

Bharti Airtel Ltd.

India & South Asia

Airtel Center, Plot No. 16,

Udyog Vihar, Phase - IV,

Gurugram - 122 015

www.airtel.in

Call +91 124 4222222

Fax +91 124 4248063



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Dated: 11.03.2020

To,
Shri Syed Tausif Abbas,
Advisor (Networks, Spectrum and Licensing),
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
Jawahar Lal Nehru Marg, Old Minto Road,
New Delhi - 110002.

Subject: Consultation Paper on 'Provision of Cellular backhaul connectivity via Satellite through VSAT under Commercial VSAT CUG Service Authorization.'

Dear Sir,

This is with reference to your above-mentioned consultation paper. In this regard, please find enclosed our response for your kind consideration.

Thanking You,
Yours' Sincerely
For **Bharti Airtel Limited**

A handwritten signature in blue ink that reads 'Amit Kushwaha'.

Amit Kushwaha
Vice President - Regulation & Compliance

Encl: a.a.

Bharti Airtel's Response to TRAI's Consultation Paper on "Provision of Cellular backhaul connectivity via Satellite through VSAT under Commercial VSAT CUG Service Authorization"

India spreads across an area of about 3.28 million sq. kms. While a large part of India is plain and accessible, a substantial portion of the land includes remote and hilly terrain comprising of the Himalayas, remote regions of the north-eastern states, the Deccan plateau, the Andaman & Nicobar, Lakshadweep islands, etc.

The provision of mobile/ broadband connectivity is a challenge considering the inaccessible terrain as well as the unavailability of backhaul media connecting to these regions. In the present day, when there are over 40,000 villages in the country that are still devoid of mobile connection and the Government of India has taken the initiative to foster digital connectivity to every part of the nation, the discussion brought forth by this Consultation is pertinent and apt. It is also worthwhile to mention here that in this scenario, connectivity by Satellite acts as the only media to connect these far-flung and remote areas.

The provision of backhaul with Satellite as a media, therefore, needs to be liberalized as well as made affordable keeping in view the Government's keenness on delivering mobile as well as broadband connectivity to every nook and corner of India. In this context, our response to the issues raised in the consultation paper is as below:

Q1. Keeping in view the connectivity requirements in remote and difficult areas, should the Commercial VSAT CUG service provider be permitted to provide backhaul connectivity for mobile services and Wi-Fi hotspots via Satellite? Please justify your answer.

&

Q2. Whether the scope of Commercial VSAT CUG Service Authorization be enhanced under both Unified License and UL(VNO) license to enable the provision of the said backhaul connectivity? Please justify your answer.

Bharti Airtel's Response:

Satellites are a vital part of the connectivity ecosystem, guaranteeing reliable and high-capacity, high-speed communications (via High Throughput Satellite ("HTS")) to even the most remote communities. They are often the only technology able to provide communications for connecting remote networks to the main internet backbone and cellular infrastructure with 99% reliability in remote terrain. Additionally, satellites help the terrestrial network operators meet the growing bandwidth demand. They not only complement the existing networks but also offer secure backhaul services.

In the present licensing regime, the provisioning of backhaul links is done by the telecom service providers ("TSPs") themselves under the NLD/ Access Service Authorization. The Commercial VSAT CUG service licensees are not permitted to provide backhaul connectivity to the mobile operators.

Until recently, mobile network operators (“MNOs”) deployed the satellite backhaul only for hard-to-reach areas such as islands, mountains, and deserts where terrestrial infrastructure (e.g. fibre or microwave) was infeasible. The emergence of HTS and technological breakthroughs has irreversibly changed this paradigm. The abundance of HTS capacity, together with technological advancements in ground segment equipment, is driving the adoption of satellite-based cellular backhaul for a wide diversity of 4G and LTE applications.

In many geographies, the Satellite is effectively used as a backhaul to deliver cellular service. In such cases, it makes sense to use satellite service as a backhaul carrier for ensuring faster deployment as well as a reduction in CAPEX and OPEX for carrying calls. However, considering the quantum of exorbitant fees payable for the transponder capacity, NOCC Charges, and formula-based WPC spectrum charges, provision of satellite backhaul services to mobile operators under the NLD/ Access Authorization License does not make a viable business case.

The VSAT operators already have large deployments with provisioned capacities. Provision of backhaul connectivity for mobile services if allowed to the VSAT operators will result in an immediate proliferation of this media in the remote areas considering the vast deployment and reasonable WPC spectrum charges. **The commercial VSAT CUG service provider should, therefore, be permitted to provide backhaul connectivity for mobile services.**

Further, for ensuring parity between the provision of the same services under different licenses, the WPC spectrum charges payable under NLD/ Access Authorization license, based on the prescribed formula, should also be revised downwards and made comparable to that payable under the VSAT license.

The VSAT CUG service providers are allowed to provide internet to the end customers provided they have internet license / UL (“ISP Authorization”). We, therefore, are of the view that the VSAT CUG service providers can provide internet connectivity to an ISP deploying Wi-Fi hotspots. Hence, there is no relevant requirement to allow VSAT operators to provide bare backhaul capacity to Wifi hotspot providers.

Given the submissions above, we suggest that **the scope of Commercial VSAT CUG Service Authorization should be enhanced under both Unified License and UL (VNO) License to enable the provision of the backhaul connectivity for mobile services only.**

Q3. Should the licensee having authorization for both Commercial VSAT CUG and NLD services be allowed to share VSAT Hub & VSAT terminals for the purpose of providing authorized services? Please justify your answer.

Bharti Airtel's Response:

Yes, we agree that the licensee having authorization for both Commercial VSAT CUG and NLD services should be allowed to share VSAT Hub & VSAT terminals to provide authorized services.

The new generation Satellite Baseband & RF Systems are Modular and capable of supporting multiple network segments that enable synergizing resources for effective utilization in terms of equipment duplication. Sharing of VSAT Hub and VSAT terminals between VSAT CUG and NLD services would entail a reduction of CAPEX and OPEX for the installation. This sharing would additionally lead to optimum utilization of infrastructure, resulting in a decrease in costs borne by the end-users. Sharing of VSAT Hub and VSAT terminal shall also lead to a reduction in the time required to build a network using the existing VSAT CUG Infrastructure.

Presently, in the case of HTS, the Satellite Gateway Stations are set-up by the Satellite operators and shared by VSAT CUG or NLD service providers. Similarly, VSAT CUG & NLD Service Providers should also be allowed to share the VSAT HUB and VSAT Terminals to provide the services, thereby reducing the cost and ensuring optimum utilization.

Aside from the above, this shall also result in the reduction of Satellite Communication Equipment imports, which in turn will reduce Foreign Exchange outflow.

Additionally, the present restriction that the VSAT Hub is to be located at the MSC situated in the same service area should be done away with. This restriction becomes more pertinent in the light of the present scenario where DoT has issued guidelines whereby the MSC can be situated outside the service area as well. The provisions concerning VSAT Hub location thus need to be similarly aligned.

Q4. Whether the licensee should be permitted to share its own active and passive infrastructure for providing various services authorized to it under the other service authorization of UL and/ or other licenses?

[In other words, whether Clause 4.3 of Chapter -VIII (Access Service authorization) be made applicable for all other authorizations also] Is there a need to impose any restrictions? Please enumerate and justify your answer.

Bharti Airtel's Response:

Yes, we believe that the licensee should be permitted to share its active and passive infrastructure for providing services authorized to it under the other service authorization of UL and/or other licenses. In light of the same, we propose that Clause 4.3 of Chapter VIII (Access Service Authorization) should be extended to all other authorizations also.

We believe that permitting the above shall enable efficient utilization of infrastructure in a way that the active and passive infrastructure is used under one license and can be utilized in a

better and more efficient manner to facilitate the provision of services provided for under other authorizations.

Q5. Whether formula-based spectrum charging mechanism for VSAT services in NLD/Access license is adequate and appropriate? If not, whether spectrum charging for VSAT services in NLD/Access service license should be made on AGR basis instead of the existing formula basis mechanism? Whether it will require accounting/revenue separation for Satellite based VSAT services under NLD/Access license? Please elaborate and provide proper justification.

Bharti Airtel's Response:

As per the industry experience, the formula-based spectrum charging mechanism for VSAT services in NLD/ Access license is inadequate and inappropriate as it involves very complex calculation methodologies with exorbitant charges. Equitable charges should be applicable on provision of similar services under different licenses.

The calculation of WPC spectrum charges carried out by the operators does not match with the DoT/ WPC order dated 22nd March 2012 due to other factors applied by the WPC Wing, which aren't justified. For the aforesaid reasons, TRAI in its recommendations on "Captive VSAT CUG Policy Issues" dated 18th July 2017 has recommended that:

(ii) There is no justification for charging additional 25% amount as reuse factor for number of VSATs more than the number of carriers. These charges may be eliminated for calculation of Royalty charges. Accordingly, DoT may issue necessary clarification in this regard.

However, even as on date, the calculation methodology has not been revised by WPC/ DoT.

Further, the new generation low-cost MFTDMA VSAT (which replaces traditional & expensive SCPC VSATs) based Cellular Backhauled supports 500 Mbps outbound/inbound bandwidth sharing over multiple sites to use the bandwidth effectively. If the formula-based spectrum charging is applied for MFTDMA based system with a greater number of sites; it will lead to exorbitant charges making the entire MFTDMA VSAT solution economically unattractive. In some cases, the formula-based spectrum charges will be higher than the satellite charges depending on the number of sites, thus making the solution redundant due to economic non-viability.

For the aforesaid reasons, we are of the firm view that formula based WPC spectrum charges for satellite services provided using NLD/ Access Authorization may be done away with.

Also, to have equity with the spectrum charges to be paid under different licenses, we believe that the **WPC spectrum charges for VSAT services in NLD/ Access License be charged at a percentage of AGR acquired from the provision of VSAT services.**

Further, since the NLD/ UASL provides various other services like NLD calls, mobile, fixed-line, etc., only be the AGR from the provision of VSAT services should be considered as the applicable AGR for the imposition of spectrum usage charge. Any stipulation to impose spectrum charges as a percentage of AGR on the entire license revenue of NLD/ Access Authorization will make provision of VSAT services costly, thereby disincentivizing the same. Hence, the spectrum charges as a percentage of AGR should only be applied to AGR acquired from the provision of VSAT services. For ascertaining the same, we strongly recommend accounting/ revenue separation for Satellite-based VSAT services under the NLD/Access license.

Q6. Please give your comments on any related matter not covered in this Consultation paper.

Bharti Airtel's Response:

The following additional issues are submitted for the kind consideration of Authority:

1. WPC Spectrum Charges paid by VSAT operators:

- Currently, the VSAT operator is required to pay 3-4% of AGR as SUC, depending upon the data rate.
- TRAI vide its recommendations on 'Spectrum Usage Charges and Presumptive Adjusted Gross Revenue for Internet Service Providers and Commercial Very Small Aperture Terminal Service Providers' dated 7th March 2017 has recommended:

'4.7 The Authority recommends that the SUC should not be more than 1% of AGR irrespective of the data rate

- TRAI may seek implementation of the said recommendations by DoT/ WPC immediately.

2. NOCC Charges

- The payment towards NOCC, which is being paid at per transponder per annum basis should be revisited and be realistically determined by considering the actual colocation and infrastructure costs.

3. Ease of Doing Business:

- At present, the multi-agency clearance (NOCC Frequency Clearance, WPC Frequency Allocation, NOCC Uplink Permission & WPC Operating License) itself takes 60-90 days while the Satellite Charges are applicable from the date of allocation. The effective utilization commences only after the clearances from NOCC and WPC are obtained.
- Obtaining Regulatory clearances for uplinking the carriers by a Service Provider typically consumes a minimum of 12 weeks as mentioned below. The same needs to be simplified to a single-window clearance from ISRO to protect the business interests of Service Providers and the country.

1. Allocation of capacity from ISRO	Day 1
2. NOCC frequency clearance	3 weeks
3. WPC frequency plan approval	3 weeks
4. WPC payment processing	2 weeks
5. NOCC uplink permission	2 weeks
6. WPC uplink permission.	2 weeks
Total	12 weeks

Simplified time-bound approval process for new product/solution evaluation is required.

- TRAI in its recommendations dated 7th March 2017 recommended the following:
 - 4.8 *The Authority is of the view that DoT may take up with DoS to evolve a system where the VSAT licensees are not made to run from pillar to post to get their services activated. The clock should start from the day the bandwidth is allotted by DoS and DoT should allot frequency within 3 months of allotment of spectrum by DoS. The two departments may also explore the possibility of implementing an on-line application for automating the whole process to bring in transparency. (Para 3.16)*
 - 4.9 *The Authority recommends that the DoT should make arrangement to accept online payment of financial levies /dues such as LF, SUC and other fees that are paid by the licensees for obtaining licence/ approval/ clearance / issue of NOC from DoT. (Para 3.18)*
 - 4.10 *The Authority recommends that DoT should put in place a comprehensive, integrated on-line system that acts as a single window clearance for the allocation/clearances/ issuance for approval/ clearance / issue of NOC and other permissions to the licensees. (Para 3.20)*

- Further recommendations on the issue were part of TRAI's recommendations dated 18th July 2017 which stated the following:
 - 3.4 *The Authority recommends that:*
 - (i) *Para 3.16, 3.18 and 3.20 of the recommendations 'Spectrum Usage Charges and Presumptive Adjusted Gross Revenue for Internet Service Providers and Commercial Very Small Aperture Terminal Service Providers' dated 7th March, 2017 on streamlining the processes shall apply to Captive VSAT licensees too.*
 - (ii) *Further, in case delay in allotment of corresponding ground segment frequency by WPC extends beyond 3 months from the date of allotment of space segment by DoS, the space segment charges payable to DoS may be borne by DoT till the time allocations/clearances by WPC/DoT/NOCC are completed.*
 - (iii) *No late fee may be charged from the licensee in case there is no pendency of submission of requisite documents, fee etc. by the licensee and delay in allocation/approval is due to licensor's internal matters.*
 - (iv) *Procedure for augmentation of bandwidth may be at par with those of Commercial VSAT, NLD, ILD licensees. Augmentation should be cleared at the level of DoT/WPC only (not at the level of Apex Committee).*
 - (v) *Validity of WOL for Captive VSAT licensee may be for a period of 5 years at a time, instead of annual at present subject to validity of the license.*

*(vi) Period of agreement with DoS for space segment may be for minimum three years unless licensee desires for shorter duration and subject to validity of license.
(Para 2.41)*

- At present, the said recommendations are yet to be implemented by DoT/ WPC. **TRAI is requested that similar provisions be made applicable in case of provision of satellite services by operators with VSAT/ NLD/ Access Authorization. We also recommend that the expeditious implementation of these guidelines be sought from DoT/WPC.**
- We also recommend that the following additional points be considered to enable ease of doing business in Satellite communication sector:
 - The Satellite Service Provider should be permitted to uplink the carrier as soon as the allocation from ISRO based on the SACFA clearance is done.
 - NOCC and WPC clearance of satellite spectrum to end-users should be done away with as this frequency has already allocated to ISRO by DOT.
 - Presently, satellite spectrum-related charges are made to ISRO, NOCC, and WPC. It is submitted that in the light of the above, a single-window payment system may be implemented to simplify the charging mechanism.
 - Single-window Uplink/Frequency clearance, preferably by the Satellite Provider (ISRO/ Antrix/ NSIL), rather than the present method of multi-agency clearance.
 - Any issue related to the Satellite spectrum (Interference/ unauthorized use) has to be dealt with by the Satellite Operator as followed globally.
 - Import License for Radio equipment should be based on "Type Approval" rather than obtaining an approval on every occasion for similar equipment.
 - Antenna Uplink permission (MPVT) should be with the Satellite Operator.
 - Antenna size and RF size to be decided by the Service Provider should be based on the link budget approval from the Satellite Operator.
 - Considering the long delay in obtaining SACFA-WOL, VSAT Uplink should be permitted based on SACFA filing itself.