STARLINK

STARLINK SATELLITE COMMUNICATIONS PRIVATE LIMITED
5TH FLOOR, CADDIE COMMERCIAL TOWER, AEROCITY (DIAL), NEW DELHI – 110037

8th August 2024

Shri Akhilesh Kumar Trivedi
Advisor (Networks, Spectrum and Licensing)
Telecom Regulatory Authority of India

Subject: SpaceX and Starlink India Response to TRAI Consultation Paper on the *"Framework for Service Authorisations to be Granted Under the Telecommunications Act, 2023"*

Sir,

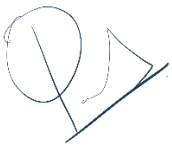
SpaceX and Starlink India thank the TRAI for the opportunity to provide comments on developing the framework for service authorisations under the Telecommunications Act, 2023. We appreciate the TRAI's repeated acknowledgment of the value of next-generation satellite broadband, and the TRAI's focus on developing a framework wherein satellite broadband can be affordably accessed, enabling universal service for consumers and businesses alike.

In our comments, we urge that the TRAI recommend (1) a responsive framework with rules and regulations that focus on desired outcomes (rather than specific mechanisms), (2) provide balance and continuity in migration (especially with regards to the progress made in the Act on spectrum assignment), (3) favor clarifying the scope of existing authorisations instead of developing instead of developing a merged authorization for satellite services, and (4) align financial conditions .

We thus recommend that the TRAI devote its feedback towards updating existing authorisations and removing obsolete conditions that are no longer compatible with the purpose or network architecture of next-generation satellite systems. In doing so, the TRAI can maintain the interests of current and future service providers, users and businesses, and the Government alike.

Most importantly, we strongly recommend that the TRAI ensure that the development of this future framework does not impede the ongoing processing or grant of current license applications (including that of Starlink India), which can enable universal access to satellite broadband today.

Thank you and sincerely,



Parnil Urdhwareshe
Director
Starlink Satellite Communications Private Limited

RESPONSES TO SELECT QUESTIONS

Framework for Service Authorisations to be Granted Under the Telecommunications Act, 2023

Question 1: For the purpose of granting authorisations under Section 3(1) of the Telecommunications Act, 2023, whether the Central Government should issue an authorization to the applicant entity, as is the international practice in several countries, in place of the extant practice of the Central Government entering into a license agreement with the applicant entity? In such a case, whether any safeguards are required to protect the reasonable interests of authorised entities? Kindly provide a detailed response with justifications.

AND

Question 2: Whether it will be appropriate to grant authorisations under Section 3(1) of the Telecommunications Act, 2023 in the form of an authorisation document containing the essential aspects of the authorisation, such as service area, period of validity, scope of service, list of applicable rules, authorisation fee etc., and the terms and conditions to be included in the form of rules to be made under the Telecommunications Act, 2023 with suitable safeguards to protect the reasonable interests of the authorised entities in case of any amendment in the rules? Kindly provide a detailed response with justifications.

AND

Question 3: In view of the provisions of the Telecommunications Act, 2023, what safeguards are required to be put in place to ensure the long-term regulatory stability and business continuity of the service providers, while at the same time making the authorisations and associated rules a live document dynamically aligned with the contemporary developments from time to time? Kindly provide a detailed response with justifications.

Response: SpaceX and Starlink India commend the TRAI's focus on evolving a stable transition framework to an authorization-based regime, which should be built upon a set of common, fair, technologically-responsive, and public conditions of authorization. This approach ensures that all applicants and operators are held to the same clear and well-defined rules and regulations, enhancing transparency and fairness across the industry. SpaceX and Starlink India recommend -

1. **Focusing on desired outcomes rather than specific mechanisms:** If the TRAI recommends the migration of terms and conditions from the text of the Unified License/Authorisation to Rules notified under the Telecommunications Act, 2023, SpaceX and Starlink India strongly recommend that this process be built to ensure responsiveness to technological evolution and improvements, as well as stable and predictable rules of authorisation.

   Doing so requires ensuring that the authorisations as well as the language of the associated rules be oriented towards achieving desired regulatory ***outcomes,*** rather than prescribing specific compliance ***mechanisms***. This approach will help

accommodate the diverse technological architectures across different operators, including next-generation satellite systems like Starlink, while maintaining the responsibility of operators to comply efficiently and without compromise. We provide specific examples of license conditions in the context of next-generation systems such as Starlink in our answers below.

2. **Ensuring continuity in application processing:** SpaceX and Starlink India strongly urge the TRAI to ensure that the transition to a new authorization framework does not disrupt the processing of existing applications under the Unified License regime. For example, Starlink India's Unified License application has been undergoing comprehensive review via several rounds of inter-ministerial deliberation. It is essential that the progress made on this (and other such applications) continue to be safeguarded and approved applicants licensed in parallel to the development of the new authorisation framework. Next-generation satellite services will have transformative impacts on ensuring universal access to affordable broadband. It is imperative that such applications are not side-lined, so that the benefits of universal access to affordable broadband can be realized without delay.

3. **Ensuring the continued applicability of Section 4(4) of the Telecommunications Act, 2023:** The Telecommunications Act allows assignment of spectrum via assignment for entries listed in the First Schedule of the Act, which in turn provides a list of satellite-based services/authorisations. This provision of the Telecommunications Act has had far-reaching consequences on the future of satellite broadband in India, ensuring an approach to spectrum assignment for satellites that is consistent with both the way that such systems share spectrum, as well as regulatory mechanisms around the world. The TRAI **must ensure** that any authorisation for satellite-based services continues to qualify for administrative assignment under Section 4(4) and Schedule I of the Act.

4. **Ensuring regular interactions and consultations with industry and users**: To maintain the relevance and effectiveness of regulatory rules, SpaceX and Starlink India recommend instituting regularly scheduled public consultations with industry. This will ensure that the rules adapt to rapid technological advancements and evolving market conditions.

5. **Migration path for existing licensees and applicants**: SpaceX and Starlink India endorse the principles outlined under Section 3(6) of the Telecommunications Act of 2023, which recognises the importance of stability and predictability for ongoing and planned investments, as well as network deployment. A fair, reasonable, non-discriminatory, and voluntary path in the form of a phased-migration process is essential. Doing so will allow both existing licensees and current applicants to transition to the new framework in an optimised manner. SpaceX and Starlink India recommend enabling licensees and applicants to opt-in to new or existing conditions over a defined multi-year transition period.

Q11. Whether there is need for merging the scopes of the extant GMPCS authorization and Commercial VSAT CUG Service authorization into a single authorisation namely Satellite-based Telecommunication Service authorisation under the Telecommunications Act, 2023? Kindly provide a detailed response with justifications.

AND

Q12. In case it is decided to merge the scopes of the extant GMPCS authorization and Commercial VSAT CUG Service authorization into a single authorisation namely Satellite-based Telecommunication Service authorisation under the Telecommunications Act, 2023, -

(a) What should be the scope of service under the proposed Satellite-based Telecommunication Service authorisation?
(b) What should be terms and conditions (technical, operational, security related, etc.) that should be made applicable on the proposed Satellite-based Telecommunication Service authorisation?
(c) Any other suggestion to protect the reasonable interests of other authorised entities upon the introduction of such an authorisation?

Kindly provide a detailed response with justifications.

Response: SpaceX and Starlink India recommend that instead of merging the scopes of the two licenses, the appropriate path would be **expanding and clarifying the terms of the existing authorisations**.

The TRAI correctly notes that "*the GMPCS authorisation permits the provision of public telecommunication services (Public Telephony and Public Internet)*". However, we also submit that the scope of the GMPCS authorisation is **general** and expansive, allowing for the provision of "*all types*" of services via satellite - across "*voice, non-voice messages, and data services*". As such, in a plain reading of the text of the scope of authorisation, there does not appear to be any restriction within the GMPCS license that prohibits the provision of any sort of satellite-based connectivity services within the authorised service area. The broad scope of the GMPCS license is also reflected in the applicable security conditions outlined under the authorisation. This enabled an authorising framework for several next-generation satellite systems (including Starlink) that ensure universal access to affordable high-speed satellite broadband at scale, even prior to the development of this new framework.

In contrast, the scope of the Commercial VSAT CUG authorisation is **specific,** restrictive, and appears intended for limited deployments rather than deployments at scale. The scope of the authorisation (1) clearly delineates the exact types of services that are permitted, (2) specifies the additional authorisations that must be obtained prior to providing added services, and (3) explicitly identifies the rights that are not covered by the authorisation (eg. long distance carriage rights, PSTN/PLMN connectivity except for backhaul etc.).

Moreover, the terms of the Commercial VSAT CUG authorisation include several requirements and restrictions, such as on network topology (Condition 5.1), interconnection (Condition 6.1), physical site inspection (Condition 39.17(iii)), and customer equipment labelling (Condition 4.3(ii)). Expanding the scope of the Commercial VSAT CUG authorisation to provide Internet services requires additionally obtaining Internet Service authorisation, which still adds additional restrictions to all Internet connectivity via VSAT by additionally

mandating all terms and conditions applicable to Internet Lease Line connections to such connectivity.

SpaceX does not see the need for the TRAI to change the VSAT authorisation as it can remain fit for the specific purpose of limited VSAT deployments (and we do support easing restrictions within the VSAT license to advance ease of doing business for those with a VSAT authorisation). Primarily however, to support the expanding generation of new satellite services aimed at broad commercial deployments of high-speed, low-latency services (whether fixed, portable or in-motion), the flexible GMPCS authorisation is suitable for satellite services.

To this end, **SpaceX and Starlink India strongly recommend that GMPCS authorisation should be considered sufficient to provide all manner of satellite-based internet connectivity**. SpaceX and Starlink India urge the TRAI to clarify the scope of the GMPCS authorisation. This would –

1. Be consistent with both the scope of the license and the nature of next-generation satellite services.
2. Allow applicants to choose the scope of the services they wish to provide (all satellite-based services under a GMPCS authorisation, or limited services under a VSAT authorisation).
3. Ensure compatibility with spectrum assignment for satellite services under Section 4(4) and the First Schedule of the Telecommunications Act.
4. Not impose artificial restrictions on spectrum access by authorisation type. The separation of licensing and spectrum is ideal and should remain a technology agnostic framework.

Finally, with respect to satellite-based services delivered directly to unmodified IMT devices, SpaceX and Starlink India strongly advise the TRAI against attempting to forcibly incorporate such services under the umbrella of existing satellite authorisation categories - whether GMPCS or VSAT. This service is designed to be deployed in partnership with a terrestrial mobile network operator as a means of expanding that mobile operator's service to its customers beyond the current reach of its terrestrial network. Such a service would operate using the mobile operator's licensed spectrum, which allows the mobile network operator's existing customers to take advantage of connectivity via satellite outside of the current terrestrial coverage zone using their existing devices. Here, we recommend that the TRAI examine what scope expansion, if any, would be appropriate for the existing Access Services authorisation in order to allow satellite-based connectivity for direct to unmodified IMT devices. As the service will be made available using IMT spectrum in partnership with a mobile network operator, the Access Services framework is the most appropriate one to support it.

Q18. In view of the provisions of the Telecommunications Act, 2023 and technological/ market developments, -

(a) **What changes (additions, deletions, and modifications) are required to be incorporated in the respective scopes of service for each service authorisation with respect to the corresponding authorizations under the extant Unified License?**
(b) **What changes (additions, deletions, and modifications) are required to be incorporated in the terms and conditions (General, Technical, Operational, Security, etc.) associated with each service authorisation with respect to the corresponding authorizations under the extant Unified License?**

Kindly provide a detailed response with justifications.

AND

Q22. In view of the provisions of the Telecommunications Act, 2023 and technological/ market developments, -

(a) **What changes (additions, deletions, and modifications) are required to be incorporated in the respective scopes of service for each service authorisation with respect to the corresponding extant standalone licenses/ authorizations/ registrations/ NOC etc.?**
(b) **What changes (additions, deletions, and modifications) are required to be incorporated in the terms and conditions (General, Technical, Operational, Security, etc.) associated with each service authorisation with respect to the corresponding extant standalone licenses/ authorizations/ registrations/ NOC etc.?**

Kindly provide a detailed response with justifications.

AND

Q29. What amendments are required to be incorporated in the terms and conditions of authorisations for providing telecommunications services using satellite-based resources in light of the policy/ Act in the Space Sector? Kindly provide a detailed response with justifications.

Response: Next-generation satellite systems, particularly those deployed in low-earth orbit (such as Starlink), have certain technological advantages and distinctions in network architecture in comparison to traditional geostationary systems. Existing terms and conditions within the associated satellite-service authorisations should be updated to –

1. **Recognise the Point of Presence as the appropriate nodal point in satellite network ground infrastructure:** Unlike gateways for traditional geostationary systems, gateways in systems such as Starlink only operate as radiofrequency-to-optical relays, converting and aggregating satellite signals from satellites and relaying them via ground-based optical fiber to the network's Point-of-Presence. The correct nodal network point in such systems for most Gateway-associated conditions under the current Unified License (eg. traffic routing, lawful interception, monitoring, operations etc.) is thus in fact the Point-of-Presence ("POP"). Conditions that

presume the Gateway as the nodal network point should be re-written to recognise this and state "Point of Presence" or "appropriate network nodal point" instead.

2. **Recognise the focus of next-generation satellite systems on providing broadband internet:** Next-generation satellite systems such as Starlink enable affordable, low-latency broadband connectivity directly to consumers and businesses at scale. Conditions in the GMPC and VSAT authorisations that presume only voice-based services should be simplified and rewritten for data-based internet service provision.

3. **Encouraging in-motion satellite services:** Next-generation satellite constellations, such as those that enable Starlink, enable continuous access to high-quality broadband at fixed locations as well as to moving vehicles (across land, over water, and in the air). In the case of Starlink's latest user terminals, the same terminal is technologically capable of enabling service in any of these situations.

   The scope of the GMPCS license already covers in-motion use[1], and we applaud the TRAI's recommendation to amend the *Flight and Maritime Connectivity Rules* to include GMPCS. In addition, SpaceX and Starlink India recommend that the GMPCS Authorisation be updated to explicitly and clearly allow service via *Earth Stations in Motion* (described as "*User terminal stations on moving platforms*" under Commercial VSAT CUG authorisation). Similarly, relocation of User Terminals within authorised territory ("Portability") should be explicitly allowed under the GMPCS authorisation, as long as all necessary security and lawful interception requirements are suitably met.

4. **Permit the use of satellite ground infrastructure in India to serve users in other countries:** Allowing satellite systems to use authorised ground infrastructure in India to serve users in other countries will have several benefits, both in the form of aiding connectivity across other countries, increasing resiliency of the network in the case of a fault at any given ground station, as well as defraying the costs of serving users in India and increasing affordability overall.

[1] See also Definition 61 ("Mobile Station") under Annexure I of the Unified License

Q19. In view of the provisions of the Telecommunications Act, 2023 and technological/ market developments, -

(a) What changes (additions, deletions, and modifications) are required to be incorporated in the respective scopes of service for each service authorisation with respect to the corresponding authorizations under the extant Unified License for VNO?

(b) What changes (additions, deletions, and modifications) are required to be incorporated in the terms and conditions (General, Technical, Operational, Security, etc.) associated with each service authorisation with respect to the corresponding authorizations under the extant Unified License for VNO?

Kindly provide a detailed response with justifications.

Response: SpaceX and Starlink India strongly recommend that the scope of the UL-VNO Internet Services authorisation be expanded and amended to enable the reselling of satellite broadband services obtained from operators authorised to provide satellite broadband services.

Empowering regional and local ISPs to be able to provide satellite broadband connectivity will have far-reaching benefits for universal access by expanding the connectivity options available to both ISPs as well as consumers and businesses.

Q39. In case it is decided to merge the scopes of the extant GMPCS authorization and Commercial VSAT CUG Service authorization into a single authorization namely Satellite-based Telecommunication Service authorization under the Telecommunications Act, 2023, what should be the: -

(i) Amount of application processing fees
(ii) Amount of entry fees
(iii) Provisions of bank guarantees
(iv) Definitions of GR, ApGR and AGR
(v) Rate of authorisation fee
(vi) Minimum equity and networth of the Authorised entity. Please support your response with proper justification.

Response: As previously stated, SpaceX and Starlink India recommend expanding and clarifying the terms of the existing authorisations rather than merging them. For both the GMPCS and VSAT authorisations, we submit the following recommendations -

- **Application Processing Fees:** The amount of Application Processing Fees should be a reasonable sum that allows for the administrative costs of evaluating an application for authorisation. In this regard, the current fee is reasonable.

- **Entry Fees:** As the TRAI notes in this consultation paper, it has recommended substantial reductions in entry fees for several authorisations (including Access, NLD, ILD, PMRTS, ISP etc.) SpaceX and Starlink India thus recommend a proportionate reduction in the Entry Fees for GMPCS/satellite-based service authorisations.

- **Definition of GR, ApGR and AGR:** SpaceX and Starlink India strongly recommend that the definition of Gross Revenue for satellite-based services be amended to not include "sale proceeds of handsets (or any other terminal equipment)**".** This will have an important and material impact on improving the accessibility of such services by enabling reasonable up-front costs for those that are most likely to benefit from affordable satellite broadband.

- **Rate of Authorisation Fee:** SpaceX and Starlink India strongly recommend the removal of – or at least a substantial reduction in – the Universal Service Obligation Fund/Digital *Bharat Nidhi* component of the License/Authorisation Fee for satellite-based services.

  The Telecommunications Act identifies one of the objectives of the Digital *Bharat Nidhi* as supporting "*universal service through promoting access to and delivery of telecommunications services in underserved rural, remote and urban areas*". This is precisely the goal as well as the chief technological benefit of next-generation satellite services such as Starlink, which has ensured affordable service in rural, remote and urban areas in over 103 markets since October 2022. Rationalising the authorisation fee to remove this levy (which must be passed on to users) for satellite services that are delivered universally will have multi-fold benefits across the proliferation of satellite broadband as well as its affordability.