

BIF Response to TRAI CP 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.

BIF RESPONSE

There are a total of three frequency bands in the Consultation Paper

- (i) 37-37.5GHz
- (ii) 37.5-40GHz
- (iii) 42.5-43.5GHz

All these bands have already been identified for IMT services by ITU. These bands are mmWave bands – similar to 26 GHz band, which was auctioned in 2022 and acquired across all LSAs by both the major TSPs, who are already at an advanced stage of testing 5G/FWA services using 26 GHz band.

The availability of these new frequency ranges to TSPs will accelerate the development of device ecosystem in these bands and facilitate further expansion of 5G/FWA services in the country.

Therefore, the entire quantum of spectrum available in these bands should be put to auction at the earliest.

However, some of the frequencies within these bands have mixed use cases. Specifically, along with IMT, there are Fixed Satellite Services (FSS – both E to S and S to E), SRS (Space Research Stations), RAS (Radio Astronomy Services) & EESS (Earth Exploration Satellite Services), both passive and active applications in these bands.

Co-existence studies were conducted for these bands during WRC-19 cycle and after intensive studies these bands were identified for IMT (Resolution 243 (WRC-19)).

Further, the Resolution 243 (REV.WRC-23) lists the measures to ensure protection of existing services in the frequency range 37 – 43.5 GHz that include protection of SRS earth stations, RAS stations, FSS earth stations (s-to-E and E-to-s) and EESS services.

The IMT services in these bands may utilize practical methods and solutions consistent with the Resolution 243 (REV.WRC-23) ensuring protection to the incumbent users, since the ITU-R co-existence studies have well established the coexistence between IMT and the other existing satellite services in these bands. However, while deploying IMT, protection measures defined in Resolution 243 (REV.WRC-23) may be considered.

It may be noted that India specific co-existence studies have not been carried out. Hence, it is recommended that **co-existence studies should be carried out by the Government involving all the concerned stakeholders, before auctioning those bands. This should be done in a time-bound manner, so that these spectrum bands can be put to auction at the earliest.**

Further, the present/planned locations of SRS and satellite hub stations, should be made available to TSPs prior to auctions, in order to enable informed decision making regarding acquisition of spectrum in these bands.

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.

BIF RESPONSE

As mentioned in Response to Q1 above, it is recommended that India specific **co-existence studies should be carried out by the Government involving all the concerned stakeholders, before auctioning those bands, which have mixed use with Satellites. This should be done in a time-bound manner, so that these spectrum bands can 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.

BIF RESPONSE

Yes, TDD based duplexing configuration should be adopted as is the case with all higher frequencies viz. milli-metre wave bands.

The choice of band plan should be left to the operators.

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.

BIF RESPONSE

For consistency with other spectrum licenses and clarity for telecom operators to roll-out services, these frequency bands should follow a similar validity period.

Telecom is capital intensive sector with huge payback periods. Shorter validity periods may not provide sufficient time for TSPs to recoup their investments. 20-year validity period is required for ensuring investment stability in the sector.

26 GHz band is also a mmWave band like these frequency ranges; and even that has been auctioned for 20 years. Thus, there is no need for changing the validity period for these specific bands.

Furthermore, longer validity periods have enabled technological re-deployment or reframing, with the same band being used for different technologies – 2100 MHz band was earlier deployed for 3G, but is now also used for 4G and can even be used for 5G; 900/1800 MHz bands were earlier used only for GSM, but are now used for LTE/5G. Shorter validity periods would discourage such innovation and evolution, due to lack of certainty on recovery of investments.

Shorter validity periods may also attract non-serious players in the industry – which would harm the interests of both the consumers and the exchequer. In any case as per current guidelines, an operator would have the option to trade the spectrum after 2 years or surrender it after 10 years. Therefore, there does not seem to be any need for considering a shorter validity period.

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.

BIF RESPONSE

Due to well-honed and time tested auction criteria over many years, the assignment must be kept as LSA-wise only.

Assignment for smaller service areas may leave the rural and semi-urban areas uncovered, as TSPs would only be interested in getting the spectrum for densely populated urban areas. This would exacerbate the digital divide, which will go against national interest.

The LSA-wise assignment has been working well for the past 30 years. 26 GHz band is also a mmWave band like these frequency ranges; and even that has been auctioned on the basis of LSAs.

Access services licenses/authorizations are granted LSA-wise; and the approach for spectrum has to be consistent with that. Moreover, as spectrum/licenses have always been granted LSA-wise, the networks have been designed accordingly. Smaller service areas would disrupt the entire network and business planning of TSPs, and create unnecessary operational and regulatory complexities.

It is also felt that it would be highly challenging for WPC to ensure interference management and harmonization with smaller service areas.

Thus, there is no need for changing the service areas for these specific bands.

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.

BIF RESPONSE

The block size should be kept as 100 MHz in case of 37 – 40 GHz (3GPP band n260) and for 39.5 – 43.5 GHz (3GPP band n259).

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).

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.

BIF RESPONSE

We feel that the Spectrum cap for these bands should not be clubbed with the 26 GHz band, as these bands are not comparable with 26 GHz in terms of ecosystem development.

On the question of whether 37-37.5 GHz, 37.5-40 GHz and 42.5-43.5 GHz should be combined with each other or spectrum cap should be calculated separately for each of these bands, it is desired to have the information on present/ planned locations of SRS and satellite hub stations and co-existence studies, in order to enable informed decision making. However, in the worst case scenario, a cap of 40% may be prescribed for these three frequency ranges combined together (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.

BIF RESPONSE

There should be no separate roll-out obligations for existing players, in respect of the frequency ranges (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz, for such licensees who have already fulfilled roll-out obligations in the 26 GHz band, as the new bands would be utilized only to build additional capacity over and above the network coverage already deployed using 26 GHz band.

For new entrants with no prior spectrum holding in any of the mmWave spectrum bands, it should be similar to the roll-out obligations for 26 GHz spectrum in 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.

BIF RESPONSE

Eligibility conditions should be similar to the current NIA 2024 for 26GHz

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.

BIF RESPONSE

The same approach as followed in case of 3.3GHz and 26GHz should be followed here for inter-operator interference mitigation.

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.

BIF RESPONSE

It may be noted that India specific co-existence studies have not been carried out for these spectrum bands. Co-existence studies should be first carried out by the Government involving all the concerned stakeholders, before auctioning those bands.

Based on similar experience in other frequency bands like 26GHz band, and location of the gateway links that are finite in number, an exclusion zone may be determined. However, to ensure interference free operations and smooth IMT services in the future, futuristic Satellite gateway requirements and locations must be also factored in and due care for adequate protection must be provided for both existing and future Satellite Gateway links.

Also the present as well as planned locations of satellite hub stations must be made available prior to auctions. Post auctions, any new hub station may not be allowed to be established in those areas which are earmarked for IMT.

As regards protection distance between IMT stations and Satellite gateways, we support TRAI's recommendation¹ of gateway station deployments being placed outside of city limits with suitable protection zone from IMT stations.

As per the DoT's reference dated 02.08.2023, the 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands have been identified for IMT; however, the 37.5-40 GHz and 42.5-43.5 GHz frequency bands will be required to be shared with satellite gateway earth stations with suitable protection distance being defined for co-existence.

The technical measures required have been discussed in the context of the ITU and the CEPT during their work before and since ITU World Radiocommunication Conference of 2019 (WRC-19).

Specifically, taking account of ITU Resolution 243 (WRC-19)² and the CEPT Report 82,³ setting out harmonized technical conditions for terrestrial wireless systems of fifth generation mobile networks in the 40.5 – 43.5 GHz band, TRAI may consider applying:

- Reporting requirement for the number and location of base stations deployed around existing Ground stations
- limitations of the areas for placement of antennas plus geographic separation requirements between satellite earth stations and mobile base stations (i.e. calculation of appropriate separation distances shall be based on site-specific information and be dealt with on a case-by-case basis)
- An authorization regime where locations of mobile base stations are planned and well known would assist in the continuous protection of satellite services.

Similar to the recommendations made in 2022 by TRAI regarding spectrum sharing in the 28GHz band, the creation of an automated process on a portal with a database of coordinates of IMT stations could assist in providing feasibility results.

TRAI may maintain suitable oversight while the India specific co-existence studies are carried out to ensure most efficient co-existence between terrestrial mobile and FSS systems, while applying suitable protection measures to protect incumbent satellite broadband services.

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

¹ See section 6.7, Recommendations on Auction of Spectrum in frequency bands identified for IMT/5G (11 April 2022), available at https://www.trai.gov.in/sites/default/files/Recommendations_11042022.pdf.

² See ITU Resolution 243 (WRC-19) on terrestrial component of International Mobile Telecommunications in the frequency bands 37-43.5 GHz and 47.2-48.2 GHz.

³ See also ECC Decision (22)06 on harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz.

should be the protection distance? (ii) What other parameters should be prescribed for the coexistence of IMT and Satellite Gateway links? Suggestions may kindly be made with detailed justification.

BIF RESPONSE

Yes-there is a need to prescribe a protection /keep off distance between IMT base stations and Satellite Gateways. The seclusion zones or keep off distances shall be decided based on India specific co-existence studies and mutually accepted conditions aligned with ITU Resolution 243 (REV.WRC-23) by all stakeholders.

However, the present and planned locations of satellite hub stations must be made available prior to auctions. Post auctions, any new hub station may not be allowed to be established in those areas which are earmarked for IMT.

We support TRAI's recommendation⁴ of gateway station deployments being placed outside of city limits with suitable protection zone from IMT stations.

As per the DoT's reference dated 02.08.2023, the 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands have been identified for IMT; however, the 37.5-40 GHz and 42.5-43.5 GHz frequency bands will be required to be shared with satellite gateway earth stations with suitable protection distance being defined for co-existence.

The technical measures required have been discussed in the context of the ITU and the CEPT during their work before and since the ITU World Radiocommunication Conference of 2019 (WRC-19).

Specifically, taking account of ITU Resolution 243 (WRC-19)⁵ and the CEPT Report 82,⁶ setting out harmonized technical conditions for terrestrial wireless systems of fifth generation mobile networks in the 40.5 – 43.5 GHz band, TRAI shall consider applying:

- Reporting requirement for the number and location of base stations deployed around existing Ground stations
- limitations of the areas for placement of antennas plus geographic separation requirements between satellite earth stations and mobile base stations (i.e. calculation of appropriate separation distances shall be based on site-specific information and be dealt with on a case-by-case basis)
- An authorization regime where locations of mobile base stations are planned and well known would assist in the continuous protection of satellite services.

⁴ See section 6.7, Recommendations on Auction of Spectrum in frequency bands identified for IMT/5G (11 April 2022), available at https://www.trai.gov.in/sites/default/files/Recommendations_11042022.pdf.

⁵ See ITU Resolution 243 (WRC-19) on terrestrial component of International Mobile Telecommunications in the frequency bands 37-43.5 GHz and 47.2-48.2 GHz.

⁶ See also ECC Decision (22)06 on harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz.

Similarly, to the recommendations made in 2022 by TRAI regarding spectrum sharing in the 28GHz band, the creation of an automated process on a portal with a database of coordinates of IMT stations could assist in providing feasibility results.

TRAI may maintain suitable oversight while the India specific co-existence studies are carried out to ensure most efficient co-existence between terrestrial mobile and FSS systems, while applying suitable protection measures to protect incumbent satellite broadband services.

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.

BIF RESPONSE

In the past valuation exercises by TRAI, spectrum efficiency factors of other bands have resulted in incorrect estimation or overestimation of the respective band's value. Moreover, the spectrum efficiency factor is a subjective parameter dependent on many unknown variables to the industry.

TRAI'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. Therefore, we suggest that each band be valued based on its economic value and business case, using a marginal revenue approach.

Alternate Approach

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 can 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 rationalized 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.

BIF 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 may not 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 if compared with the referred international countries. However, since there is no reference point for these bands in India, this approach can be considered as an additional derivative for valuation which should be further normalized 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.

BIF 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

BIF RESPONSE

The valuation of the respective spectrum bands should be based on its 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 the 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.

BIF 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.

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.

BIF RESPONSE

- i. **Upfront payment:** There should be no requirement of upfront payment.
- ii. **Moratorium period:** At least a 6-year moratorium period should be allowed, in order for TSPs to be able to start realising revenues from the spectrum before they have to make the payments for the same.
- iii. **Total number of instalments to recover deferred payments:** A total of 14 annual instalments, after the 6-year moratorium period, should be fixed – with no upfront payment requirement. This will enable TSPs to invest in network rollout.
- iv. **Rate of discount in respect of deferred payment and prepayment:** Huge interest on deferred spectrum payments defeats the purpose of allowing a moratorium. Therefore, no interest should be levied on deferred payments.
In case interest has to be levied, it should be at the repo rate, and not the SBI PLR/MCLR, as repo rate is adequate to protect the time value of money.

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

BIF RESPONSE

- i. **Spectrum Swapping:**

Spectrum is a precious resource that is limited and hence, any successful policy of spectrum management has as its chief objective the most efficient utilisation of the assigned spectrum. We laud the Government of India for its incessant efforts to improve the policy and regulatory environment of telecommunications including that of spectrum.

It is noteworthy that the Cabinet reforms of 2021 introduced historic measures to lighten the regulatory burden on telecom. The measures included actions like an increase in spectrum term from 20 to 30 years, the option of surrendering the spectrum after 10 years, spectrum usage charge for future auctions, removal of SUC on a shared spectrum, the conduct of annual auctions, relaxations of terms and conditions of payouts etc. These measures have truly energised the entire sector and boosted sentiment in the business environment.

In continuation of all the welcome steps taken by the Government, we earnestly recommend the consideration of a Spectrum Exchange Policy

which could vastly enhance the efficiency of utilisation of spectrum. Our suggestion is that the DoT kindly consider the exchange of spectrum held by the TSP in one band with the spectrum available with the Government in other bands. For example, a TSP may wish to exchange part of its 1800 MHz spectrum holding which is not efficiently utilised by it for equal spectrum in 800 or 900 MHz spectrum bands lying idle with the Government.

The TSPs may be permitted to do this on a revenue-neutral/positive basis to the Government by paying the difference of amount, if any, calculated based on the last auction-determined price. In case the auction-determined price is more than 1-year-old, then suitable indexation may be applied to arrive at the current price. Through this methodology, the Government will not lose any revenue, reduce its idle holdings, and at the same time augment the spectrum efficiency of the operators. While the spectrum desired to be exchanged by one TSP because it is somewhat in excess for that operator, the same may be much desired by another operator who might be having less of it for his strategic plan. This is a win-win for all stakeholders including the end users.

In conclusion, we earnestly request the urgent kind consideration of DoT for a Spectrum Exchange Policy as outlined above on a revenue-neutral/positive basis to the exchequer.

ii. **Refund of Spectrum Charges on Surrender of Spectrum:**

As per 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 instalments are required to be paid after surrender. This is discriminatory towards the TSPs who make part/full upfront/pre-payment of spectrum charges and, discourages TSPs from making such upfront/pre-payments.

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 5G Spectrum Recommendations). However, the Spectrum Surrender Guidelines are not in line with the policy decision conveyed by DoT in its reference.

We submit that when a policy decision has been taken to waive the 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 of 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.

Therefore, we recommend 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 more than one year has elapsed since the last auction. Further, for the LSAs where 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. We have 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 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 900 MHz band was sold in only 3 circles out of 21. There are multiple such instances where spectrum in crucial bands were sold but 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 were sold respectively.
 - ii. In the 2100 MHz band in 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 Andhra Pradesh LSA.

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

The spectrum left unsold and remained unused signifies a missed socio-economic opportunity for the nation. If auctioned, it could have been utilized 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.**

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 1800 MHz band also were lower in the 2022 auctions in all LSAs except 3.

The fact that 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, we suggest that **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 unutilized, 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, we recommend 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 UP (East) circle, where the reserve prices have been arrived at after indexation of the past recommended reserve prices.

We wish to point out that 900 MHz band was not even offered for auction in UP (East) circle in the 2022 Auctions, and thus, there is no auction-determined price available for 900 MHz band. Therefore, in line with 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, it should be clarified that in cases where spectrum was not put to auction in the previous auctions, the past recommended reserve prices have to be used without any indexation.

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

As per 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, the interest on spectrum instalments should only be applicable from the date of issue of the frequency assignment letter and not earlier.
