

Speech by Mr. Harsh Kaushik, Advocate-on-Record, Supreme Court of India in the seminar held in Chennai on 11.02.2023

Hon'ble Justice MM Sundresh, Hon'ble Justice Raja, Hon'ble Justice Patel, Hon'ble Mr. Thangaraj, esteemed dignitaries both on and off the stage, respected Mr. Bajpai, Members of the Madras Bar and the TDSAT Bar and my dear friends.

A special thanks to the stalwarts who preceded me and whose talks were enriching and interesting and it was a pleasure listening to all of them.

There is a famous saying that wisdom comes to those who remain hungry. So as the last obstacle before lunch, I request everyone to kindly continue to believe in this saying while I complete my talk.

The topic of my talk is “Emerging Regulatory Landscape & Issues arising in respect of Satellite based Internet Services”.

(A) So first what is Satellite based Internet or Broadband services:

Presently as we all know, broadband based services are usually provided through terrestrial means, i.e. via optical fibre and mobile networks.

In the case of satellite based broadband services, broadband services are delivered directly via satellites. In this technology, Internet service providers send an internet signal to a satellite in space, which then comes back to its users and is captured by their satellite dish. This dish is connected to the user's modem, which finally connects their computer to the internet signal. This process then reverses back to the internet service provider and is repeated every time.

The main difference between satellite broadband services and the more popular terrestrial means for providing broadband services is that aggregation of all the data generated and transmitted by users accessing the internet happens in the sky or space, that is in the satellite. In contrast to this, if we take a look at cellular networks, aggregation happens on the ground, in the base stations. This is the case for any other terrestrial means of providing broadband — be it optical fibre, cable, etc.

Another key difference is that to access satellite services, we will need a dish antenna just like we do in the case of TV services, so a normal mobile handset cannot directly access satellite broadband. For a user to access satellite broadband, a clear line of sight to the satellite is needed.

(B) Why has it generated so much interest amongst global and domestic players in India

The satellite based broadband services would not only reduce the dependency on the terrestrial network but would also further the goal of delivering broadband in remote and rural areas of the country, its accessibility being its biggest advantage, as its consumer would be able to access internet services from everywhere, including the most remote places. Satellite broadband services would therefore turn out to be a boon for rural residents of the country, who do not get easy access to traditional telecom infrastructures such as Cable or Fibre.

Moreover, satellite internet service is cost-effective. It can be less expensive to use satellite internet in a less populated area where fiber and cable TV aren't available since it doesn't rely on the necessary infrastructure for fiber and cable.

In addition to the above, installing and deploying satellite internet is usually quick and easy, and it could be installed, configured and deployed in minutes.

Lastly, since satellite signals are not dependent on physical infrastructures (like phone lines and cable TV systems) and rely on satellite availability, the possibility of interruptions in internet services is minimized. Thus, satellite based broadband services ensure a greater degree of reliability.

(C) Current regulatory landscape and emerging issues regarding the permissions required to operate

In a very welcome step, the Department of Telecommunications vide Guidelines dated 26.10.2022 titled “Guidelines For Establishing Satellite based Communication Network”, consolidated the previously existing framework for satellite-based communication networks which includes broadband services and provided clarifications where required. The salient features of the guidelines are as follows:

I. Process for providing any satellite based communication network to the public or setting up a satellite based network

For setting up a satellite based communication system, separate authorization/permissions are required from different bodies which are as follows:

1. Service license or appropriate authorization under the Indian Telegraph Act from the DoT
2. Space segment assignment to render the services through Department of Space / New Space India Limited
3. Frequency assignment [Decision Letter (DL), SACFA clearance, & Wireless Operating License] from WPC.
4. Carrier plan approval and up-linking permission from National Operation Control Centre.
5. Security clearance (wherever applicable)

The Guidelines consolidate the process and have provided a step by step process which would be required to be followed by the applicant in order to set up a satellite based communication network.

II. Licenses under which Satellite based Communication Services can be provided

As per the Guidelines Satellite based communication services can be provided within the respective scope of the following licenses/authorizations issued under Section 4 of the Indian Telegraph Act, 1885:

Global Mobile Personal Communication by Satellite (“GMPCS”)

The scope of the GMPCS service authorization as provided under Clause 2 of Chapter XII of the Unified License includes voice and non-voice message and data services by establishing GMPCS gateway in India. Furthermore Annexure I of the Unified License defines GMPCS system as any satellite system providing telecommunication service *directly to end users* from a single or constellation of satellites.

Commercial VSAT Closed User Group Service

The scope of this service is to provide, inter-alia, data connectivity between various sites scattered within territorial boundary of India using VSATs. A Commercial VSAT CUG Service licensee is permitted to provide data connectivity solutions to a closed user group only. For example Bank ATMs make use of this technology. It is only upon acquiring an ISP license, that they can provide independent services directly to multiple subscribers.

In-Flight And Maritime Connectivity (IFMC) Service Authorization

IFMC Rules, 2018 define IFMC service as the establishment, maintenance and working of telegraph to provide wireless voice or data or both types of telegraph messages in aircraft and on ships. As per the Guidelines an IFMC service provider is eligible provide wireless voice or data or both types of telegraph messages in aircraft and on ships, within or above India or Indian territorial waters. As per the Guidelines, a licensee shall be eligible to provide IFMC service if it:

- Holds a license for access service or an ISP category A license; and
- Holds a National Long Distance (“NLD”) license or a commercial VSAT CUG service license and has satellite gateway earth station within the service area of the license, in case connectivity through satellite is used.

Captive VSAT CUG license

License for Captive VSAT Closed User Group domestic data network using INSAT satellite system is to provide, inter-alia, data connectivity **for internal communication of an organisation and is for non-commercial purpose**. The sites connected using VSATs should form part of a Closed User Group (CUG).

National Long Distance (NLD) Service authorization under Unified License

The NLD Service licensee shall, inter-alia, have the right to carry inter-circle switched bearer telecommunication traffic over its national long distance network.

III. Establishment of Inter-Ministerial Committee For Satellite Network Clearance (IMC-SNC)/ Apex Committee for the issuance of the In principle clearance to the proposed network

The Guidelines provide for the establishment of an Inter-Ministerial Committee for Satellite Network Clearance (IMC-SNC), formerly known as the Apex Committee, (having representative from the units as mentioned in point I above), established to provide a centralised setting for the issuance of ‘in principle clearance’ for proposed satcom networks. After obtaining the licence/authorisation (Commercial VSAT/GMPC, etc), an applicant desirous of establishing and/or operating a satellite based communication network will be required to apply for in-principle clearance to the Satellite Licensing Division of DoT on the online SaralSanchar portal.

The proposal will be examined by Satellite Licensing Division and presented to IMC-SNC, if required. If the application is in order, the Satellite Licensing division of the

DoT will grant the applicant in-principle clearance for establishing the satellite-based network on the advice of IMC-SNC.

The objective of the examination by IMC-SNC being that once the in-principle clearance is issued by DoT, the further issue of clearances by individual units thereafter is carried out quickly so that there are no delays in operationalizing the satellite network(s).

IV. NO Mandatory Performance Verification Testing (MPVT)

Mandatory Performance Verification Testing (MPVT) procedure is not required to be carried out by NOCC before start of the antenna operation(s) i.e. the MPVT procedure has been dispensed with.

V. PRESCRIBED TIME LIMITS

The Guidelines prescribe fixed time frames for the various assignments/clearances by DoS/NSIL, NOCC, WPC and SACFA. This is again a very welcome move.

VI. INCLUSION OF NGSO Satellites

The Guidelines allow for all types of satellite viz. Geo Stationary Orbit (GSO) and Non-GSO (NGSO) satellites are permitted to be used for providing satellite-based low bit-rate connectivity.

EMERGING ISSUES – Like any service, when it grows over a period of time, several issues may have to be ironed out. Given the time, I wish to highlight two areas which may require some consideration by the concerned authorities:

1. It has now been clarified in the guidelines that foreign satellite system can be used to provide satellite communication services. However, a gateway will have to be established in India. Currently there does not appear to be clarity on what authorisation needs to be procured by the satellite provider for operating the gateway hub in India. **TRAI recently in its recommendations dated 29.11.2022 titled “Licensing Framework For Establishing and Operating Satellite Earth Station Gateway” has recommended there shall be a separate “Satellite Earth Station Gateway” (SESG) License under Section 4 of the Indian Telegraph Act which will not form part of the Unified License. The Authority has recommended the scope of the SESG License, eligibility criteria for availing the SESG License and the nature of services which will be offered by the SESG Licensee, amongst others. As per the recommendations the SESG Licensee may provide satellite based resources to any entity which hold a license/ permission granted by DoT or MIB and is permitted to use satellite media for provision of services under its license/ permission.**
2. Interestingly under the IFMC Rules, a GMPCS licensee has not been given the option to apply for authorization to provide IFMC service. Given the fact that a GMPCS service authorization includes within its scope voice and non-voice messages as well as data services and the fact that the provision of GMPCS service authorization was very

much in existence at the time when IFMC Rules had been brought into effect, it is not clear as to why that is the case presently.

(D) Security issues which need to be ensured as the service permeates the market.

Amongst innovation and excitement, security can often be left behind. The reality is that as more satellites are deployed, more satellites must be protected, and it is crucial that organizations consider how their systems may be potentially compromised by hackers. There was a time when satellites were seen to be almost untouchable, however now it is relatively simple for hackers to purchase and operate the right equipment in a way that is a cause for concern. Almost anyone can aim an antenna at a satellite and send communication to it, so it is critical that a level of trust is established between earth bound devices and satellites.

Many components in satellites have now been replaced with software, thereby allowing the space platforms to become more connected to ground infrastructure and opening up more ways for them to be accessed through such systems. The latest known attack on a satellite network took place on Feb 24 and came as Russia invaded Ukraine. The hack took down the satellite broadband services of tens of thousands of households across Europe, said Internet service provider Viasat, which owns the satellite.

These attacks can affect services such as TV broadcast, Internet connectivity and navigation systems, as well as corrupt data sent over networks, including information relating to banking, military operations and scientific studies.

Thus ensuring security while we adopt this service is fundamental for the growth of this service itself.

While I am sure that by now I have aroused the hunger of all present, I only hope that it is largely in respect of more information on internet based satellite services and less towards the sumptuous meal that has been organised.

I wish to thank the Hon'ble Chairperson, the Hon'ble Members of the TDSAT and the TDSAT Bar to give me the opportunity today to speak besides such an august panel of speakers.

Thank you.