

CIN: U61209DL2023FTC413659

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May 13, 2026

RE: Consultation Paper No. 06/2026, Consultation Paper on the Framework for Satellite Communication Network Authorization, and Assignment of Spectrum to Satellite Communication Network Providers

Amazon Leo¹ welcomes the opportunity to respond to Consultation Paper No. 06/2026 issued by the Telecom Regulatory Authority of India (“TRAI”) on Satellite Communication Network (“SCN”) Authorisation and Spectrum Assignment.² Amazon Leo supports the adoption of a flexible SCN framework that empowers operators to deploy innovative network architectures and partner across diverse service models—directly accelerating broadband connectivity for India’s unserved and underserved communities. The recommendations that follow are guided by this principle.

I. Background

Amazon Leo is deploying a global constellation of low-Earth orbit (“LEO”) satellites to deliver affordable, high-speed broadband connectivity worldwide. Amazon Leo began launching its constellation of non-geostationary satellite orbit (“NGSO”), Fixed-Satellite Service (“FSS”) satellites in LEO (“Amazon Leo System”) in April 2025.³ Since committing to invest over 10 billion U.S. dollars in the Amazon Leo System, Amazon Leo has made significant strides toward further deployment, including the continued expansion of its terrestrial infrastructure and the unveiling of innovative customer terminals that will offer high performance in small form factors and at affordable price points. Amazon Leo has started shipping terminals to select enterprise customers for initial network testing as part of an enterprise preview, and

¹ Amazon Kuiper Services India Private Limited (d/b/a “Amazon Leo”) is a wholly owned subsidiary of Amazon.com Services LLC (collectively, “Amazon”). On November 13, 2025, Amazon replaced the Project Kuiper code name with Amazon Leo, its permanent brand for its satellite broadband network.

² Telecom Regulatory Authority of India, Consultation Paper No. 06/2026, Consultation Paper on the Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers (Apr. 8, 2026)

³ Amazon Leo has now successfully launched over 300 satellites, with additional launches planned in the coming weeks and months. See *Amazon Leo mission updates: Amazon Leo mission updates: 300+ satellites deployed following back-to-back Atlas V, Ariane 6 launches* (Apr. 30, 2026), <https://www.aboutamazon.com/news/innovation-at-amazon/project-kuiper-satellite-rocket-launch-progress-updates>.

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plans to roll out service more widely as we launch more satellites and increase the coverage and capacity of the Amazon Leo System.

Amazon Leo is building on the momentum of its broadband constellation with a major expansion into direct-to-device (“D2D”) services. On April 14, Amazon and Globalstar, Inc. (“Globalstar”) announced a definitive merger agreement under which Amazon will acquire Globalstar and combine Globalstar’s spectrum holdings and established MSS capabilities with the scale, performance, and reach of Amazon Leo.⁴ Beginning in 2028, Amazon Leo will deploy a next-generation D2D satellite system to deliver advanced voice, data, and messaging services directly to mobile phones and other devices. Globalstar’s fleet will operate alongside Amazon Leo’s broadband and D2D constellations, forming a unified network spanning fixed and mobile satellite services. Amazon Leo intends to work closely with MNOs and additional partners to bring this vision to life and extend reliable, high-speed connectivity to customers no matter where they are in the world.

In addition, Amazon and Apple Inc. have signed an agreement for Amazon Leo to continue to support iPhone and Apple Watch models currently using Globalstar’s existing and planned upcoming LEO satellite constellations, and to collaborate with Apple on future satellite services using Amazon Leo’s expanded satellite network.⁵

II. Comments on Consultation Paper

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.

Amazon recommends that the SCN authorisation be made available to any company incorporated under the Companies Act, 2013, with minimum paid-up equity and net worth requirements calibrated to reflect the capital-intensive nature of satellite infrastructure without creating unnecessary barriers to entry. Applicants should demonstrate a legitimate nexus with an authorised space segment provider — either by being such a provider (authorised by DoS or IN-SPACe), a subsidiary thereof, or an entity with a binding agreement with such a provider. This ensures that only entities with genuine capability and intent to deploy satellite networks are granted authorisation, while preventing speculative applications.

The framework should also prohibit direct or indirect investment from restricted entities, consistent with national security imperatives and FDI Policy Press Note 3 of 2020. Additionally, clarification should be sought from the Department of Space that the establishment of Earth Station Gateways for Satellite Communication Network as a Service (SCNaaS) falls under Ground Segment Section 3A of the Sectoral Guidelines for FDI in space sector dated 06th November 2025, with 100% FDI permitted through the

⁴ See *Amazon to acquire Globalstar and expand Amazon Leo satellite network* (Apr. 14, 2026), <https://www.aboutamazon.com/news/company-news/amazon-globalstar-apple>.

⁵ See *id.*

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Automatic Route. Any ambiguity in the applicable FDI route would create uncertainty for investors and delay deployment.

The area of operation should be national/pan-India, extending to Territorial Waters and the Exclusive Economic Zone. Satellite coverage is inherently national in character, and restricting the area of operation to sub-national regions (Licensed Service Areas “LSA”) would be impractical.

Amazon suggests a validity period of 20 years, with provision for renewal. Satellite communication networks require massive upfront capital investment across space, ground, and backhaul infrastructure. A 20-year period provides the investment certainty necessary to justify such expenditure, accommodates 2–3 complete constellation refresh cycles, and maintains consistency with the existing Unified License framework. Most jurisdictions globally grant satellite authorisations for 15–25 years.

Regarding scope, the SCN authorisation is a network authorisation enabling SCNaas — it does not permit the provision of telecommunication services directly to end users. The SCN entity should control the space segment (Landing Rights with IN-SPACe authorisation) and the ground segment (gateway earth stations and associated infrastructure). The user segment — customer terminals and user equipment — should be owned and managed by the partnering service provider, consistent with the wholesale-only nature of this authorisation.

It is imperative that SCN-authorized entities be permitted to establish Points of Presence (PoPs), deploy fiber connectivity from gateways to PoPs, enable internet breakout, enter into peering arrangements with IXPs and CDNs, and carry traffic between locations. These are not optional enhancements — they are structural necessities. The architecture of a modern LEO satellite network requires ground gateways connected via fiber to PoPs (at data centres and interconnection points), where satellite-optimised protocols are translated to standard internet protocols. Restricting these rights would render the SCNaas framework inoperable.

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.

Amazon recommends organising the terms and conditions across four categories: general, technical, operating, and security.

On general conditions, the framework should clearly demarcate equipment responsibilities. Gateway equipment import and type approval (ETA/WPC clearance) should rest with the SCN entity, while user terminal import and clearance should rest with the partnering service provider. This ensures accountability at each layer without regulatory ambiguity.

Spectrum for gateway earth stations (feeder links) should be assigned to the SCN entity, while user link spectrum should be assigned to the service provider. This aligns with the operational control principle — spectrum should be assigned to the entity that controls the equipment utilising it. Regulatory approval timelines for in-principle clearance, Standing Advisory Committee on Frequency Allocation (SACFA)

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clearance and Satellite Monitoring Center (SMC) / carrier plan approvals should be prescribed (e.g., 60, 30, and 45 days respectively), given that LEO satellites have limited operational lives and regulatory delays directly erode commercial viability.

Spectrum Usage Charges should be divided equitably (50:50) between the SCN entity and the service provider, reflecting shared utilisation of the value chain.

On technical conditions, the SCN entity should establish a minimum of one gateway earth station within 12 months of commercial frequency assignment. The network must comply with ITU Radio Regulations, relevant ITU-R Recommendations, and must not cause harmful interference to other authorised networks.

On operating conditions, a formal agreement between the SCN entity and the partnering service provider — similar to the existing NSO-VNO framework — should be furnished to DoT within 15 days of signing. Multiple service providers should be permitted to partner with a single SCN entity, promoting competition at the service layer and enabling specialisation across industry segments. License Fee should be passed through to the service provider level to avoid double-levy on the same revenue stream. Indian gateway earth stations should also be permitted for cross-border utilisation where the satellite footprint extends beyond Indian borders, positioning India as a regional satellite communication hub.

On security, lawful interception and security compliance should be a joint responsibility of the SCN entity and the service provider, consistent with the GMPCS Security Conditions dated 05/05/2025, with all security conditions met prior to commercial launch.

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.

Amazon recommends that the following categories of authorised entities be permitted to seek SCNaaS:

For FSS-based internet/broadband services, service providers holding Internet Service Authorisation (Category A/B/C as applicable). FSS-based satellite broadband is fundamentally an internet service delivered via satellite rather than terrestrial infrastructure, and the ISA framework already encompasses subscriber management, billing, QoS compliance, and customer protection.

For MSS voice services, service providers holding Access Service Authorisation (National Level — to be introduced) or Unified Service Authorisation. A National-Level Access Service Authorisation should be introduced for satellite-based voice, given that satellite coverage is inherently pan-India and does not lend itself to the existing LSA-based framework.

For MSS data services, service providers holding Internet Service Authorisation (Category A). This avoids unnecessary regulation of data-only services with voice-specific obligations that are irrelevant to the service being provided.

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For enterprise/captive network services, service providers holding Captive VSAT CUG Service Authorisation or Internet Service Authorisation.

VNOs holding Internet Service Authorisation should also be permitted to seek SCNaaS. The VNO framework was introduced precisely to enable asset-light service providers to deliver telecom services by leveraging network infrastructure — the SCNaaS model is architecturally identical. Permitting VNOs maximises competition at the service layer, accelerates rural connectivity, enables specialisation segments, and reduces entry barriers. User link spectrum should be assigned to the VNO, SUC should be divided 50:50, and License Fee should be levied at the VNO level with a pass-through mechanism to avoid double-levy. Multiple VNOs should be permitted to partner with a single SCN entity.

Q4. Whether the SCN authorised entity establishing, operating, maintaining, or expanding the baseband system along with 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.

Amazon believes a regulatory mandate is appropriate here — the SCN entity should be required to extend control, visibility, resource allocation, and management capabilities of the telecommunication service to the partnering service provider, with terms mutually agreed between the parties.

The rationale is straightforward. In the SCNaaS model, the service provider bears regulatory accountability to subscribers, the regulator, and law enforcement for service quality, security, and legality — yet it does not own or operate the underlying network. Without mandated visibility, the service provider becomes a billing intermediary with no ability to ensure QoS compliance, perform lawful interception, respond to subscriber complaints with network-level diagnostics, or manage capacity allocation. The SCN entity owns the baseband processing system where all traffic is decoded, routed, and managed. Without mandated access, the service provider cannot fulfil its statutory security obligations.

This mandate should be balanced with safeguards for the SCN entity: no requirement to disclose proprietary constellation design or algorithms, bounded control capabilities to protect network integrity, reasonable cost recovery, and acknowledgment of physical capacity constraints.

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.

Amazon recommends that the SCN authorisation framework be harmonised with the Norms, Guidelines and Procedures for Implementation of Indian Space Policy-2023 issued by IN-SPACe. Critically, the framework should accommodate multiple commercially viable business structures that the current NGP does not explicitly enable.

Multiple authorised entities should be permitted to obtain IN-SPACe authorisation for provisioning capacity over India from the same satellite constellation. Global constellation operators routinely appoint

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multiple distribution partners in a single country, and the Indian framework should accommodate this commercial reality.

The framework should explicitly enable at least four business structures: a service provider with a direct foreign partnership; structural separation with a separate SCN entity and service provider entity (mirroring the NSO-VNO separation); a pure infrastructure SCN entity appointing multiple downstream service providers (analogous to tower companies); and a foreign operator with a smaller constellation appointing a local Indian partner.

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.

Amazon does not believe a mandated reference agreement is necessary at this stage of satellite communication development in India. The satellite communication market is evolving rapidly, with business models that demonstrate significant flexibility. Arrangements span from pure capacity provisioning to managed network services and hybrid models, enabling customized solutions tailored to specific customer needs rather than standardized reference agreements.

The regulatory framework should adopt a flexible approach, allowing industry to determine commercial terms while retaining TRAI's power to intervene only in cases of commercial failure, anti-competitive conduct, or denial of reasonable access. This is consistent with TRAI's established philosophy of regulatory forbearance in competitive industries.

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.

Amazon appreciates the Authority's attention to interconnection matters and has no additional comments.

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

Amazon appreciates the Authority's comprehensive approach to developing the SCN authorisation framework and does not have additional inputs beyond those provided in response to the preceding questions at this time. We remain available to provide further detail or clarification on any of the positions outlined in this submission.

Q9. Which of the following services should be permitted to be provided by using the SCNs established by the proposed SCN authorised entities: Fixed Satellite Service (FSS); Mobile Satellite Service (MSS);

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Direct-to-Device (D2D) Service via satellite by using MSS spectrum; Direct-to-Device (D2D) Service via satellite by using IMT spectrum? Kindly provide a detailed response with justification.

Amazon recommends that all four service categories — FSS, MSS, D2D via MSS spectrum, and D2D via IMT spectrum — be permitted over SCN infrastructure. Restricting any of these categories would create an artificial limitation that disadvantages Indian customers and enterprises in an era of rapid satellite industry innovation.

This approach aligns with the objectives of the Telecommunications Act, 2023 and India's Digital India vision. It ensures technology neutrality and service neutrality in the authorisation framework, maximises spectrum efficiency and investment returns, and positions India as a progressive regulatory jurisdiction attracting global satellite operators. Each of these service categories addresses distinct connectivity needs and all should be enabled through the common SCN infrastructure layer.

Additionally, Amazon respectfully encourages the TRAI to follow the ITU and international approach and regulate Earth Stations in Motion (“ESIM”) operating with NGSO LEO satellite systems as FSS, rather than MSS. The ITU has expressly addressed ESIM as earth stations communicating with geostationary (“GSO”) and non-geostationary (“NGSO”) space stations in the FSS, including within the ITU Radio Regulations. In particular, the Radio Regulations provide technical specifications and requirements for ESIM communicating with GSO FSS space stations and aeronautical and maritime ESIM communicating with NGSO FSS space stations in specified Ka-band frequencies.⁶ ITU reports and public materials likewise describe ESIM operations as FSS operations, and World Radiocommunication Conference decisions in 2019 and 2023 facilitated regulatory harmonization for GSO and non-GSO FSS ESIM to deliver high-speed broadband connectivity on aircraft and ships.⁷ Classifying ESIM as MSS would therefore depart from the ITU Radio Regulations and established international practice, creating unnecessary regulatory ambiguity for a service that the international framework already treats as FSS.

⁶ See ITU, Radio Regulations, Vol. 1, No. 5.517A (“The operation of earth stations in motion communicating with geostationary fixed-satellite service space stations within the frequency bands 17.7-19.7 GHz (space-to Earth) and 27.5-29.5 GHz (Earth-to-space) shall be subject to the application of Resolution 169 (Rev.WRC-23)”; ITU, Radio Regulations, Vol. 1, No. 5.517B (“The operation of aeronautical and maritime earth stations in motion communicating with non-geostationary space stations in the fixed-satellite service in the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) shall be subject to the application of Resolution 123 (WRC-23).”).

⁷ See, e.g., ITU, *Satellite Issues: Earth Stations in Motion (ESIMs)*, <https://www.itu.int/en/mediacentre/backgrounders/Pages/Earth-stations-in-motion-satellite-issues.aspx> (last updated Jan. 2025) (“ITU Satellite Issues: Earth Stations in Motion”); ITU, *Operation of earth stations in motion communicating with geostationary space stations in the fixed-satellite service allocations at 17.7-19.7 GHz and 27.5-29.5 GHz*, Report ITU-R S.2464-0, (2019), <file:///C:/Users/cb47570/Downloads/R-REP-S.2464-2019-PDF-E.pdf> (“Report ITU-R S.2464-0”); ITU, *Technical and operational guidelines for earth stations on mobile platforms communicating with geostationary space stations in the fixed-satellite service in the frequency bands 19.7-20.2 GHz and 29.5-30.0 GHz*, Report ITU-R S.2537-0, (2015), https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-S.2357-2015-PDF-E.pdf (“Report ITU-R S.2537-0”);

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The classification of ESIM as FSS is not merely administrative. Rather, the classification reflects the technical parameters of ESIM operations. ESIM terminals use stabilized, directional antennas, satellite tracking and pointing techniques, network control facilities, and enable/disable controls to maintain accurate links with the intended FSS satellite and prevent harmful interference.⁸ ITU and ECC studies recognize that ESIM can operate within the same networks and frequencies as stationary FSS earth stations, that GSO FSS satellites supporting ESIM are indistinguishable from GSO FSS satellites supporting stationary FSS earth stations, and that ESIM receiving in the downlink does not change the interference environment for other services.⁹ For NGSO systems, ECC Report 217 concluded that treating ESIM as FSS provides operators and regulators a “well-established” and “proven” authorization framework, avoids divergent rules for terminals using the same networks and frequencies, and allows ESIM to be treated as typical uncoordinated FSS earth stations when they comply with applicable technical requirements.¹⁰

By contrast, MSS services and FSS and ESIM services operate within materially different technical and commercial use cases. Traditional MSS systems generally operate in lower-frequency bands such as 1.5 GHz, 1.6 GHz, 2.1 GHz, and 2.4 GHz, where individual user bandwidths are typically only a few kHz to a few hundred kHz and single-channel data rates range from a few kbit/s to approximately 700 kbit/s.¹¹ ESIM, by contrast, are designed to provide broadband connectivity to aircraft, vessels, and land vehicles, with typical network data rates around 100 Mbit/s and the ability to take advantage of high-throughput Ka-band satellite capacity.¹² Accordingly, regulating ESIM under an MSS framework would conflate narrowband mobile satellite services with high-throughput FSS broadband, risk imposing technically inapposite obligations, and undermine the regulatory certainty needed to deploy affordable, high-speed NGSO broadband in India.¹³ Amazon therefore respectfully urges TRAI to adopt a clear ESIM framework grounded in FSS allocations and FSS technical rules, consistent with ITU and ECC practice, rather than regulating ESIM as MSS.

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.

Amazon recommends that the Authority permit D2D service via satellite using IMT spectrum. The United States and the United Kingdom have already adopted regulatory frameworks enabling D2D through

⁸ See Report ITU-R S.2464-0 at p. 4.

⁹ See Electronic Communications Committee, *The Use of Land, Maritime and Aeronautical Earth Stations on Mobile Platforms Operating with NGSO FSS Satellite Systems in the Frequency Range 17.3-20.2 GHz, 27.5-29.1 GHz and 29.5-30.0 GHz*, ECC Report 217, at 2, 13 (approved Feb. 2015, amended Jan. 31, 2020), <https://docdb.cept.org/download/1162> (“ECC Report 217”); see also Report ITU-R S.2464-0 at 20 (“In the band 17.7-19.7 GHz, ESIM are receiving and GSO FSS satellites that support ESIM are no different from GSO FSS satellites that operate stationary FSS earth stations. Therefore, the interference environment for GSO FSS systems remains unchanged with the introduction of ESIM in the band.”).

¹⁰ ECC Report 217 at 13.

¹¹ Report ITU-R S.2464-0 at 2.

¹² See ITU Satellite Issues: Earth Stations in Motion; Report ITU-R S.2464-0 at 3.

¹³ See ECC Report 217 at 12-13.

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mobile spectrum, with the FCC establishing its Supplemental Coverage from Space framework in March 2024 and Ofcom finalizing its D2D framework in December 2025.¹⁴ These precedents demonstrate that D2D can be authorized through flexible, licensing-based approaches that protect incumbent terrestrial services while delivering expanded coverage, enhanced public safety, and connectivity to unserved and underserved communities.

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 1–4 as listed]? Kindly provide a detailed response with justification.

Amazon recommends Combination 2 — feeder link spectrum held by the SCN entity, user link spectrum held by the partnering service provider — as the appropriate model.

The SCN entity owns and operates the gateway earth stations that utilise feeder link spectrum. The service provider owns and manages the user terminals that utilise user link spectrum. Spectrum should be assigned to the entity that controls and operates the equipment using that spectrum. This ensures clear regulatory accountability, avoids ambiguity in enforcement, and gives the service provider — the entity responsible for QoS and interfacing with end users — direct control over the user link.

Q12. Which of the following types of spectrum should be assigned to the proposed SCN authorised entities: Spectrum in the frequency bands allocated for FSS; Spectrum in the frequency bands allocated for MSS; Any other? Kindly provide a detailed response with justification.

Amazon recommends that all spectrum in FSS and MSS bands identified in the National Frequency Allocation Plan for enabling feeder uplink and downlink be assigned to SCN authorised entities. This ensures that the SCN entity has the spectrum necessary to operate its gateway infrastructure and provide wholesale network capacity to downstream service providers.

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? Kindly provide a detailed response with justification.

Amazon suggests that the terms and conditions from TRAI's Recommendations dated 09.05.2025 on "Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services" (read with TRAI's response dated 08.12.2025) be made applicable to SCN authorised entities for GSO/NGSO-based FSS and GSO/NGSO-based MSS, with one key modification: the inclusion of L-band and S-band spectrum assignment policy for MSS and D2D services. This provides regulatory predictability by building on an already-consulted and publicly-available framework rather than creating an entirely new one.

¹⁴ See United States Federal Communications Commission, *Single Network Future: Supplemental Coverage from Space*, Report and Order, GN Docket No. 23-135 (rel. Mar. 14, 2024); United Kingdom Ofcom, *Enabling satellite direct to device services in mobile spectrum bands*, Statement (Dec. 9, 2025).

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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.

Amazon recommends the following mandatory prerequisites for seeking administrative assignment of FSS or MSS spectrum: a valid SCN Authorisation under Section 3(1)(b) of the Telecommunications Act, 2023; IN-SPACE Authorisation for provisioning of satellite capacity over India; in-principle clearance of the network including SACFA clearance for gateway earth stations; and Satellite Monitoring Center (SMC) approval for the carrier plan. These prerequisites confirm that the entity is authorised, has space segment approval, has had its network architecture reviewed, and will not cause harmful interference — collectively ensuring that spectrum is assigned only to entities with demonstrated capability and regulatory compliance.

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.

Amazon appreciates the Authority's thorough treatment of spectrum assignment matters and does not have additional inputs beyond those provided in the preceding responses at this time. We remain available to provide further detail on any aspect of the spectrum assignment framework as it develops.

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? If yes, what should be the terms and conditions under such a framework? If no, in what manner such agreements/arrangements should be enabled and regulated? Kindly provide a detailed response with justification.

Amazon recommends against permitting the SCN authorised entity to utilise FSS/MSS spectrum assigned to a service authorised entity. The spectrum assigned to the partnering entity should remain under that entity's control and operational authority.

Under the Telecommunications Act, 2023, the entity to whom spectrum is assigned bears regulatory accountability for compliance with usage conditions, payment of SUC, and ensuring no harmful interference. Permitting the SCN entity to "utilise" spectrum assigned to another entity creates an untenable accountability gap — the partnering entity holds the assignment but does not operationally control the spectrum, while the SCN entity operates the spectrum but does not hold the assignment.

The correct model — already established under the GMPCS licence, Commercial VSAT, and proposed ISA frameworks — is for the service provider to hold user link spectrum and contract with the SCN entity for network infrastructure. The SCN entity configures its gateway and space segment to serve the partnering

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entity's user terminals operating on the partnering entity's assigned spectrum. This preserves clear delineation of responsibility: the SCN entity for network performance, the partnering entity for spectrum compliance.

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.

Amazon does not have additional inputs on this topic beyond the position outlined in response to Question 16. The principle that spectrum control must remain with the entity to whom it is assigned is fundamental, and the existing regulatory framework already provides the correct model for enabling SCN-service provider partnerships without disrupting spectrum accountability.

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.

D2D satellite connectivity represents a transformative opportunity for India. Many people still lack reliable internet connectivity, predominantly in rural and remote areas where terrestrial deployment remains economically unviable. D2D can provide emergency communications, IoT connectivity for agriculture and logistics, and basic messaging/voice services in coverage gaps — without requiring specialised satellite terminals.

One option is creating a new "Satellite D2D Service Authorisation" under Miscellaneous Telecommunication Services, modelled on the existing IFMC authorisation. Entities holding a Main Service Authorisation (Access Service, Unified Service, or Internet Service) should be eligible to obtain this additional authorisation, which would enable them to provision D2D connectivity via satellite using MSS spectrum in partnership with an SCN entity. A National-Level Access Service Authorisation could be created for satellite-based voice services, given that satellite coverage is inherently pan-India and incompatible with the existing LSA-based framework.

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 — [full multi-part question as stated in the consultation paper]. Kindly provide a detailed response with justification.

Please refer to the response to Question 10.

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.

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Amazon appreciates the Authority's forward-looking approach to D2D regulation and does not have additional inputs at this time. As D2D technology and standards continue to evolve rapidly, Amazon would welcome the opportunity to engage further as the framework develops.

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.

Amazon does not have additional inputs on spectrum use beyond those provided in the preceding responses. We remain available to provide further technical or policy detail on any aspect of the spectrum framework as needed.

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.

Amazon does not believe regulation of charges between the SCN entity and the service provider is warranted in this context. The charges exchanged should be left to mutual commercial negotiations, governed by competition forces and contractual freedom.

This is a B2B wholesale arrangement between two commercially sophisticated, licensed entities with bargaining power. TRAI has consistently followed the principle of regulatory forbearance in similar cases, and the Indian telecom sector has benefited immensely from this approach since 1999. The satellite industry is poised to have multiple SCN entities — competitive dynamics will naturally prevent exploitative pricing. Each arrangement will have unique technical parameters, SLA requirements, and spectrum utilisation patterns that make standardised regulation impractical. In the unlikely event of anti-competitive behaviour, the Competition Act, 2002 provides adequate ex-post remedies without the need for ex-ante tariff regulation.

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.

For the same reasons outlined in response to Question 22, Amazon does not believe charge regulation is necessary here. The nature of the relationship remains B2B regardless of whether the downstream service is FSS, MSS, or D2D. Regulatory forbearance, robust competition, and existing competition law provide adequate safeguards without the need for prescriptive charge regulation.

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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.

The same principles of regulatory forbearance apply here as well, and Amazon does not recommend charge regulation in this context. The Telecommunications Act, 2023 envisions a flexible approach for emerging technologies and services. Regulating charges in a evolving industry like SCNaaS would deter investment, reduce flexibility for innovative pricing models, and slow deployment — contrary to the spirit of the Act. Where spectrum utilisation terms are involved, these are already governed by the respective authorisation conditions. Additional charge regulation would amount to regulatory overreach.

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.

Amazon strongly recommends permitting this deduction. The charges paid by the service provider to the SCN entity for SCNaaS should be a permissible deduction from ApGR when computing AGR for License Fee and Spectrum charges.

The UL(VNO) framework already provides clear precedent — VNOs are permitted to deduct payments made to NSOs from Gross Revenue when computing AGR. The SCNaaS model is structurally identical. Without this deduction, the same revenue stream would be subjected to License Fee at both the SCN entity level and the service provider level, resulting in cascading double-levy that is economically inefficient and contrary to rational taxation principles.

The fundamental principle is that License Fee should be levied on revenue actually earned, not on pass-through payments to upstream infrastructure providers. Denying the deduction would impose a higher effective License Fee rate on satellite-based service delivery compared to terrestrial alternatives, creating a disincentive for satellite adoption — particularly in remote and low-ARPU areas where satellite services are most needed.

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.

Please refer to the response to Question 25.

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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.

Amazon recommends that the definitions mirror the post-2021 reform framework for terrestrial telecom, adapted for the unique characteristics of satellite operations.

Gross Revenue (GR) should encompass all revenue earned by the SCN entity — from satellite bandwidth/capacity leasing, gateway operations, VSAT services, value-added services, equipment sale/rental, as well as non-telecom income such as interest, dividends, capital gains, and rental income.

Applicable Gross Revenue (ApGR) should equal GR minus non-telecom revenue. Items excluded should include interest income, dividend income, capital gains, rental income from non-telecom property, foreign exchange gains, insurance claims, and revenue from non-satellite activities. Items remaining in ApGR should include all revenue from activities covered under the scope of SCN Authorisation — satellite bandwidth provisioning, connectivity services, gateway and earth station services, transponder capacity charges, and equipment rental directly linked to service delivery.

Adjusted Gross Revenue (AGR) should equal ApGR minus permissible deductions: GST actually paid, roaming/interconnection charges paid to other operators, USOF levy paid, and content costs where applicable.

Key regulatory principles: parity with terrestrial telecom (mirroring the 2021 reforms), clarity on scope of authorisation, uniform treatment across all satellite operators, and simplicity to avoid the prolonged AGR litigation that plagued the terrestrial sector.

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?

Amazon recommends that satellite spectrum be assigned through administrative allocation (not auction), consistent with Section 4 of the Telecommunications Act, 2023 and global practice.

The financial framework should include: Spectrum Usage Charges divided equitably (50:50) between the SCN entity and the service provider, payable quarterly, uniform across all SCN entities regardless of orbit type or band; License Fee at 3% of AGR (1% Government + 2% Digital Bharat Nidhi); a one-time entry fee aligned with existing Internet Service Authorisation; and nil Performance Bank Guarantee and Financial Bank Guarantee.

Revenue already subjected to LF/SUC at the SCN level should be treated as a permissible deduction at the service provider level, and vice versa, to prevent double-counting. Financial terms should be non-

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discriminatory, proportionate to spectrum actually used and revenue generated, and competitive with comparable jurisdictions to attract investment.

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.

Amazon recommends that any spectrum usage charges applicable to SCN entities be limited to amounts reasonably associated with regulatory licensing, administration, and oversight functions. Fees extending beyond recovery of regulatory costs increase operational costs for SCN entities, potentially affecting service affordability and slowing investment and deployment.

If the Authority nonetheless determines that revenue-linked charges are appropriate, Amazon recommends Spectrum Usage Charges at 4% of AGR divided equitably (50:50) between the SCN entity and the service provider.

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.

Consistent with the Government's 2021 telecom reform principles, Amazon recommends that specific items be excluded from AGR for spectrum charge purposes.

Non-operational items to exclude: interest income, dividend income, capital gains, rental income from non-telecom property, foreign exchange gains, insurance claims, write-backs of provisions, government grants/subsidies, and revenue from non-satellite activities.

Operational items specific to SCN entities that should also be excluded: pass-through charges for USOF contributions, License Fee pass-through collected from downstream entities, revenue from CPE sale/lease (hardware revenue unrelated to spectrum use), installation and maintenance service charges, ground station co-location revenue (analogous to tower company revenue), capacity resale for non-India transit traffic, dark fibre/backhaul revenue, interconnection usage charges, and revenue from value-added services not requiring spectrum (cloud hosting, data analytics, cybersecurity).

Revenue that should remain in AGR: wholesale SCNaas bandwidth/capacity revenue, satellite-based internet access services, satellite backhaul services, VSAT/satellite connectivity services, in-flight/maritime connectivity over Indian territory, and subscription/access charges. Safeguards against misclassification should include mandatory segregated accounting, annual auditor certification, DoT audit rights, and transfer pricing norms for related-party transactions.

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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.

Please refer to the response to Question 29.

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.

Amazon recommends that any spectrum usage charges applicable to SCN entities be limited to amounts reasonably associated with regulatory licensing, administration, and oversight functions.

If the Authority nonetheless determines that revenue-linked charges are appropriate, Amazon recommends that the spectrum charging framework be consistent with the revenue-share model (percentage of AGR) included in TRAI's Recommendations dated 09.05.2025 on "Spectrum for Satellite-based Commercial Communication 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.

Amazon recommends against levying additional spectrum charges on the service provider for use of its IMT spectrum in satellite-based D2D services. The partnering entity has already paid for this spectrum and is already paying SUC on the revenue generated from its use. Imposing additional charges for satellite-based utilisation of the same spectrum would amount to double-charging, discourage MNO participation in D2D partnerships, and ultimately delay the deployment of services that benefit customers in coverage gaps.

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.

Amazon recommends a quarterly payment cycle on a self-assessment basis, consistent with the established Unified License framework and TRAI's Recommendations dated 09.05.2025. Quarterly self-assessment provides predictability for operators, aligns with standard financial reporting cycles, and reduces administrative burden for both the Government and the licensee.

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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.

Amazon suggests that the Minimum Spectrum Charges of ₹3,500 per MHz per annum (as recommended by TRAI on 09.05.2025) be payable as an advance payment within 30 days of the start of the financial year. This ensures Government revenue certainty while remaining proportionate and manageable for SCN entities, particularly during the initial years when commercial revenues may still be ramping up.

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.

Amazon recommends aligning the minimum equity and net worth requirements with those prescribed for Internet Service Authorisation for data services, while requirements for entities providing voice services via MSS should align with Access Service Authorisation. This calibration balances financial credibility with ease of entry — recognising that while satellite infrastructure is capital-intensive, the SCN entity operates as a wholesale infrastructure provider rather than a retail service entity. Overly onerous requirements would create unnecessary barriers without meaningfully improving the quality of applicants, given that the satellite launch prerequisite and IN-SPACE authorisation already serve as effective filters for serious operators.

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

Amazon recommends aligning the entry fee with the proposed Internet Service Authorisation for data services, with requirements for voice services aligned with Access Service Authorisation. The entry fee should be nominal and cost-recovery based, reflecting the administrative cost of processing the application rather than serving as a revenue-generation mechanism or barrier to entry. The substantial infrastructure investments required for satellite network deployment — combined with ongoing revenue-linked fees (LF and SUC) — already ensure that only serious operators seek 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.

Amazon recommends that any Authorisation Fee applicable to SCN entities be limited to amounts reasonably associated with regulatory licensing, administration, and oversight functions.

If the Authority nonetheless determines that revenue-linked charges are appropriate, Amazon recommends an Authorisation Fee of 3% of AGR, comprising 1% towards the Government exchequer and 2% towards Digital Bharat Nidhi (formerly USOF). This is lower than the 8% applicable to other licensees, justified by the wholesale-only nature of SCN operations and the need to promote satellite connectivity in underserved areas. A higher rate would create cascading taxation across the wholesale-retail value

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chain, deter investment in a nascent sector, and ultimately increase the cost of satellite services to end users — undermining the Government's connectivity objectives.

39. 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.

Amazon does not recommend imposing a Minimum Authorisation Fee for the proposed SCN Authorisation. The revenue-linked model (3% of AGR) already ensures fees proportionate to commercial activity, and a minimum fee would disproportionately burden entities during the 18–36 month deployment phase when capital expenditure is highest and commercial revenues have not yet materialised. Should the Authority determine a minimum fee is nonetheless necessary, it should be nominal, apply only after the first 24 months of authorisation, and be adjustable against actual AGR-based fees once commercial operations commence.

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

Payment should follow the existing DoT framework: quarterly self-assessment in arrears through the SARAS portal. A graduated moratorium for new entrants during the initial deployment phase would be appropriate, given that satellite networks require significant lead time before generating commercial revenue. The framework should incorporate lessons from the AGR crisis — clear definitions, absence of penal surcharges, and proportionate enforcement — to create a predictable investment environment.

A 5-year review mechanism should be built in, allowing the rate to be recalibrated as the sector matures and revenue scales.

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.

Amazon recommends dispensing with both PBG and FBG requirements entirely for SCN Authorised entities, consistent with the Government's progressive policy direction.

The November 2024 Cabinet decision waiving over ₹30,000 Crore in bank guarantees for terrestrial operators — and the industry's acknowledgment that this freed capital for network growth — conclusively demonstrates that bank guarantees are an outdated instrument that constrains investment without providing meaningful security. For a nascent satellite sector where entities invest ₹500–2,000+ Crore in physical infrastructure, maintain substantial net worth, and face revenue-linked (not fixed) fee obligations, bank guarantees serve no legitimate regulatory purpose. The infrastructure itself — satellites, gateways, fiber, PoPs — represents a far more meaningful commitment than a bank guarantee ever could.

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

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Amazon recommends setting the application processing fee at INR 10,000, sufficient to cover administrative costs of processing the application. This is consistent with the principle that processing fees should be cost-recovery based and should not serve as a barrier to entry or a revenue-generation mechanism.

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.

Amazon recommends that any fees charged to SCN entities be based solely on the recovery of regulatory costs—that is, the costs reasonably associated with regulatory licensing and oversight functions. When regulatory fees extend beyond cost recovery, they can unnecessarily increase the cost of operations for satellite service providers, potentially decreasing service affordability and discouraging deployment. Fees that are developed around administrative and processing costs can help to ensure satellite services can be deployed affordably to end users, while still providing funding for essential regulatory activities. Other developed telecommunications jurisdictions rely on a cost recovery fee structure to manage satellite licensing.

III. Conclusion

Amazon expresses its gratitude to the TRAI for the opportunity to provide comments in response to this consultation, and welcomes further dialogue on these important issues.

Respectfully submitted,

/s/ *Faheem Shaikh*

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