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Advisor (Networks, Spectrum and Licensing)
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Mahanagar Door Sanchar Bhawan,
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New Delhi – 110 002

Subject : **Bharti Airtel's Comments on TRAI Consultation on Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT**

Reference : **TRAI's Consultation Paper on Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT dated 04th April 2024.**

Dear Sir,

This is in reference to TRAI's Consultation Paper on Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT dated 04th April 2024.

In this regard, please find enclosed our comments on the captioned consultation paper for your kind consideration.

Thanking You,

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

Rahul Vatts
Chief Regulatory Officer

Encl: a.a

Response to TRAI Consultation on *Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT*

Preamble:

Airtel would like to start by thanking TRAI for providing it with the opportunity to respond to this important Consultation Paper (CP).

The Hon'ble Prime Minister launched the '**Digital India**' initiative to transform the country into a digitally empowered society and knowledge economy. To achieve this ambitious goal, an **enabling regulatory and business environment** is required and for the purposes of digital inclusion, extensive IMT usage will be important, especially if the Government's target of 100% connectivity by 2030 is to be reached.

To enable all of this, it is imperative to ensure that **access to sufficient spectrum is obtained** within the right regulatory conditions, specifically, the **37-37.5 GHz, 37.5-40 GHz and 42.5-43.5 GHz bands** that need to be reserved for IMT usage since these can be used for proliferation of IMT-based broadband services. These bands are capable of delivering extremely high data rates due to their wide bandwidth.

The availability of these new bands which are also classified as mmWave spectrum, in addition to the 26 GHz band (which was auctioned in 2022), will enable the **further expansion of 5G/FWA services in the country.** In fact, both the major TSPs acquired the 26GHz band across all LSAs in the 2022 Auctions and are now at various stages of deployment. Hence, it is important that these bands be put up for auction as soon as possible.

However, before putting these bands to auction, it is important to ensure that spectrum bands are clean, interference free and free of exclusion zones (if any) or limited exclusion zones. This is because some of the frequencies within these bands may also be used for satellite operations (in addition to IMT). Specifically, the 37-38 GHz range is utilised for Space Research Services (SRS), the range 37.5-40 GHz facilitates hub operations (satellite to earth) and the range from 42.5-43.5 GHz is used for hub operations (earth to satellite) as well as Radio Astronomy Services (RAS).

In terms of spectrum valuation, the Authority's spectrum pricing exercise must emerge from the industry's incremental/aggregate RoCE and incremental/marginal revenue generation ability in the spectrum band(s) being valued. Each band should be valued based on its economic value and business case using the marginal revenue approach. Alternatively, since these spectrum bands will be auctioned for the first time in India, the valuation of these bands can be estimated by considering the combined weightage of the market value of 26GHz used in the most recent auction and its contribution to the revenue generation. This value should be further discounted to adjust for the comparative efficiency and propagation loss of these bands compared to the 26GHz band.

The international spectrum prices of other countries should not be used to serve as a basis for the valuation of these bands due to the level of maturity of the network and the social and economic parameters of India when compared with the referred international countries.

Issues concerning rollout obligations, terms and conditions, payment terms and co-existence with the services:

There are certain other crucial aspects that bear consideration for assignment of these bands. These relate to licensing, technical and financial terms and conditions (T&Cs) of assigning these spectrum bands through auction. A list of these aspects is as follows:

1. The allocation of spectrum bands should be consistent with the present licensing regime of Licensed Service Area (LSA) based allocation. There should be no deviation from this, given that the regime has been successfully developed over the last 30 years, and the telecom networks have been designed based on the regime.

2. The rollout obligations should only be prescribed for a player having no access to the mmWave spectrum band earlier. Licensees that have met the rollout obligations once in 26 GHz band, should not have the obligations again in these bands.

3. Since the spectrum also has a coexistence requirement with the satellite services, an appropriate **protection/keep-off distance** may be prescribed between IMT stations and Satellite Earth Station Gateways. Also, prior to the auctions, the list of present/planned locations of satellite hub stations should be made available. Post auctions, a new hub station should be allowed to be established only in isolated areas with no existing IMT base station.

4. The **eligibility conditions for participation in the auction** should be in line with those prescribed for existing spectrum bands in the NIA 2024.

5. The payment terms and conditions should ensure orderly and sustainable growth of the industry.

In summary, for frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, Airtel submits:

- ✓ *The entire available spectrum should be put **to auction** for IMT at the earliest.*
- ✓ *Adequate information about present/planned locations of SRS/satellite hub stations should be provided and **co-existence studies between IMT and satellite operations** conducted – both prior to auctions.*
- ✓ ***TDD-based configuration should be adopted**. The choice of band plan should be left to the licensee.*
- ✓ *The **block size** should be **100 MHz**. The minimum bidding quantity should be 400 MHz for new entrants who do not hold any spectrum in any mmWave band and 100 MHz for existing operators who already hold spectrum in any of the mmWave spectrum bands.*
- ✓ *The **validity period of spectrum assigned should continue to be for 20 years**.*
- ✓ *There should be n**o separate roll-out obligations** for licensees having already fulfilled such obligations in the 26 GHz band. For an entrant with no prior spectrum holding in*

any of the mmWave bands, the obligations should be the same/in-line with those prescribed for the 26 GHz band in the NIA 2022/2024.

- ✓ *The **eligibility conditions for participation in the auction** should be in line with those prescribed for existing spectrum bands in the NIA 2024.*
- ✓ *The approach of **maintaining contiguity of spectrum** and assigning the same frequency spots to a TSP across different LSAs can be used in an equivalent manner to that used for mitigating interference on account of TDD-based configuration in case of 3300 MHz and 26 GHz bands.*
- ✓ *An appropriate **protection/keep-off distance** between IMT stations and Satellite Earth Station Gateways should be prescribed. Present/planned locations of satellite hub stations should be presented prior to auctions. Post auctions, establishment of new hub stations should be allowed only in isolated areas with no existing IMT base station.*
- ✓ *The Authority's **spectrum pricing exercise** must emerge from the industry's incremental/aggregate RoCE and incremental/marginal revenue generation ability in the band(s) being valued. Therefore, each band should be valued based on its economic value and business case, using a marginal revenue approach. **Or alternatively,** considering these spectrum bands are being auctioned for the first time in India, the valuation of the spectrum in these bands can be estimated by considering the combined weightage of the market value of 26GHz used in the most recent auction and its contribution to revenue generation. Additionally, the value so arrived should be reduced to adjust for comparative efficiency and propagation loss of these bands vis a vis the 26 GHz band.*
- ✓ *The **reserve price should be taken as 50% of the valuation of the spectrum.***
- ✓ ***Payment terms & conditions**:*
  a. *No upfront payment should be required. Operators should be allowed a 6-year moratorium, and annual installments spread over the remaining 14-year spectrum duration period.*
  b. *No interest should be charged on the deferred installments. Without prejudice, if it is decided otherwise, then the rate of interest must align with the prevailing repo rate.*
- ✓ *The DoT should formulate a policy on spectrum swapping. The TSPs should be allowed to swap the existing spectrum in one band with any other band that they need and is available with the Government, while being revenue neutral to positive to the exchequer.*

- ✓ *The spectrum surrender guidelines should be amended to include refund of spectrum charges. In the alternative, if the spectrum charges cannot be refunded, allow them to be adjusted with the deferred spectrum payments of the TSP or with the charges for any spectrum acquired by the TSP in future auctions.*
- ✓ *There should be no indexation of auction-determined prices (ADP) in case the spectrum remains Partially Unsold. In such cases, reserve prices should be revised downwards or kept at the same level as in the last auction. Without prejudice, auction-determined prices should be indexed only in cases where the entire quantum of spectrum put to auction got sold in the previous auctions, and not in cases where it remained partially unsold. Alternatively, in cases where the spectrum remained partially unsold, there should be a clear-cut criterion as to when the auction-determined prices can be indexed.*
- ✓ *There should be no indexation of reserve prices in case spectrum was not put to auction in the previous year and instead the past recommended reserve prices should be used.*
- ✓ *The calculation of interest on spectrum installments should only be applicable from the date of issue of the frequency assignment letter and not earlier.*

With this background, Airtel now submits its questions-wise detailed response.

Response to TRAI Consultation on *Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT*

Q1.	**Whether the entire available spectrum in each of the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, should be put to auction for IMT? If no, please specify the quantum of spectrum in each frequency range to be put to auction. Kindly justify your response.**
Q2.	**In case you are of the opinion that any of the frequency ranges viz. 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz should be put to auction at a later date, what should be the timelines for auctioning of such frequency bands for IMT? Kindly justify your response.**

Airtel's Response:

Yes, all the available spectrum, in each of the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, should be put to auction for IMT at the earliest.

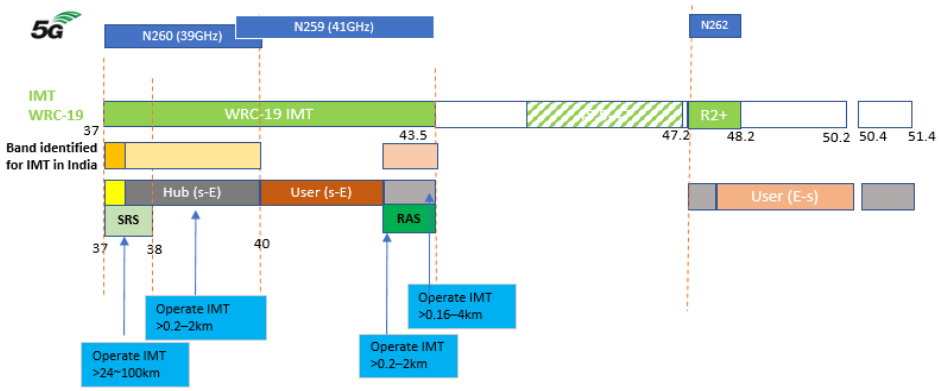
It is highlighted at the outset that as early as in 2022, the Authority, in its Recommendations[1] related to the 2022 Auctions (for IMT/5G bands), had itself observed that the frequency ranges 37-40 GHz bands have already been identified for IMT services by ITU, and thus these bands should made available for IMT services in India at the earliest.

It is also pertinent to mention here that all the three frequency ranges under consideration in the instant Consultation Paper can be classified as mmWave band spectrum – similar to the 26 GHz band, which was auctioned in 2022. **Both the major TSPs acquired the 26 GHz band across all LSAs in the 2022 Auctions; and are already at various stages of the deployment**.

The availability of these three new frequency ranges, in addition to the 26 GHz band, will enable the further expansion of 5G/FWA services in the country. Albeit the device ecosystem in these bands is not fully developed, these bands have already been identified as the IMT bands and hence their increased usability for TSPs will only help accelerate the ecosystem development. This, therefore, is yet another reason to auction these bands at the earliest.

However, it is also important to take note of the other services present in these bands before auctioning them. The following figure illustrates IMT identification of these bands in WRC-19 and in India:

[1] "Auction of Spectrum in frequency bands identified for IMT/5G", 11 April 2022



As seen from the figure above, the frequency bands designated for IMT in India within these ranges are also used for satellite operations. Specifically, the 37-38 GHz range is utilised for Space Research Services (SRS), the range 37.5-40 GHz facilitates hub operations (satellite to earth), and the range from 42.5-43.5 GHz is used for hub operations (earth to satellite) as well as Radio Astronomy Services (RAS).

While both SRS and satellite hub operations would require appropriate exclusion zones to be prescribed for the purposes of co-existence, it is understood that the exclusion zones with respect to SRS are much larger in comparison to those with respect to satellite hub stations. Further, adequate data with respect to present/planned locations of SRS and satellite hub stations is neither available in the public domain, nor has it been made available to the TSPs.

Accordingly, **Airtel requests that the following details be first made available to TSPs,** in order to enable them to determine the necessary protection distances for the Indian context through CPM-19 studies, and evaluate the potential impact on IMT deployment:

- **SRS:** Location details of current/planned assignments and their elevation angles
- **Hub (satellite to Earth):** Location details of present hub stations and plans for future (if any)

Further, in order to determine which portions, regions and frequencies will be impacted and rendered inaccessible as a result of coexistence issues between IMT and satellite operations, Airtel requests that a study be conducted for IMT coexistence with incumbent services, taking into account India-specific requirements. This will enable informed decision-making on the part of the TSPs, regarding the acquisition of these spectrum bands at the time of auction. The co-existence study should be carried out in a time-bound manner, so that these spectrum bands may be put to auction at the earliest.

<u>In summary, Airtel recommends the following:</u>

(i) The entire available spectrum in each of the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, should be put to auction for IMT.

(ii) Availability of clean spectrum is crucial before auctioning. Hence, adequate information and necessary data regarding present/planned locations of SRS/satellite hub stations should be made available to TSPs, and a co-existence study between IMT and satellite operations should be carried out prior to auctions.

(iii) The co-existence study should be conducted in a time-bound manner so that these spectrum bands may be put to auction at the earliest.

Q3. Do you agree that TDD-based duplexing configuration should be adopted in the country for the frequency ranges under consideration viz. (a) 37 - 37.5 GHz, (b) 37.5 - 40 GHz, and (c) 42.5 - 43.5 GHz, for IMT? If yes, considering that there is an overlap of frequencies in the band plans n260 (37-40 GHz) and n259 (39.5-43.5 GHz), how should the band plan(s) along with its frequency range be adopted? Kindly justify your response.

Airtel's Response:

Yes, Airtel agrees that **TDD-based duplexing configuration should be adopted** in the country for the frequency ranges under consideration viz. (a) 37 - 37.5 GHz, (b) 37.5 - 40 GHz, and (c) 42.5 - 43.5 GHz, for IMT. Further, the **choice of band plan should be left to the operator**.

3GPP band plans in mmWave spectrum bands and their duplex mode of operation are as follows:

Operating Band	Uplink (UL) operating band BS receive UE transmit	Downlink (DL) operating band BS transmit UE receive	Duplex Mode
	F_{UL_low} – F_{UL_high}	F_{DL_low} – F_{DL_high}	
n257	26500 MHz – 29500 MHz	26500 MHz – 29500 MHz	TDD
n258	24250 MHz – 27500 MHz	24250 MHz – 27500 MHz	TDD
n259	39500 MHz – 43500 MHz	39500 MHz – 43500 MHz	TDD
n260	37000 MHz – 40000 MHz	37000 MHz – 40000 MHz	TDD
n261	27500 MHz – 28350 MHz	27500 MHz – 28350 MHz	TDD
n262	47200 MHz – 48200 MHz	47200 MHz – 48200 MHz	TDD

The TDD-based configuration has been globally adopted for mmWave band spectrum. Since the device ecosystem is developed at a global level, it is appropriate to follow international standards in this regard.

Further, considering that there is an overlap of frequencies in the band plans n260 (37-40 GHz) and n259 (39.5-43.5 GHz), the operator should be free to choose any band plan as per 3GPP, depending on the availability of device ecosystem.

Therefore, Airtel recommends the following:

(i) TDD-based configurations should be adopted for all the three frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, for IMT.

(ii) The choice of band plan should be left to the operator.

Q4. Whether the spectrum in the frequency ranges under consideration viz. (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz should be assigned for a validity period of 20 years, as prevalent in the existing frequency bands, or for a shorter validity period? In case you are of the opinion that a shorter validity period should be adopted, please suggest the validity period? Kindly provide your response with detailed justifications.

Airtel's Response:

Yes. The spectrum in the frequency ranges under consideration viz. (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, should be assigned for a validity period of 20 years only, as prevalent in the existing frequency bands, and not for a shorter validity period.

1. There are some important reasons for retaining the longer validity period (at least 20 years): It is well acknowledged that creating telecommunications networks is capital-intensive and has a long gestation period. As a result, the monetisation of the network and the uptake of services takes a significant amount of time especially when the band or services are new. For instance, in the 2300MHz band, it took close to 5-6 years to develop the ecosystem and network deployment at a massive scale post auction. In 5G, while TSPs have rolled-out the pan-India 5G network since 2022 auctions, the monetisation continues to pose a challenge. **Thus, any shorter validity period for the spectrum would risk destabilising the long-term investments of the sector**.

2. Since the time of entry of private players in the telecom sector, the access spectrum has always been assigned with a validity period of 20 years (irrespective of the method of assignment whether administratively bundled with license or using auctions). **The regime has been working well for the sector for the past 30 years, hence Airtel sees no reason to change such a well-settled and successful approach.**

   In fact, for the 26GHz band, which is also a mmWave spectrum band like the frequency ranges under consideration in the instant CP, the validity period has been kept as 20 years in both the NIA 2022 and NIA 2024. Therefore, Airtel suggests that DoT continue to maintain a consistent approach in this regard.

3. In our understanding, this question has seemingly been raised by the Authority, as the ecosystem in these bands is not fully developed and use cases are not adequately available. However, we submit that this is all the more reason to have a longer validity period. It will help the ecosystem to develop in a sustainable manner as operators will have surety of its long term deployment and use.

4. Longer validity periods, combined with the Government's principled decision to allow use of auctioned spectrum bands in a technology-neutral manner, have ensured continuous evolution of technology deployment across different bands. For example, the 2100 MHz band that started with the provision of 3G services in 2010 is now (also) used for 4G and can even be used for 5G. Similarly, the 900/1800 MHz bands were earlier used to provide only the GSM-based services but now are used to deploy LTE/5G. This evolution would not have been possible with shorter validity periods. Indeed, shorter validity periods would have rather deterred innovation in tech deployment and use case development.

5. **Shorter validity may also attract fly-by-night operators,** which scenario may not be in the interests of either the consumers or the exchequer. It is important to have serious players operate in the industry.

6. Lastly, there are already policy guidelines for the surrender and trading of spectrum which would apply to these frequency ranges under consultation as well. Those too would provide flexibility to a spectrum holder in these ranges to trade or even surrender after 2 years and 10 years, respectively. Hence, Airtel sees no reason whatsoever to still consider a shorter validity period.

In view of the foregoing, Airtel recommends that the spectrum in the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, should be assigned for a validity period of 20 years, consistent with the present approach (including in the 26 GHz band).

Q5. Whether the spectrum in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency ranges should be assigned for the existing licensed service areas (LSAs) for Access Service (i.e. Telecom Circles/Metros), or it should be assigned for smaller service areas? In case you are of the opinion that the spectrum in these bands should be assigned for smaller service areas, please suggest the criteria for defining such service areas? Kindly provide your response with detailed justifications.

Airtel's Response:

The spectrum in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency ranges should be consistent with the existing licensing regime and only be assigned for the licensed service areas (LSAs) for Access Service (i.e., Telecom Circles/Metros), and not for smaller service areas.

The reasons for continuing with the present LSA-based regime are as follows:

1. **Assignment in service areas smaller than LSAs would give rise to select pockets of coverage in urban areas** or there may be a scenario where no TSP would want to acquire

spectrum in rural or even semi-urban areas, where population density is less. **This will completely derail the Digital Inclusion and Digital India mission of the Government**.

2. Since the opening of the telecom sector, access spectrum has consistently been assigned on an LSA-level basis – irrespective of assignment method (i.e., administrative or using auctions). This approach is consistent with the Indian licensing regime – the access service licenses, under which this spectrum is used, are also granted LSA-wise (whether the CMTS or the UAS licenses earlier or the Access Service Authorisation under the UL now). There is no reason to change this approach for these particular spectrum bands.

3. Consequently, and as a logical corollary from point 2 above, the entire network and service architecture of the TSPs is designed and set up on the basis of LSAs. The tariff plans are designed and offered to consumers LSA-wise. In view of this, any attempts to **assign certain specific bands for smaller service areas would not only disrupt the entire network and business planning of TSPs**, but also unnecessarily create operational and regulatory complexities.

4. Spectrum assignment for smaller service areas will lead to the fragmentation of spectrum, with the mushrooming of an enormous number of smaller operators in localised geographies. This, in turn, will result in inefficient utilization. It will further lead to complexities of **disjointed spectrum holdings for larger TSPs, disincentivising a nation-wide or even an LSA-wide network deployment**.

   Unnecessary spectrum fragmentation will also prevent larger TSPs from leveraging economies of scale, increasing the time and resources required to be spent on acquiring the same amount of spectrum.

5. On top of it all, the entire **interference management and harmonisation effort across such smaller service areas will grow into an unnecessarily humongous task for the WPC**.

Seemingly, this question has been raised by the Authority, as the deployment is not likely to be ubiquitous in the frequency ranges under consideration in the instant Consultation Paper. However, as noted by the Authority itself, this is the case with all mmWave spectrum bands – including 26 GHz, which has already been assigned to TSPs on an LSA-level basis through the 2022 Auctions (even in the NIA 2024, the area of assignment for the 26 GHz band is LSA-wise). Thus, there is no need or rationale for deviating from the same for these specific bands. Airtel suggests, therefore, that DoT maintain a consistent approach in this regard.

In summary, Airtel recommends that the spectrum in the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, should be assigned LSA-wise, consistent with the approach followed in the case of the existing frequency bands (including 26 GHz band).

Q6. What should be the block size, and the minimum quantity for bidding in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency ranges? Kindly justify your response.

Airtel's Response:

The block size in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency ranges should be a minimum of 100 MHz.

The minimum quantity for bidding should be 400 MHz for new entrants (who do not hold any spectrum in any mmWave band) and 100 MHz for existing operators (who already hold spectrum in any of the mmWave spectrum bands).

A minimum block size of 100 MHz or higher is required for these ultra-high frequency bands to deliver the following key requirements:

i. **Capacity Requirements**: These spectrum bands are capable of delivering extremely high data rates due to their wide bandwidth. High block sizes allow for the aggregation of multiple channels, increasing overall capacity and accommodating the high throughput demands of modern wireless communication.

ii. **Utilisation Efficiency:** With larger block sizes, more data can be transmitted simultaneously, increasing the efficiency of spectrum utilisation. This is particularly important in dense urban environments where spectrum resources are limited and demand is high.

iii. **Propagation Characteristics:** These ultra-high frequency bands are more susceptible to attenuation and are limited in their ability to penetrate obstacles compared to lower frequency bands. Using larger block sizes helps mitigate the effects of signal attenuation by providing more redundancy and robustness in the transmission.

Therefore, Airtel recommends the following:

(i) The block size in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency ranges should be 100 MHz.

(ii) The minimum quantity for bidding should be 400 MHz for new entrants (who do not hold any spectrum in any mmWave band) and 100 MHz for existing operators (who already hold spectrum in mmWave spectrum bands).

Q7. What provisions with respect to the spectrum cap per service provider in a licensed service area (LSA) should be made applicable for the frequency ranges under consideration viz. (i) 37-37.5 GHz, (ii) 37.5-40 GHz, and (iii) 42.5-43.5 GHz for IMT? Specifically, –

(a) Whether there is a case for a combined spectrum cap for 26 GHz band (24.25-27.5 GHz) and the frequency ranges under consideration? If yes, what should be the spectrum cap? Kindly justify your response.

(b) In case your response to (a) above is in the negative, whether spectrum cap should be prescribed separately for each frequency range viz. (i) 37-37.5 GHz, (ii) 37.5-40 GHz, and (iii) 42.5-43.5 GHz, or these frequency ranges should be combined for applicability of spectrum cap? What should be the spectrum cap(s)? Kindly justify your response.

Airtel's Response:

The frequency ranges under consideration, viz. (i) 37-37.5 GHz, (ii) 37.5-40 GHz, and (iii) 42.5-43.5 GHz, should not be combined with the 26 GHz band and these bands on consolidated basis should be treated separately, for the purpose of calculating spectrum cap per service provider in an LSA for IMT.

(a) No combined Spectrum Cap for 26 GHz band and the three new frequency ranges:

Currently, there is no case for a combined spectrum cap for 26 GHz band (24.25-27.5 GHz) and the frequency ranges under consideration.

It has been noted by the Authority itself that the ecosystem is not fully developed for the frequency ranges under consideration in the instant Consultation Paper, and they are yet to find adequate use cases. On the other hand, the 26 GHz band, which has already been auctioned in 2022, is rapidly developing and has already been deployed in multiple parts of the country. In this background, **a combined spectrum cap for 26 GHz band and the three new frequency ranges may lead to one TSP monopolizing the more developed 26 GHz band, while others are left with the newer bands which are still in the early stages of ecosystem development**.

Thus, we suggest that 26GHz band should not be aggregated with the three new frequency ranges for the purposes of calculation of spectrum cap.

Therefore, Airtel recommends that there should not be a combined spectrum cap for 26 GHz band and the new frequency ranges under consideration

(b) Combined Spectrum Cap for the three new frequency ranges (excluding 26 GHz band):

As explained in the response to Q1 earlier, the frequency bands designated for IMT in India within these ranges are also in use for satellite operations. Specifically, the 37-38 GHz range is utilised for Space Research Services (SRS), the range 37.5-40 GHz facilitates hub operations (satellite to earth), and the range from 42.5-43.5 GHz is used for hub operations (earth to satellite) as well as Radio Astronomy Services (RAS).

While both SRS and satellite hub operations would require appropriate exclusion zones to be prescribed for the purposes of co-existence, it is understood that the exclusion zones with respect to SRS are much larger than those of satellite hub stations.

Further, adequate data for present/planned locations of SRS and satellite hub stations is neither available in the public domain, nor has it been made available to the TSPs. In the absence of such information, it would be premature to take a decision regarding the spectrum cap and whether it should be combined with each of the three frequency ranges or calculated separately for each of the three frequency ranges.

There are pros and cons to both approaches. On the one hand, combining all these bands together may result in one TSP monopolising a relatively cleaner spectrum band while the others are left with effectively unusable bands with huge exclusion zones (possibly, with a radius of 100 km); on the other hand, calculating spectrum caps for each individual band may impact contiguity of the spectrum, resulting in less efficient use. Hence, any decision in this regard must be taken only after all the relevant factors have been carefully considered and evaluated.

Accordingly, Airtel requests that the following details be first made available to TSPs, in order that they can determine the necessary protection distances for the Indian context through CPM-19 studies, and evaluate the potential impact on IMT deployment:

- **SRS:** Location details of current/planned assignments and their elevation angles
- **Hub (Satellite to Earth):** Location details of present hub stations and plans for future (if any)

Further, in order to determine which portions, regions and frequencies will be impacted and rendered inaccessible as a result of coexistence issues between IMT and satellite operations, Airtel requests that a study be conducted for IMT coexistence with incumbent services, taking into account India-specific requirements. This will enable informed decision-making regarding the assignment of these frequency ranges.

At worst, a combined spectrum cap of 40% may be prescribed for these three frequency ranges but excluding 26 GHz band, to ensure a level playing field. However, it would be prudent for TSPs to make an informed decision on investment only post availability of information about satellite operations.

In summary, Airtel recommends that adequate data regarding present/planned locations of SRS and satellite hub stations should be made available to TSPs, and a co-existence study between IMT and satellite operations should be conducted prior to the auctions, so as to enable informed decision regarding spectrum caps. In the worst case scenario, to maintain a level playing field, a combined spectrum cap of 40% can be prescribed for these three frequency ranges (excluding 26 GHz).

Q8. What should be the roll-out obligations for the assignment of spectrum in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency bands for IMT? Kindly justify your response.

Airtel's Response:

Imposing new roll-out obligations on existing licensees that have already met such obligations for the 26 GHz band would not serve any purpose – as **the new mmWave spectrum would be utilised only to build additional capacity over and above the network coverage already deployed using the 26 GHz band for 5G/FWA services**.

Further, there should be no roll-out obligations in the frequency ranges under consideration in the instant CP for existing licensees who have already fulfilled the coverage obligations with respect to the 26 GHz band. This is also in line with the **DoT's approach of not having any roll-out obligations for a licensee who has already met such obligations once with any technology**.

However, a new entrant, i.e., an operator acquiring mmWave spectrum for the first time, should be bound by similar roll-out obligations as defined for the 26 GHz band in the NIA 2022/2024.

In summary, Airtel recommends the following:

(i) There should be no separate roll-out obligations with respect to the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz and (c) 42.5-43.5 GHz for licensees who have already fulfilled roll-out obligations in the 26 GHz band.

(ii) For new entrants with no prior spectrum holding in any of the mmWave spectrum bands, the roll-out obligations should be in line with the roll-out obligations prescribed for the 26 GHz band in the NIA 2022/2024.

Q9. Whether the eligibility conditions and associated eligibility conditions for participation in the auction for 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz should be kept analogous to the eligibility conditions and associated eligibility conditions for participation in the auction for spectrum for IMT, as defined in NIA 2024? In case your response is in the negative, suggestions may kindly be made with detailed justification.

Airtel's Response:

Yes, the eligibility conditions and associated eligibility conditions for participation in the auction for the 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands should be kept analogous to the eligibility conditions and associated eligibility conditions for participation in the auction for spectrum for IMT, as defined in NIA 2024.

Since the frequency ranges under consideration in the instant CP will also be used for 5G services like many existing spectrum bands, the inclusion of new bands in auctions cannot be allowed to become a trigger for changing eligibility conditions. Therefore, Airtel suggests that DoT maintain a consistent approach in this regard.

Moreover, eligibility conditions specified in the NIA 2024 are quite flexible as they allow even non-licensees to bid for the spectrum, so long as they give an undertaking that they will procure the necessary license, i.e., UL (Access Service). Even for the 26 GHz band, which is a mmWave band spectrum like these new frequency ranges, the same eligibility conditions have been defined.

Therefore, Airtel recommends that the eligibility conditions for participation in the auction for the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz should be in line with those prescribed for the existing spectrum bands in NIA 2024.

Q10. To mitigate inter-operator interference due to TDD-based configuration, whether the approach adopted for 3300-3670 MHz and 26 GHz bands should also be made applicable for the frequency ranges under consideration viz. 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz, or some other provisions need to be created? In case you are of the opinion that some other provisions are required to be created, suggestions may be made with detailed justification.

Airtel's Response:

Yes. To mitigate inter-operator interference due to TDD-based configuration, the approach adopted for the 3300-3670 MHz and 26 GHz bands should also be made applicable for the frequency ranges under consideration viz. 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz.

Airtel agrees with the Authority's observation that there is a possibility of interference between networks of different TSPs due to the use of TDD-based configurations in these bands.

It is important to highlight here that this is the case with all the bands where TDD-based configuration is used. This issue has been discussed earlier as well with respect to other bands where TDD-based configuration is used.

In fact, the Authority took specific note of this issue with respect to the 3300 MHz band in its 2018 Auction Recommendations[2] and accordingly recommended the assignment of contiguous blocks of spectrum in case a TSP were to obtain more than one block, and the assignment of the same frequency spots across all LSAs where a TSP acquired spectrum.

The Authority made similar observations and recommendations with respect to the 3300 MHz as well as the 26 GHz bands in its 2022 Auction Recommendations. The relevant extracts are reproduced below:

> *"In view of the above, the Authority recommends that to mitigate inter-operator interference in TDD configuration bands, the following measures should be taken:*
>
> *a.* ***In case a TSP acquires more than one block, the entire spectrum should be assigned to it in contiguous form.***
>
> *b.* ***In case a TSP acquires spectrum in more than one LSA, same frequency spots should be assigned to it in all those LSAs, to the extent possible.***
>
> *c.* ***Interference mitigation be left to the mutual coordination between the TSPs.***"

Airtel submits that such measures are adequate for mitigating any interference on account of TDD-based configuration, and similar measures should be adopted in the case of the frequency ranges under consideration in the instant CP as well.

In summary, Airtel recommends that:

The approach of maintaining contiguity of spectrum and assigning the same frequency spots to a TSP across different LSAs, as used for mitigating interference on account of TDD-based configurations in the case of the 3300 MHz and 26 GHz bands, should be used for the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, as well.

[2] "*Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz, 3400-3600 MHz Bands*", dated 01.08.2018

Q11. Whether there could be any challenges in sharing of 37.5-40 GHz and 42.5-43.5 GHz spectrum frequency ranges between IMT and Satellite Gateway links? If yes, what challenges do you foresee and what measures could be adopted to mitigate such challenges? Kindly justify your response.

Q12. In case it is decided to share (i) 37.5-40 GHz, and (ii) 42.5-43.5 GHz spectrum frequency ranges between IMT and Satellite Gateway links, –

(a) Whether there is a need to prescribe a protection/keep-off distance between IMT stations and Satellite Earth Station Gateways? If yes, what should be the protection distance?

(b) What other parameters should be prescribed for the coexistence of IMT and Satellite Gateway links?

Suggestions may kindly be made with detailed justification.

Airtel's Response:

In case it is decided that sharing the (i) 37.5-40 GHz and (ii) 42.5-43.5 GHz spectrum frequency ranges between IMT and Satellite Gateway links would be appropriate, **an appropriate protection/keep-off distance between IMT stations and Satellite Earth Station Gateways should be prescribed.**

However, in order to enable TSPs to take an informed decision regarding the acquisition of spectrum, the present/planned locations of satellite hub stations must be made available prior to auctions. Further, post auctions, a new hub station should be allowed to be established only in isolated areas with no existing IMT base station.

In summary, Airtel recommends the following:

(i) An appropriate protection/keep-off distance should be prescribed between IMT stations and Satellite Earth Station Gateways for the purposes of co-existence in the frequency ranges (i) 37.5-40 GHz, and (ii) 42.5-43.5 GHz.

(ii) In order to enable informed decision making, the present/planned locations of satellite hub stations must be made available prior to auctions.

(iii) Post auction, a new hub station should be allowed to be established only in isolated areas with no existing IMT base station.

Q13. Whether the value of spectrum in 37–37.5 GHz, 37.5–40 GHz and 42.5–43.5 GHz spectrum bands be derived by relating it to the auction determined price/value of spectrum in any other band by using spectral efficiency factor? If yes, with which spectrum band, should these bands be related and what efficiency factor or formula should be used? Please justify your suggestions.

Airtel's Response:

In the past valuation exercises of the Authority, it has been observed that using spectrum efficiency factors of other bands has resulted in the wrong estimation or overestimation of the respective band's value being reached. Additionally, since the spectrum efficiency factor is a subjective parameter dependent on many unknown variables in the industry, it needs to be treated as such.

Therefore, going forward, the Authority's spectrum pricing exercise should be based on the industry's incremental/aggregate RoCE and incremental/marginal revenue generation ability in the spectrum band(s) being valued. It is Airtel's suggestion that each band be valued based on its economic value and business case, using a marginal revenue approach.

Alternatively, since these spectrum bands are being auctioned for the first time in India and there are no reference points or data related to the spectrum being auctioned, the following approach could be considered:

- The valuation of the spectrum in these bands can be estimated by considering the combined weightage of the market value of 26 GHz used in the most recent auction and its contribution to revenue generation. This value should be further reduced based on the comparative efficiency and propagation loss of these bands compared to the 26 GHz band.

- The valuation should also be further adjusted and rationalised depending upon the available quantum of the spectrum development status of the device and equipment ecosystem as well as the global adoption of that band.

Q14. Should international spectrum prices i.e. the auction determined price/reserve price of other countries in 37 – 37.5 GHz, 37.5 – 40 GHz and 42.5 – 43.5 GHz spectrum bands serve as a basis for the purpose of valuation of these bands? If yes, what methodology can be followed in this regard? Please provide detailed information.

Airtel's Response:

No.

The international spectrum prices of other countries in the 37-37.5 GHz, 37.5-40 GHz and 42.5-43.5 GHz spectrum bands should not serve as a basis for the valuation of these bands due to the differences in the levels of maturity of the respective network and of the social and economic parameters of India when compared with the referred international countries. However, since there is no reference point for these bands in India, this approach could be considered an additional derivative in the process of valuation before being further normalised to adjust for the Indian telecom economics, i.e., ARPU, RoCE, rollout obligations and investment.

Q15. Apart from the approaches highlighted above which other valuation approaches should be adopted for the valuation of 37 – 37.5 GHz, 37.5 – 40 GHz and 42.5 – 43.5 GHz spectrum bands? Please support your suggestions with detailed methodology, related assumptions and other relevant factors, etc.

Airtel's Response:

The Authority's spectrum valuation approach must emerge from the industry's incremental/aggregate RoCE and incremental/marginal revenue generation ability in the spectrum band(s) being valued. Therefore, it should be valued based on its economic value and business case, using a marginal revenue approach.

Q16. Whether the value arrived at by using any single valuation approach for a particular spectrum band should be taken as the appropriate value of that band? If yes, please suggest which single approach/method should be used. Please support your answer with detailed justification.

Q17. In case your response to the above question is negative, will it be appropriate to take the average valuation (simple mean) of the valuations obtained through the different approaches attempted for valuation of a particular spectrum band, or some other approach like taking weighted mean etc. should be followed? Please support your answer with detailed justification

Airtel's Response:

The reserve price for all spectrum bands in the past has followed a combination of valuation models/approaches which have in turn led to the discovery of a price not sustainable in the long term. The success of some bands and unsuccessful auctions in other bands clearly indicates that there are factors beyond modelling (potential revenue, free cash flow and profitability) that impact the success of spectrum auctions.

Therefore, there is a need to re-look at the approach for the valuation of spectrum such that it is able to balance the long term public good, continuous impact on the national economy and

its growth due to investment in telecom infra with the one-time revenue opportunity of spectrum sale.

Therefore, Airtel recommends that the valuation of the respective spectrum bands should be based on their economic value and business case. In such cases, a marginal/incremental revenue approach should be the preferred approach since it would be proportionate to the potential revenue generated by the additional spectrum bands acquired through auction.

Q18. What ratio should be adopted between the reserve price for the auction and the valuation of the spectrum in these spectrum bands and why? Please support your answer with detailed justification.

Airtel's Response:

The reserve price **should not exceed 50% of the valuation** of the band to ensure that the prices discovered in the auction are market driven.

There is a need to set reserve prices at levels that are **sufficient to keep non-serious players out, but also low enough to achieve vibrant price discovery**. To enable competitive bidding and price discovery in the auction, it is important that the reserve price is set below the valuation of the marginal bidder[3].

The UK's Regulator OFCOM states[4] that *we wish to set reserve prices below market value to avoid unsold spectrum, encourage participation and allow a margin for price discovery*.

The European Commission in one of its recommendations[5] on incentives for investments in 5G networks recommends the following to its member states:

> "*Member States are invited to set reserve prices by using a methodology, including benchmarking for the specific band under consideration, financial valuation models and/or other models. When using a benchmarking exercise as input, prices should be adjusted to consider the country specific circumstances, such as population, licence duration and coverage obligations, among others, and, when justified, with the exclusion of exceptional cases (statistical outliers).*
>
> *Member States should avoid revenue maximization.*"

Typically, the reserve price of spectrum is set at a discount to the estimated value to allow a cushion in the level of the reserve price to see price discovery in the auction.

[3] In any auction, the market price is revealed when the marginal bidder either reduces its demand or leaves the auction. Put simply, in each LSA, there will be as many valuations of spectrum as there are operators, but there is only one market price for spectrum.
[4] Statement on Award of the 700 MHz and 3.6-3.8 GHz spectrum bands dated 13.03.2020
[5] Common Union Toolbox for Connectivity, available at https://digital-strategy.ec.europa.eu/en/news/connectivity-toolbox-member-states-agree-best-practices-boost-timely-deployment-5g-and-fibre

In the past, the Authority has recommended setting the reserve price as high as 70% and 80% of the valuation of the spectrum. However, the analysis of auction outcomes suggests that this **approach of setting such steep reserve prices has not proven successful in terms of generating competitive bidding, i.e., has not helped in discovering the market price since most of the winning prices were nearer the reserve price and significant amounts of spectrum remained unsold**. There seems to be an extraordinarily compelling case, therefore, for further bringing down the discounting factor to a level that generates competitive bidding.

In view of the above, Airtel recommends that the reserve price be taken as 50% of the valuation of the spectrum.

Q19. What should the payment terms and associated conditions for the assignment of 37 – 37.5 GHz, 37.5 – 40 GHz and 42.5 – 43.5 GHz spectrum bands relating to:

i. Upfront payment
ii. Moratorium period
iii. Total number of installments to recover deferred payments
iv. Rate of discount in respect of deferred payment and prepayment

Please support your answer with detailed justification.

Airtel's Response:

The payment terms and associated conditions for the assignment of 37 – 37.5 GHz, 37.5 – 40 GHz and 42.5 – 43.5 GHz spectrum bands should be as follows:

i. **Upfront payment:**

During the 2022 auctions, operators opting for moratorium were required to make an upfront payment equal to the spectrum installments of a minimum of 2 years. Making this kind of hefty upfront payment for a resource that is utilised over a period of 20 years causes a strain on the finances of operators.

The core tenet of the recent Cabinet Reforms[6] was to increase availability of cash with the operators by providing a moratorium on dues. If operators are again forced to make hefty upfront payments for acquiring spectrum in the upcoming auctions, then it will effectively negate the relief provided by the Cabinet decision and adversely impact the financial health of the industry.

Therefore, Airtel recommends that no upfront payment should be required. Operators should be allowed to make payments in the form of annual installments

[6] Cabinet Reforms dated 15. Sep.2021

only (post a 6-year moratorium), spread over the remaining 14-year spectrum duration period.

ii. **Moratorium period:**

Please refer to the response to point i. above. No upfront payment should be required. Operators should be allowed to make payments in the form of annual installments only (post a **6-year moratorium**), spread over the remaining 14-year spectrum duration period.

As noted above, operating in the telecom sector requires TSPs to make huge investments that have long gestation periods. Any new network takes a time period of at least 4-5 years to monetise. In view of this, huge upfront payments combined with short moratorium periods are likely to cause significant strain on the finances of TSPs over the long run. In the interests of the overall financial health of the industry in the long-term, it is essential to provide a longer moratorium period with no upfront payment requirement.

Therefore, Airtel recommends that a moratorium of at least 6 years be allowed in the forthcoming auctions, with no requirement of upfront payment and annual installments spread over the remaining 14-year spectrum duration period.

iii. **Total number of installments to recover deferred payments:**

Please refer to the response to points i. and ii. No upfront payment should be required. Operators should be allowed to make payments in the form of **annual installments spread over the remaining 14-year spectrum duration period** (post a 6-year moratorium).

Recovering the payment for spectrum in 14 installments spread over the period of spectrum can meet the objective of securing revenue for the exchequer while also alleviating the financial burden on TSPs and giving them enough liquidity to invest in the network to ensure maximum utilisation of spectrum for the public good.

Therefore, Airtel recommends that a total of 14 installments, after the 6-year moratorium period, should be fixed to recover the deferred payment, with no requirement of upfront payment.

iv. **Rate of discount with respect to deferred payment and prepayment:**

The purpose of allowing deferred payments of spectrum charges is to provide some liquidity to TSPs, to enable them to keep investing in network infrastructure. However, the obligation to pay an additional huge interest on such deferred spectrum payments defeats this objective, since the interest rate burdens the TSPs' finances and impairs their ability to make investments in the network rollout. Hence, to alleviate the financial

burden on the TSPs, **no interest should be levied on the deferred spectrum installments.**

In any case, the purpose of levying interest on deferred payments is not to create an additional source of revenue for the exchequer. Hence, the interest rate, if any, must be such that it is just enough to protect the time value of money and not more – and the repo rate declared by the RBI is the best way to achieve the same.

On the other hand, PLR/MCLR are rates at which loans are offered by banks to customers. Accordingly, they involve a business margin over and above the repo rate, which is as high as 3-4% in some cases. Considering the huge sums involved in spectrum payments, this margin amounts to a significant extra cost for the TSPs.

Thus, **in case it is decided to levy interest on deferred payment installments, the interest rate must be lowered to be in line with the repo rate prevailing in the country**, in order to ensure that no unwarranted financial burden is imposed on the TSPs while simultaneously protecting the interests of the exchequer.

Therefore, Airtel recommends the following:

(i) No interest should be levied on the deferred spectrum installments.

(ii) Without prejudice, if it is decided to charge interest on deferred payment installments, then the interest rate must be lowered to align with the prevailing repo rate in the country.

Q20. Any other suggestion relevant to the subject, may be submitted with detailed justification.

Airtel's Response:

In addition to Airtel's submissions in Q1-19 above, there are certain other issues related to spectrum assignment, which need to be highlighted:

i. Spectrum Swapping:

Spectrum is a critical resource and a robust and comprehensive spectrum policy enhances and improves telecom services, which, in turn, supports the country's GDP growth. **The Hon'ble Prime Minister has set out the vision to transform the country into a digitally empowered society and knowledge economy by launching the 'Digital India' initiative. To achieve this ambitious goal, an enabling regulatory and business environment is necessary.**

Further, the Cabinet reforms of 2021 eased the regulatory framework on spectrum viz. the moratorium period for spectrum deferred payouts, option of surrender of spectrum after 10 years, zero spectrum usage charges (SUC) for future auctions, removal of additional SUC on shared spectrum, conduct of annual auctions, relaxation of terms & conditions of payouts, and so on. These measures have given the necessary impetus to industry. This is evident from the fact that India is witnessing one of the fastest 5G rollouts in the world.

In the same vein, **it is essential that the Government also consider a more flexible spectrum allocation policy by prescribing new/additional spectrum allocation methods apart from spectrum auctioning and trading**. This would improve the ease of doing business as well as ensure efficient utilisation of the spectrum.

In this regard, Airtel suggests that **DoT allow the swapping of spectrum held by TSPs in one band with spectrum available with the Government in other bands.** Due to multiple factors, some of the existing spectrum holdings of the TSPs remain underutilised/stay idle in the spectrum pool of that TSP. In contrast, the same spectrum would be useful to other TSPs based on their business strategy. For better utilisation of the spectrum and to ensure minimal spectrum remains idle, TSPs should be allowed to exchange their existing holding of auctioned spectrum in one band with the spectrum available with the Government in another band that fits the business strategy of the TSP.

For example, one TSP may want to switch some part of its 1800 MHz spectrum holdings with 800/900 MHz of the spectrum band available with the Government based on its business requirements while being revenue neutral or positive. This can be done by paying the difference in amount, which can be calculated based on the last auction-determined price. If the auction determined prices are more than one year old, then the prevailing market rates could be determined by indexing the last auction prices with interest as mentioned in the recent NIA for spectrum auction. By facilitating the same, better utilisation of spectrum resources can be ensured, without any loss to the exchequer. This will ensure that the TSPs have the right combination of various spectrum bands to support their business needs and, more importantly, result in superior quality experience, which is the basic tenet and requirement of telecom policy.

Therefore, Airtel recommends that DoT should formulate a policy that allows TSPs to swap the existing spectrum in one band with another band that they need while being revenue neutral to positive to the exchequer.

ii. Refund of Spectrum Charges on Surrender of Spectrum:

Clause 2.2(viii) of the Guidelines for surrender of Access Spectrum by Access Service Providers dated 15.06.2022 (**"Spectrum Surrender Guidelines"**), provides that "*On surrender of spectrum, **no future instalments with respect to surrendered spectrum will be required to be paid after the date of surrender***." However, clause 2.2(ix) provides

that "*There shall be* ***no refund of any payment made, either as full or partial upfront payment or instalments or pre-payments****, towards the acquisition of such spectrum*."

Thus, as per the current guidelines, if a TSP surrenders spectrum for which prepayment has been made, DoT does not refund any amount. However, if no prepayment has been made, no further installments are required to be paid after surrender. This is not only discriminatory towards the TSPs who make part/full upfront/pre-payment of spectrum charges but it also discourages TSPs from making such upfront/pre-payments.

Further, it also deters TSPs who have made upfront/pre-payments from surrendering such spectrum, even if it is of no use to them – thus, resulting in the spectrum lying idle. This represents a loss of public good as well as a loss to the exchequer – as this spectrum, if surrendered, could have been put to auction and used for provision of services by some other TSP.

It is pertinent to mention here that the DoT itself, while seeking TRAI's recommendations on the terms and conditions of surrender, had stated that "*the spectrum purchase dues for the remaining (post surrender) period will not be levied*" (as quoted in the 2022 Auctions Recommendations). However, the Spectrum Surrender Guidelines are not in line with the policy decision conveyed by DoT in its reference.

It is important that when a policy decision has been taken to waive future payments in case of surrender, it should be implemented both in letter and spirit. In the interests of parity and fairness, the benefit has to be provided in both situations – i.e., if no prepayment has been made, there should be no need for future payments; and if some amount has been pre-paid, the same must be refunded.

In case it is not possible to refund the spectrum charges, they should at least be adjusted with the deferred spectrum payments of the TSP, or with the charges for any spectrum acquired by the TSP in future auctions.

In summary, Airtel recommends the following:

(i) The Spectrum Surrender Guidelines should be amended to provide for a refund of spectrum charges in case of surrender of spectrum.

(ii) In the alternative, i.e., in case the spectrum charges cannot be refunded, they may be adjusted with the deferred spectrum payments of TSP, or with the charges for any spectrum acquired by the TSP in future auctions.

iii. No indexation of Auction-Determined Prices in case Spectrum remains Partially Unsold:

The Authority, in the 2022 Auctions Recommendations, had recommended that a fresh spectrum valuation exercise be conducted once every three years for existing bands.

For auctions conducted in between such periodic valuation exercises, the last auction-determined prices should be duly indexed at MCLR for arriving at the reserve prices for the LSAs where the spectrum put to auction in the previous auctions was sold and over a year elapsed since the previous auction. Further, for the LSAs where the spectrum remained unsold in previous auctions, it was recommended to use the last reserve prices without any indexation.

We submit that **indexing the last auction-determined prices would inflate the reserve prices significantly. Everyone has witnessed how steep reserve prices have led to substantial portions of the spectrum on offer going unsold during the past few auctions.** For example:

a) In the 2022 Auctions, more than 60% of each band put to auction (except for 5G spectrum, i.e., 3300 MHz and 26 GHz bands) remained unsold. The entire spectrum put to auction in the 2300 MHz bands was unsold. Moreover, even in the 800 and 900 MHz bands each, the spectrum sold was merely 13% and 17%, respectively.

b) Further, 800 MHz spectrum was sold in only 4 circles out of 22 where it was put to auction. Similarly, spectrum in the 900 MHz band was sold in only 3 circles out of 21. There are multiple such instances where spectrum in crucial bands was sold but only in a measly quantity. For example:

   i. In the 1800 MHz band,
      - In Andhra Pradesh and Himachal Pradesh LSAs, a meagre 27% of the spectrum put to auction was sold.
      - Whereas in LSAs like Mumbai and Kolkata, only 18% and 21% of spectrum was sold, respectively.

   ii. In the 2100 MHz band in the Delhi LSA, only 33% of the spectrum was sold in the auction.

   iii. In the 2500 MHz band, 33% of the spectrum was sold in the Andhra Pradesh LSA.

The above clearly indicates that the available spectrum was not fully sold, thus representing a lack of demand at current prices. In this situation, **elevating the reserve prices (auction-determined prices indexed at MCLR) is counterproductive, since it serves the interests of neither the government nor industry.**

The spectrum left unsold and remained unused signifies a missed socio-economic opportunity for the nation. If auctioned, it could have been utilised to enhance network capacities, keeping pace with the escalating data usage, and extending services into remote rural areas to narrow the digital divide. Therefore, **any unwarranted inflation of reserve prices is unjustified and needs to be avoided at all costs.**

Further, the primary focus for the DoT should be to ensure sufficient spectrum availability at reasonable prices, regardless of the outcomes of previous auctions. In any case, there have been several instances where the valuation methodology employed by the Authority has resulted in reserve prices lower than that of the preceding auction. For example:

a) The reserve prices for the 800 MHz band in the 2022 Auctions were lower than those in the 2021 Auctions in all LSAs except 5.

b) Similarly, the reserve prices for the 1800 MHz band also were lower in the 2022 auctions in all LSAs except 3.

The fact that the 800 MHz and 1800 MHz spectrum bands got sold in those LSAs during the 2021 Auctions also did not prevent the Authority/DoT from recommending a lower reserve price.

Accordingly, **reserve prices should ideally be revised downwards or at least kept at the same level as the last auctions. In no case should the reserve prices be increased.** This will encourage TSPs to buy more spectrum. This spectrum, which would otherwise be lying unsold and unutilised, will actually generate revenue for the government and enable TSPs to provide better services to consumers – a win-win situation for all.

Without prejudice, in case auction-determined prices have to be indexed to arrive at reserve prices, it should be done only in cases where the entire quantum of spectrum put to auction got sold in the previous auctions, and not in cases where it remained partially unsold. Alternatively, in cases where spectrum remained partially unsold, there should be a clear-cut criterion as to when the auction-determined prices can be indexed – say, for example, when at least 75% of the spectrum on offer got sold in the previous auctions.

Therefore, Airtel recommends the following:

(i) Reserve prices should be revised downwards or kept at the same level as the last auctions. They should not be increased in any case.

(ii) Without prejudice, auction-determined prices should be indexed only in cases where the entire quantum of spectrum put to auction got sold in the previous auctions, and not in cases where it remained partially unsold.

(iii) Alternatively, in cases where spectrum remained partially unsold, there should be a clear-cut criterion as to when the auction-determined prices can be indexed – say, for example, when at least 75% of the spectrum on offer got sold in the previous auctions.

iv. **No indexation of Reserve Prices in case Spectrum was not put to Auction in the Previous Year:**

It is evident from the 2022 Auctions Recommendations that it is only the auction-determined prices that can be indexed. **In cases where there is no auction-determined price, i.e., where the spectrum remained unsold or was not put to auction in the previous auctions, the past recommended reserve prices (without indexation) have to be used. There is no question of indexing the reserve prices.**

It has been observed that the above principle has been followed in calculating the reserve prices for the 2024 Auctions in all spectrum bands and circles, except for the 900 MHz band in the UP (East) circle, where the reserve prices have been arrived at after indexation of the past recommended reserve prices.

It is relevant to point out here that the 900 MHz band was not even offered for auction in the UP (East) circle in the 2022 Auctions and, thus, there is no auction-determined price available for the 900 MHz band. Therefore, in line with the 2022 Auctions Recommendations, the past recommended reserve prices (without indexation) must be used as the reserve prices for the purposes of the 2024 Auctions.

Therefore, Airtel recommends that in cases where spectrum was not put to auction in the previous auctions, the past recommended reserve prices should be used without any indexation.

v. **Calculation of Interest on Spectrum Installments:**

As per the current practice on spectrum auctions, DoT has a 30-day window from the date of first payment to issue a frequency assignment letter. However, interest on the remaining amount becomes applicable even before the issue of the frequency assignment letter.

Therefore, Airtel recommends that the interest on spectrum installments should only be applicable from the date of issue of the frequency assignment letter and not earlier.