VIL/P&O/TRAI/2026/041
May 13, 2026

Advisor (Networks, Spectrum and Licensing)
Telecom Regulatory Authority of India,
4th, 5th, 6th & 7th Floor, Tower-F,
World Trade Centre, Nauroji Nagar,
New Delhi – 110029

Kind Attn: Shri Akhilesh Kumar Trivedi

Subject: Comments on the TRAI's Consultation Paper on "The Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers" issued on 08.04.2026.

Dear Sir,

This is in reference to the TRAI's consultation Paper on "The Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers" issued on 08.04.2026.

In this regard, kindly find enclosed herewith comments from Vodafone Idea Limited on the above-said consultation paper.

We hope our comments will merit the Authority's kind consideration please.

Thanking you,

Yours sincerely,

For **Vodafone Idea Limited**

Ambika Khurana
Chief Regulatory and Corporate Affairs Officer

Enclosed: As stated above

VIL Comments to the 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

At the outset, we are thankful to the Authority for giving us this opportunity to provide our comments to the TRAI's Consultation Paper on "The Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers" issued on 08.04.2026.

In this regard, we would like to submit our comments as follows, for Authority's kind consideration. It may kindly be noted that the terminology 'Service Authorised entity' wherever being mentioned in our comments given below, for the purpose of VIL comments, should be considered as including both entities authorised under the Section 3(1)(a) of the Telecommunications Act 2023 as well as existing licensees having Unified License (Access service).

Preface

Early Adoption of Direct-to-Device (D2D) Technology in India

We welcome this comprehensive consultation paper from the TRAI and the extent to which it touches upon different aspects of satellite-based communications like FSS, MSS (including D2D).

India stands at a pivotal moment to establish global leadership in Direct-to-Device (D2D) satellite communications. As the telecom landscape shifts toward seamless, ubiquitous coverage, the ability to connect standard, unmodified smartphones directly to satellites is no longer a futuristic concept but a deployable reality.

For Vodafone Idea (Vi), this technology represents a primary vehicle for fulfilling the "Digital India" vision, ensuring that no citizen is left behind due to geographical constraints.

Some reasons why it is crucial for the Authority and the DoT, to consider early adoption of D2D are highlighted below:

1. **Opportunity Cost of Starting Early: Leading the Global Standard vs. Passive Consumption**

    a. India stands at a pivotal moment to establish global leadership in D2D satellite communications. The "Opportunity Cost" of delay is not merely a matter of months,

but a generational shift in technological influence. Historically, India has been a consumer of foreign-developed telecom standards; however, D2D presents a rare window for transitioning to a "creator" nation.

b. Standardization Leadership: Early action allows India to position its domestic industry at the forefront of a transformative technology. By deploying now, India can ensure its unique geographical and spectral requirements are baked into the global ecosystem influencing the discussions and outcomes in global bodies, rather than reacting to standards set by early movers.

c. Economic Value Capture: Early regulatory action allows India to capture economic value from a technology aligned with existing national strengths in software and satellite engineering.

d. Investment Magnetism: Establishing a clear framework today fosters indigenous innovation and attracts substantial investment.

2. Why waiting until 2027 is not a good idea for D2D through IMT?

a. While the global telecom community is looking toward the World Radiocommunication Conference (WRC) 2027 for harmonized spectrum rules and technical specification however, many countries have moved ahead with localized norms enabling launch of D2D services through IMT without waiting for WRC-27, while stating that they will also do a review after WRC-27. For India to wait for these outcomes risks ceding a critical first-mover advantage.

b. The 2030 Delay Risk: Waiting for WRC-2027 means commercial rollouts in India might only begin by 2029–2030. In the fast-paced world of satellite-to-cell technology, a three-year lag is an eternity that would leave India's unconnected areas, disconnected for an unnecessary duration.

c. Managing Coexistence Today: The coexistence can be very well managed as a terrestrial TSP owns the IMT spectrum and by allowing the use of IMT spectrum through no-protection no-interference basis – methods which are being used internationally as well.

d. Global Precedents: Other nations are not waiting. For example, United States, Canada, Australia, Bahrain, UK etc have made head start with enabling frameworks – details of which are mentioned in our subsequent comments and have been amply mentioned in the TRAI consultation paper as well. India has the technical expertise and market

scale to implement similar "interim" frameworks that allow for immediate progress while remaining adaptable to future WRC outcomes.

3. **First-Hand Learning in Innovative Technology Deployments**

   a. Theoretical models cannot replace the insights gained from live, on-ground deployments. Early pilots and partnerships provide the data necessary to refine national security protocols and technical standards.

   b. The Vi and AST SpaceMobile Partnership: This collaboration proves that D2D is not a distant concept but a deployable solution. It utilizes standard smartphones to bridge connectivity gaps in "shadow zones," providing a blueprint for how existing mobile network operators (MNOs) can extend coverage without new hardware.

   c. Real-World Problem Solving: First-hand learning allows the government and operators to understand the nuances of bridging the digital divide in India's vast rural and remote regions. These deployments inform how to best manage power controls and terrestrial interference in a uniquely placed Indian spectral environment.

   d. National Security and Resilience: Implementing D2D early provides India with a resilient, satellite-backed communication layer that is also critical for national security and disaster management. This *"learning by doing"* ensures that the Indian government has full oversight and indigenous control over the technology as it adapts, matures and evolves.

Executive Summary

1. **Enabling D2D through existing licenses and authorizations** would support innovation, reduce regulatory friction and promote efficient integration of terrestrial and satellite communications ecosystems.

2. **D2D services with IMT spectrum should be permitted** at this stage itself **without waiting for outcome of WRC 2027**.

3. **Feeder links for both FSS and MSS should be allowed to be given to SCN entities**. **No User links should be allocated to the SCN entities.**

4. **The user links (FSS and MSS) should be allocated only to the service licensees** i.e. the existing Unified Licensees (Access, GMPCS, V-SAT authorisation) holders or the Authorisation issued under Section 3(1)(a) of the Telecommunications Act 2023.

5. **VNOs should NOT be permitted to seek SCNaaS** and provide services to end consumers.

6. The SCN entity should be an Indian Entity and holding a relevant license/authorisation for seeking spectrum assignment.

7. There should be **no separate licensing/regulatory distinction should be made for D2D services or for MSS services**, which is provided either through MSS spectrum or through IMT spectrum.

8. The commercial arrangements inherently vary based on business models, technology configurations, risk allocation, and geographic scope. Hence, **we strongly urge reference agreements should NOT be prescribed and the commercial agreements are left between the entities to be mutually decided upon.**

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

10. **No separate conditions are required to be included in the terms and conditions of Satellite Communication Network (SCN)** authorisation considering the policy/ Act in the Space sector.

11. **The financial conditions specified by the DoT in Chapter 4 of the Gazette Notification dated 05.09.2025** on the "Draft Telecommunication (Authorisation for Provision of Main Telecommunication Services) Rules, 2025" **should be followed for the purpose of prescribing the definitions of GR/ApGR/AGR for SCN authorized entities**.

12. **The minimum equity and minimum networth should be NIL** for DCIP Authorisation, IP Authorisation, IXP authorisation, SESG authorisation etc. and similarly the requirement of Minimum Equity and Minimum Networth should be NIL for the SCN authorisation.

13. As the scope of the SCN entity is more closely aligned with DCIP and SESG authorisations **hence, an Entry fee of Rs Ten Lakh can be prescribed for the SCN authorisation.**

14. Based on the Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17.02.2025, **we recommend that there should be no authorisation fee for the SCN authorisation similar to SESG provider authorisation as it does not involve the provision of services directly to end consumers.**

QUESTION–WISE COMMENTS

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.

VIL Comments to Q. No.1

1. **Eligibility Conditions:**

   a. Applicant should be an Indian company, registered under the Indian Companies Act, 2013 (as amended from time to time).

   b. For D2D services using IMT spectrum, applicant should have a commercial agreement with the holder of IMT spectrum.

   c. Applicant should be any one of the following:

      i. A satellite operator operating satellite system(s) approved by the Indian Government
      ii. A subsidiary of such satellite operator.
      iii. An entity having contracts/ license agreements entered into with such satellite operator, for establishing the Satellite Gateway along with radiating the Spectrum.

2. **Area of Operation:** Pan-India authorisation

3. **Validity Period of Authorisation:** 20 years

4. **Scope of the Proposed Authorisation:**

   a. SCN Authorised Entity should be permitted to establish the gateway earth stations.

   b. The SCN Authorised Entity should also be permitted to seek spectrum from DoT for feeder links.

   c. The SCN Authorised Entity should also be permitted to use IMT spectrum or MSS spectrum as User links or FSS/MSS spectrum as feeder links, from other Service Licensees through suitable contracts.

d. The SCN Authorised Entity should be permitted to provide services only to the Service licensees. They should be explicitly disallowed not to provide any service directly to a non-service licensee.

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.

VIL Comments to Q. No.2

1. Given that these services are in nascent stage, a simple licensing regime with light-touch conditions should be made applicable, for helping timely launch of such services in India.

2. General Conditions

a. **Ownership / FDI:** The existing FDI norms should apply.

b. **Renewal of License:** It should be renewed for a period of 20 years.

c. **Delivery of Service:** The licensee should inform the DoT and the TRAI about commencement of commercial service to the consumers (i.e. end consumers of service license if applicable) as well as about commencement of radiating the spectrum.

d. **Exit from Service Delivery:** To be notified to DoT/TRAI atleast 60 days in advance. The Licensee will be bound to inform the Service Licensee atleast 60 days in advance or any other time period more than 60 days, as mutually agreed between the Parties through the written contract.

e. **Non-exclusivity:** The license should be granted on a non-exclusive basis.

3. Technical Conditions

a. Should meet minimum roll-out obligations of setting up of a Gateway, within one-year of grant of License.

b. Should be able to utilize spectrum for providing commercial services (i.e. to end consumers of service authorised entity), within a period of 3 years from the date of grant of Authorisation or date of allocation of spectrum, whichever is later.

c. To stop radiating spectrum in select geographies, basis Govt of India directive.

4. Security related Conditions

a. Permission required for specific location of Gateway before establishing.

b. To meet Security guidelines from DoT related to D2D services. Some clauses of existing DoT guidelines dated 05.05.2025 may need some modifications w.r.t. D2D services, as these clauses are primarily meant for FSS services.

5. Conditions within the scope of Service Authorised entity and not with SCN entity:

a. Switching, Routing and Interconnect

b. Provision of Emergency services to end consumers

c. Provision of Lawful Interception and CDR/IPDR/SDR to be provided to designated security and law enforcement agencies.

d. Implementation of service denial in selective geographies, basis directive from competent Government body.

e. End Customer: Service Provisioning, KYC, lifecycle journey, tariff and billing, MNP, complaint handling, QoS, withdrawal of services etc. would be responsibility of service Authorised entity, as per their respective license conditions.

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.

VIL Comments to Question. No.3

1. Only entities authorized to provide access services should be able to seek SCNaaS from SCN Authorisation holders. The Access service authorisation holders should include Unified Licensee with an Access/Internet service authorisation granted under the Indian Telegraph Act 1885 or the Access / Internet service authorisation granted under the Telecommunications Act 2023.

2. The SCNaaS can be provided by SCN as per following:

    a. **Voice, SMS and Data:** To an Access service authorisation holder
    b. **Internet:** To an Internet service authorisation holder
    c. **FSS:** To an Access / Internet service authorisation holder, subject to a. & b. above
    d. **MSS:** To an access service authorisation holder

3. VNOs should NOT be permitted to seek SCNaaS and provide services to end consumers.

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.

VIL Comments to Q. No.4

1. As a principle, such terms and conditions should be mutually agreed between two commercial entities.

2. However, given that certain Regulatory compliances have to be allocated separately for SCN authorised entities and for SCNaaS using entities like LI/CDR etc., it would be prudent that certain high-level items are prescribed to be covered in such agreements between the two entities. For such high-level items e.g. LI/CDR or basebands for use of IMT spectrum, the SCN entities should be mandated to extend control, visibility, resource allocation and management to the SCNaaS using entities.

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.

VIL Comments to Q. No.5

1. The Space Policy 2023 is a path-breaking document which entrusted IN-SPACe with a function as an autonomous Government organization, mandated to promote, hand-hold, guide and authorize space activities in the country. For this purpose, the Policy mentioned that IN-SPACe shall act as the single-window agency for authorisation of space activities

by Government entities as well as Non-Government entities. It shall periodically issue guidelines and procedures, that would among other things promote ease of doing business.

2. The Policy envisages to allow Non-government entities to undertake end-to-end activities in space sector through establishment and operation of space objects, ground-based assets and related services, such as communication, remote sensing, navigation, etc., subject to such guidelines/regulations as prescribed by IN-SPACe.

3. In this regard, IN-SPACe has issued Norms, Guidelines and Procedures for Implementation of Indian Space Policy-2023 in respect of Authorization of Space Activities (NGP) in May'2024.

4. For SCN entity to enable communication services from space on land in India, it would have to take authorisation from IN-SPACe. Said Authorisation would entail all the requisite terms and conditions, which the entity would have to comply with.

5. Therefore, there is NO need for any separate conditions to be included in the terms and conditions of Satellite Communication Network (SCN) authorisation considering the policy/ Act in the Space sector except one condition i.e. the SCN authorisation holder should possess a valid Authorisation from IN-SPACe while enabling communication services from space on Indian land mass.

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.

VIL Comments to Q. No.6

No requirement of mandating a Reference Agreement between commercial entities

1. At the outset, we would like to submit that the commercial arrangements inherently vary based on business models, technology configurations, risk allocation, and geographic scope. A uniform reference agreement cannot adequately capture this diversity, and would instead constrain innovation and limit the ability of parties to structure commercially optimal arrangements, that too in an evolving technology space.

2. Further, Indian Telecom Policy provides clear precedents where no reference agreements have been mandated as mentioned below:

   a. **Virtual Network Operator (VNO) Framework**: Under the DoT regime, the VNOs enter into commercial agreements with Licensed TSPs without any prescribed reference agreement template. This enables flexible and customized partnerships.

   b. **Infrastructure Providers (IP-1) Ecosystem:** The IP-1 registered with the DoT engage with the TSPs through mutually negotiated agreements, which has led to the successful scaling of passive infrastructure sharing models.

   c. **Spectrum Sharing/Trading/Leasing:** The Regulatory frameworks issued by the DoT permit the operators to undertake spectrum transactions based on commercial negotiations without mandating a standard agreement. This allows innovation in deal structures and efficient spectrum utilization.

3. These examples demonstrate that flexibility in contracting supported by existing legal, licensing, and competition safeguards is sufficient to ensure fair and efficient outcomes. Mandating reference agreements would be counterproductive as they will:

   a. Introduce rigidity in a dynamic market environment;
   b. Risk becoming outdated with evolving technologies and business models;
   c. Prolong negotiations through deviations and expectations; and
   d. Constitute unnecessary regulatory intervention in balanced B2B relationships, where no material asymmetry exists.

4. **In light of the above, it is submitted that there should be minimum regulatory intervention limited to defining broad principles and safeguards, while allowing commercial entities the freedom to negotiate terms based on market realities. Thus, we strongly urge reference agreements should NOT be prescribed and the commercial agreements are left between the entities to be mutually decided upon.**

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.

VIL Comments to Q. No. 7

1. No issues in addition to those raised in TRAI's consultation paper on 'Review of existing TRAI Regulations on Interconnection matters' dated 10.11.2025, are required to be addressed in this consultation process.

2. The Interconnection is a requirement between two service licensees and hence, would continue to be governed between them under the extant Interconnect related regulations.

3. Beyond the physical infrastructure i.e. Gateway etc., the SCN authorised entity is proposed to cover scope of having baseband equipment related to the spectrum of service authorisation holder. SCN authorisation should not allow it to set-up Core Networks for switching, routing, CDRs, LI, billing etc

4. Thus, for all routing and interconnect perspective, the service licensees will continue to have responsibilities of setting up requisite points of interconnect.

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

VIL Comments to Q. No.8

1. The existing Unified License (Access service authorisation) holders should also be allowed to take both feeder links and user links, without the need of taking SCN authorisation, in so far, they have appropriate contract with the Satellite capacity provider and an entity authorized by IN-SPACe.

2. Similar to SCN, the existing Unified license (access service authorisation) holders should also be allowed to utilize the services under the scope of SCN Authorisation.

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.

VIL Comments to Q. No.9

1. All the above-said four services should be enabled through and permitted under the scope of proposed SCN authorisation but, same are to be extended by SCN entity to the partnering service provider.

2. There should be no separate licensing/regulatory distinction should be made for D2D services or for MSS services, which is provided either through MSS spectrum or through IMT spectrum.

3. The MSS or D2D services should be mandated to be provided under partnership with the terrestrial access services providers only and not with any other service providers.

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?

VIL Comments to Q. No.10

1. Yes, D2D services with IMT spectrum should be permitted at this stage itself without waiting for outcome of WRC 2027.

2. India stands at a pivotal moment to be amongst the first set of nations establishing Direct-to-Device (D2D) satellite communications. Waiting for World Radiocommunication Conference 2027 outcomes risks ceding first-mover advantages to nations already advancing regulatory frameworks and commercial deployments.

3. In other words, waiting until 2027 means enabling frameworks will come by 2028-29 and commercial rollouts might only begin by 2029-2030. In that window, India would remain a consumer of globally tested and proved technologies rather than one of the creator of them. Also, pilots and partnerships in an enabling environment, will build momentum and influence the formation of global standards instead of just being user of global standards.

4. Early action would accelerate universal connectivity—particularly in India's vast unconnected areas — while positioning domestic industry at the forefront of a transformative technology. The benefits of connecting the unconnected, bridging the digital divide substantially outweigh manageable spectrum coordination risks.

5. While coexistence risks might appear to be existing, they are manageable given that the spectrum used in case of D2D (IMT spectrum) is of the partnering TSP, who will always

have a far strong interest of not having any interference in the auctioned spectrum. The current architecture can be based on ring-fenced regulatory framework in consonance with Article 4.4 of the ITU Radio Regulations.

6. Some of the countries have already developed national regulatory frameworks for enabling D2D service via satellite in select FDD bands of IMT in their respective countries. The framework in these countries permit a commercial partnership between a terrestrial cellular mobile operator and a satellite operator, under which, the satellite operator facilitates the terrestrial cellular mobile operator to provide D2D service via satellite to consumers, especially in remote, unserved, and underserved areas.

7. Some of the early mover global examples in this regard are given as follows:

Canada ISED Decision SMSE 001 25 (February 2025)

8. Enforcing MNO partnership is a formal licence condition, not a commercial arrangement. A mandatory, non-exclusive SMCS Agreement between the Canadian MNO and the satellite operator is required before the satellite operator may commence operations in any band — it is embedded as a condition of the earth station license itself. [1]

9. Canada's SRSP-103 is the most precisely articulated interference standard in any operative D2D framework globally. SMCS space stations operate on a strict No-Interference, No-Protection (NINP) basis, they must not cause harmful interference to any other licensed system and receive no protection from primary terrestrial users. The satellite operator must maintain real-time interference-mitigation capability and act immediately at the MNO's direction. [2]

10. Non-exclusive structure means multiple satellite operators may partner with the same MNO, and the multiple MNOs may partner with the same satellite operators, preserving competition at both levels. [1]

11. ISED described the framework explicitly as a **"first step"** pending WRC-27, and has committed to post-WRC-27 review. [1]

Australia ACMA D2D Regulatory Guide (September 2024)

12. ACMA did not create a new spectrum category or authorisation for D2D. It concluded that an IMT satellite D2D service falls within the scope of the MNO's existing spectrum licence - meaning a satellite operator can only use that spectrum by agreement with the MNO who holds the license. [3]

13. Telstra has announced commercial D2D partnerships with SpaceX Starlink and Lynk Global under this framework. [3]

14. Australia's Draft Five-Year Spectrum Outlook 2025–30 proposes a Universal Outdoor Mobile Obligation (UOMO) — requiring MNOs to use satellite D2D technology to meet rural outdoor coverage obligations. This is one of the first proposals globally to integrate D2D directly into a universal service framework, and is directly relevant to India's rural connectivity imperative. [4]

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Bahrain TRA Authorisation (December 2025)

15. Bahrain authorised D2D by amending the existing Individual Mobile Telecommunications Licence (IMTL), no new satellite service licence or spectrum category was created. D2D capability is enabled as a schedule within the MNO's own licence, making the MNO the regulatory access point for all D2D services. [5]

16. Bahrain's framework follows an IMT-first approach: D2D access to IMT-identified spectrum (held by the three licensed MNOs — Batelco, Zain, and Viva) is enabled first, with MSS-band expansion to be considered subsequently. MNO primacy is preserved by design throughout. [5]

17. Bahrain was the first GCC nation to formally approve satellite D2D technology, completing its regulatory cycle from consultation launch to authorisation in under two months (October to December 2025). [5]

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[1] **ISED Canada, Decision SMSE-001-25:** https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/consultations/decision-policy-licensing-and-technical-framework-supplemental-mobile-coverage-satellite

[2] **ISED Canada, SRSP-103:** https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/standard-radio-system-plans/srsp-103-technical-requirements-space-stations-providing-supplemental-mobile-coverage-satellite

[3] **ACMA, Regulatory Guide: IMT Satellite D2D Service (September 2024):** https://www.acma.gov.au/spectrum-planning/satellite-services/direct-to-mobile-services

[4] **ACMA, Draft Five-Year Spectrum Outlook 2025–30 (March 2025):** https://www.acma.gov.au/sites/default/files/2025-03/Draft%20FYSO%202025-30_0.pdf

[5] **TRA Bahrain Official Website:** https://www.tra.org.bh

[6] **Ofcom, Statement: Enabling Satellite D2D Connectivity in Mobile Spectrum Bands (9 December 2025):** https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/consultation-enabling-satellite-direct-to-device-services-in-mobile-spectrum-bands/main-documents/dec2025/statement---enabling-satellite-direct-to-device-connectivity-in-mobile-spectrum-bands.pdf

[7] **Fieldfisher, Satellite enabled mobile services — European and UK regulation (15 April 2025):** https://www.fieldfisher.com/en/insights/satellite-enabled-mobile-services-european-and-uk-regulation

[8] **FCC Report and Order FCC 24-28: Supplemental Coverage from Space (14 March 2024):** https://docs.fcc.gov/public/attachments/FCC-24-28A1.pdf

United Kingdom Ofcom Statement (December 2025)

18. Ofcom adopted a license variation model: MNOs may apply to vary their existing wireless telegraphy licenses to permit satellite D2D use in specified bands. Ofcom does not directly licence satellite operators — the MNO is the regulated access point, and satellite operators require a commercial contract with the MNO as a condition of the varied license. [6]

19. Under the varied licence conditions, MNOs must contract with satellite operators to set limits on satellite power outputs and transmission characteristics — giving Ofcom indirect oversight through the MNO licence without directly regulating satellite operators. Eligible bands: 700, 800, 900, 1400, 1800, 2100, and 2600 MHz. [6]

20. The UK NGSO Gateway Licence (created December 2021, expanded January 2025) enables a neutral-host gateway model where independent operators can hold spectrum rights that are leasable and transferable — the most commercially enabling gateway framework in any reviewed European jurisdiction. This is the primary gateway-related observation of relevance to India's SESG framework discussions. [6][7]

21. Virgin Media O2 and Vodafone UK have announced satellite D2D partnerships. Ofcom has committed to post-WRC-27 review. [6]

United States FCC Supplemental Coverage from Space (March 2024)

22. The FCC adopted the world's first D2D-IMT framework in March 2024. It operates through a spectrum lease: the satellite operator must lease spectrum rights from the MNO under FCC Part 1 rules. The MNO must hold all co-channel licenses across a contiguous Geographically Independent Area (GIA), ensuring the MNO is the sole terrestrial rights-holder in the zone where satellite D2D operates. [8]

23. A secondary MSS allocation was added to the US Frequency Allocation Table in the eligible SCS bands. Secondary status means satellite D2D receives no interference protection from primary terrestrial users. Eligible bands: 600 MHz, 700 MHz, 800 MHz Cellular, Broadband PCS, AWS H-Block. [8]

24. In November 2024, SpaceX received the world's first commercial SCS authorisation, providing satellite D2D service to T-Mobile subscribers on their existing SIMs in the 1910–1915 / 1990–1995 MHz bands — no new SIM or device required. [8]

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.

VIL Comments to Q. No.11 and 12

1. While the feeder links should be allowed to be provided to the SCN entity however, the user links should be allowed to be given only to the Partnering entity (service provider). Thus, only the combination 2 and 4 mentioned in the question no. 11, should be allowed.
2. As the user links relates to servicing the consumer, it is crucial that the rights and obligations for the use of spectrum remains with the service providers and not with the network provider. This will also align with the Telecommunication Act 2023 and the prevalent robust licensing and regulatory regime in India.

3. Most importantly, the user links for the MSS (IMT) should only be assigned to the mobile access service providers only. IMT Spectrum is already assigned through auction, so the SCN entity should be able to use the IMT spectrum allotted to the partnering mobile access service provider and no further change is required in that regard.

4. In case of user links in MSS spectrum (L & S bands), the same should only be assigned to a Unified License (access service / GMPCS) issued under Indian Telegraph Act or upcoming Access Service Authorisation under the Telecommunication Act 2023.

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

Any other? Kindly provide a detailed response with justification.

VIL comments to Q. no. 12:

1. Feeder links for both FSS and MSS should be allowed to be given to SCN entities. No User links should be allocated to the SCN entities. Kindly refer to table below:

Sr. No.	Eligible Licensed Entity	FSS		MSS		
		User Links	Feeder Links	User Links		Feeder Links
				D2D – MSS bands (L&S Bands)	D2D – IMT bands	
1	SCN entity	No	Yes	No	No	Yes
2	Unified License (Access Service) issued under Indian Telegraph Act 1885	Yes	Yes	Yes	Yes	Yes
3	Unified License (GMPCS) issued under Indian Telegraph Act 1885	Yes	Yes	Yes	No	Yes
4	Unified License (VSAT-CUG) issued under Indian Telegraph Act 1885	Yes	Yes	No	No	No
5	Access service Authorisation issued under Section 3(1)(a) of the Telecommunications Act 2026 (reference: Unified Service Authorisation or Access Service authorisation for NSO under the Draft Rules for the Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules, 2025	Yes	Yes	Yes	Yes	Yes

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.

VIL Comments to Q. No.13

1. We support the shared use of Q/V band for the feeder links, as it is aligned with the global practices.

2. Also, the roll-out timeline of 12 month for setting up of Gateway station is a measure in right direction. However, given that equipment will have to be imported, many permissions would become applicable, which may be time consuming unless there is a single-window permission. Hence, there should also be an opportunity to seek waiver of this timeline- by showing suitable applications being put in motion by the authorisation holder.

3. However, the charging framework for the spectrum provided for use through satellite needs to be revisited holistically. Given the question is related to SCN entities, we reiterate that only the feeder links should be allowed to be allocated to the SCN entities.

4. The user links (FSS and MSS) should be allocated only to the service licensees i.e. the existing Unified Licensees (Access, GMPCS, V-SAT authorisation) holders or the Authorisation issued under Section 3(1)(a) of the Telecommunications Act 2023, except that the V-SAT authorisation should only be allocated for FSS.

5. On the charging aspect, there are three key areas:

    a. Firstly, the extant recommendations of TRAI on spectrum for satellite services, provide with a framework with consolidated charges for the spectrum to be assigned for both feeder links and user links together. Given the rise of D2D services which can be provided through IMT spectrum where charges have already been paid to the Government, there should not be any need to pay any additional charges. In D2D (IMT spectrum) case, there would be need to take feeder links on standalone basis and thus, there is a need to have charges for taking these on standalone basis. Given these feeder links are on shared basis couple by their role akin to backhaul in terrestrial, charges on nominal basis i.e. to the extent of processing of application, should be prescribed for the standalone feeder links. These should be provided and recommended by the TRAI.

    b. Secondly, the FSS services are quite prevalent globally in many countries as such, the charges for the user link spectrum for FSS should reflect that reality and there should also be market-price linked upfront charges as well as revenue linked spectrum charge.

c. Thirdly, considering the throughput of MSS services over the large beam size and minimal device ecosystem, it's quite niche and in nascent stage even globally at present, as such, the user links for MSS (in MSS bands) can be provided on a light touch charging mechanism with a shorter validity. The shorter validity will help ascertain the market potential as well as technology evolution over the next few years and thereafter, pricing can be determined on market-based mechanism.

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.

VIL Comments to Q. No.14

1. The SCN entity should be an Indian Entity and holding a relevant license/authorisation for seeking spectrum assignment.

2. The SCN entity should only be allowed to seek feeder links and not the user links.

3. The service licensees (including existing Unified License (Access service) license holders) should be allowed to seek User links for giving access service with satellite as a media. The existing Unified License (Access service) should also be enabled through suitable amendments, if required and recommendations should be made in this regard.

4. The SCN or service providers should have demonstrable application made to IN-SPACe for authorisation (directly or in partnership) and also demonstrable technology ability (directly or in partnership) to use the spectrum.

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.

VIL Comments to Q. No.15

1. Spectrum Assignment

a. **Feeder Links:** Should be allowed to be allocated to SCN entities or directly to the service providers, through administrative assignment.

b. **User Links:** Should be allowed to be allocated directly to the service providers only, through administrative assignment.

c. Please refer to the table given in comments to question no. 12 above, providing inputs on entity-wise assignment eligibility.

2. Spectrum Charging

a. **Feeder Links:** Standalone charges for use of feeder links on a shared basis should be provided.

b. User Links: In case of MSS, there should be a light touch charging mechanism with a shorter validity. In case of FSS, there should be market-price linked upfront charges besides the revenue linked spectrum charge.

3. Enablement required in Access Service Authorisations:

a. The 2022 Guidelines from Satellite Licensing Division, DoT through circular number F. No. 60-SATCOM Plan/DoS/2020-SAT dated 26.10.2022, provides that satellite-based connectivity can also be provided under the authorisations of the Unified License, viz Access Service. The relevant clause is reproduced as follows:

> ***1. Licensing regime of DoT for satellite-based communication services***
> *1.1 Satellite based communication services can be provided within the respective scope of the following licenses/authorizations issued under Section 4 of the Indian Telegraph Act, 1885:*
> *(i) Global Mobile Personal Communication by Satellite (GMPCS) Service authorization under Unified License*
> *(ii) VSAT CUG Service authorization under Unified License for commercial service*
> *(iii) In-Flight and Maritime Connectivity (IFMC) Service authorization*
> *(iv) Captive VSAT CUG license*
> *(v) National Long Distance (NLD) Service authorization under Unified License*
>
> *Besides the above,* ***satellite-based connectivity can also be provided under other authorizations of the Unified License, viz. Access Service as per the scope of the respective license.***

b. The existing Unified License under Chapter-V Operating conditions also allow the Licensee to provision services through the Satellite media or use of satellite media through owned/leased satellite connectivity. The extract is reproduced below. This clearly provides that VIL as a Unified Licensee (Access Authorisation) holder, can provide services with satellite connectivity only acting as media.

30.11 In case of provision of services by the LICENSEE through the Satellite media or use of satellite media through owned/leased satellite connectivity: -

(i) The Licensee shall abide by the prevalent Government guidelines, policy, orders, regulation or direction on the subject like Satellite communication policy, VSAT policy etc.

(ii) Before putting in operation the network for Satellite based services, necessary clearances from INSAT Network Operations Control Center (NOCC) on payment of prescribed charges will be taken by the Licensee. NOCC instructions with regard to space segment access and other relevant operational matters will have to be complied by the Licensee.

(iii) For use of space segment and setting up and to start operating the Earth Station etc., Licensee shall directly coordinate with and obtain clearance from Network Operations Control Centre (NOCC), apart from obtaining SACFA clearance and clearance from other authorities.

c. However, the Satellite related conditions have been incorporated in the earlier GMPCS/VSAT licensees and not in the Unified License (Access service authorization). These conditions have also been included in the Access Authorisation under the draft rules issued by DoT under the Telecommunications Act 2023 i.e. the Telecommunications (Authorisation for Provision of Main Telecommunication Services) Rules, 2025 which envisages satellite as a medium to provide services just like terrestrial medium, which can be Access or Internet or Long Distance.

d. Considering the VIL partnership with the AST SpaceMobile, the primary use of D2D services is to extend the existing cellular coverage of an access telecom service provider, to the unconnected areas. This will be done by using the same SIM, services and unmodified mobile devices. In such case, the services are to be extended to consumers by the service provider through the existing Unified License (Access services).

e. Similarly, if D2D (IMT) is launched in partnership with Access service provider, there would be a case for Access service provider to establish the Gateway in India.

f. Hence, we request the Authority to also give enabling recommendations to the DoT for incorporating the Satellite related conditions in the existing Access Authorisations in Unified Licensees, thereby explicitly allowing use of IMT spectrum through Satellite as well as establishment of Gateway.

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.

VIL Comments to Q. No.16

No requirement of mandatory Reference Agreements between commercial entities

1. At the outset, we would like to submit that the commercial arrangements inherently vary based on business models, technology configurations, risk allocation, and geographic scope. A uniform reference agreement cannot adequately capture this diversity, and may instead constrain innovation and limit the ability of parties to structure commercially optimal arrangements.

2. Further, Indian Telecom Policy provides clear precedents where no reference agreements have been mandated as mentioned below:

   a. **Virtual Network Operator (VNO) Framework**: Under the DoT regime, the VNOs enter into commercial agreements with Licensed TSPs without any prescribed reference agreement template. This enables flexible and customized partnerships.

   b. **Infrastructure Providers (IP-1) Ecosystem:** The IP-1 registered with the DoT engage with the TSPs through mutually negotiated agreements, which has led to the successful scaling of passive infrastructure sharing models.

   c. **Spectrum Sharing/Trading/Leasing:** The Regulatory frameworks issued by the DoT permit the operators to undertake spectrum transactions based on commercial negotiations without mandating a standard agreement. This allows innovation in deal structures and efficient spectrum utilization.

3. These examples demonstrate that flexibility in contracting supported by existing legal, licensing, and competition safeguards is sufficient to ensure fair and efficient outcomes. Mandating reference agreements would be counterproductive as they will:

a. Introduce rigidity in a dynamic market environment;

b. Risk becoming outdated with evolving technologies and business models;

c. Prolong negotiations through deviations and expectations; and

d. Constitute unnecessary regulatory intervention in balanced B2B relationships, where no material asymmetry exists.

4. **In light of the above, it is submitted that there should be minimum regulatory intervention limited to defining broad principles and safeguards, while allowing commercial entities the freedom to negotiate terms based on market realities. Thus, we strongly urge reference agreements should NOT be prescribed and the commercial agreements are left between the entities to be mutually decided upon.**

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.

VIL Comments to Q. No.17

The entities to whom spectrum has been assigned should be bound to comply with the terms of the use of spectrum and scope of their respective authorisation. Keeping these entities as solely bound to ensure compliance for use of spectrum, will keep the requirements simpler and responsibility clearly on one entity.

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.

VIL Comments to Q. No.18

1. Yes, there is a need to put a policy and regulatory framework for enabling D2D through MSS spectrum.

2. Most importantly, the MSS spectrum (like L-band and S-band) should be allocated only to the Service providers as mentioned in the table given in our comments to question no. 12 above.

3. All the compliance requirements applicable while providing mobile/wireless services under the extant Unified License (Access service authorisation), should be made applicable on the service providers providing D2D services over MSS spectrum, like Emergency services, LI, security, QoS etc.

4. D2D through MSS spectrum being in nascent stage, following policy measures are recommended:

    a. The spectrum should be provided basis reasonable cost and through administrative assignment.

    b. The spectrum should be provided in chunks of 10 MHz (or let's say 15 MHz) and its validity should not be more than 5 years. 5 Years is a substantial period to determine the commercial success or for evolution of such technology.

    c. Given that spectrum is being provided administratively, its trading should be explicitly prohibited.

    d. The allocation criteria for this spectrum should be such that it doesn't allow hoarding of spectrum, instead should result into launch of services which will benefit the Indian consumers. For this, suitable checks of ITU filing of satellites, technology, throughput, MNO partnership etc., should be established before allocation of spectrum.

    e. The service provider should be allowed to be able to serve multiple service providers, to make full use of the spectrum and technology, and provide substantial benefits to the consumers at large.

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: 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 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 Any other method?

Kindly provide a detailed response with justification.

VIL Comments to Q. No.19

1. The access service providers who hold the IMT spectrum, should be permitted to launch D2D service. The licensing and spectrum enablement for use of IMT spectrum through satellite and establishing Gateway, would be required to be carried out for the service providers holding existing Unified License (access service authorisation) – for which satellite related security conditions can be also prescribed. There is no need of any separate terms and conditions for launch of D2D services through IMT spectrum.

2. **Frequency Bands:** All allocated IMT FDD Spectrum shall be permitted for offering D2D service through satellite connectivity.

3. **NFAP:** Since the usage of the spectrum will also include providing IMT services through Satellite, suitable NFAP modification shall be required for making this use as Secondary use on non-interference basis.

4. **Cross-border Interference:** Article 4.4 of the ITU-Radio Regulations is sufficient to mitigate the issues related to cross-border interference

5. **Use of IMT spectrum within country:**

   a. It should be recommended that WPC should aim to harmonize the D2D IMT spectrum for uniform allocation across the country (i.e. same frequency spots across all 22 LSAs) to minimize the coverage gaps at the border area of LSAs necessitated due to change of spots across border of an LSA and will help reduce the complexity in the spectrum planning and improve the seamlessness of the D2D service across the offered geographies.

   b. Once the outcome of WRC-27 is available, a review can be initiated (like other countries), for examining additional measures for ensuring interference free operation of D2D service via satellite by using IMT spectrum within the country.

6. Yes, 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. Further, as Access Authorisation under the Telecommunication Act 2023(through draft Rules) are envisaged to be allowed to establish Gateways and provide access services through Satellite, similar enablement should be carried out for Unified Licensee (access Authorisation) service providers also.

1. Limiting the SCN partnership with only Access service provider holding same IMT spectrum across all 22 LSAs, will be impractical and create rigidity in the partnership choices available. Therefore, no such artificial restrictions should be brought in, which can make the market inefficient as well as tilted towards skewed- pre-defined and limited outcomes.

7. There is no need of prescribing any reference agreement between SCN and service provider – kindly refer our detailed comments to question number 16 above.

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.

VIL Comments to Q. No.20

1. We reiterate that for commencement of D2D service in India, it is crucial that the existing Unified License (Access service authorisation) are enabled to provide D2D service, by directly establishing Gateways and using Satellite media or else by partnering with SCNs.

2. **Exemption from QoS:** Given that such services like MSS (including D2D through IMT or MSS spectrum) will not be able to provide services comparative to terrestrial network and are in nascent stage. Therefore, if an access service provider launches D2D service through SCN or directly, performance of the network QoS parameters would not be same as are in the case of terrestrial network. Therefore, once the authorisation framework is laid out by the Government of India, the Authority would also need to initiate steps to exempt QoS for D2D services (IMT or MSS) if it is launched by an access service provider. However, suitable transparent disclosures to the consumers, should be mandated.

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.

VIL Comments to Q. No.21

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.

And

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.

And

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.

VIL Comments to Q. No.22, 23 and 24

1. Our comments to question no. 16 may kindly be read as part of comments to this question.

2. No reference agreement or financial should be prescribed between the SCN entity and Service Authorised entity for SCNaaS.

3. The Regulatory provisions for intervention should only be invoked in case of market failure and not at initial step of market opening for new technologies. The Regulator and/or DoT should instead look towards providing flexibility as well as enablement, for launch of such niche services.

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.

And

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.

VIL Comments to Question No. 25 and 26

1. As feeder links spectrum can be allocated to the SCN Authorised entity for providing SCNaaS to one or multiple Service Authorised entity, it is important that the SCNaaS related revenue at the hands of SCN Authorised entity is made subject to spectrum charges.

2. Further, as the SCN authorised entity provides SCNaaS to Service Authorised entity, who in turn provides services to the consumers, there would be payment made by Service Authorised entity to the SCN authorised entity. To avoid double incidence of spectrum charges, the service authorized entity should be allowed to claim deductions for the amount paid to the SCN entity for the SCNaaS services.

3. While we do not recommend levying of any Authorisation fee from SCN authorised entity however, if TRAI decides to recommend levying Authorisation fee, there should be equivalent deduction from the license/authorisation fee of the Service authorised entity.

4. This framework for deduction of spectrum charges (and license fee incase the Authority decides so), it will be similar to the licensee fee framework as is prevalent between Network Service Operator (NSO) and Virtual Network Operator (VNO).

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.

VIL Comments to Q. No.27

For the SCN Authorisation, the financial conditions specified by the DoT in Chapter 4 of the Gazette Notification dated 05.09.2025 on the "Draft Telecommunication (Authorisation for Provision of Main Telecommunication Services) Rules, 2025" should be followed for the purpose of prescribing the definitions of GR/ApGR/AGR for SCN authorized entities. The following definitions may be followed for the same:

1. **"Gross Revenue"** of shall include revenues accrued to an SCN authorised entity by way of all operations and activities and all income from any source.

2. **"Applicable Gross Revenue" or "ApGR"** for the purposes of calculating Adjusted Gross Revenue (AGR) of an SCN authorised entity, shall be equal to Gross Revenue as reduced by the items listed below:

    (i) revenue from operations other than telecom activities or operations;
    (ii) revenue from activities under an authorisation, permission or registration issued by Ministry of Information and Broadcasting;
    (iii) receipts from the Digital Bharat Nidhi; and
    (iv) revenue falling under the following items:
        a) income from dividend;
        b) income from interest;
        c) capital gains on account of profit on sale of fixed assets and securities;
        d) gains from foreign exchange rates fluctuations;
        e) income from property rent;
        f) insurance claims;
        g) bad debts recovered; and
        h) excess provisions written back: Provided that the Central Government shall from time to time specify the description and conditions applicable to these revenue sources and the manner of their computation.

3. **Adjusted Gross Revenue "AGR"** of the SCN authorised entity shall be calculated by excluding the following (as applicable) from the ApGR

    (i) interconnection usage charges (IUC);
    (ii) roaming revenues paid;
    (iii) Charges of pass through nature paid to other Telecom service provider
    (iv) For the Service authorised entities, charges paid by the Service authorised entities to one or more SCN authorised entities (either one-time / recurring) for the SCNaaS services.
    (v) Payments made for procurement of spectrum usage rights and satellite capacity by the SCN authorised entity (wherever applicable);

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?

And

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.

VIL Comments to Question No. 28 and 29

1. Kindly refer to the comments to question no. 12 given above. We strongly recommend that only feeder links should be allocated to the SCN authorised entity for provisioning of SCNaaS to Service Authorised entities.

2. The TRAI has earlier determined the spectrum charges through Recommendations on Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services dated 9th May 2025 at 4% of AGR. This included spectrum for both user links and feeder links. There were no charges if standalone feeder links were to be taken.

3. **Feeder Links:**

    a. For feeder links to be assigned, we strongly recommend that standalone charges be determined by the TRAI. Given that feeder links are of the nature of backhaul that too being used on shared basis at very few locations hence, its charges should be minimal fraction of the earlier charges recommended by the TRAI jointly for both user links and feeder links.

    b. Further, as the feeder links can also be taken by the Access service providers / Service authorised entities, it should be explicitly qualified that the AGR based charges should be applicable on the revenues collected from the satellite-based services especially in the case of D2D services (IMT or MSS). There shall not be any kind of double charging of the AGR based charges for the Access service providers / Service authorized entities on the revenue generated from the subscribers using IMT spectrum through traditional terrestrial network and revenue generated by deploying the feeder Links/User Links for satellite-based services.

4. **User Links – MSS bands:**

    a. We strongly recommend that no User Links should be assigned to the SCN entity.

    b. Further, since the user links should only be allocated to the Access service providers / Service authorized entities it should be explicitly qualified that the AGR based charges

for satellite services should only be applicable on the revenues collected from the satellite-based services especially in the case of D2D services (MSS and IMT bands). There shall not be any kind of double charging of the AGR based charges for the Access service providers / Service authorized entities on the revenue generated from the subscribers using IMT spectrum for traditional services and MSS/IMT user link spectrum-based satellite services.

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.

VIL Comments to Q. No.30

Please refer to the response to Q. No. 27

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.

VIL Comments to Q. No.31

We once again recommend that only feeder links should be considered for assignment to the SCN authorised entity. For charging feeder links, we reiterate our comments to the Question no. 27/28 given above.

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.

VIL Comments to Q. No.32

1. In case the D2D services are permitted to be provided using the MSS frequency bands such as L & S bands, establishing an appropriate charging framework for such spectrum for such services is critical as the spectrum for the same is proposed to be allocated administratively and services will be provided directly to the end users.

2. We reiterate our view that MSS or D2D services should be mandated to be provided under partnership with the terrestrial mobile services providers only and not with any other service providers.

3. Considering the throughput of MSS services over the large beam size and minimal device ecosystem, it's quite niche and in nascent stage even globally at present, as such, the user links for MSS (in MSS bands excluding IMT) can be provided on a light touch charging mechanism with a shorter validity. The shorter validity will help ascertain the market potential as well as technology evolution over the next few years and thereafter, pricing can be determined on market-based mechanism.

4. It should also be explicitly provided that the AGR based charges should be applicable on the revenues collected from the satellite-based D2D services. There shall not be any kind of double charging of the AGR based charges for the Access service providers / Service authorized entities on the revenue generated from the subscribers using IMT spectrum for traditional services and MSS/IMT user link spectrum-based satellite services

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.

VIL Comments to Q. No.33

1. No 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. The Service Authorised entity for the purpose of this paper and VIL comments, would include both entities authorised under the Section 3(1)(a) of the Telecommunications Act 2023 as well as existing licensees having Unified License (Access service).

2. The IMT spectrum has been taken from the auction at market determined price. Any Access licensee would be keen to deploy the IMT spectrum through own terrestrial network except when it is commercially not viable, at a given point in time, for the licensee to cover any specific geography through the IMT spectrum. Therefore, satellite based D2D services can fill in that gap and help augment coverage in the uncovered areas. If any additional cost is to be imposed for the use of IMT spectrum, it would discourage the access provider to launch D2D services.

3. Besides, after taking the IMT spectrum through auction, the licensee has the full right to exploit the spectrum for commercial purposes. Using the IMT spectrum through satellite, is just a change in medium over the same land mass where IMT spectrum can be used through terrestrial medium and it doesn't provide any additional licensed business opportunity to the access license which is not available as on date.

4. Further, the IMT spectrum being taken through the auction, is technology neutral and hence, should be kept in true sense and allowed to be used through satellite also.

5. **Therefore, we strongly recommend that there should be no additional charges on the Service Authorised entity for using IMT spectrum for providing D2D services.**

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.

VIL Comments to Q. No.34

For the AGR based charges, the payment terms which are provided by the DoT in its Gazette notification dated 05.09.2025 shall be considered which are:

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

2. The SCN authorised entity shall make payment of the quarterly instalments of the authorisation fee and spectrum charges linked to AGR in the following manner:

    a. The quarterly instalment is respect of each of the first three quarters of a financial year shall be paid within fifteen days of completion of the relevant quarter and

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

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

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.

VIL Comments to Q. No.35

1. There should not be any Minimum Spectrum Charges are to be applicable for SCN authorized entities for first 2 years of allocation as the overall technology is in nascent stage and revenue linked charging is appropriate in this stage.

2. Post initial 2 years, a suitable decision may be taken to introduce the minimum spectrum charges.

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

VIL Comments to Q. No.36

1. The SCN authorisation is similar to other network authorisations recommended by TRAI to be provided under Section 3(1)(b) of the Telecommunications Act 2023, vide its Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17th February 2025. The SCN entity cannot provide services to the end consumers and can only provide SCNaaS to the Service authorised entities.

2. Therefore, just like minimum equity and minimum networth as NIL recommended for DCIP Authorisation, IP Authorisation, IXP authorisation, SESG authorisation etc through

the said TRAI recommendations, **requirement of Minimum Equity and Minimum Networth should be NIL for the SCN authorisation.**

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

VIL Comments to Q. No.37

1. The SCN authorisation is similar to other network authorisations recommended by TRAI to be provided under Section 3(1)(b) of the Telecommunications Act 2023, vide its Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17th February 2025. The SCN entity cannot provide services to the end consumers and can only provide SCNaaS to the Service authorised entities.

2. However, scope of the SCN entity is more closely aligned with DCIP and SESG authorisations **hence, an Entry fee of Rs Ten Lakh can be prescribed for the SCN authorisation.**

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.

And

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.

And

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

VIL Comments to Question No. 38, 39 and 40

1. The SCN authorisation is similar to other network authorisations recommended by TRAI to be provided under Section 3(1)(b) of the Telecommunications Act 2023, vide its

Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17th February 2025. The SCN entity cannot provide services to the end consumers and can only provide SCNaaS to the Service authorised entities.

2. Through the Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17.02.2025, the Authority has itself noted in the paper that there should be no authorisation fee on SESG provider authorisation as it does not involve the provision of services directly to end consumers. The related para of the Recommendations is reproduced below. Similar has been mentioned for various other authorisations also in the Recommendations.

> 3.45 Considering the scope associated with SESG Provider Authorisation, the Authority notes that it does not involve the provision of services directly to end customers. Instead, the provision of networks under this authorisation are intended only for telecom service providers. Therefore, the Authority is of the view that it is appropriate not to levy any authorisation fee for SESG Provider Authorisation.

3. **Therefore, we recommend that there should be no Authorisation fee for the SCN authorisation.**

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.

VIL Comments to Q. No.41

1. The SCN authorisation is similar to other network authorisations recommended by TRAI to be provided under Section 3(1)(b) of the Telecommunications Act 2023, vide its Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17th February 2025. The SCN entity cannot provide services to the end consumers and can only provide SCNaaS to the Service authorised entities.

2. We also strongly recommend that no Authorisation fee should be imposed on the SCN authorised entity.

3. Therefore, just like no bank guarantees recommended for DCIP Authorisation, IP Authorisation, IXP authorisation, SESG authorisation etc through the said TRAI recommendations, **there should be no bank guarantee (PBG/FBG) applicable for the SCN 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.

VIL Comments to Q. No.42

1. The SCN authorisation is similar to other network authorisations recommended by TRAI to be provided under Section 3(1)(b) of the Telecommunications Act 2023, vide its Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023 dated 17th February 2025. The SCN entity cannot provide services to the end consumers and can only provide SCNaaS to the Service authorised entities.

2. Therefore, just like application processing fee recommended for DCIP Authorisation, IP Authorisation, IXP authorisation, SESG authorisation etc through the said TRAI recommendations, **the application processing fee for SCN should also be kept at Rupees Ten Thousand only.**

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.

VIL Comments to Q. No.43

No comments.

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