

**Nelco's comment w.r.t. TRAI Consultation paper
on the Terms and Conditions of Network Authorisations to be Granted
Under the Telecommunications Act, 2023**

Nelco would like to thank TRAI for the opportunity to respond to the Consultation Paper ('CP') on the Terms and Conditions of Network Authorisations to be granted under the Telecommunications Act 2023. The terms & conditions will also help satellite industry stakeholders' clarity wrt establishment & operation of Satellite Earth Stations. It is important considering the Telecommunication Act 2023 which clearly distinguishes Telecom authorization and network authorization.

It is also important considering the technology changes in satellite technology wherein case of NGSO, it is constellation of satellites providing services at any location rather than one satellite for that specific location in case of Geostationary satellite. The same spectrum of the NGSO satellite constellation is used for providing services to multiple service providers in the country. This requires spectrum consideration for NGSO gateways differently than GSO gateways. In addition, the baseband in case of NGSO is decided basis baseband technology used by NGSO operator for its NGSO satellites.

The following section provides Nelco's response to specific questions raised in the consultation paper:

Q7. Whether there is a need to make any changes in the eligibility conditions, area of operation, validity period of authorisation, scope, and terms & conditions (general, technical, operational, security etc.) of the Satellite Earth Station Gateway (SESG) authorisation, as recommended by TRAI on 29.11.2022? If yes, what changes should be made in the eligibility conditions, area of operation, validity period of authorisation, scope, and terms & conditions (general, technical, operational, security etc.) of the SESG authorisation? Kindly provide a detailed response with justification.

Response:

TRAI recommendation for SESG provides authorization holder to establish, operate and maintain the Hub/Gateway and provide it as service to the service licensee. Spectrum will not be allocated to the spectrum and baseband equipment also will not be allowed to be installed for SESG authorization holder.

The Baseband equipment & spectrum will be rather in scope of service licensee.

There is no change suggested in the earlier recommendation of TRAI related to SESG.

Q8. Whether there is a need to introduce a new authorisation for establishing, operating, maintaining or expanding satellite communication network, which may be used to provide network as a service to the entities authorised under Section 3(1)(a) of the Telecommunications Act, 2023? If yes-

(a) What should be the eligibility conditions, area of operation, validity period of authorisation, scope, and terms & conditions (general, technical, operational, security etc.) of such authorisation?

(b) Whether an entity holding such authorisation should be made eligible for the assignment of spectrum for both feeder link as well as user link?

Kindly provide a detailed response with justification.

Response:

In NGSO system, same spectrum may be required to be used across multiple service licensees under same NGSO system. The spectrum is assigned dynamically and flexibly across various end customers, which may belong to multiple service licensees. Moreover, the baseband system to be installed at the Hub/Gateway on which various customers will be provisioned will also depend on the baseband used in the NGSO system. The baseband of NGSO system need to manage the bandwidth (& associated spectrum) assignment for various end customers, which may belong to multiple service licensees.

Considering this, it is important to have a network authorisation for NGSO which will allow authorisation holder to put the baseband system and hold the spectrum which can be used to provide services to multiple service licensee, though should not be allowed to provide services to end customers. Such network authorisation may be used to provide 'network as a service' (NaaS) for NGSO system. Technically & commercially, such network authorisation may not be required for GSO systems.

Following terms are suggested, related to this authorisation:

- i) Eligibility: Only Satellite operator or its authorised local partner should be allowed to take such authorisation.
- ii) Term period: Considering large investment involved, the initial term of such authorisation should be 20 years extendible by 10 years period.
- iii) Area of operation: National (& should also be allowed to serve countries outside India, subject to compliance of respective country local regulations)
- iv) Baseband equipment: NaaS authorisation holder should be allowed to put the baseband equipment though it should be mandatory that logical separated baseband and NMS (with full & exclusive control to configure, change, manage respective end customers on the network of respective service licensee) should be provided to respective service licensee.
- v) Spectrum: in case of Satcom, spectrum for feeder links and user links works in conjunction with each other and thus same entity should be access to both, to make efficient use of the spectrum. Spectrum in such authorisation (NaaS) for both feeder link as well as user link, should be taken by such authorisation holder rather than individual service licensee that take services from such authorisation holder.
- vi) Spectrum pricing:
 1. In case, if regulator decides to charge spectrum as %age of revenue in that case, Spectrum Usage Charges should be :
 - a. %age of Adjusted Gross Revenue (AGR – cost of network service paid to NaaS provider) from the service licensee
 - b. %age of AGR of NaaS authorisation holder
 2. In case, if regulator decides to charge spectrum as 'Price per Mhz' of spectrum then NaaS authorisation holder should pay for such spectrum price.

Q9. Whether there is a need to introduce an authorisation under Section 3(1) of the Telecommunications Act, 2023 for establishing, operating, maintaining or expanding ground stations, which may be used to provide ground station as a service (GSaaS)? If yes, what should be the eligibility conditions, area of operation, validity period of authorisation, scope, and terms & conditions (general, technical, operational, security etc.) for the authorisation to establish, operate, maintain, or expand ground stations, which may be used to provide GSaaS? Kindly provide a detailed response with justifications.

Response:

With the understanding of the context that Ground Station as Service (GSaaS) should have following scope:

- i. Satellite Control Centre (SCC)
- ii. Telemetry, Tracking and Command (TT&C)
- iii. Mission Control Centre (MCC)
- iv. Remote Sensing Data reception station
- v. Ground stations for supporting operations of the space-based services such as Space Situational Awareness (SSA), astronomical, space science or navigation missions, etc.

As these above activities are important to have the control, operation & management of the satellites and such services will be provided to the satellite operator.

To enable the growth of such services, it is important to have enabling provisions. Accordingly, it is suggested to have Ground Station as Service (GSaaS) network authorization. Few of the suggested terms are as given below:

- Entry Fee: Nil / Negligible
- Performance & Financial Bank Guarantee: Nil / Negligible
- Eligibility Condition: Non-Government Entities, Companies registered under companies act 2013 in India.
- Validity period: 20 years, extendible to 20 years.

It is important to have clearly defined scope and terms & conditions for different kind of network authorizations like for SESG, Network as a Service, Gateway as a Service etc to avoid any ambiguity later.

In addition, we would like to reiterate our earlier submission that considering the difference in scope, related terms & conditions, obligation related to GMPCS license and Commercial VSAT CUG license, both the license/service authorization should be kept separate and should not be merged into single one 'Satellite service authorisation'. This will impact adversely on the Commercial VSAT CUG service licensee who are providing fixed VSAT data services (FSS) and not providing voice or mobile satellite services (MSS) and need not have related obligations as required for GMPCS licensee. Request TRAI to reconsider.