

OneWeb India Communications Private Limited

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TRAI/FY23-24/OW/20

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: OneWeb Counter Comments on responses to TRAI's CP on Assignment of Spectrum for Space Based Communication Services.

Dear Sir,

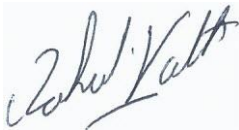
This is in continuation to our response to TRAI's Consultation Paper on "Assignment of Spectrum for Space-based Communication Services" dated 06.04.2023 (CP No. 6/2023).

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

Thanking you,

Yours sincerely,

For **OneWeb India Communications Private Limited**



Rahul Vatts

Director

**Counter Comments on the Consultation Paper on
*Assignment of Spectrum for Space-based Communication Services***

We thank the Authority for giving us the opportunity to provide our counter comments on the responses received towards the consultation paper (“CP”) on *“Assignment of Spectrum for Space-based Communication Services”*.

We have reviewed the responses to the ongoing consultation concerning the Assignment of Spectrum for Space-based Communication Services in India. It has come to our attention that there are several points which seem to have been misunderstood or mischaracterized by some respondents due to clear lack of understanding of how satellite technology operates. We deem it necessary to rectify these interpretations and provide an informed counter-perspective, anchored in our understanding of the satellite sector and our international experience.

In the following sections, we will address specific claims by some respondents, and offering counter arguments and clarifications to enhance the depth and breadth of the ongoing discourse. Our goal is to contribute factual information based on our operations and help foster balanced and effective policy making in the interest of all stakeholders.

We hope these counterpoints and clarifications will serve to enrich the ongoing discussion and aid in the formulation of fair and effective policies based on factual information, and we remain at TRAI’s disposal for any further clarification.

A. Same service same rules

The argument of "same service same rule" when juxtaposing mobile and satellite services is an oversimplification of the reality, and a misleading approach towards spectrum policy. It is crucial to disentangle the two and address their distinct operational specifics and societal roles.

Mobile networks predominantly cater to dense urban & rural clusters, capitalizing on comparatively large population bases to offset their infrastructure costs. Their need for spectrum is thus largely defined by pursuit of high-density coverage, requiring exclusive spectrum rights to prevent interference.

Conversely, satellite services are the connectivity lifelines for predominantly remote, rural, and underserved regions, where the business case for mobile networks crumbles. This crucial distinction underscores why their spectrum requirements differ fundamentally. Satellite operators share spectrum efficiently among themselves, rather than necessitating exclusive rights. This sharing is not a luxury, but a technical and operational necessity.

Trying to shoehorn the satellite service model into the "same service same rule" narrative is not just misguided but also risks stifling the enormous potential satellite services hold for achieving digital inclusivity. Spectrum policy needs to embrace the principle of "right rule for the right service". This approach recognizes the unique attributes, societal contributions, and technical requirements of different services and enables a more balanced, fair, and forward-looking spectrum management strategy.

B. Administrative allocation on FCFS basis is not allowed by Supreme Court, who declared spectrum can only be transferred through a transparent auction

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.

The criticism that administrative allocation operates on a 'first-come-first-served' (FCFS) basis and thus faced critique from the Supreme Court must be taken into perspective. This standpoint can be effectively refuted by referring to the arguments presented in the 2G case.

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.

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.¹

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 that if the 2G Judgement were to be read as recommending holding

¹ Judgment dated 10.01.2020 passed in WP(C) No. 1031 of 2019 titled as “Anuradha Bhasin v. UoI & Ors.”

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.

Applying the auction principle to satellite spectrum, a resource that is fundamentally shared rather than exclusive, would undermine the unique benefits of satellite technology. administrative allocation remains a viable and effective approach to satellite spectrum assignment, one that supports competition, encourages innovation, and most importantly, serves the welfare of the public.

C. Sharing spectrum among satellite operators is unfeasible, and band segmentation is the only way to prevent interference

The claim that sharing among satellite operators is unfeasible and that band segmentation is the only way to prevent interference demonstrate a lack of understanding of satellite technology and lack of practical operational experience by certain respondents. In fact, **sharing of spectrum among satellite operators is not just feasible, but it's a proven practice in the industry, adhering to the ITU's framework for frequency coordination, including for LEO satellites 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 without causing interference to each other. 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's clear that sharing among satellite operators, including NGSO systems, is not just feasible but an integral part of the industry's operations. It's a complex task, but with the help of advanced technologies and the right regulatory framework, it's entirely feasible and practical. It's a harmonious symphony of technological elements that enables a shared and efficient use of spectrum in the satellite industry.

In conclusion, the assertion that band segmentation is the only means of avoiding interference betrays a lack of understanding, potentially stemming from limited exposure to the operational practices of the satellite industry. This viewpoint is likely informed predominantly by experiences within the terrestrial mobile operation field, where the spectrum usage paradigm differs significantly.

It is crucial to recognize the extensive expertise, skill, and technological sophistication within the satellite industry that enables successful spectrum sharing. This approach, refined over decades of global operation, ensures the most efficient use of spectrum – a crucial resource – and contradicts the need for rigid band segmentation. Therefore, the fostering of a holistic understanding of these diverse industries and the intricate nuance of their operation is essential to avoid misconceptions and facilitate informed decision-making.

D. ITU-R Radio Regulation has no role in domestic spectrum management

The assumption that the ITU only focuses on orbital slots and interference management, while an understandable misconception from a terrestrial operator's perspective, severely understates the global body's multifaceted role. In reality, the ITU serves as a crucial player in the international coordination of spectrum usage, particularly for the satellite industry.

For satellite operators, whose operations invariably span regional or global scales, adherence to the ITU's regulations is a necessity. Satellite operators must coordinate their operations across different national jurisdictions, and to do so effectively, they must adhere to the ITU's radio regulations. These regulations facilitate the harmonious use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits, preventing harmful interference among radio stations of different countries.

Even though the ITU does not directly partake in national spectrum allocation processes, the latter are intrinsically tied to the ITU's regulations. Nations cannot arbitrarily allocate spectrum without regard for international rules and regulations, lest they risk causing harmful interference with services in other countries. This could lead to conflicts, potential legal implications, and operational disruptions, defeating the purpose of striving for global connectivity.

Therefore, national spectrum allocation, while a domestic process, must be conducted in harmony with the international framework provided by the ITU. This harmonization ensures smooth and efficient usage of the 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.

E. Misleading country examples

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's missing is that in November 2022, the MSIT finished assessing the fulfilment 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 to use their portions of the 28 GHz spectrum².

The third operator was granted an additional six months to meet the network building requirement. However, they too failed to meet these expectations, resulting in the revocation of their license on May 12th³. In essence, this narrative highlights the challenges and complexities associated with the deployment and usage of the 28 GHz spectrum by one of the early adopter of the 28GHz mmWave, a crucial aspect neglected in the proponents submissions.

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/>

Thailand

Some respondent claims spectrum for satellite services has been auctioned in Thailand, however in reality, it is the concession right to exploit Thai ITU filing for certain orbital slots that was auctioned. The orbital slot and the spectrum represent different elements of satellite operations and, thus, cannot be conflated.

An orbital slot refers to the specific location in the geostationary orbit where a satellite is stationed. The orbital slot allocation is indeed critical to prevent satellites from colliding with each other or causing interference. On the other hand, 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 an orbital slot and spectrum 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.

Finally, it's important to clarify that while some countries have attempted to auction orbital slots, this is not the norm, and the practice has encountered significant issues, leading some to discontinue it. Notably, these orbital slot auctions are not equivalent to spectrum auctions, and the difficulties faced further affirm the benefits of the existing international coordination system for satellite spectrum management.

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 with other types 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 or handheld devices. This service 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 their spectrum to ensure there's no interference to their operations. The nature of the services and the type of antennas used (omnidirectional) make spectrum sharing between MSS operators or with other services significantly more challenging.

In contrast, FSS and BSS refers 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 exclusive access of MSS bands cannot be seamlessly applied to FSS and BSS bands.

Moreover, using a single instance of MSS spectrum auctioning in Saudi Arabia as a universal model overlooks the broader international trend against spectrum auctions, especially for satellite services. It's important to recognize 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

made it very clear that satellite bands were out of the discussion for auction and are protected. “Continued guaranteed and protected access to all existing satellite bands for current and future uses, which include L, C, Ku and Ka bands...”

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 maximize spectrum usage and serve public interest effectively.
