform the same network functions – currently paying 8% of AGR as LF (including USOF levy of 5% of AGR).

Setting the SCN LF at the same rate ensures that the choice between building one's own SCN (and holding a service license with network capabilities) versus outsourcing that function to a specialised SCN operator is driven purely by technical and commercial considerations, not by differential regulatory costs. This competitive neutrality is essential for fostering a healthy, competitive satellite communications market in India.

**Uniform rationalization of levies**

Notwithstanding the above submissions, we acknowledge that the rate of LF/USOF levies in India is significantly high, and re-iterate the long-standing ask of the industry to rationalize the same. However, any rationalization must be uniform across service providers and network operators.

This approach will provide regulatory certainty, foster a level playing field, encourage efficient investment in satellite communication infrastructure, and support the Government's broader policy objectives of promoting innovation, competition and universal connectivity.

**Therefore, Airtel recommends the following:**

- (i) The LF framework, including payment terms, for an SCN operator should be at par with that of the service providers.**
- (ii) Any rationalisation of levies must be applied uniformly across service providers and SCN operators.**

**Q41. What should be the terms and conditions for Bank Guarantees, including both Performance Bank Guarantee (PBG) and Financial Bank Guarantee (FBG), for SCN authorised entities? Please provide detailed justification in support of your response.**

**Airtel Response:**

At the outset, Airtel recommends that the requirement for a BG should be done away with – for the entire telecom industry.

The industry has matured over the last 30 years and the existing players have ably demonstrated their performance and experience. What they now expect from policymakers are less onerous financial obligations and the freeing up of precious capital/funds to be deployed into networks and services. To that extent, the 2021 Cabinet reforms already recognised this fact and reduced the BGs requirement.

The amount blocked in BGs benefits no one (neither TSPs nor the DoT), except perhaps the lenders. Rather, if such securities are released, it will free up the working capital flow for the TSPs and remove the infructuous payment of charges and generate value for the TSPs.

On the aspect of securitising Government dues, the risk to government dues is actually emerging more due to the high levels of recurring and sector-specific levies, i.e., LF/USOF levy/SUC rather than the failure of TSPs to pay the same. The time has come to substantially rationalise these levies and recover only the cost of administration of license. Moreover, the imposition of such BGs to securitise dues is not consistent with other statutory dues like tax dues – there is no requirement for BGs under the Income Tax Act or under GST laws to securitise such due payments.

Thus, Airtel believes that the government can go a step further in having faith in sectoral players and, in the spirit of reform, do away with the BG requirements (PBG and FBG both) altogether. The time has come to enable industry to mobilise and deploy precious funds/capital in generating value for all stakeholders by putting more investments into digital infrastructure, networks and services rather than blocking those funds in the form of BG.

However, in case the Government still believes that the requirement of BG cannot be dispensed with, an appropriate amount may be recommended by the Authority – based on corresponding

requirement for service providers, while taking into account the restricted scope of SCN Authorisation being merely a network-layer authorisation.

**In summary, Airtel recommends the following:**

- (i) The requirement for BGs (both PBG and FBG) should be done away with.
- (ii) However, if the requirement of BGs is to be retained, an appropriate amount should be recommended by the Authority based on the corresponding requirements for service providers, while taking into account the restricted scope of the SCN Authorisation being merely a network-layer authorisation.

**Q42. What should be the application processing fee for Satellite Communication Network (SCN) authorised entity? Please provide detailed justification in support of your response.**

**Airtel Response:**

The application processing fee for SCN authorised entity should be benchmarked to the corresponding requirement for service providers – while factoring in the restricted network-layer scope of SCN Authorisation.

Under the extant regime, application processing fees vary depending on the scope and complexity of the authorisation category – reflecting the differing levels of administrative effort required to process applications for authorisations of varying geographic scope and technical complexity.

For SCN authorisation, DoT and WPC will, inter alia, need to:

- Verify technical and financial eligibility (minimum equity, networth, technical qualifications)
- Assess the proposed SESG/SNP infrastructure (locations, technical specifications, interference analysis)
- Coordinate spectrum requirements and conduct preliminary ITU coordination checks for feeder-link spectrum assignments

This level of scrutiny is broadly similar to that required for service authorisations involving satellite infrastructure but is less extensive than the full retail-service compliance checks (KYC frameworks, consumer grievance mechanisms, QoS monitoring systems) that apply to service providers offering direct-to-consumer services.

**Therefore, Airtel recommends that the application processing fee for SCN authorisation should be benchmarked to the fees applicable to satellite-based service authorisations but may be calibrated to reflect the network-layer scope of the authorisation.**

**Q43. Apart from the financial provisions discussed earlier, are there any other financial terms and conditions that should be made applicable for the proposed Satellite Communication Network authorisation? Kindly provide a detailed response with justifications.**

**Airtel Response:**

No comments.