

Recommendations of the TRAI on certain conditions of VSAT license viz., permitting higher data rate, reduction in license fees for captive VSAT network and reducing minimum antennae size.

1.0 Background

This has reference to Secretary, Department of Telecommunications DO No. 815-66/2002 – LR (PT.) dated November 1, 2002 addressed to Chairman TRAI seeking the comments of TRAI on two specific issues pertaining to VSAT license terms & conditions

- a) Restriction on data rate
- b) Reduction in license fee for captive VSAT network.

TRAI had discussion with VSAI and other VSAT Service Providers to understand the requirements involved.

2.0 Recommendations of the Authority on the issues referred by the DOT

2.1 Increasing the present limit of 512 Kbps on maximum data rate to 2 Mbps

The Authority's recommendation was essentially a review of an existing license agreement for setting up of CUG 64 Kbps data network via INSAT Satellite System entered into between private operators and the DOT in 1994. The DOT had permitted a maximum data rate of 64 Kbits/second presumably due to constraints on transponder capacity available on INSAT Satellite Systems in 1990s. In the post NTP'99 era, new terms and conditions were set

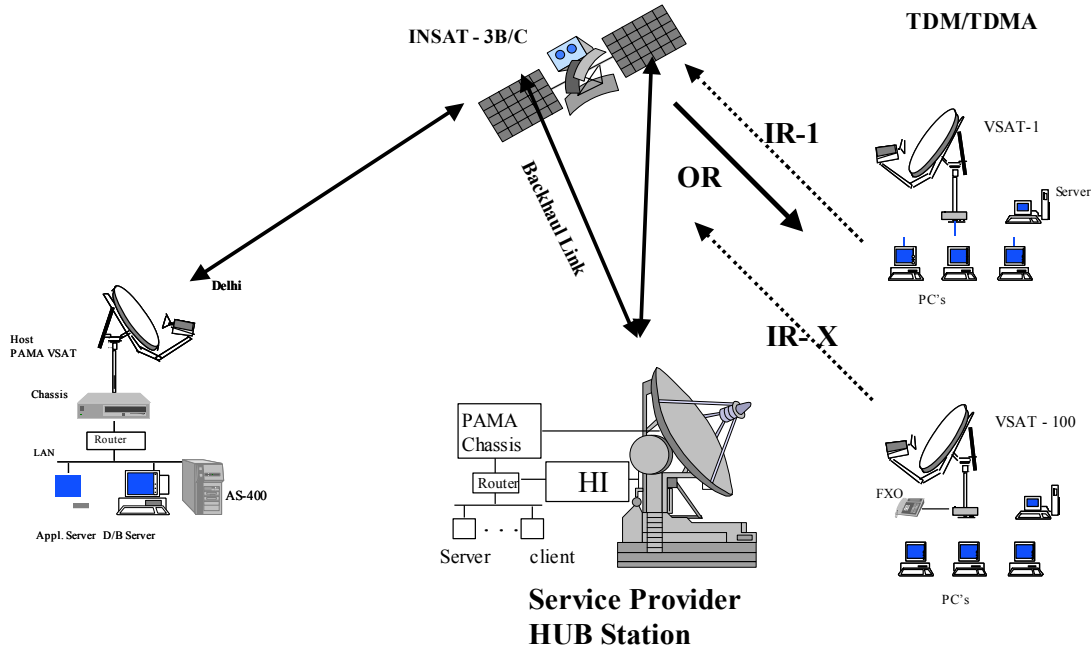
for VSAT Service Providers by the government based on the TRAI recommendations.

While consulting on the issue of maximum data rate, the industry had requested for 2 Mbps. However, after consulting with the officers of the TEC/ DOT dealing with Satellite Communication & taking into account the available transponder capacity at that point of time, it was felt that a speed of 512 Kbps is sufficient for applications such as video conferencing.

The VSAT industry has now brought to our notice the following applications, which require data rates higher than 512 Kbps in Mesh connectivity mode.

➤ **Bulk data transfer for software industry:** In software industry servers are located at various places. These companies often use satellite links as a back up for leased lines. Under circumstances where leased lines fail, customers use VSAT (which is highly reliable) for their working. As the amount of data transfer is large, minimum requirement of 2 Mbps under these circumstances is necessary.

➤ **High Speed back haul links:** Some of the large customers gather data from remote stations on TDMA links and bring it down to the hub. From the hub the collected data is transferred on a back haul link to the server. As this link is required to carry the data for a number of locations high speed is a requirement. A minimum of 2 Mbps has been requested by the industry. Some of the prospective customers include Oil sector, Banking, FMCG.



➤ **In house training using audiovisual:** Similar topology and requirement exists to provide in-house training to remote locations of companies. To support audiovisual and multimedia applications, there are requirements in excess of 512 Kbps.

➤ **Video data transfer** for newsgathering and feed to studio applications. These are generally high capacity files and would require long duration if done over 512 Kbps. An estimate provided by the Service Providers is tabulated below:

Se	Application	Bandwidth	Time (hrs)
1	500 MB file transfer	512 Kbps	2.17 hrs
2	Five 500 MB file transfer	512 Kbps	10.85 hrs
3	500 MB file transfer	2048 Kbps	0.54 hrs
4	Five 500 MB file transfer	2048 Kbps	2.71 hrs

Source: Presentation by VSAI & VSAT industry to TRAI

Some of the prospective customers for such application could be media companies.

The Authority has also noted that this issue was under discussion of Telecom Advisory Group (TAG) Sub-group, which has representatives from industry, Department of Space, Department of Telecom and WPC and in its recommendations to the TAG, the subgroup has recommended increase in bandwidth to 2 Mbps.

The Authority has also taken note of the relevant TEC specification (INTERFACE REQUIREMENTS NO. IR/VST-08/01. SEP 2000) in this regard, which permits a data rate upto a maximum of 512 Kbps for remote terminals.

2.1.1 Recommendation of TRAI on increasing the restriction on maximum data rate

In exercise of its powers vested under section 11 (1) (a) (ii) of the TRAI Act 1997 (as amended in 2000), the recommendations of the Authority are provided as under:

In the light of the needs of VSAT networks, which are also employed for IT enabled services & considering that the pressure on transponder capacity has considerably eased due to change in the Government's policy to permit foreign satellites, the Authority finds considerable merit in the demand of the industry to remove the restriction on the bandwidth and therefore

recommends to the government to increase the maximum transmission data rate from 512 Kbps to 2 Mbps for remote terminals for DAMA/ PAMA mode in mesh connectivity. In addition to the license, relevant changes will also need to be carried out in the TEC specification as it has linkages with the license. Since the license fees currently being charged from VSAT Service Providers is not linked to data rate, no change in license fees is envisaged due to the increased data rate.

2.2 Reduction in license fee for captive VSAT network

While finalizing the guidelines for VSAT services, the Government had decided to keep the license fees at 10% of adjusted gross revenue for Commercial VSAT service providers and had retained Rs. 16,000/ per annum per terminal as the license fees for captive VSAT networks. The VSAT Service Providers Association and National Stock Exchange (NSE, one of the largest VSAT captive user network in India) has represented to TRAI that the license fee for captive user network should be reduced from Rs. 16,000 per terminal to comparable level as applicable for commercial VSAT users. Earlier, while reconsidering the recommendations of TRAI based on DOT's reference on VSAT recommendations, the Authority had reiterated that the captive user network and commercial VSAT service providers should have the level playing field in terms of the license fees charged. In view of the level playing field aspect, the Authority considers that the license fee for captive users be fixed at a level, which matches the effective license fee charged from commercial VSAT service providers in the form of 10% of adjusted gross revenue. Since in case of captive VSAT network, there is no revenue, it is

necessary to estimate the license fees paid by Commercial VSAT Service Provider on per terminal basis. This estimation varies from one service provider to other and also from one quarter to other.

To assess the license fees per terminal for captive users, it is necessary that the absolute value of license fee for commercial VSAT users is estimated. The VSAT Service Providers and the Department of Telecom were asked to submit the amount of license fee paid by different VSAT service providers and the number of VSAT terminals for each operators for the last three-quarters. Based upon the data received from VSAT service providers, the license fee per VSAT per quarter comes in the range of Rs. 1200 to Rs 3000 per quarter. Annexure 1 provides the range of effective license fees.

From the data, it is also observed that the average license fees per terminal have come down every quarter. As the new license fees structure for which the recommendations have been sought will be effective prospectively, it will be more rational to consider the average license fees per terminal for the last quarter (extrapolated for the year) as the basis for estimating the benchmark. The license fee for captive VSAT Services need to be at a level, which while being conducive to the growth of VSAT industry also supports competition in the sector.

Keeping in view the average effective license fees per terminal currently paid by Commercial VSAT Service Provider and the need to have similar license fees level for captive VSAT services, the Authority recommends that the

annual license fees per terminal for captive VSAT users be brought down from Rs 16000 to Rs. 8000.

Though the DOT's reference was only on these two points, the industry representatives also requested TRAI to consider recommending the reduction in minimum antennae size specified.

3.0 Reduction in minimum Antenna size

In the meeting with TRAI, VSAI requested the Authority to consider the issue of minimum Antennae size. Such a request has also been made to the TRAI earlier. The restriction on antenna size was incorporated in the specification to ensure that the radiation pattern of the antenna does not cause interference with other terrestrial wireless transmission system and also to meet the link design specifications. With the improvement in EIRP and G/T of new satellites, it should now be possible to reduce the antenna size from the present level of 1.8 metre in Star configuration and 3.8 metre in Mesh configuration to lower size as follows:

	Star		DAMA	
	Currently permitted min size	Proposed Minimum size	Currently permitted min size	Proposed Minimum size
XC	1.8 m	1.2 m	3.8 m	2.4 m
Ku	1.2 m	1 m	2.4 m	2.4 m

TRAI is of the opinion that the benefits accruing from technological advancements should be passed on to the service providers and end users. In the extant case this will reduce the terminal cost to the end user.

Accordingly, in exercise of its powers vested in Section 11 (1) (a) (ii), the Authority suo-motu recommends that the minimum size of the antenna be brought down to levels permitted by the new series of INSAT without affecting the present performance levels. Such reduction can at the beginning be permitted in co-ordinated transponders. For other transponders the condition of minimum antenna size could be relaxed on case-to-case basis.

Annexure 1: License fees per terminal for existing service provider

Table 2.1 Average license fees paid by Commercial VSAT users

License fees	Jan - Mar	Apr - June	Jul - Sep
	All amount in Rs.		
Eff quarterly license fees per terminal for service provider A	3879	2433	1278
Eff quarterly license fees per terminal for service provider B	3368	3101	1999
Eff quarterly license fees per terminal for service provider C	3118	2935	1652
Eff quarterly license fees per terminal for service provider D	5202	3260	2994
Average annual license fee per terminal	15567	11729	7923