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TRAI/FY23-24/21
Dated: 22.06.2023

To,
Shri Akhilesh Kumar Trivedi,
Advisor (Network, Spectrum and Licensing)
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
JawaharLal Nehru Marg,
New Delhi – 110 002.

Subject: Counter comments to Consultation Paper on "Assignment of Spectrum for Space-based Communication Services"

Dear Sir,

This is in continuation to our response to TRAI's Consultation Paper on "Assignment of Spectrum for Space-based Communication Services" dated 06.04.2023 (CP No. 6/2023).

In this regard, please find enclosed our counter comments for your kind consideration.

Thanking You,

Yours' Sincerely,
For Bharti Airtel Limited

Manoj Misra
Vice President- Economic Regulation

Encl: a.a

Counter Comments to TRAI Consultation on
Assignment of Spectrum for Space-based Communication Services

Executive Summary

Airtel thanks the Authority for the opportunity to provide its counter comments to the responses received on the consultation paper ("CP") on *"Assignment of Spectrum for Space-based Communication Services"*.

At the outset, we submit that these counter comments are extension of the arguments already presented by us in the main response to the CP. For sake of brevity, we firstly re-summarize our key submissions in context of firm belief that **auctioning satellite spectrum is neither reasonable nor fair, because:**

1. Satellite spectrum is a shared resource, and globally, it is assigned on an administrative basis.
2. Auctioning spectrum can distort the utility of satellite spectrum.
3. Non-exclusivity and auctions do not go together.
4. Auctioning spectrum and then creating a sharing mechanism is self-defeating.
5. Auctioning satellite spectrum can severely impact wider socio-economic welfare.
6. India will be left at a competitive disadvantage versus global / other countries if it is auctioned.
7. Auctioning could result in a persistent digital divide.
8. The Supreme Court Judgment didn't mandate auction as the sole method in every case.
9. The propensity to pay should be proportionate to the revenue generation ability of a segment.
10. Auctioning will create multivariate scenarios and too many complexities, making the exercise infeasible.
11. Auctioning spectrum will have a detrimental impact on startups and preempt competition.

We also reiterate our key recommendations from our main response:

- Satellite communication has the potential to bridge the digital divide by covering hitherto uncovered, remote areas, while serving the country's disaster, maritime and defence needs.

- Allocation of spectrum for space-based communications should complement the vision embedded in the India Space Policy 2023 & encourage private sector participation.

- India has followed the international best practices for allocation of terrestrial spectrum that has held it in good stead for over a decade now. By following similar best practice as is applicable for Space based communications viz. non-exclusive, administrative allocation of satellite spectrum, India can immensely benefit from satellite technology.

- The spectrum for space-based communications should continue to be assigned on an administrative basis, in line with international practice, consistent with ITU rules & regulations. The period of spectrum should be co-terminus with the period of license.

- In the spirit of Space Reforms, no charges for spectrum usage be levied. However, if the

Authority still considers imposing a spectrum usage charge, then it should be within 0.5%-1% of AGR at the maximum, to recover the cost of administering the spectrum.

- The eligibility criterion for getting spectrum for space-based communication should follow the global ITU priority, holding a valid license, and other necessary techno-commercial aspects (e.g., a constellation ready to provide service).

Now, in the following sections, **we submit our counter comments on key points raised by some of the stakeholders favoring the auctions.**

I. International Examples of Auctions

Some of the stakeholders have given the examples of Saudi Arabia and Thailand as countries that have successfully auctioned satellite spectrum.

Airtel Counter Response:

None of the countries mentioned above have auctioned frequencies or spectrum related to NGSO-based satellite communications.

Saudi Arabia:

The argument that the auctioning of MSS (Mobile Satellite Service) spectrum in Saudi Arabia justifies a similar process for all satellite spectrum significantly oversimplifies the complexities and distinctiveness of satellite services such as FSS and BSS. They serve different purposes, have unique operational characteristics and require divergent approaches for spectrum allocation.

MSS is designed for mobile platforms such as vehicles and handheld devices. It generally operates on a point-to-multipoint basis. Unlike FSS, which can have its spectrum efficiently shared among multiple operators, MSS often necessitates exclusive access to spectrum to ensure that there is no interference in operations. The nature of the services and the types of antennas used (omnidirectional) make spectrum sharing between MSS operators or with other services significantly more challenging.

In contrast, FSS and BSS refer to satellite systems that provide links between specific, fixed land locations. Multiple FSS operators, GSO or NGSO can reuse the same frequency ranges and share the spectrum, thanks to their use of highly directional antennas and sophisticated coordination mechanisms. Given the differences in technical characteristics and service provision, the justifications for the exclusive access of MSS bands cannot be seamlessly applied to FSS and BSS bands.

Making out this single instance of MSS spectrum auctioning in Saudi Arabia to be a universal model is disingenuous. It overlooks the broader international trend against spectrum auctions, especially for satellite services. It is important to recognise that what works in one country or for one type of

satellite service might not be the best solution elsewhere or for other services. Moreover, CITC has made it very clear that satellite bands were out of the discussion for auctions and were protected. *"Continued guaranteed and protected access to all existing satellite bands for current and future uses, which include L, C, Ku and Ka bands..."*

Relying on Saudi Arabia single instance example as an argument in support of auctions is an attempt to create chimeras and waste the precious time of the Authority. In essence, proposing to auction FSS spectrum based on the Saudi Arabian auction of MSS spectrum overlooks the unique operational and technical differences between these services. It also disregards the global norm of coordinating and sharing FSS spectrum, which has proven to efficiently maximise spectrum usage and serve public interest effectively.

Thailand:

National Broadcasting and Telecommunications Commission (NBTC), Thailand, conducted an auction for assigning **satellite orbit in a package** on January 15, 2023.[1]

Five packages were put into auction, as follows:

Package	Slots	Winner – Final bidding price
Set 1	50.5°E/51°E	No bid
Set 2	78.5°E	Space tech Innovation Co. Ltd.
Set 3	119.5°E/120°E	Space tech Innovation Co. Ltd.
Set 4	126°E	National Telecommunication Public Co. Ltd.
Set 4	142°E	No bid

It is quite evident that what was auctioned here was the orbital slot and not the spectrum for satellite services. An orbital slot refers to the specific location in the geostationary orbit where a satellite is stationed, while spectrum refers to the range of radio frequencies that satellites use to transmit and receive signals. While the two are related in the sense that a satellite operator needs access to both to operate effectively, they serve different functions and are managed and regulated in different ways.

Moreover, the auctioning of an orbital slot doesn't necessarily mean the exclusive right to use a certain range of frequencies (spectrum) is granted as well. The same spectrum can be shared among different satellite operators with satellites in different orbital slots. In this particular case in Thailand, although some frequencies were associated with the orbital slot been auctioned, the same frequency is still accessible to other operators including OneWeb, and GSO and NGSO share the same frequency band without causing harmful interference to each other.

Therefore, as stated in our response to the Consultation Paper as well, an auction of orbital slots – such as the one conducted in Thailand – must not be confused with the auction of spectrum for

[1] https://www.nbtc.go.th/News/Information/58245.aspx?lang=th-th

satellite services, which is being considered in India and is the subject matter of the present consultation process.

It is also pertinent to mention here that while some countries have attempted to auction orbital slots, it is not the norm. Indeed, the practice has encountered significant issues which have led countries like the US and Mexico to discontinue it.

Republic of Korea:

The assertion that the Ministry of Science and ICT (MSIT) in June 2018 assigned the 26.5GHz-28.9GHz range to three national mobile operators is correct but only tells part of the story. A key detail that is missing is that in November 2022, the MSIT finished assessing the fulfillment of 5G spectrum license obligation conditions. Despite the government's concerted efforts over four years, the carrier operators exhibited little enthusiasm towards the expansion of 28 GHz networks. The evaluators expressed significant concerns regarding the delay in delivering future-oriented services that support 28 GHz to consumers and the stagnated growth of the industrial ecosystem. Consequently, the MSIT revoked two operators' license rights of the 28 GHz spectrum.[2]

The third operator was granted an additional six months to meet the network building requirement. However, it, too, failed to meet these expectations, resulting in the revocation of its license on May 12.[3] In essence, this highlights the challenges and complexities associated with the deployment and usage of the 28 GHz spectrum by one of the early adopters of the 28GHz mmWave, a crucial aspect neglected in the proponents' submissions.

Thus, in conclusion, it is submitted that nowhere across the globe – whether in Saudi Arabia/Thailand, as mentioned by some stakeholders, or in any other country – has any government auctioned frequencies or spectrum to be used dedicatedly for NGSO-based satellite services.

II. Apex Court's Stance on Auctions – 2G Judgment

Some stakeholders have relied on the 2G Judgment to argue that the Hon'ble Supreme Court has declared auction as the only method of spectrum assignment in India.

Airtel Counter Response:

As explained in our response to the Consultation Paper as well, the reliance placed on the 2G Judgment in the current scenario is wholly flawed and entirely untenable. The 2G Judgment was made with regard to the arbitrary grant of terrestrial spectrum for exclusive usage. However, spectrum used for space-based communication is non-exclusive by its very nature and, hence, the 2G Judgment cannot be extrapolated to rule on satellite spectrum.

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[2] https://www.msit.go.kr/eng/bbs/view.do?sCode=eng&mId=4&mPid=2&pageIndex=&bbsSeqNo=42&nttSeqNo=753&searchOpt=ALL&searchTxt=#

[3] https://telecoms.com/521670/south-korea-cancels-skts-28-ghz-5g-licence/

Even in the 2G Judgment, the focus of the Court was not on auctions, but on the principles of fairness, transparency and accountability under Article 14 of the Constitution of India. Given the arbitrary executive action through which the 2G spectrum was allocated on FCFS basis, the Court held that auctions would 'perhaps' have been the best method for distribution of 2G spectrum with maximised returns for the country. The relevant extracts from the 2G Judgment are reproduced below:

> *"In our view, **a duly publicised auction conducted fairly and impartially is perhaps the best method** for discharging this burden and the methods like first-come-first-served when used for alienation of natural resources/public property are likely to be misused by unscrupulous people who are only interested in garnering maximum financial benefit and have no respect for the constitutional ethos and values."*

It is to be noted that a larger bench of the Hon'ble Supreme Court was requested, vide Special Reference No. 1 of 2012 (**"Presidential Reference"**), to provide certain clarifications about the 2G Judgment. A specific question about whether the only permissible method for disposal of all natural resources across all sectors and in all circumstances is through auctions was also raised.

It has been amply clarified in the judgement rendered by the larger Bench that the 2G Judgment neither extends to allocation of all natural resources in general nor prohibits administrative allocation of natural resources, and that common good is the sole guiding principle under Article 39(b) of the Constitution of India for the distribution of natural resources. The Court relied upon the usage of the term 'perhaps' in the 2G Judgment to suggest that the recommendation of an auction was never intended to be an absolute or blanket statement applicable across all natural resources. The relevant extracts from the Presidential Reference Judgement are as follows:

> *"We are conscious that a judgment is not to be read as a statute, but at the same time, we cannot be oblivious to the fact that when it is argued with vehemence that the judgment lays down auction as a constitutional principle, the word "perhaps" gains significance. This suggests that **the recommendation of auction for alienation of natural resources was never intended to be taken as an absolute or blanket statement applicable across all natural resources, but simply a conclusion made at first blush over the attractiveness of a method like auction in disposal of natural resources**. The choice of the word 'perhaps' suggests that the learned Judges considered situations requiring a method other than auction as conceivable and desirable."*

> *"We find that the 2G Case does not even consider a plethora of laws and judgments that prescribe methods, other than auction, for dispensation of natural resources; something that it would have done, in case, it intended to make an assertion as wide as applying auction to all natural resources."*

The Hon'ble Supreme Court further stated that ***"Auction may be the best way of maximising revenue, but revenue maximisation may not always be the best way to serve public good"***. **In fact, the alienation/allocation of natural resources to the highest bidder *"at times, may run***

***counter to public good*".** Thus, assignment methodologies other than auctions may well be considered, especially where revenue maximisation is not the primary object of a policy of distribution and developmental considerations are more important.

Therefore, the Apex Court has held that alienation of natural resources is a policy decision – the means adopted for the same are executive prerogatives and, hence, have to be decided on a case-to-case basis. **There is no directive under the 2G judgement that natural resources can only be allocated through auctions.**

In addition to the 2G Judgement and the Presidential Reference Judgement dealing specifically with assignment of spectrum, there are multiple judgements of the Hon'ble Supreme Court in the context of other natural resources like petroleum, minerals, electric supply, etc. which have consistently held that the common good must be the deciding factor in cases of distribution of natural resources.

In a judgement dated 07.05.2010 passed in CA No. 4273 of 2010 titled "Reliance Natural Resources Ltd. v. Reliance Industries Ltd.", the Hon'ble Supreme Court, albeit in the context of natural gas, held that sovereignty over natural resources has to be exercised while keeping in mind a broad set of objectives that would together constitute national development. While revenue generation is one such objective, it is not the only one – timely utilisation of resources and universal access also need to be considered. The relevant extracts from the said judgement are reproduced below:

> *"The sale at the Delivery Point takes place when the people of India are still the owners of the natural gas and consequently they have the responsibility of ensuring that they exercise their permanent sovereignty, through their elected government, in order to achieve a* ***broad set of goals that constitute national development. While revenue generation is one part of those objectives, that cannot be the only objective of India. Timely utilization, by users spread across many sectors and across regions as the network of pipelines spreads and conservation are all necessary objectives to be kept in mind****."*

It is submitted that the criticality of SATCOM and the importance of universal coverage has been unequivocally recognised in both the Space Policy and the National Digital Communications Policy. Thus, the case of space-based communication services falls squarely within the broader objectives of contributing to national development; and mere revenue maximisation can never match the benefits that would accrue from encouraging SATCOM in the country. This gains further significance in the context that expression through the internet and carrying on trade via the internet have been held to be intrinsic parts of the fundamental right to free speech under Article 19(1)(a) and freedom of trade and business under Article 19(1)(g), respectively.[4]

Furthermore, as highlighted by one of the stakeholders (Amazon/Kuiper), the legal framework of India recognises methods other than auctions for allocation of natural resources. The Mines and Minerals (Regulation and Development) Act, 1957, the Biological Diversity Act, 2002 are examples of the same. Even the Hon'ble Supreme Court, in the Presidential Reference Judgement, observed

[4] Judgment dated 10.01.2020 passed in WP(C) No. 1031 of 2019 titled as "Anuradha Bhasin v. UoI & Ors."

that if the 2G Judgement were to be read as recommending holding auctions as the only permissible means of disposal of all natural resources, "*it would lead to the quashing of a large number of laws that prescribe methods other than auction, e.g., the MMRD Act*". The Telecom Bill issued by the DoT last year itself proposes administrative assignment of spectrum in case of satellite services. Thus, there is no basis for claiming auction as the only legally tenable method of spectrum assignment in India.

III. Non-Exclusive Nature of Satellite Spectrum:

Some of the stakeholders have claimed that exclusive assignment with band segmentation is necessary in case of spectrum for user links, in order to mitigate interference. Further, for gateway links, auction of entire band in specific gateway locations has been recommended. Some stakeholders have even called for a pan-India assignment of spectrum through auctions, for both user links and gateway links.

Airtel Counter Response:

The claim that sharing among satellite operators is unfeasible and that band segmentation is the only way to prevent interference demonstrates a lack of understanding of satellite technology and practical operational experience. This viewpoint is likely informed predominantly by experiences within the terrestrial mobile operation field, where the spectrum usage paradigm differs significantly. A holistic understanding of these diverse industries and the intricate nuances of their operation is essential to avoid misconceptions and facilitate informed decision-making.

Feasibility of Sharing of Satellite Spectrum:

The fact is, sharing of spectrum among satellite operators, is not just feasible, it is a proven practice in the industry, adhering to the ITU's framework for frequency coordination, including for LEO satellite operators like OneWeb. This sharing is accomplished through a meticulous combination of frequency, spatial and temporal coordination techniques, each contributing to the harmonious coexistence of multiple operators within the same frequency bands.

Satellite operators meticulously plan the satellite orbits, altitudes and inclinations, as well as the antenna pointing angles and power levels, to ensure that they can operate without causing harmful interference to each other. This allows multiple satellite operators, both GSO and NGSO, to operate within the same spectrum to their mutual advantage. Such coordinated sharing is based on a well-established process at the international level under the ITU and is rooted in real-world operational experiences.

Therefore, it is clear that sharing among satellite operators, including NGSO systems, is not just feasible but an integral part of the industry's operations. It is a complex task, but with the help of advanced technologies and the right regulatory framework, it is entirely feasible and practical. It is a harmonious symphony of technological elements that enables the shared and efficient use of spectrum in the satellite industry.

Gateway Links:

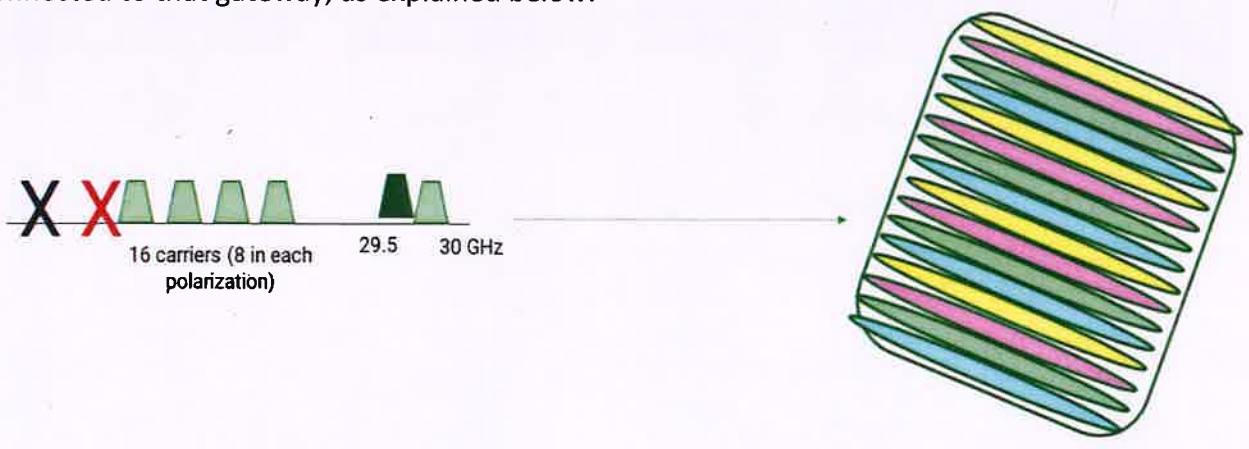
Unlike terrestrial spectrum, which involves deployment of lacs of towers/base stations, NGSO operators require only 2-4 gateways for covering the complete geographies of a country. Hence, comparing NGSO gateways with terrestrial networks, vis-à-vis spectrum assignment methodologies, would be like comparing apples with oranges.

A gateway is restricted in its area of deployment – spanning only a few kilometers. Hence, gateway frequencies are used at specific locations only, which makes them much more suitable for sharing among different satellite operators than user link spectrum. This eventually means that the assignment of spectrum via auctions for gateways on a pan-India basis would lead to practically only a single NGSO operator being able to deploy services, thus leading to a monopoly.

Further, any band segmentation or capping as only suggested by one of the stakeholders is without considering the dynamics of the space industry.

Technically, the gateway spectrum is only required in a few locations in India. Gateways need to operate in the Ka-band spectrum as per the transmission plan. Any segmentation or capping of bands for Gateways will lead to gaps in the complete coverage area of the country which technically means, 50-70% of transponder bandwidth rendered unusable as well as dark spots or coverage hole in coverage over certain parts of the country.

For example, the artificial restriction of using any 250MHz uplink channel or 125MHz downlink channel would prevent NGSO operators from serving 2 (one per pol) beams for every satellite connected to that gateway, as explained below:



The localised usage of frequencies allows for greater coordination and sharing of spectrum resources, promoting more efficient utilisation of the available frequencies. By allocating gateway spectrum administratively, regulators can facilitate the sharing of these resources, ensuring that operators are able to establish and maintain their gateway infrastructure at the designated locations. This approach maximises the efficient use of the spectrum.

Furthermore, auction processes for gateway spectrum may create contradictions within the existing regulatory requirements in India. Failure to obtain the necessary gateway spectrum

through an auction might result in satellite operators being unable to meet their regulatory obligations, leading to an artificial barrier to compliance.

Unfeasibility of Auctions:

A satellite operator requires access to four frequencies, i.e., to uplink and downlink each of them for the Satellite Earth Station Gateway (SESG) and the User Terminals (UT), respectively. The design will have to ensure the availability of this entire combination lest it render the use case for Satcom meaningless if players fail to obtain adequate spectrum in all required links for service provisioning. A coordinated result of this nature is unlikely to be achieved through an auction process.

Furthermore, every operator would have different requirements as to the quantum of spectrum in each of these four frequencies, depending on the kinds of services being offered by it. Thus, even bundling the four kinds of frequencies for auction would not be possible since any bundling would be uniform and not as per the different requirements of different operators. Hence, spectrum for both gateway and user links should be assigned through an administrative process only.

Moreover, transponders of a satellite are developed with the consideration of particular frequency bands and due to the very nature of deployment of various systems for providing space-based communication systems, it is borderline impossible to change the frequency requirement of particular transponders.

Before assignment of the satellite spectrum, most of the satellite service operators will have either put the satellite systems in space on their own or via ties with existing or established players. At the very least, they will have planned the systems that they are going to put to use. For this, significant financial investments will have been made and business requirements and use-cases along with the target demographic and type of customer decided.

After incurring such massive expenditure and carrying out over such varied areas, companies expect to deliver services to their specific customer bases without disruption and utilise their investments properly.

Now, if an auction is conducted for the assignment of satellite spectrum, the following issues would emerge:

- The satellite service provider may not get allocated the spectrum it needs to operate its systems due to the uncertain nature of auction. In such a case, the systems already deployed will be rendered useless and all the investments will be wasted. This does not bode well for the satellite-based communications industry as it is already in a nascent stage in India and conducting auctions could destroy the ecosystem even before it sees the first glimmers of development or maturity.

- The satellite service provider may get allocated only a portion of the spectrum band it needs. Using such fragmented spectrum is technologically inefficient and much less effective as it results in severely reduced capacity. The consequence of this is improper utilisation of resources including the communication systems as well as the spectrum.

Therefore, conducting a spectrum auction will result in the fragmentation of spectrum. In order to make the satellite communication industry in India flourish and utilise a precious natural resource like spectrum to its full extent, only administrative assignment makes sense.

Another important consideration is that satellites require access to entire bands in order to function efficiently and provide uninterrupted services to users. In such a scenario, the suggestions like having a 30% spectrum cap (refer to RJIL's response) make no sense at all.

IV. Involvement of ITU in the Assignment of Satellite Spectrum

*Some of the stakeholders have claimed that the role of the International Telecommunications Union (**"ITU"**) and its Radio Regulations (**"ITU-RR"**) is limited to interference mitigation and they do not impose any limitations on the methodology used for spectrum assignment within a country.*

Airtel Counter Response:

Satellite spectrum is governed by the ITU-RR. And it is also the ITU-RR that decides the parameters that form the basis for India's National Frequency Allocation Plan. This is why the resources are not deemed independent of orbit-parameters and planned service areas and are collectively referred to as "spectrum-orbit resources" by the ITU. In fact, Article 44 of the ITU Constitution actually states that these spectrum-orbit resources are to be shared among all countries and must be used in conformity with the parameters laid down by the ITU-RR.

Furthermore, under the co-ordination mechanism prescribed by the ITU-RR, ITU member countries have been able to ensure that each satellite operator operates efficiently within its allocated frequencies and geographies. This same mechanism has also been used to design the network topology and determine the deployment of satellites in orbit.

Additionally, since these satellite spectrum bands are a shared resource within the country and elsewhere, the arrangement is not constrained by the boundaries of any specific country. All countries and operators are able to use it at the same time and in a harmonious manner, unlike the terrestrial spectrum.

It is very important that all national administrations, when making decisions regarding satellite spectrum, take into account the international nature of this resource, even if they do not deem the ITU to have authority over member countries' methodology for spectrum assignment or pricing.

Additionally, it is for a country's administration to decide whether it intends to remain aligned with and follow the strict co-ordination and interference mitigation rules defined and agreed to by the

ITU for smooth outer-space operations or whether it would rather create a space war like situation that ends up restricting the already deployed constellations and rendering available capacity unusable in terms of serving customers in India.

Basically, the auctioning of satellite spectrum will be akin to asking each NGSO operator to deploy completely separate constellations to serve its customers in India. The fundamental question then would be whether the DoT and TRAI intend to support new players with already deployed satellite capacities to commence their operations in India to achieve the national goal of universal coverage.

We unequivocally submit that **national spectrum allocation, while a domestic process, must be conducted in harmony with the international framework provided by the ITU**. This will ensure smooth and efficient usage of radio-frequency spectrum on a global scale, preventing interference, and enabling the satellite industry to provide reliable services across borders. Ignoring this integral role of the ITU in the broader spectrum management framework is indicative of a limited understanding of the complexities of global radio-frequency spectrum management, especially in relation to the satellite industry.

V. Competition between Terrestrial and Satellite Services:

Some of the stakeholders have claimed that new satellites are capable of offering services which are comparable to that of terrestrial operators, and hence, "same service, same rules" should apply.

Airtel Counter Response:

The new Indian Space Policy 2023 envisages that strengthening satellite communication technologies in India will help provide coverage to the most remote and inaccessible areas in a geographically widespread country like India.

The satellite-based communication services ecosystem is inherently different from its terrestrial counterpart in terms of the shared nature of the spectrum, corresponding QoS parameters like throughput, latency etc. and the financial backing along with profit margins for both sectors. Moreover, the use cases of terrestrial and satellite broadband services also differ and are geared towards specific and different user bases.

Despite the significant growth of terrestrial services, many difficult terrains and hilly/remote areas still remain uncovered. Satellite-based communication services are best-placed to cater to such areas. Thus, in order to achieve universal coverage, satellite networks that complement IMT coverage are needed rather than networks that at this nascent stage are expected to substitute or compete with the massive terrestrial communications industry.

The difference between space spectrum and terrestrial spectrum was clearly laid out in our response to the Consultation Paper. SATCOM being on a completely different footing as compared to IMT services, the approaches and assumptions used in the case of terrestrial spectrum just

cannot be used in the case of satellite spectrum. Since Article 14 of the Indian Constitution requires equals to be treated the same and unequals to be treated differently, accordingly the same treatment to satellite and terrestrial spectrum would not only be irrational but also unconstitutional.

Thus, instead of "same service, same rules", spectrum policy needs to embrace the principle of "right rule for the right service" – taking into account the unique attributes, societal contributions and technical requirements of different services. This will enable a more balanced, fair, and forward-looking spectrum management strategy.

VI. Auction – Not the only process to ensure Fair Resource Allocation:

Some of the stakeholders have claimed that auction is the only option which involves a fair and transparent process of spectrum assignment.

Airtel Counter Response:

As a general principle, the economic logic of allowing market forces to play out freely is important. However, it does not always translate into positive outcomese for all stakeholders – while profits for businesses may be maximised, equitable access to consumers is not guaranteed. If such a situation were to arise in the context of satellite services, all the painstaking efforts of the Government for encouraging SATCOM would be rendered null and void. Since the major reason behind the Government's efforts is to ensure universal coverage as fast as possible, it would be wholly inimical to national interests if the free hand of the market were allowed to trump other important considerations here.

Even the Hon'ble Supreme Court has noted the possible negative effects of market mechanisms in case of access to natural resources, in its judgment dated 07.05.2010 passed in CA No. 4273 of 2010 titled "Reliance Natural Resources Ltd. v. Reliance Industries Ltd.". In fact, the Apex Court has observed that market mechanisms may not even be able to ensure revenue maximisation as they may lead to the under-pricing of resources in some cases. The relevant extracts from the said judgment are reproduced below:

> *"While markets and private initiatives have an important role in garnering financial resources, developing and bringing new technologies to practical use, expanding the infrastructure, and increasing supplies by identification of and extraction from new sources,* ***if unmonitored and completely unregulated markets are also capable of causing great inequities, in access, overpricing and sometimes even under pricing (if externalities, such as environmental costs, are not taken into account) the resources.***"

Further, in the Presidential Reference Judgement, the Hon'ble Supreme Court has even listed the potential drawbacks of an auction. The relevant extracts from the Presidential Reference Judgement are as follows:

> *"In fact, it may be said that **even auction has a potential of abuse, like any other method of allocation**, ... These drawbacks include cartelization, "winners curse" (the phenomenon by which a bidder bids a higher, unrealistic and unexecutable price just to surpass the competition; or where a bidder, in case of multiple auctions, bids for all the resources and ends up winning licenses for exploitation of more resources than he can pragmatically execute), etc."*

It was precisely these adverse outcomes of free market operationsthat were highlighted by us in our response to the Consultation Paper. At the risk of repeating ourselves, in an auction-based scenario, competitive forces can block /hoard spectrum capacity. This will lead to non-utilisation in areas where other operators, in a non-auction scenario, having been globally assigned the same spectrum, would have used it. It will also severely constrain the available capacity for satellite services. Further, an auction-based allocation will also discourage new startups and smaller players from entering the market due to the high initial costs. Therefore, auctioning of satellite spectrum will run counter to the common good.

It is apparent, then, that the argument for an auction being the most fair and transparent method of allocation does not hold ground in the case of satellite spectrum. Satellite based communications services are the only viable solution for bridging the digital divide and the only way to enable the full realisation of the immense potential of this sector will be to administratively assign spectrum.

VII. Entry of Foreign Satellite Operators in India:

Some of the stakeholders have argued against the entry of foreign satellite operators (especially LEO/MEO) in India, citing interference issues with legacy satellite operators like DTH and litigations being faced in other countries.

Airtel Counter Response:

This argument brings us back to the originating point of the discussion on satellite services. It is well-established that vast swathes of land in this country are still unconnected due to the inhospitable terrains. Ensuring universal access as fast as possible is a national priority and SATCOM is the only way of achieving it. Further, the criticality of satellite networks in cases of disasters and emergency situations also needs to be highlighted here, as terrestrial networks are prone to disruption in such situations. It is pertinent to note here that it is specifically the LEO/MEO satellites which would enable the provision of such critical services.

Further, the alleged interference issues are not actual cases of interference faced by legacy satellite operators. They are merely claims that such interference is possible in future; and these claims have, in fact, been analysed and rejected by the FCC.

As for the litigations, it is submitted that one of the challenges instituted by DishTV against FCC's decision to allow a lowering of altitude with regard to SpaceX's satellites has been rejected by the DC Circuit Court. DishTV had also filed an appeal against FCC's grant of approval to SpaceX for about 7,500 Gen2 satellites. That is still pending. Therefore, thus far, there is actually no precedent

at all of LEO/MEO satellites being prohibited in any country on the basis of unsubstantiated claims of possible interference.

In any case, the subject matter of the present consultation is the assignment of spectrum for satellite services, and it is a given that spectrum will only be assigned to entities registered in India and holding valid licenses for the provision of services in India. Since the end service providers would be bound by Indian laws, there should be no concern about a satellite operator being foreign. Thus, the argument against entry of foreign satellite operators is actually a non-argument being posited as an argument.

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