VIL/PB/RCA/2023/014

June 21, 2023

Advisor (Networks, Spectrum and Licensing)
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
Jawaharlal Nehru Marg (Old Minto Road),
New Delhi – 110002

Kind Attn: Shri Akhilesh Kumar Trivedi

Subject: Counter-comments on the TRAI's Consultation Paper on "Assignment of Spectrum for Space-based Communication Services" dated April 06, 2023

Dear Sir,

This is in reference to the TRAI's Consultation Paper on "Assignment of Spectrum for Space-based Communication Services" issued on April 06, 2023.

In furtherance to the comments submitted by us vide our letter no. VIL/P&O/TRAI/2023/064 dated June 01, 2023, kindly find enclosed herewith counter-comments from Vodafone Idea Limited on the above-said consultation paper.

We hope our submission will merit your kind consideration please.

Thanking you,

Yours sincerely,

For **Vodafone Idea Limited**

P. Balaji
Chief Regulatory & Corporate Affairs Officer

Enclosed: As stated above

VIL Counter Comments to the TRAI Consultation Paper on "Assignment of Spectrum for Space-based Communication Services"

This is with reference to the TRAI Consultation Paper on "Assignment of Spectrum for Space-based Communication Services" dated 06.04.2023 and the comments from various stakeholders on this paper, as uploaded on TRAI's website.

In this regard, we would like to submit our counter comments to certain comments made by few stakeholders. Our counter-comments are given below for kind consideration of the Authority.

1. **We outrightly disagree with the comments of various stakeholders for space-based communication services (SBCS) on assignment of spectrum to be carried out on administrative basis.**

2. We reiterate following basic tenets should be observed for allocation of spectrum, to maintain level playing field, competitiveness of terrestrial players in long term and to ensure consistency in the licensing and regulatory norms:

   a. **Any spectrum being put up for fresh assignments, should be done through a fair and transparent auction, without any separate treatment for any service.**

   b. **The spectrum for space-based communication services, should not be fragmented and be auctioned on a LSA wise basis only.**

   c. **Model#1 i.e. exclusive spectrum assignment should be implemented for assignment of spectrum for space based communication services (irrespective of the spectrum bands), similar to the auction of the IMT spectrum.**

   d. **Ku and Ka band should be considered under this consultative process for space-based communication services at this stage, after duly excluding the frequency ranges along with sufficient guard bands in mmWave bands, E&V bands, MWA-MWB bands as well as C-band (4 GHz - 8 GHz), which are being utilized or reserved for IMT services or is in evolution path of IMT services.**

3. **'Primary aim of SBCS is for Rural/remote areas' – comments of certain stakeholders:**

a. Certain stakeholders who are involved in providing space-based communication services, have submitted that their services will primarily focus upon improving connectivity in rural and remote areas. Extract of comments provided by some of the stakeholders are as below:

> *"the primary goal is to bridge the digital divide by catering to populations that are currently underserved by traditional terrestrial broadband solutions, including rural and remote areas with limited or no access to high-speed internet."*

> *"satellite communications providers play a critical role in providing connectivity to customers, particularly in remote and underserved areas."*

> *"Satellite broadcasting and communication are the most powerful tools for to connect the unconnected and serve the underserved population of rural, remote and difficult-to reach areas, as still more than 30% population of the country is not having meaningful broadband internet connectivity."*

> *"The space sector plays a crucial role in the infrastructure, communications, defence, and security of a nation. It holds great potential in connecting rural and unconnected users, as well as benefiting various socioeconomic sectors like disaster management, agriculture, healthcare, education, transportation, and energy."*

b. Here, it is highly imperative to understand the misrepresentation being made for seeking administrative allocation of spectrum as such, there is a need to properly understand their business plans.

c. **Tariffs of SBCS:** We understand that the cost to avail such space-based communication services across various countries, does not commensurate with the usage and spending patterns of users in Indian rural and remote areas. Following are charges being levied by one such SBCS provider[1] in some of the countries:

[1] https://www.starlink.com/

Country	Cost
London, UK	£75/month for service and £449 for hardware
Spain	€65/month for service and €300 for hardware
Germany	€65/month for service and €300 for hardware
United States	$120/month for service and $599 for hardware

d. Even if such prices are normalized to Indian context, it still indicate that the services will not be targeted for providing connectivity to users in Indian rural and remote areas but, primarily in the urban/towns/cities and commercial areas of the country.

e. Also, the consumers in rural/remote areas face income disparities, and many of them generally use devices (hardware) of older technology, with frequency to upgrade devices to newer technologies much slower than the consumers in urban areas, towns and cities.

f. So, while the connectivity and coverage may come to rural/remote areas from SBCS but, there would be hardly any realized benefits to the users in rural/remote areas.

g. **In our view, the SBCS would be pushed to all parts of a LSA/Pan-India with primary push to users in the urban and commercial areas of the country and hence, it will compete directly with the terrestrial communication providers.**

h. **Spectrum assignment to one set of communication service providers through auction and to other set of communication service providers through administrative assignment, will not be consistent with the principles followed till now and will certainly result into non-level playing field as well as huge loss to the national exchequer.**

i. **Therefore, we strongly urge the Authority that all spectrum assignments for communication service providers should be through a fair and transparent auction, irrespective of license/authorization/service.**

2. Spectrum and USO fund:

a. For terrestrial players, spectrum and USO levy have been very big cost items. Spectrum is to be purchased through fair and transparent auctions which results into higher purchase price as compared to administrative pricing, and at the same time put forth uncertainty of purchasing the same in future for business continuity.

b. Over a period of last 13 years, there have been 8 spectrum auctions, where the TSPs have cumulatively spent more than Rs 5500 bn[2] for spectrum purchase thereby, also making it a huge revenue for national exchequer.

c. Had spectrum to terrestrial player been given at administrative pricing i.e. far lower than that of auction, it would have provided availability of additional capital to the terrestrial players, and it would have led to the terrestrial players covering all geographical area including said rural/remote areas with reliable and quality connectivity and mobile broadband technology.

d. Similarly, 5% of the AGR is levied on the terrestrial players for Universal Service obligation, which has led to an amount of more than Rs. 1300 bn[3] to the Government.

e. If these two major cost items are taken care of, the terrestrial players would be better placed to provide reliable and quality mobile broadband connectivity in the remote and rural areas of the country, as compared to the SBCS. It is pertinent to mention that connectivity from terrestrial players would not have issues in bad weather, obstructions from buildings/trees etc and would also be far better placed for scaling up capacity and speed.

f. **Therefore, we again strongly recommend that the spectrum to SBCS should be allocated only through a fair and transparent auction, and on a LSA basis.**

g. **If providing connectivity to rural/remote areas is a reason to recommend administrative pricing and allocation, then we strongly urge the Authority for recommending waiving spectrum charges and 5% USO being levied from terrestrial access players, in lieu of connectivity in remote/rural areas of the country, as a level playing field.**

3. Spectrum for 5G:

a. As we all know, the deployment and uptake of 5G is critical for various social-economic benefits expected. The positive rub-off for country like India will be, in industries like handset (where smartphone and 5G phone sale will drive industry revenue), content (OTT players selling more on fast wireless broadband networks), manufacturing (Make in India for the world), e-Commerce and in delivery of enhanced

[2] https://dot.gov.in/sites/default/files/auction_analysis.pdf, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1712305, https://www.pib.gov.in/PressReleseDetailm.aspx?PRID=1847279

[3] https://usof.gov.in/fund-status

services like entertainment, gaming, InsurTech, EdTech AgriTech, FinTech, HealthTech, delivery of Government Services, Smart Cities, Smart Governance etc.

b. 5G technology would drive benefits in terms of economic growth, revenue for the Government through GST collections from various other sectors and employment growth.

c. It is well established from international as well as domestic scenarios that TSP(s) have bought spectrum for various services, in same and different bands during multiple auctions (almost over a period of 10 years), for technology evolution and capacity augmentation. **Hence, the certainty of availability of spectrum in prime bands is a must to be assured for terrestrial networks over a longer time period.**

d. Also, we would like to highlight that following spectrum bands which are crucial for deployment of 5G networks, have already been allocated under auction and very less quantity is left for allocation to existing entities, leave aside for new licensees.

   i. 700 MHz band: As mentioned by TRAI in one of its Consultation paper, 45 MHz (paired) spectrum can be utilized in this band. However, 10 MHz (paired) spectrum has been earmarked for government use and 5 MHz (paired) spectrum has been assigned to Indian Railways. In addition to this, 5 MHz was allocated to NCRTC and 10 MHz was allotted through auction held in 2022. 10 MHz has recently been decided to be allocated to BSNL[4]. Hence, only 5 MHz is remaining in this band.

   ii. C-band spectrum: In C-band, which is crucial in providing a balance of high throughput and good coverage, a total of 370 MHz (3300 MHz-3670 MHz) was available. Out of this, 250 MHz has been assigned in 14 circles and 280 MHz has been assigned in 8 circles based on the 2022 spectrum auction. Further, 70 MHz has been decided to be allocated to BSNL[5]. Hence, only 50 MHz is left in 14 circles and 20 MHz is left in 8 circles in this band.

   iii. mmWave band: This band, which has high throughput but very short range has already been exhausted almost to its total quantum, basis auction in July, 2022 and through relief package for BSNL in almost all of the LSAs. Details of the same are listed in the table below:

[4] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1930444
[5] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1930444

Quantum of Spectrum Allocated in mmWave band as % to total made available of 3250 MHz	Number of LSAs
80% - 85%	6
86% - 90%	7
91% -95%	7
96% -100%	2

**The above calculation is based on 2850 MHz which was put for auction and 400 MHz reserved for BSNL. It also takes into account recent cabinet decision of relief package for BSNL which includes 800 MHz in 21 LSAs and 650 MHz in 1 LSA.*

e. Further, the mobile backhaul is an integral part of the network which connects cell site BTSs with BSCs. In India, currently 13 GHz (12.750-13.250 GHz), 15 GHz (14.5-15.5 GHz), 18 GHz (17.7-19.7 GHz) and 21 GHz (21.2-23.6 GHz) bands are used for the assignment of frequencies for MWA carriers. In India, currently 6 GHz (5.925-6.425 GHz) and 7 GHz (7.425-7.725 GHz) bands are used for frequency assignment for MWB carriers. Thus, the mmWave band and E&V bands are very important and inseparable part of true 5G journey, as has been seen globally.

f. **It is pertinent to note that slowly and gradually once 5G services are launched across the country, the spectrum requirements will also increase. Considering all of the spectrum allocations above, it is pertinent to note that the remaining spectrum will be inadequate for terrestrial networks to rollout advanced technologies.**

g. Furthermore, more than 95% of the broadband subscribers in the country are presently using the mobile networks for their broadband requirement and shortage of spectrum availability for IMT and associated backhaul services will adversely impact the broadband targets and throughput experience as envisioned in our National broadband plan.

h. **Hence, any sort of reduction in quantity of spectrum available in an auction or to be made available in future auctions for 5G/IMT services, will jeopardize the success story of 5G services in India and thus, severely impacting the growth of economy and GDP of the nation.**

i. **We believe that prior to assigning any spectrum to any entity, there is a critical need to define the long term spectrum roadmap, for at least a period for 10 years. This roadmap will help the industry in gaining a better understanding of the availability of the spectrum and target its business plans, customer acquisition and future spectrum management activities in the most optimum way, including identification of potential new spectrum sharing opportunities as well.**

j. **Considering all above, we strongly urge that the frequency ranges along with sufficient guard bands in mmWave bands, E&V bands, MWA-MWB bands as well as C-band (4 GHz - 8 GHz) should be reserved for terrestrial networks and excluded from the bands being considered for space-based communication services.**

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