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An Analysis of the Recommendations Released by the Telecom Regulatory Authority of India on the Licensing Framework for Establishing and Operating Satellite Earth Station Gateway

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ABSTRACT

The telecom regulatory authority of India has released certain recommendations on the licensing framework of Licensing Framework for Establishing and Operating Satellite earth Station Gateway. The author in this paper analyses the recommendations, its implications and the market impact of the recommendations.

KEYWORDS: *Telecom Law, Technology law, Satellite Gateway, Law and Technology*

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INTRODUCTION

On 29th November 2022, the Telecom Regulatory Authority of India released certain recommendations on the "Licensing Framework for Establishing and Operating Satellite EarthStation Gateway"[1]

Through these recommendations TRAI recommended a separate satellite earth station gatewaylicense to be established under the Indian Telegraph Act.[2] It has also been made clear by TRAI that the separate Satellite Earth Station Gateway would not form part of the Unified License and the service area within which the license shall operate would be at the national level.

The Telecom Regulatory Authority of India also recommended that the separate Satellite EarthStation Gateway (SESG) licensee shall have the right to establish, maintain and operate a separate Satellite Earth Station Gateway anywhere within the territory of the country for all satellite systems for which the government has given permission, such an entity shall provide satellite-based resources to any other entity, which has the license/ permission by the Department of Telecommunications or the Ministry of Information and Broadcasting and the entity is permitted to use satellite media for the provision of services under its license/authorization/permission.[3]

Further, as per the recommendations, the Satellite Earth Station Gateway licensee may also establish the

[1] Trai releases recommendations on Licensing Framework for establishing and Operating Satellite Earth Station Gateway (SESG). Telecom Regulatory Authority of India. (2022, November 29). Retrieved December 24, 2022, from https://www.trai.gov.in/notifications/press-release/trai-releases-recommendations-licensing-framework-establishing-and

[2] "TRAI Releases Recommendations on 'Licensing Framework for Establishing and Operating Satellite Earth Station Gateway (SESG).'" PIB, 29 Nov. 2022, pib.gov.in/Pressreleaseshare.aspx?PRID=1879774.

[3] *Ibid*

Satellite Earth Station Gateway with respect to one or more government-approved satellite systems and it shall not be permitted to provide any telecommunication services or broadcasting service directly to the consumers, for which, a separate license/authorisation/permission is required from the government.[4]

The Telecom Regulatory Authority also recommends that the Satellite Earth Station Gatewaylicense shall be valid for a period of 20 years from the effective date, along with a provision for renewal for a period of 10 years.[5]

Further, the Telecom Regulatory Authority of India recommended that the licensee should adhere to the instructions/ guidelines issued by the government with respect to connecting trusted products in its network and the licensee shall meet the instructions/ directions of the Department of Telecommunications, issued in the interest of national security. It is also indicated by the recommendation that only companies registered under the Companies Act shall be eligible to apply for the license.[6]

It has also been recommended that a non-refundable one-time entry fee of Rs 10,00,000 shall be charged for the grant of the Satellite Earth Station Gateway license. Further, it has been recommended that since the Satellite Earth Station Gateway will not provide any service directly to the end consumers, only a token License Fee of Re.1 per annum shall be levied on Satellite Earth Station Gateway License.[7]

Finally, it has been recommended that the licensees or permission holders for telecommunication and broadcasting services who are qualified to offer satellite-based communication services in India may choose to build their own satellite earth station gateways,if allowed by their licenses or permissions, or use SESGs already established by SESG licensees by connecting their baseband equipment with the SESGs at the terms and conditions offered by the SESG licensees.[8]

The current scenario

At present, an entity is required to have (a) a wireless operating license and (b) a service licensefor operating a satellite communication system in the country.[9]

Further, it is to be noted that via a notification dated 24/11/2014, the Department of Telecommunications gave clarification with respect to the operation of a satellite communication system in the country. The clarification released by the Department of Telecommunication mentions that the Department of Telecommunications is the licensing authority for all satellite-related telecommunication services and the Ministry of Information and Broadcasting is the licensing authority for all satellite related broadcasting services in thecountry.[10] Further, it is to be noted that with respect to telecommunication services, the Department of Telecommunication follows the Unified license regime in consonance with section 4 of the Indian Telegraph Act, 1885[11], and with respect to the broadcasting services, it is the Ministry of Information and Broadcasting that grants licenses/ permissions for uplinking/ downlinking of TV channels, uplinking Hub/ Teleport, uplink facility by a News Agency, useof Satellite News Gathering (SNG)/ Digital Satellite News Gathering (DSNG), DTH, HITS etc.

Thus, currently there is no particular license/ authorization for establishing and operating Satellite Earth Station Gateways for the purpose of providing satellite based resources to service licensees.

The need to establish a separate license for Satellite Earth Station Gateways

With various technological advancements in satellite technologies, the deployment of SatelliteEarth station Gateways has become quite capital intensive, and thus it may not be economicallyfeasible for several service licensees to establish individual Satellite Earth Station Gateways for rendering services to the end customers. Thus making it necessary for satellite operators to establish their own Satellite Earth Station Gateways. Hence creating a separate Satellite Earth Station Gateway License would simplify the process of establishing a Satellite Earth Station Gateway for next–generation satellite systems.[12]

[4] *Ibid*
[5] *Ibid*
[6] *Id* @ 2.
[7] *Ibid.*
[8] *Ibid.*
[9] Final consultation paper on satellite earth station gateway 15 Nov 2021. Telecom Regulatory Authority of India. (2021, November 15). Retrieved December 25, 2022, from https://www.trai.gov.in/sites/default/files/CP_15112021.pdf

[10] Notification dated 24/11/2014. Department of Telecommunications. (2014, November 24). Retrieved December 28, 2022, from https://dot.gov.in/sites/default/files/Certifcate.pdf
[11] The Section 4 of the Indian Telegraph Act, 1885 provides as below:
"4. Exclusive privilege in respect of telegraphs, and power to grant licenses. – (1) Within India, the CentralGovernment shall have exclusive privilege of establishing, maintaining and working telegraphs:
Provided that the Central Government may grant a license, on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain or work a telegraph within any part of India: …"
[12] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing

Further, another reason why a separate licensing regime is required for Satellite Earth Station Gateways is that the existing licensing regime requires the service licensees to establish SESGs,leading to infrastructure redundancy. Thus creating a separate SESG Licensing regime will

help avoid redundant investment by several service licensees. Further another benefit for the market players, in decoupling the provisioning of the Satellite Earth Station Gateways from theservice licenses is that it would enable the satellite operators to serve multiple service licensees in India and thus would enable service licensees in India to access several satellite systems.[13]

However, it is to be noted that it can also be argued that it is necessary to establish a separate license for establishing Satellite Earth Station Gateways only with respect to GSO- HTS multiple gateway systems and NSGO systems, since GSO- wide beam systems, and GSO- HTSsingle gateway systems, requires only one Satellite Earth Station Gateway to cover the entire Indian sub-continent and thus for obtaining satellite-based resources from such systems, the existing service licensees would have already established a Satellite Earth Station Gateways, as per the current licensing framework. Thus there is no need to establish a specific license for establishing Satellite Earth Station Gateways for GSO- wide beam systems and GSO- HTS single gateway systems.

Further, for GSO-HTS multiple gateway systems, it is quite clear that several gateways are required to cover the entire Indian Subcontinent. With respect to such systems, the common antenna, and radio frequency terminal which is installed at a Satellite Earth Station Gateway may be used for serving multiple service licensees, such an arrangement would be more efficient and cost-effective, and thus there is a need to establish a separate license for SatelliteEarth Station Gateway for GSO-HTS multiple gateway systems.

Further, for NSGO systems, the technology required is quite complex and is closely linked to the constellation of satellites, since the satellites are constantly in motion, each individual user station might need to switch multiple satellites and do a hand-off without losing the connection.Thus, it is essential that the Satellite Earth Station Gateways are installed by either the satellite operator itself or by a separate entity designated by the satellite operator. Therefore, for NGSO systems, there is a need to establish a separate license for establishing Satellite Earth Station Gateways.

However, the Telecom Regulatory Authority of India observed that in case a specific license for establishing Satellite Earth Station Gateways for the purpose of providing satellite-based resources to service licensees is introduced, it will bring efficiencies and cost-effectiveness in the satellite communication ecosystem and thereby help bridge the digital divide in the country.[14] Therefore, there is a need for a specific license for establishing a satellite earth station gateway (SESG) in India for the purpose of providing satellite-based resources to service licensees.

Specifications of the license

In order to determine what type of license would best suit the Satellite Earth Station Gateway the Telecom Regulatory Authority of India looked into the definition of "telegraph" as per section 3(1) of the Indian Telegraph Act, 1885,[15] and observed that the antenna subsystem andthe radio frequency subsystem, which are installed at a Satellite Earth Station Gateway are essentially telegraphs. Thus the authority recommended that the maintenance, operation, and establishment of Satellite Earth Station Gateways should be licensed as per Section 4 of the Indian Telegraph Act, 1885.[16] Further, the Authority also observed that under this license, thelicensees would provide satellite-based resources to service licensees and since the licensees would not provide services to the end users, hence, it would be best to regulate the establishment of Satellite Earth Station Gateway through a light touch license and hence the Telecom Regulatory Authority of India recommended establishing a separate Satellite Earth Station Gateway license under section 4 of the Indian Telegraph Act, that would not form a part of the Unified License.[17]

Without a doubt, enabling a separate light touch license would be a boon for the market players, since the establishment of Satellite Earth Station Gateway would not confer any right to sell services to the end users, the obligations under the light touch license would best suit the marketsince the obligations under such a license would be simple and cost-effective and thus would encourage ease of operating business and thus would attract more investments in the sector.

and Operating Satellite Earth Station Gateway (SESG)." ,p.19,Press release, November 29, 2022.

[13] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).",p.20, Press release, November 29, 2022.

[14] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).", p.21, Press release, November 29, 2022.

[15] The Indian Telegraph Act, 1885, s3(1).

[16] The Indian Telegraph Act, 1885, s4.

[17] *Ibid.*

Now with respect to the scope of the License, the Telecom Regulatory Authority of India recommends that the service area for the Satellite Earth Station Gateway license shall be at National Level and the scope of the License shall include establishing, maintaining and working Satellite Earth Station Gateways anywhere within the territory of the country. Further it has been recommended that the Satellite Earth Station Gateway Licensee may establish the same with respect to one or more government-approved satellite system. Further it hasrecommended that the Satellite Earth Station Gateway Licensee may establish one or more Satellite Earth Station Gateways for each Government approved satellite system. However, thelicensee shall obtain separate permission from the Department of Telecommunications (DoT) before installing each Satellite Earth Station Gateway.[18]

Further, it has been recommended that Satellite Earth Station Gateway Licensee shall not be permitted to provide any kind of telecommunication service or broadcasting service directly to the consumers, for provision of which, a separate license/ authorization/ permission is required from the Government. It has also been recommended that the Satellite Earth Station Gateway license shall be valid for a period of 20 years from the effective date of the license with a special provision for renewal for an additional 10 years.[19]

Without a doubt, the afore mentioned recommendations would be a boon to the market players and the market in general, since as per the recommendations the licensees would have the rightto operate the Satellite Earth Station Gateways at a national level, it would without doubt, make the discourse of these services easier and would improve the ease of doing business in the sector, thus improving investments. Further with respect to the period of validity of the license, it is similar to the period of validity of Unified license , Commercial VSAT CUG License andCaptive VSAT CUG License, i.e. 20 years with an additional extension of 10 years, this without doubt is an incentive for the market players to make an investment, since this provides the players a considerable amount of time as a licensee and thus enabling the players to get sufficient returns on their investment. This without a doubt is a welcome move.

With respect to the technological and operational conditions for establishing a Satellite Earth Station Gateway, the Telecom Regulatory Authority of India has recommended that the licensee shall use only those equipment and products that meet the standards set by the TEC. However, in case of mandatory TEC standards, it has been recommended that the licensee shall utilize such equipment or products which meet the standards set by bodies such ITU, ETSI, IEEE, ISO, IEC etc, or set by international fora which are recognized by TEC subject to adaptation /modification as prescribed by TEC from time to time. Further, it has also been recommended, that the Satellite Earth Station Gateway Licensee shall meet all the instructions given by the Department of Telecommunications issued from time to time in the interest of national security.[20]

Now when looking into the financial conditions for the grant of license, the Telecom Regulatory Authority of India has recommended a non-refundable one time entry fee of Rs. 10,00,000 for the grant of the Satellite Earth Station Gateway License. This can be seen as a welcome move for the market since the establishment of the Satellite Earth Station Gateway would require a large amount of investment such as investment on land, RF terminal, antenna etc., and considering such a magnanimous requirement of investment only those entities whichare serious would invest. The nominal entry fee without a doubt would be a boost to the market as there will be more investment flow. Further another welcome move is with respect to the License Fee, since the Satellite Earth Station gateway licensees would not provide any servicedirectly to the end consumers, the Telecom Regulatory Authority of India has suggested a negligible amount of Re.1 per annum as the License Fee. The notional annual license fee of Re.1, similar to that of IFMC authorisation[21], is without a doubt a welcome move and would be a boon to the market players, since the telecommunication services to the customers are provided by the Service Licensees and not the Satellite Earth Station Gateway Licensees, and since the service licensees are already paying a specific amount as a Licensee fee as a percentage share of AGR, making the Satellite Earth Station Gateway Licensees pay a license fee would lead to double charging.

[18] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).", p.26, Press release, November 29, 2022.

[19] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).", p.27, Press release, November 29, 2022.

[20] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).", p.33, Press release, November 29, 2022.

[21] Fee.– (1) The IFMC service provider shall pay annual fee of one rupee to be paid on annual basis to the DoT through Bharatkosh"

Further other financial recommendations like, no requisition of bank guarantee, a minuscule amount of Rs. 5000 as processing fees, no mandatory requirement of minimum equity and minimum net worth, and not levying any NOCC charges are all a welcome move and without a doubt would boost investment in the sector.[22]

Eligibility conditions for obtaining Satellite Earth Station Gateway License

It has been recommended by the Telecom Regulatory Authority of India that only companies that are registered under the Companies Act, 2013 of India shall be eligible to apply for the grant of the License.[23] Further, it has also been recommended that such a company shall eitherbe a satellite operator operating satellite system/ systems approved by the Indian Government,or a subsidiary of such a satellite operator or an entity having contracts/ license agreements entered into with such satellite operator for the provision of satellite-based resources through Satellite Earth Station Gateways.[24] It has also been recommended that such licensee shall disclose in entirety the details of terms and conditions of the contracts/ license agreements entered into with its parent/ associate company and/ or satellite system owner/ operator.[25]

On a prima facie reading, these recommendations might look welcoming, but what needs to beanalysed here is whether restricting the grant of licenses to just Indian Companies is beneficial in the long run. The answer to this, without a doubt, is no. The same can be substantiated in a two-fold manner. Firstly, establishing or starting a Satellite Earth Station Gateways requires magnanimous investments, and as a result, there would be chances that only a few companies would participate; thus, there are chances that an oligopolistic or monopolistic market would be created.. Secondly, preventing foreign companies to enter, and considering only a few Indiancompanies are in a position to make such investments, would prevent competition and the innovation that results from such competition.

Framework to regulate the provision of satellite-based resources to service licensees

The Telecom Regulatory Authority of India has recommended that the Satellite Earth Station Gateway Licensee shall offer satellite-based resources only to service licensees/ permission holders.[26] It is also recommended that the Satellite Earth Station Gateway Licensee shall declare a Reference Offer on its website in order to ensure that the terms and conditions offered by the Satellite Earth Station Gateway Licensee to various telecommunication and broadcasting service licensees/ permission holders are fair, transparent, and non-discriminatory.[27] Further, it has been recommended that the Satellite Earth Station Gateway Licensee shall provide an online portal wherein the eligible service licensees/ permission holders can make request for the provision of satellite-based resources.[28] It has also been recommended that the Satellite Earth Station Gateway Licensee shall provide the feasibility status, through the online portal,to the seeker service licensee/ permission holder clearly stating acceptance or refusal (with reasons thereof, in case of refusal) of the request within 30 days. [29]

These recommendations are majorly based on the assumption that the Satellite Earth Station Gateway Licensees and their service licensees can self-regulate the access to satellite-based resources at Satellite Earth Station Gateways. However, there are chances that without adequate supervision, the Satellite Earth Station Gateway Licensees might use their dominant position to the disadvantage of service licensees, thus resulting in market failure.

Installation of baseband equipment at Satellite Earth Station Gateways

The Telecom Regulatory Authority of India recommended that the service licensee/ permission holders, being served by the Satellite Earth Station Gateway Licensee, shall install their own baseband equipment at the Satellite Earth Station Gateway established by Satellite Earth Station Gateway Licensee.[30]

With respect to why baseband equipment be allowed to be established by Satellite Earth Station Gateway Licensees, it can be put forth that baseband equipment

[22] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).", p.37, Press release, November 29, 2022.

[23] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework for Establishing and Operating Satellite Earth Station Gateway (SESG).", para3.5,p.68, Press release, November 29,2022.

[24] *Ibid.*

[25] *Ibid.*

[26] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework for Establishing and Operating Satellite Earth Station Gateway (SESG).", para3.6,p.21, Press release, November 29,

[27] *Ibid.*

[28] *Id @26.*

[29] *Ibid.*

[30] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework forEstablishing and Operating Satellite Earth Station Gateway (SESG).", para 3.7.p.70, Press release, November 29,

is an integral part of ground infrastructure in a Satellite Earth Station Gateway and Satellite Earth Station Gateway Licensees should be permitted to install the same since it would be much easier for the SatelliteEarth Station Gateway Licensees to provide the requisite satellite capacity in 'MHs' or Mbps' depending on the business model and the agreement between the licensees. Further, it can also be argued since there are multiple service licensees which are attached to a Satellite Earth Station Gateway, all with varying frequencies and bandwidth requirements, it would be best for the service licensees to install their own baseband equipment at the Satellite Earth Station Gateway and in case the Satellite Earth Station Gateway Licensee requires to install baseband equipment, the licensee can acquire a service license and acquire the right to use feeder link frequencies.

Sharing of Satellite Earth Station Gateway infrastructure

In order to facilitate the sharing of Satellite Earth Station Gateway infrastructure the Telecom Regulatory Authority of India firstly recommended the following amendment to Clause 33.4. Part-I, Chapter V (Operating Conditions) of Unified License, "*The Licensee shall be allowed to use the SESG established by any SESG licensee by connecting its baseband equipment withthe SESG at the terms and conditions offered by the SESG licensee.*"[31] Further TRAI recommended adding a new clause in the operating conditions of the unified license which is as follows "*The service licensees who have established SESGs in the country under the respective service licenses, may provide satellite-based resources to the eligible servicelicensees/ permission holder.*"[32]

Without a doubt allowing sharing of Satellite Earth Station Gateway among various Satellite Earth Station Gateway licensees and service licensees, and among service, licensees would benefit the entire market by substantial reduction in costs, by reducing the time taken for service delivery, by improving operational efficiency, which in turn would promote investments and thus boosting the market economy.

Spectrum Assignment

The Telecom Regulatory Authority of India has recommended that the frequency spectrum i.e.gateway spectrum and user terminal side spectrum shall be assigned to the eligible service licensees/ permission holders as per the allocation of transponder bandwidth in the concerned satellite system.[33] The Telecom Regulatory Authority of India has also recommended that no frequency spectrum should be assigned to Satellite Earth Station Gateway licensees.[34]

Further it is to be noted that the Telecom Regulatory Authority of India has not provided any recommendations concerning the methodology for the assignment of spectrum and charging mechanism for the spectrum assigned for establishing Satellite Earth Station Gateway, however, the Telecom Regulatory Authority of India has suggested that it will take up a separate consultation process on the issue of spectrum for space-based communication services which will include the matters relating to assignment of spectrum for satellite-based communication, its methodology and charging.

This recommendation without a doubt would benefit the market because the Satellite Earth Station Gateway licensees would be only operating the Earth Station only to facilitate the service licensees to connect to the appropriate satellite operator for providing satellite based communication service. Subsequently, there is no a need for changing the current dispensationon assigning frequency carriers to service licensees based on the space segment acquired from the satellite operator. Further all spectrum regardless of access spectrum or feeder link, it essentially pertains to provisioning the service, the spectrum should be assigned to service licensee only. Further, as the feeder link frequencies and look angle will vary for satellite constellations, the spectrum for the same should be allowed to service licensees and not to the Satellite Earth Station Gateway licensees. This will provide flexibility to the service licenseesto use the services of any gateway provider and thereby avoid any monopolistic behaviour by Satellite Earth Station Gateway licensees.

Conclusion

The recommendations released by the Telecom Regulatory Authority of India on Licensing Framework for Establishing and Operating Satellite earth Station Gateway is, without doubt, a welcome move. These recommendations largely address the issues and problems faced due to the lack of a particular license/ authorization for establishing and operating Satellite Earth Station Gateways for the purpose of providing satellite-based resources to service licensees. However, as mentioned above certain recommendations require a revisit in order to

[31] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework for Establishing and Operating Satellite Earth Station Gateway (SESG).", para 3.9 ,p.77, Press release, November 29,2022

[32] *Ibid.*

[33] Telecom Regulatory Authority of India. "TRAI Releases Recommendations on Licensing Framework for Establishing and Operating Satellite Earth Station Gateway (SESG).", para. 3.10. p.77, Press release, November 29, 2022.

[34] *Ibid.*

properly facilitate the purpose for which the recommendations were made. In general, it can be said that the recommendations address most of the associated concerns and have pretty well accommodated the suggestion given by the stakeholders.

Without a doubt, if these recommendations are effectively implemented it would be a boost to the economy and would incentivise investment in the sector.