



VIL/P&O/TRAI/AK/2025/108
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Advisor (Networks, Spectrum and Licensing)
Telecom Regulatory Authority of India,
4th, 5th, 6th & 7th Floor, Tower-F,
World Trade Centre, Nauroji Nagar,
New Delhi – 110029

Kind Attn: Shri Akhilesh Kumar Trivedi

Subject: Comments on the TRAI's Consultation Paper on "The Auction of Radio Frequency Spectrum in the Frequency Bands Identified for International Mobile Telecommunications (IMT)" issued on 30.09.2025.

Dear Sir,

This is in reference to the TRAI's consultation Paper on "The Auction of Radio Frequency Spectrum in the Frequency Bands Identified for International Mobile Telecommunications (IMT)" issued on 30.09.2025.

In this regard, kindly find enclosed herewith comments from Vodafone Idea Limited on the abovesaid consultation paper.

We hope our comments will merit your kind consideration please.

Thanking you,

Yours sincerely,

For **Vodafone Idea Limited**

Ambika Khurana
Chief Regulatory and Corporate Affairs Officer

Enclosed: As stated above



“Auction of Radio Frequency Spectrum in the Frequency Bands Identified for International Mobile Telecommunications (IMT)”

At the outset, we are thankful to the Authority for giving us this opportunity to provide our comments to the TRAI Consultation Paper on “Auction of Radio Frequency Spectrum in the Frequency Bands Identified for International Mobile Telecommunications (IMT)” dated 30.09.2025.

In this regard, we would like to submit our comments for Authority’s kind consideration, as given below:

Executive Summary

1. There is a critical need to define the long-term spectrum roadmap, for at least a period of 10 years, which will provide certainty to the business plans and technology evolutions, as chosen by TSPs. The spectrum roadmap should not get influenced by temporary factors of participation in a single auction(s).
2. In our view, there is no over-supply of the spectrum. The spectrum being a key cost component of a mobile service provider, its acquisition is generally in a phase-wise approach. Besides, need of certain amount of spectrum for deployment of networks, the mobile service provider does require additional spectrum for capacity augmentations, beyond the initial spectrum acquired for network deployment.
3. **Given the demand of spectrum in network roll-out and subsequent capacity augmentations, any attempt to regulate the supply of spectrum or introducing new category of licensees to participate in auctions, would result in influencing the spectrum outcomes and would not lead to fair market discovery, thus defeating the very purpose of assigning spectrum through auctions.**
4. **Ways to enhance competition:** There are many ways to enhance competition in the IMT spectrum auctions and to increase competitive bidding activity. Some of these ways are mentioned below:
 - a. **Rationalization of reserve price:** The objective of the Government should not be maximization of revenue through auctions, hence reserve price of new spectrum bands needs to be rationalized. At the same time, we recommend following measures can be taken in the forthcoming auction(s):



- i. For the LSA and spectrum band combination where the spectrum remained unsold in entirety for two consecutive auctions where it was put up for auction, the reserve price should be reduced by 30%.
 - ii. For the LSA and spectrum band combination where the spectrum remained unsold in entirety in the last auction where it was put up for auction, the reserve price should be maintained equal to the last auction without any indexation.
 - iii. For the LSA and spectrum band combination where for the total spectrum put to auction there was no excess demand (i.e. demand was for only part or equal to the spectrum put to auction) and spectrum was sold at reserve price only, the reserve price should be maintained equal to last auction without any indexation.
 - iv. Only for the LSA and spectrum band combination where there was excess demand during the last auction, reserve price may be indexed to account for the time gap.
- b. **Bundling Backhaul spectrum:** As the backhaul spectrum in itself is a non-revenue generating spectrum, along with the administrative allocation, two carriers of radio backhaul should be bundled with the different bands of access spectrum being provided through the auctions e.g. 40 MHz of spectrum in 3300 MHz giving 2 carriers of E-band bundles, 5 MHz of spectrum in 1800 MHz giving 2 blocks of MWA/MWB carriers.
- c. **Increased validity of Spectrum:** The spectrum validity should be made more than 20 years which can be done by giving choice to the TSPs to increase spectrum validity by 10 or 20 years before expiry, basis original acquisition price or the last auction price whichever is lower, without any indexation. The price so determined shall be payable by the TSPs at the end of 20 years based on the 2 payment options as explained above from the expiry of 20 years period of the original spectrum acquisition.
- d. **Roll-out obligations:** For bands with low device ecosystem, the roll-out obligations should be deemed fulfilled with re-certifications, if the IMT services are being provided in a technology through other bands. For example, the roll-out obligations of 26 GHz should be deemed fulfilled, if it has been met through spectrum in 3300-3670 MHz band.

5. Participation of other categories of licensees/authorisation for IMT spectrum:



- a. We do not foresee any need to separately allowing any other licensed entities to be able to bid for mobile spectrum for a sub-set of services. Any such step would also lead to fragmentation of spectrum.
 - b. Any artificial way of increasing competition by allowing other categories of licensees/authorisations like ISPs and M2M WAN service providers, to participate in the IMT spectrum auction, would impact the robustness of the licensing framework. It will not be aligned with the new authorisation framework being pursued under the Telecommunications Act 2023. Besides, it will bring in huge complications related to valuation.
- 6. All available spectrum in 800, 900, 1800, 2100, 2300, 2500, 3300 MHz and 26 GHz should be put for auction to effectively manage the capacity and coverage requirements in the Indian market. The auction will help incentivize the operators to purchase the spectrum and deploy it to provide the necessary services to the customers as well as assist in meeting the government's objectives of spectrum deployment. More Spectrum purchased will also ensure higher revenues to the government.
 - 7. The **objective of the Government should not be maximization of revenue through auctions**, hence **reserve price needs to be rationalized for new bands**.
 - 8. The **existing bands plans and the block size for the spectrum** in the 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands **should continue**.
 - 9. The eligibility criteria and associated eligibility conditions for participation in the forthcoming IMT spectrum auction, should remain as is it was during the 2024 spectrum auction.
 - 10. All IMT Spectrum should continue to be auctioned and assigned on a Telecom circle/Metro area basis only.
 - 11. A reasonably **longer validity like 20 years is a prerequisite** for service providers to make huge investment in purchasing the spectrum as well as deployment of networks. Further, the spectrum validity should be made more than 20 years which can be done by giving choice to the TSPs to increase spectrum validity by 10 or 20 years before expiry, basis original acquisition price or the last auction price whichever is lower, without any indexation.
 - 12. **Spectrum Cap:** We recommend that as and when spectrum is put up for auction, a



spectrum cap of 35% is most appropriate as it balances both the objectives of providing bidding activity as well as equitable availability of spectrum for all TSPs in present market structure. We recommend following spectrum caps:

- a. Spectrum in <1 GHz bands (if not all spectrum bands) should specially have a cap of 35%.
- b. If 600 MHz is put to auction then, there should be a cap of 35% for 600+700 MHz band groups as well.
- c. Cap of 35% should be recommended for all IMT spectrum holding as well.
- d. If Upper 6 GHz (400 MHz) is put to auction, cap of 100 MHz should be applied. After 2030 when entire Upper 6 GHz (700 MHz) is available, cap of 35% can be applied.

13. **2500 MHz spectrum band (B41):** At present, only 60 MHz of this band has been allocated for telecom services, with the remaining 130 MHz reserved for the Department of Space. Full 190 MHz spectrum allocation to telecom services is crucial for the continued growth and competitiveness of the Indian telecommunications sector.

14. **600 MHz:**

- a. The **600 MHz should come with n105 band plan**, which gives 2x40 MHz spectrum.
- b. However, since this band plan has challenge of **absence of device ecosystem**, hence, the auction of 600 MHz should be undertaken only once adequate ecosystem readiness is established, and it should be consulted afresh in FY 2028.

15. **Upper 6 GHz (400 MHz in 6425 MHz to 7125 MHz):**

- a. We strongly recommend that the spectrum in range from 6425 MHz to 7125 MHz should be reserved solely for the IMT services, irrespective of the auction timelines.
- b. The spectrum in range from 6425 MHz to 7125 MHz is very important for the evolution of IMT services therefore, it should only be provided to TSPs – Access authorisation holders and not to any other authorisation holders like ISPs.
- c. 400 MHz spectrum in 6425-6725 MHz and 7025-7125 MHz ranges in the upper 6 GHz band shall be made available in the forthcoming auction.
- d. **Band Plan:** 3GPP has standardized n104 for upper 6 GHz and the same should be used.



- e. **Block size:** The block size should be similar to 3300 MHz i.e. 10 MHz.
 - f. The band pattern for 6 GHz should be set as TDD similar to 3300 MHz & 26 GHz.
16. The **band 1427-1518 MHz** will ensure long-term capacity expansion for TSPs, as data usage keeps increasing, Hence, it becomes necessary that this band should **be brought under the IMT services**.
17. **Auction process, Pricing and Payment:**
- a. There is no need to review the spectrum auction method and design followed in India. The existing auction method of simultaneous multiple round ascending auction system (SMRA) should be continued in forthcoming auctions as well.
 - b. Spectrum valuation exercise should be conducted once in 3 years only and no changes required in spectrum valuation models.
 - c. **For existing bands**, pricing based on ADP should continue subject to alignment of reserve price if there is unsold spectrum.
 - d. **6 GHz** should be priced between 6-10% of the pricing of 3300 MHz.
 - e. Ratio of 70% between the reserve price for the auction and the valuation of the spectrum should continue.
 - f. Spectrum surrender should be allowed for spectrum acquired through auctions prior to 2022.

In furtherance to the above, kindly find below our question- wise comments:

Question-wise Comments

Q1. What measures should be taken to enhance competition and mitigate over-supply of the spectrum in various frequency bands in the forthcoming auction? Please provide a detailed response with justifications.

VIL Comments to Q. No.1



1. Long term Spectrum Roadmap

- a. There is a critical need to define the long-term spectrum roadmap, for at least a period of 10 years, which will provide certainty to the business plans and technology evolutions, as chosen by TSPs. The spectrum roadmap should not get influenced by temporary factors of participation in a single auction(s).
- b. TRAI in its Recommendations on 'Auction of spectrum in frequency bands identified for IMT/5G dated April 11, 2022 has mentioned the need for spectrum roadmap stated as below:

“Considering that there are certain additional bands which are already identified by ITU for IMT services and few additional bands are under consideration in WRC-23 for IMT identification, the Authority recommends that DoT should explore the possibility to make these bands available for IMT services at the earliest and come out with a spectrum roadmap for opening up of new bands for IMT to meet the future demand. At least a 5-year roadmap on spectrum likely to be made available for IMT in each year and likely date/month of auction should be made public. Such a spectrum roadmap will provide certainty, enable the bidders to take informed decisions and may also encourage new entrants.”

- c. This roadmap will help clarify quantum and timeline of spectrum availability, facilitating the TSPs to plan their investments and network roll-outs in near term to long term. The roadmap should also include details regarding the harmonization of future spectrum which will be beneficial in reduction of equipment costs and limiting the possibility of interference.
- d. Therefore, we again request the Authority to re-emphasize DoT to come out with a long-term spectrum roadmap in consultation with the industry. This spectrum roadmap should be for 10 years, instead of 5 year recommended by the Authority vide its above-mentioned recommendations dated 11.04.2022.

2. No Over-Supply of Spectrum:

- a. At the outset, it is surprising to note the observation of “over-supply of spectrum” and the instant question is based on a premise that there is an over-supply of the spectrum which requires mitigation.
- b. In our view, there is no over-supply of the spectrum. The spectrum being a key cost component of a mobile service provider, its acquisition is generally in a phase-



wise approach. Besides, need of certain amount of spectrum for deployment of networks, the mobile service provider does require additional spectrum for capacity augmentations, beyond the initial spectrum acquired for network deployment.

- c. Since the spectrum purchase in an auction generally depends upon various factors like stage of existing roll-outs, pricing of spectrum, device ecosystem, OEM equipment ecosystem, competition, investment strategy etc.
- d. Also, with the evolution of technologies, more and more spectrum is required by a mobile service provider to launch new technologies while continuing with the existing technologies due to consumer device preferences. For example, despite the availability of 4G and 5G, a huge number of customers continue to use the 2G services over feature-phones. This trend is not expected to go away, and even with the introduction of 6G in future, the demand for 4G is expected to remain.
- e. For new technologies, the spectrum is available only in limited and finite quantity thus, the demand for additional spectrum to cater to existing technologies, will come only through the spectrum in the traditional bands like 800 MHz / 900 MHz / 1800 MHz / 2100 MHz / 2300 MHz / 2500 MHz.
- f. To meet the future demands of existing mobile technologies as well as future mobile technologies, IMT spectrum should continue to remain available across LSAs, irrespective of such spectrum remaining unsold in auctions.
- g. **Considering above, we submit that there is no over-supply of spectrum.**
- h. **Given the demand of spectrum in network roll-out and subsequent capacity augmentations, any attempt to regulate the supply of spectrum or introducing new category of licensees to participate in auctions, would result in influencing the spectrum outcomes and would not lead to fair market discovery, thus defeating the very purpose of assigning spectrum through auctions.**

3. Factors linked to selling of Spectrum

- a. At para no. 2.30, the Consultation paper mentions that the demand for spectrum is driven by market forces and influenced by several economic and technological factors. One of the most significant economic factors is the pricing of the spectrum. The spectrum prices in India compared to the ARPU have been higher than they are in most of the other countries and tend to have substantial influence on the auction participations.



- b. The spectrum purchase in an auction generally depends upon various factors like stage of existing roll-outs, pricing of spectrum, device ecosystem, OEM equipment ecosystem, competition, investment strategy etc.
- c. Unsold spectrum doesn't necessarily indicate lack of demand and would not require examination of demand and supply dynamics. As has been mentioned in the paper that demand is driven by market forces and influenced by several factors, it would not be proper to conclude lack of demand without going deep into each of such factors as well as looking at ways to increase the demand through such factors.
- d. Principally, in case no spectrum is sold in a typical spectrum band for two consecutive spectrum auctions then, it is important that its pricing is rationalized.

4. Ways to enhance competition:

- e. There are many ways to enhance competition in the IMT spectrum auctions and to increase competitive bidding activity. Some of these ways are mentioned below and it would be important to have certain principles adopted, to ensure transparency, continuity and certainty.
- f. **Rationalization of reserve price:** The objective of the Government should not be maximization of revenue through auctions, hence reserve price of new spectrum bands needs to be rationalized. At the same time, we recommend following measures can be taken in the forthcoming auction(s):
 - a. For the LSA and spectrum band combination where the spectrum remained unsold in entirety for two consecutive auctions where it was put up for auction, the reserve price should be reduced by 30%.
 - b. For the LSA and spectrum band combination where the spectrum remained unsold in entirety in the last auction where it was put up for auction, the reserve price should be maintained equal to the last auction without any indexation.
 - c. For the LSA and spectrum band combination where for the total spectrum put to auction there was no excess demand (i.e. demand was for only part or equal to the spectrum put to auction) and spectrum was sold at reserve price only, the reserve price should be maintained equal to last auction without any indexation.
 - d. Only for the LSA and spectrum band combination where there was



excess demand during the last auction, reserve price may be indexed to account for the time gap.

- g. **Bundling Backhaul spectrum:** We reiterate our comments provided under TRAI Consultation Paper on Assignment of Spectrum Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and V-Band dated 28.05.2025 that as the backhaul spectrum in itself is a non-revenue generating spectrum, along with the administrative allocation, two carriers of radio backhaul should be bundled with the different bands of access spectrum being provided through the auctions e.g. 40 MHz of 5G spectrum in 3300 MHz giving 2 carriers of E-band bundles, 5 MHz of spectrum in 1800 MHz giving 2 blocks of MWA/MWB carriers.
- h. **Increased validity of Spectrum:** The spectrum validity should be made more than 20 years which can be done by giving choice to the TSPs to increase spectrum validity by 10 or 20 years before expiry, basis original acquisition price or the last auction price whichever is lower, without any indexation. The price so determined shall be payable by the TSPs at the end of 20 years based on the 2 payment options as explained above from the expiry of 20 years period of the original spectrum acquisition.
- i. **Roll-out obligations:** For bands with low device ecosystem, the roll-out obligations should be deemed fulfilled with re-certifications, if the IMT services are being provided in a technology through other bands. For example, the roll-out obligations of 26 GHz should be deemed fulfilled, if it has been met through spectrum in 3300-3670 MHz band.

5. No other category of licensees/authorisation to be allowed to bid for IMT spectrum

- a. **IMT spectrum as per NFAP:** As per NFAP, the instant spectrum discussed in this paper is prescribed to be used for Mobile services and not for any other services.
- b. **Services through use of IMT spectrum means 'Wireless services':** Through a Direction dated 27.05.2025, the TRAI itself has assessed the internet/broadband services (FWA) launched through use of IMT spectrum, as wireless services. Therefore, any entity who intends to use the IMT services, has to take appropriate license/authorisation i.e. access authorisation, to provide wireless services through IMT spectrum.
- c. **IMT spectrum auction is open to all:** The eligibility conditions in the NIA of the IMT spectrum auction is such that any entity including the entities having existing ISP license are free to participate subject to undertaking to take access



authorisation. These entities can provide wireless services under the access authorisation and accordingly, can participate in the IMT spectrum auctions.

- d. The mobile industry is already witnessing cut throat competition, with ARPUs being one of the lowest in the world. Introducing any other set of licensed entities, would be counterproductive, bring in huge complications of pricing of spectrum and consequent pricing arbitrage. Such policy measures impact the existing investments made in the spectrum and networks.
- e. Thus, we do not foresee any need to separately allowing any other licensed entities to be able to bid for mobile spectrum for a sub-set of services. Any such step would also lead to fragmentation of spectrum.
- f. Any artificial way of increasing competition by allowing other categories of licensees/authorisations like ISPs and M2M WAN service providers, to participate in the IMT spectrum auction, would impact the robustness of the licensing framework. It will not be aligned with the new authorisation framework being pursued under the Telecommunications Act 2023. Besides, it will bring in huge complications related to valuation.

Q2. Whether the entire available spectrum in the existing bands viz. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz band should be put to auction in the forthcoming auction?

(a) If yes, what measures should be taken to ensure effective competition in the forthcoming auction?

(b) If no, what quantum of spectrum in each of the frequency bands should be put to auction in the forthcoming auction? Kindly provide a detailed response with justifications.

VIL Comments to Q. No.2

- 1. Yes, all available spectrum as identified for the IMT services should be put for auction to effectively manage the capacity and coverage requirements in the Indian market. The auction will help incentivize the operators to purchase the spectrum and deploy it to provide the necessary services to the customers as well as assist in meeting the government's objectives of spectrum deployment. More Spectrum purchased will also ensure higher revenues to the government.
- 2. A 10-year Spectrum Roadmap involving spectrum availability in each band, (including Government users) with the relevant expiry dates etc. should be made available to provide a comprehensive view across all spectrum bands.



3. Ways to enhance competition:

- a. There are many ways to enhance competition in the IMT spectrum auctions and to increase competitive bidding activity. Some of these ways are mentioned below and it would be important to have certain principles adopted, to ensure transparency, continuity and certainty.
- b. **Rationalization of reserve price:** The objective of the Government should not be maximization of revenue through auctions, hence reserve price of new spectrum bands needs to be rationalized. At the same time, we recommend following measures can be taken in the forthcoming auction(s):
 - i. For the LSA and spectrum band combination where the spectrum remained unsold in entirety for two consecutive auctions where it was put up for auction, the reserve price should be reduced by 30%.
 - ii. For the LSA and spectrum band combination where the spectrum remained unsold in entirety in the last auction where it was put up for auction, the reserve price should be maintained equal to the last auction without any indexation.
 - iii. For the LSA and spectrum band combination where for the total spectrum put to auction there was no excess demand (i.e. demand was for only part or equal to the spectrum put to auction) and spectrum was sold at reserve price only, the reserve price should be maintained equal to last auction without any indexation.
 - iv. Only for the LSA and spectrum band combination where there was excess demand during the last auction, reserve price may be indexed to account for the time gap.
- c. **Bundling Backhaul spectrum:** We reiterate our comments provided under TRAI Consultation Paper on Assignment of Spectrum Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and V-Band dated 28.05.2025 that as the backhaul spectrum in itself is a non-revenue generating spectrum, along with the administrative allocation, two carriers of radio backhaul should be bundled with the different bands of access spectrum being provided through the auctions e.g. 40 MHz of 5G spectrum in 3300 MHz giving 2 carriers of E-band bundles, 5 MHz of spectrum in 1800 MHz giving 2 blocks of MWA/MWB carriers.

- d. **Increased validity of Spectrum:** The spectrum validity should be made more than 20 years which can be done by giving choice to the TSPs to increase spectrum validity by 10 or 20 years before expiry, basis original acquisition price or the last auction price whichever is lower, without any indexation. The price so determined shall be payable by the TSPs at the end of 20 years based on the 2 payment options as explained above from the expiry of 20 years period of the original spectrum acquisition.
- e. **Roll-out obligations:** For bands with low device ecosystem, the roll-out obligations should be deemed fulfilled with re-certifications, if the IMT services are being provided in a technology through other bands. For example, the roll-out obligations of 26 GHz should be deemed fulfilled, if it has been met through spectrum in 3300-3670 MHz band.

Q3. Whether the band plans, which have been adopted for the existing bands viz. the 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands in India, should be retained in the forthcoming auction? If no, kindly suggest new band plan(s) for the existing bands with detailed justifications.

VIL Comments to Q.No.3

1. The consultation paper provides the band plans of the existing spectrum bands at table 2.13 (reproduced below).

Band Plans for the Existing Bands				
Band	3GPP Band Plan Number	Duplexing Scheme	Uplink (MHz)	Downlink (MHz)
800 MHz	5	FDD	824-844	869-889
900 MHz	8	FDD	890-915	935-960
1800 MHz	3	FDD	1710-1785	1805-1870
2100 MHz	1	FDD	1920-1980	2110-2170
2300 MHz	40	TDD	2300-2400	
2500 MHz	41	TDD	2535-2555 MHz and 2615-2655	
3300 MHz	n77/n78	TDD	3300-3370	
26 GHz	n258	TDD	24250-27500	

2. We strongly recommend that the band plans for all the spectrum bands i.e. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz should be retained on a 'as is' basis.



3. Given that the auctioned spectrum bands are already in use for existing commercial services, any changes of band plan in these bands would seriously jeopardize the existing services to the consumers as well as cost of operations.
4. **Therefore, the existing bands plans (as mentioned in Table 2.13 of the consultation paper) for the spectrum in the 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands should continue.**

Q4. Whether the spectrum in the existing bands viz. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands should be auctioned on Telecom Circle/ Metro Area basis with a validity period of 20 years in the forthcoming auction? If no, what should be the area, and validity period of spectrum assignment in the existing bands? Please provide detailed response with justifications.

VIL Comments to Q.No.4

1. Geographical area for Spectrum allocation:

- a. It is important to maintain robustness, certainty and uniformity in spectrum assignment and pricing methodologies. Spectrum being one of the major cost-element of telecom networks, any deviation from uniform policies, can disturb level playing field and provide benefit to certain entities at the cost of others.
- b. The present access licensing and spectrum assignment framework is LSA based hence, the network designing, planning and deployments are at LSA level only. Any depart from LSA based framework, is expected to bring inefficiencies as well as non-level playing field.
- c. Therefore, we recommend that the Spectrum should continue to be auctioned on a Telecom Circle/Metro Area basis only.

2. Validity of Spectrum

- a. Spectrum is the key raw material to provide optimized customer experience and their consumption demand for the long-term stability of the industry. Thus, a reasonably longer validity is a prerequisite for service providers to make huge investment in purchasing the spectrum as well as deployment of networks. Longer validity of more than 20 years will also increase interest of TSPs and thus, would positively attract more participation in auctions.



- b. Therefore, we recommend that the spectrum validity should be made more than 20 years which can be done by giving choice to the TSPs to increase spectrum validity by 10 or 20 years before expiry, basis original acquisition price or the last auction price whichever is lower, without any indexation. Seeking this price during original acquisition inflates the pricing and jeopardizes the interest of the TSPs.
- c. For extension of spectrum with additional 10-20 years, following norms should be fixed:
 - i. TSPs should be permitted to choose upfront or deferred payments for additional 10-20 years, and the interest rate applicable to the last concluded auction.
 - ii. There should be no Spectrum Usage Charges (SUC) on such extended spectrum.
- d. Apart from this, the Spectrum surrender should only be allowed after expiry of at least half the term of spectrum initially taken or extended. All payments already made for the unexpired period of spectrum should be set off against spectrum or any other dues, and such benefits should be applicable to all TSPs on a non-discriminatory basis.

Q5. Whether the block size and minimum quantity for bidding in the existing bands viz. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands should be kept the same in the forthcoming auction as those in the spectrum auction of June 2024 as mentioned in Table No. 2.14 of this consultation paper? If not, what should be the band-wise block size and minimum bid quantity? Kindly provide a detailed response with justifications.

VIL Comments to Q.No.5

1. The block sizes should remain as existing as there are existing operations by the TSPs in these bands and any change will result in many issues like service disruption, complexity of implementation and may also lead to huge capex cost.
2. Change in block sizes will also provide a competitive edge to one service provider over the other, i.e. between incumbent spectrum holding service provider v/s new spectrum acquiring service provider or greenfield networks.
3. Hence, we strongly recommend that the block size for the spectrum in 800 MHz, 900



MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz bands, should be kept the same as in the last spectrum auction.

Q6. What should be the eligibility criteria and associated eligibility conditions for participation in the forthcoming auction for the existing bands viz. the 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands? Kindly provide a detailed response with justifications.

VIL Comments to Q.No.6

1. The eligibility criteria and associated eligibility conditions for participation in the forthcoming IMT spectrum auction, should remain as is it was during the 2024 spectrum auction, except couple of changes given below, to align with present licensing and spectrum structure.
2. The eligibility criteria should also include the new authorisation framework for access services, under the Telecommunication Act 2023.
3. The Networth criteria as mentioned in the NIA 2024 and highlighted in para 2.67 of the instant consultation paper, should also include the spectrum in 700 MHz, 3300 MHz and 26 GHz. Revised condition is given as follows:

(viii) Net Worth requirements: A Bidder is required to show a net worth of Rs.100 Crore per License Service Area (Rs. 50 Crore each for Jammu and Kashmir and North East Service Areas), in which the bidder wants to submit bids. The net worth requirement is applicable in case of 'New Entrants' and the same is not applicable in case of existing licensees. However, this condition of net worth requirement will be applicable on new entrants only in those LSAs where they do not hold any spectrum in any of the bands (i.e., any of the 700 / 800 / 900 / 1800 / 2100 / 2300 / 2500 / 3300 MHz and 26 GHz bands)."

Q7. Whether there is a need for modifying roll-out obligations for the existing bands viz. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz bands, as stipulated in the Notice Inviting Application (NIA) for the spectrum auction held in June 2024 in order to improve mobile coverage in the country? If yes, what modifications should be made in the roll-out obligations for the existing bands? Kindly provide a detailed response with justifications.



VIL Comments to Q. No.7

1. In Wireless telecom domains, technologies are rolled out in multiple bands and thus there is a definite need to look at the MRO obligations for a technology across multiple bands.
2. The principles for fulfilling MRO obligation for a technology in any band allows re-certification in other bands as well. This was part of the NIA conditions for quite some time and the recent NIA conditions, as highlighted at para 2.75 of this paper also incorporated the same – extract reproduced below:

2.75 In NIA 2022 for the auction of spectrum held in July/ August 2022, it was stipulated that the requirement of rollout obligations in respect of the 600 MHz, 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, and 2500 MHz bands, shall be treated as fulfilled once the required number of district headquarters or block headquarters or rural SDCAs are covered by a licensee by using any technology in any band; therefore, the licensee would not be required to fulfil these roll-out obligations separately in respect of each of these bands. However, in that auction, the rollout obligations for the 3300 MHz and 26 GHz bands were specific to the frequency bands. It is noteworthy that the provisions related to roll out obligations in the subsequent NIA i.e. NIA 2024 were similar to those in NIA 2022.

3. However, for 3300 MHz and 26 GHz spectrum bands, the MRO was linked to number of towers and also made band specific. Due to lack of device ecosystem, the 26 GHz has seen skeletal deployments. Therefore, there is a need to re-assess roll-out obligations for new bands including 26 GHz spectrum band.
4. We strongly recommend that there should be consistent application of roll-out obligation principle across the spectrum bands i.e. the principle used in the 800/900/1800/2100/2300/2500 MHz bands as mentioned at point no. 2 above, should also be extended to other bands being used for 5G services i.e. 3300 MHz and 26 GHz. Thus, the roll-out obligation fulfillment for n78 (3300 MHz) should also allow re-certification of roll-out obligations for the band n258 (26 GHz), both for new as well as existing allocations.
5. Such pragmatic approach in the spectrum policies goes a long way in reposing trust and certainty for the huge investments being made in spectrum acquisitions.



Q8. Whether there is a need to review the spectrum caps for the existing bands viz. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz bands for the forthcoming auction? If yes, what should be the spectrum cap per service provider for different frequency bands? Kindly provide a detailed response with justifications.

VIL Comments to Q. No. 8

1. In the last NIA of 2024 for the spectrum auctions conducted in June 2024, spectrum caps were set as follows:
 - *A Cap of 40% on the combined spectrum holding in the sub-1 GHz bands i.e. 700 MHz, 800 MHz and 900 MHz bands, including existing spectrum holding of TSPs in these bands.*
 - *A Cap of 40% on the combined spectrum holding in 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands, including existing spectrum holding of TSPs in these bands.*
 - *A Cap of 40% on the spectrum holding in 3300 MHz band including existing spectrum holding of TSPs (rounded off considering the block size in this band).*
 - *A Cap of 40% on the total spectrum holding in 26 GHz band including existing spectrum holding of TSPs (rounded off considering the block size in this band).*
2. In our view, a cap of 40% leads to reduction in equitable availability of spectrum for even 3 TSPs over a period of time, leave aside any room for a new player. While certain players may exercise their right of purchasing the spectrum till the spectrum cap value in the first auction itself, it will not leave adequate spectrum for other TSPs who may want to purchase spectrum to a reasonable extent (leave aside till the spectrum cap value), over a period of next few auctions.
3. Availability of lesser and equitable spectrum to the 3 TSPs certainly impacts the competitive structure of the market in the longer term.
4. Furthermore, the reservation of spectrum for the PSU TSP, reduces the overall availability of spectrum being put to auction and further skews the competitive availability of reasonable spectrum in favour of the initial TSP(s) who buys in the first auction.
5. Therefore, it is important to put in place a balance between revenue realization by the Government through more spectrum purchase by TSPs bidding in initial auction v/s maintaining an effective competitive structure in the market through equitable availability of spectrum for all TSPs.
6. **Keeping above in view, we recommend that as and when spectrum is put up for auction, a spectrum cap of 35% is most appropriate as it balances both the objectives of providing**



bidding activity as well as equitable availability of spectrum for all TSPs in present market structure.

7. Having said that, different spectrum bands have different technical characteristics as well as availability hence, applying carte blanche approach for grouping of spectrum bands for the purposes of spectrum cap %, would not be a rational approach.
8. **The spectrum in < 1 GHz bands have typically lower quantum than the higher frequencies and play an important role in enhancing coverage of wireless services and thus, it is in the consumer interest that all TSPs have equitable access to spectrum in these bands. Therefore, spectrum in <1 GHz bands (if not all spectrum bands) should specially have a cap of 35%.**
9. **For the spectrum in the 600 MHz and 700 MHz bands, considering the utility of these spectrum bands from coverage point of view, a combined spectrum cap at 35% should be introduced for 600 MHz + 700 MHz, if 600 MHz is being put to auction. The spectrum cap for sub-GHz spectrum shall also be continued in addition to introducing the spectrum cap for 600+700 MHz.**

Q9. Are there any other inputs/ issues related to the auction of spectrum in the existing bands viz. 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz bands for the forthcoming auction? Suggestions may be made with detailed justifications.

VIL Comments to Q.No.9

2500 MHz spectrum band (B41):

1. We would like to bring to your attention the current allocation status of the B41 spectrum band (2496-2690 MHz), which is critical for the efficient deployment of 5G services. At present, only 60 MHz of this band has been allocated for telecom services, with the remaining 130 MHz reserved for the Department of Space. This allocation is significantly lower compared to other leading countries like the United States and China, where the full 190 MHz spectrum has been allocated for telecom use, allowing for the efficient deployment of advanced technologies such as 5G.
2. Multiple representation was made in the past by TSPs that more spectrum from this band shall be allocated for IMT.

25	25	25	26	26	26
00	35	55	15	55	90



DoS (35 MHz)	BSNL (20 MHz)	DoS (60 MHz)	Pvt. Operators (40 MHz)	DoS (35 MHz)
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3. Reallocating the full 190 MHz for telecom services will have several benefits, including:
 - i. Enhanced Network Capacity and Performance: The additional spectrum will enable telecom operators to deploy wider channels, leading to improved data speeds and network performance.
 - ii. Accelerated 5G Deployment: A larger spectrum allocation will facilitate the rapid rollout of 5G networks, positioning India as a global leader in next-generation telecommunications.
 - iii. Economic Growth: Improved connectivity and network performance will drive innovation, boost productivity, and create new economic opportunities across various sectors.
 - iv. Better User Experience: Consumers will benefit from faster, more reliable internet services, enhancing their overall digital experience.
4. We believe that reallocating the full 190 MHz spectrum for telecom services is crucial for the continued growth and competitiveness of the Indian telecommunications sector.
5. Considering above, we request Authority's support in recommending the above to the DoT.

Q10. Whether the spectrum in the 600 MHz band should be put to auction in the forthcoming auction? If yes, whether the band plan n105 should be adopted for the 600 MHz band, or otherwise? Please provide a detailed response with justifications.

And

Q11. In case you are of the opinion that the 600 MHz band should not be put to auction in the forthcoming auction, what should be the timelines for auctioning of the 600 MHz band? Please provide a detailed response with justifications.

VIL Comments to Q. No. 10 and 11



1. Band plan n105 (612 – 652 MHz / 663 – 703 MHz) will enable spectrum availability of 2x40 MHz in the critical sub-GHz band which will be critical for bridging the digital divide and ensuring robust indoor connectivity, as elaborated below:
 - a. **Wide rural and national coverage:** The 600 MHz band being a low-band spectrum, have superior propagation characteristics, allowing them to cover larger geographical areas with fewer towers. This is critical for expanding coverage to rural and remote parts of India, closing the digital divide.
 - b. **In-building signal penetration better:** The low-frequency signal can penetrate more easily in walls and buildings, ensuring more reliable indoor coverage.
 - c. **Support for Internet of Things (IoT) services:** The wide coverage of low-frequency bands like n105 is ideal for Internet of Things (IoT) applications. It provides a massive network capacity to connect billions of embedded sensors and devices, supporting future growth in smart technologies.
2. However, currently there is no ecosystem availability in this band and will take few years to get developed. Due to ecosystem unavailability, TSPs will not be able to capitalize on the investment made in procuring this spectrum. Therefore, it should be consulted afresh in FY 2028.

Q12. In case it is decided to auction the spectrum in the 600 MHz band in the forthcoming auction,

(a) Should the entire available spectrum in the 600 MHz band be put for bidding in the forthcoming auction?

(b) Whether the eligibility criteria, associated eligibility conditions, block size, minimum bid quantity of spectrum, validity period for the assignment of spectrum, area of assignment on Telecom Circle/ Metro Area-basis, spectrum cap and roll out obligations for the spectrum in the 600 MHz band in the forthcoming auction should be kept the same as those in the spectrum auction of 2022, or otherwise? Please provide a detailed response with justifications.

And

Q13. Are there any other inputs/ issues related to the auction of spectrum in the 600 MHz band for the forthcoming auction? Suggestions may be made with detailed justifications.

VIL Comments to Q.No.12



On spectrum to be auctioned under 600 MHz band, kindly refer to our comments to Q. No. 11 above. We again recommend that spectrum in 600 MHz band should not be put to auction in forthcoming auction instead, it should be consulted afresh in FY 2028.

Q14. Whether the spectrum in 6425-6725 MHz and 7025-7125 MHz ranges in the upper 6 GHz band should be put to auction for IMT in the forthcoming auction? Kindly provide a detailed response with justifications.

And

Q15. In case you are of the opinion that the spectrum in 6425-6725 MHz and 7025-7125 MHz ranges should not be put to auction in the forthcoming auction, what should be the timelines for auctioning of this spectrum for IMT? Kindly provide a detailed response with justifications.

VIL Comments to Q. No. 14 and 15

- 1. We strongly recommend that the spectrum in range from 6425 MHz to 7125 MHz should be identified and reserved solely for the IMT services, irrespective of the auction timelines.**
- 2. Spectrum in this band is very important for the evolution of IMT services therefore, it should only be provided to TSPs – Access authorisation holders and not to any other authorisation holders like ISPs.**
- 3. Ecosystem around upper 6 GHz and Timeline for Auction:**
 - a. 3GPP has standardized n104 for upper 6 GHz and the same can be used from 5G or higher Technologies.
 - b. We understand that certain countries have started licensing or conducting 5G trials on the spectrum in the Upper 6 GHz band i.e. 6425-7125 MHz and 7025-7125 MHz. For example, TSPs in China, Australia, Hongkong and Thailand are conducting trials.
 - c. Further, in case of auction, since this band is a capacity band and will be deployed to supplement the capacity requirement for existing 5G networks, there shall not be any additional minimum rollout obligations (MRO) requirement for this band in case MRO is already met for 3300 MHz band.



- d. However, if it is decided to put a separate MRO for this band, a sufficient time period of 5 years shall be allowed to the TSPs before any such MRO conditions are made applicable.
- e. Further, this spectrum is of significant importance to 5G and 5G Advanced/6G services. Balance 300 MHz spectrum shall also be made available as soon as possible for IMT usage.
- f. **Considering above, we strongly recommend 400 MHz spectrum in 6425-6725 MHz and 7025-7125 MHz ranges in the upper 6 GHz band shall be made available in the forthcoming auction.**

**Q16. Considering that the satellite-based service (uplink) will coexist with IMT-based services in the upper 6 GHz band, - whether pilot trials should be conducted to ascertain the keep out distance of the IMT base stations for satellite uplink stations before the auction of the upper 6 GHz band,
or
should it be left to the telecom service providers to ascertain the keep-out distance of the IMT base stations for satellite uplink stations at the time of commercial deployment after the auction? Kindly provide a detailed response with justifications.**

VIL Comments to Q.No.16

- 1. Yes, trials should be conducted within the supervision of competent Authorities like TEC.
- 2. Should there be interference, the trial shall clearly be able to identify that:
 - a. The minimum distance between IMT base stations and Satellite systems with no or minimum degradations.
 - b. All efforts shall be made to ensure that there is no Fragmenting of the spectrum. This will be a significant loss to Govt and the services which the Indian population can enjoy.
 - c. A finite timeframe shall be given to Satellite operators to move out of these bands in the next 2-3 years.



Q17. In case it is decided to put the spectrum in 6425-6725 MHz and 7025-7125 MHz ranges in the forthcoming auction, -

(a) Whether the 3GPP band plan n104 should be adopted for the upper 6 GHz band? If no, which band plan should be adopted for the upper 6 GHz band?

(b) What amount of spectrum in the 6425-6725 MHz and 7025-7125 MHz ranges should be put to auction?

(c) Whether the spectrum in the 6425-6725 MHz and 7025- 7125 MHz ranges should be auctioned on Telecom Circle/Metro service area basis with a validity period of 20 years? If no, what should be the area and validity period of spectrum assignment in the 6425-6725 MHz and 7025- 7125 MHz ranges?

(d) What should be the block size, minimum bid quantity, and roll-out obligations for the spectrum in these ranges?

(e) What should be the eligibility criteria and associated eligibility conditions for bidding for the spectrum in these ranges? Please provide a detailed response with justifications.

VIL Comments to Q.No.17

1. Kindly refer to our above comments to Q. No. 14 and 15. We strongly reiterate that the spectrum in 6425-6725 MHz and 7025-7125 MHz should be put to auction in forthcoming auction itself.
2. **Band Plan:** Yes, 3GPP has standardized n104 for upper 6 GHz and the same should be used.
3. **Amount of Spectrum:** Entire identified and available 400 MHz should be put to auction.
4. **Area and Validity of Spectrum:** For consistency in spectrum policies, the geographical area for spectrum allocation should remain Telecom circle/Metro service area wise basis. The validity should also remain 20 years, with a right of getting that extended by another 10-20 years. Pls refer to our detailed comments to Q. No. 1.
5. **Block size:** The block size should be similar to 3300 MHz i.e. 10 MHz.
6. **Eligibility criteria:** The eligibility criterion and rules shall remain similar to auction conditions of 3300 MHz, with a separate spectrum cap for this band. Spectrum in this band is very important for the evolution of IMT services therefore, it should only be provided to TSPs – Access authorisation holders and not to any other authorisation holders like ISPs.



Q18. What provisions with respect to the spectrum cap per service provider in a licensed service area (LSA) should be made applicable for the spectrum in the upper 6 GHz band for IMT? Specifically,

(a) Whether a combined spectrum cap for the 3300 MHz band and the upper 6 GHz band should be prescribed? If yes, what should be the spectrum cap per service provider?

(b) In case your response to (a) above is in the negative, what should be the spectrum cap per service provider for the spectrum in the upper 6 GHz band? Please provide a detailed response with justifications.

VIL Comments to Q.No.18

1. In our view, the spectrum cap for the 3300 MHz band and the upper 6 GHz band should not be combined due to different propagation characteristics of the spectrum. In case, the 3300 MHz band is clubbed with the upper 6 GHz in the forthcoming auction, it would provide capability to buy higher amount of spectrum in 3300 MHz band, beyond the present threshold due to the in-band spectrum cap – which will distort the competition and also impact the equitable access of spectrum in all bands to all players.
2. There should be a specific and separate spectrum cap for the upper 6 GHz spectrum. Since only 400 MHz is available at present, a maximum spectrum cap of 100 MHz per TSP should be recommended. In future, when additional spectrum is available, the spectrum cap should be revisited and separate cap of 35% of the total spectrum should be made applicable.

Q19. To mitigate inter-operator interference due to TDD-based configuration, whether the approach adopted for the 3300 MHz and 26 GHz bands should also be made applicable for the newly identified spectrum in the upper 6 GHz band? In case you are of the opinion that some other provisions are required to be established, suggestions may kindly be made with detailed justifications.

VIL Comments to Q.No.19

The band pattern for 6 GHz should be set as TDD similar to 3300 MHz & 26 GHz.



Q20. Are there any other inputs/ issues related to the auction of spectrum in the upper 6 GHz band for the forthcoming auction? Suggestions may be made with detailed justifications.

VIL Comments to Q. No. 20

No comments.

Q21. Considering the need to assign a contiguous 24 MHz block in the 1427-1518 MHz range to the Government user,

(a) Which band plan and duplexing scheme should be adopted for IMT in the 1427-1518 MHz range?

(b) Which range of spectrum (a contiguous block of 24 MHz) should be assigned to the Government user? Kindly provide a detailed response with justifications.

VIL Comments to Q. No. 21

1. The frequency range of 1427-1518 MHz is a valuable spectrum range for IMT services. This band was globally identified for IMT use at the World Radiocommunication Conference in 2015 (WRC-15). This offers 91 MHz of additional mobile broadband spectrum, providing a good balance of coverage and capacity for mobile operators.
2. The frequency range of 1427-1518 MHz has also been suggested by the Cabinet, based on the DoT's proposal which is part of a total of 687 MHz of spectrum for re-farming.
3. Many countries like the European Union, China, Japan and the US have already identified 1427-1518 MHz for IMT. Aligning with these global band plans will help TSPs to ensure device ecosystem compatibility, lower equipment cost and ease of roaming.
4. India has limited mid-band spectrum (1-6 GHz) that supports both coverage and capacity for 5G, the 1427-1518 MHz band offers ~ 90 MHz of valuable mid-band spectrum, that can fill the gap between low-band (sub-1GHz) and high-band (3.3-3.67) 5G allocations.
5. This band can be configured in supplemental downlink (SDL) or supplemental uplink (SUL) mode, helping for balancing data traffic between the up/down link and improving user experience.



The band 1427-1518 MHz will ensure long-term capacity expansion for TSPs, as data usage keeps increasing, Hence, it becomes necessary that this band should be brought under the IMT services. A continuous spectrum at the end of the block can be assigned to the Govt User post finalizing the band plan for this band.

Q22. Are there any other inputs/issues related to the spectrum in the 1427-1518 MHz range? Suggestions may be made with detailed justifications.

VIL Comments to Q. No. 22

Due to limited availability of IMT bands in low-mid band, this band is of significant importance to TSPs and any non IMT usage impacts the band plan and hence there is a need to define a roadmap for release of the 24 MHz from Government user for IMT services.

Q23. Whether there is a need to review the spectrum auction method and design followed in India? If yes, suggestions on spectrum auction method and design may be made with detailed justifications and international practice in this regard.

VIL Comments to Q.No.23

There is no need to review the spectrum auction method and design followed in India. The existing auction method of simultaneous multiple round ascending auction system (SMRA) should be continued in forthcoming auctions as well. The SMRA method of auction has been followed in India right from the first auction in 2010 till the last auction 2024. It has served well in the past and considers the dynamics of the spectrum auctions.

Q24. What additional economic, technical, or market-related factors should be taken into account while determining the valuation and, subsequently, the reserve price of spectrum, in order to promote effective competition, ensure optimal spectrum utilization, and encourage wider participation in auctions?

VIL Comments to Q.No.24

1. For promoting effective competition, ensuring optimal spectrum utilization, and encouraging wider participation in auctions, we would like to recommend certain



principles to be adopted, details of which are given in following points.

2. For Valuation and Reserve price determination of the Spectrum Bands already put to auction in earlier auctions:

- a. For the LSA and spectrum band combination where the spectrum remained unsold in entirety for two consecutive auctions where it was put up for auction, the reserve price should be reduced by 30%.
- b. For the LSA and spectrum band combination where the spectrum remained unsold in entirety in the last auction where it was put up for auction, the reserve price should be maintained equal to the last auction without any indexation.
- c. For the LSA and spectrum band combination where for the total spectrum put to auction there was no excess demand (i.e. demand was for only part or equal to the spectrum put to auction) and spectrum was sold at reserve price only, the reserve price should be maintained equal to last auction without any indexation.
- d. For the LSA and spectrum band combination where there was excess demand during the last auction, the reserve price may be indexed to account for the time gap.

3. For Valuation and Reserve price determination of the spectrum bands which have not been put to auction earlier:

- a. The development of the overall Ecosystem including device ecosystem, availability of sufficient use cases shall be considered before putting the spectrum for auction.
- b. Availability of contiguous blocks of spectrum shall also be ensured.
- c. The existing method of using technical efficiency factor, revenue generating capacity and other factors for valuation of spectrum may be continued.

Q25. Should the valuation of a given spectrum band, among 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2500 MHz, 3300 MHz, and 26 GHz, be based exclusively on its respective auction-determined price from the 2022 and/or 2024 auctions, without applying any other valuation approach? In such a case, should the auction price be indexed using MCLR or any other basis (please specify) to account for the time gap? Please provide detailed justification.



VIL Comments to Q.No.25

1. The valuation of spectrum in the spectrum bands of 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2500 MHz, 3300 MHz, and 26 GHz should be based on its respective auction-determined price from the 2022 and/or 2024 auctions.
2. We would like to recommend that certain principles to be adopted for valuation / reserve price, details of which are given below:
 - a. For the LSA and spectrum band combination where the spectrum remained unsold in entirety for two consecutive auctions where it was put up for auction, the reserve price should be reduced by 30%.
 - b. For the LSA and spectrum band combination where the spectrum remained unsold in entirety in the last auction where it was put up for auction, the reserve price be maintained equal to the last auction without any indexation.
 - c. For the LSA and spectrum band combination where for the total spectrum put to auction there was no excess demand (i.e. demand was for only part or equal to the spectrum put to auction) and spectrum was sold at reserve price only, the reserve price should be maintained equal to last auction without any indexation.
 - d. For the LSA and spectrum band combination where there was excess demand during the last auction, the reserve price may be indexed to account for the time gap.
3. Historically, the One-year prevalent SBI MCLR is considered for indexation of the prices to account for the time gap between the auctions. However, the indexation shall be done using a rate which is closer to the RBI Repo rate.

Q26. If the answer to the above is in the negative, should the past auction-determined price of the respective spectrum band still be considered as one of the approaches or basis for valuation, along with other approaches? Please provide justification for your response. In such a case, should the auction price be indexed using MCLR or any other basis (please specify) to account for the time gap? Please provide detailed justification.

VIL Comments to Q.No.26

Please refer to our above comments to Question No. 25.



Q27. Should the spectrum valuation exercise be undertaken once every three years, as recommended by the Authority in its recommendations dated 11.04.2022? If not, what should be the revised periodicity for conducting the valuation exercise? Please justify your response along with detailed basis for conducting a fresh valuation exercise.

VIL Comments to Q.No.27

Yes, the spectrum valuation exercise should be undertaken once every three years, as recommended by the Authority in its recommendations dated 11.04.2022.

Q28. Should the valuation models as adopted by the Authority in its last recommendation, continue to be used as a basis for valuation of spectrum in the 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz bands? Please provide a detailed justification.

VIL Comments to Q.No.28

1. The valuation of spectrum in the spectrum bands of 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2500 MHz, 3300 MHz, and 26 GHz should be based on its respective auction-determined price from the 2022 and/or 2024 auctions.
2. In addition to above, kindly also refer to our comments given above to Q. No. 25.

Q29. Is there a need to introduce any changes to the valuation models or methodologies currently followed by the Authority for spectrum valuation exercises, including the discontinuation of any existing model or the introduction of a new model? If yes, please provide specific suggestions along with a detailed justification.

VIL Comments to Q.No.29

The valuation models or methodologies currently followed by TRAI for spectrum valuation exercises adequately cover the various factors which should be considered for the valuation and hence, these should be continued by TRAI going forward as well.



Q30. Should the auction determined price of other bands by using spectral efficiency factor serve as a basis of valuation for the 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz bands? If yes, which spectrum bands be related, what efficiency factor or formula should be used and what is the basis for the same? Please justify your suggestions.

VIL Comments to Q.No.30

In each of these bands mentioned in the question, the auction determined price is available. Therefore, there is no need to conduct the valuation exercise by using spectral efficiency factor, and the existing ADP duly indexed (as provided in our comments above to Q. No. 25) can be used.

Q31. Apart from the approaches highlighted above which other valuation approaches should be adopted for the valuation of spectrum in existing bands? Please provide detailed information along with justifications.

VIL Comments to Q.No.31

Please refer to our comments on the above questions. There is no need of bringing in any other valuation approach.

Q32. Should the auction determined price of other bands by using spectral efficiency factor serve as a basis of valuation for 6425–6725 MHz and 7025–7125 MHz bands? If yes, which spectrum bands be related, what efficiency factor or formula should be used and what is the basis for the same? Please justify your suggestions.

VIL Comments to Q. No.32

1. For new bands, it is pragmatic to use spectral efficiency factor. 6 GHz has lower propagation compared to 3300 MHz by 6dB and hence, radio network deployment with 6 GHz spectrum would require 4 times infrastructure build up as compared to 3300 MHz.
2. Further, currently the ecosystem in the 6 GHz band is at a nascent stage with few countries having just started the auction process for this band. The overall development of ecosystem may take 4-5 years post which the commercial exploitation of the spectrum in this band may start taking shape. Due to these factors,



the TSPs will not be able to capitalize on the investment made in procuring this spectrum.

3. In a recent example the spectrum in 26 GHz band was auctioned by DoT in 2022. 2850 MHz in each LSA was put to auction in the spectrum auction held in July/ August 2022. Out of the total 62700 MHz (2850 MHz in each of the 22 LSAs), 45350 MHz was sold in that auction. However, the overall ecosystem has not seen the expected development in last 4 years and operators are still struggling to find a relevant use case of this spectrum. During the same period of time, operators have paid 4 instalments pertaining to 2022 auction without any benefit of the spectrum. In PV terms 48% of the total value (based on the interest rate of 8.65%) is being paid by the TSPs in first 5 years which in this case has been lost due to non-development of the ecosystem.
4. Considering the above, the price derived as per point no. 1 above shall be reduced by 60%-75% to provide for loss to the TSPs due to time spectrum being kept idle for development of the necessary ecosystem for the upper 6 GHz band which may take more time than 26 GHz.
5. Therefore, we recommend 6 GHz should be priced between 6-10% of the pricing of 3300 MHz.

Q33. Should the auction determined price of other countries in 6 GHz spectrum bands serve as a basis of valuation of 6425- 6725 MHz & 7025-7125 MHz bands in India? What methodology should be followed for using this auction determined price as a basis for valuation? Support your suggestions with justifications and country-wise auction data.

VIL Comments to Q. No. 33

Not many examples of auction determined price in other countries are available. Thus, we would like to draw emphasis towards pricing based on spectral efficiency. Please refer to our above comments to Q. No. 32.

Q34. If the above approach is considered appropriate, should the international auction-determined prices be normalized to account for cross-country differences such as population, GDP, purchasing power parity (PPP), subscriber base, and other relevant factors? If so, should normalization be carried out by using the ratio of auction prices of 6 GHz spectrum bands vs other mid band/mmWave band within the same country to



neutralize the impact of cross-country differences? Alternatively, please suggest any other suitable normalization methodology that may be adopted in this context.

VIL Comments to Q.No.34

Please refer to our above comments to Q. No. 32 and 33.

Q35. Apart from the approaches highlighted above, which other valuation approaches may be adopted for the valuation of 6425- 6725 MHz & 7025-7125 MHz bands? Please provide detailed information along with justifications.

VIL Comments to Q.No.35

Please refer to our above comments to Q. No. 32 and 33.

Q36. Should the auction determined price of other bands by using spectral efficiency factor serve as a basis of valuation for 600 MHz bands? If yes, which spectrum bands be related, what efficiency factor or formula should be used and what is the basis for the same? Please justify your suggestions.

VIL Comments to Q.No.36

Given the absence of ecosystem, we request that the 600 MHz spectrum should not be put to auction in forthcoming auction, and should be consulted afresh in FY 2028.

Q37. Should the auction determined price of other countries in 600 MHz band serve as a basis of valuation of 600 MHz band in India? What methodology should be followed for using this auction determined price as a basis for valuation? Support your suggestions with justifications and country-wise auction data.

VIL Comments to Q.No.37

Please refer to our above comments to Q. No. 36



Q38. If the above approach is considered appropriate, should the international auction-determined prices be normalized to account for cross-country differences such as population, GDP, purchasing power parity (PPP), subscriber base, and other relevant factors? If so, should normalization be carried out by using the ratio of auction prices of 600MHz band vs other sub GHz spectrum bands within the same country to neutralize the impact of cross-country differences? Alternatively, please suggest any other suitable normalization methodology that may be adopted in this context.

VIL Comments to Q.No.38

Please refer to our above comments to Q. No. 36.

Q39. Apart from the approaches highlighted above which other valuation approaches may be adopted for the valuation of 600 MHz band? Please provide detailed information.

VIL Comments to Q.No.39

Please refer to our above comments to Q. No. 36.

Q40. Should the value of 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, 26 GHz, 6425- 6725 MHz & 7025-7125 MHz and 600 MHz bands be determined using a single valuation approach? If yes, please indicate which single valuation approach or method should be adopted in each case and provide detailed justification.

VIL Comments to Q. No. 40

1. These bands are at different level of maturity and auction hence, it would not be possible to have a single valuation approach. While bands where auction determined prices (ADP) are available, should continue basis the said ADP whereas, for the new bands, an apt approach is to be seen given international examples, clear technical efficiency factor of nearby bands etc.
2. **For Spectrum Bands of 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, 26 GHz valuation may be determined as follows:**
 - a. For the LSA and spectrum band combination where the spectrum remained unsold in entirety for two consecutive auctions where it was put up for auction, the reserve price should be reduced by 30%.



- b. For the LSA and spectrum band combination where the spectrum remained unsold in entirety in the last auction where it was put up for auction, the reserve price should be maintained equal to last auction without any indexation.
 - c. For the LSA and spectrum band combination where for the total spectrum put to auction there was no excess demand (i.e. demand was for only part or equal to the spectrum put to auction) and spectrum was sold at reserve price only, the reserve price should be maintained equal to last auction without any indexation.
 - d. For the LSA and spectrum band combination where there was excess demand during the last auction, the reserve price may be indexed to account for the time gap.
3. **For Spectrum Band of 600 MHz valuation may be determined as follows:** We recommend that this band be consulted afresh in FY 2028.
4. **For Spectrum Band of 6425- 6725 MHz & 7025-7125 MHz following factors may be considered:** Please refer to our comments given above to Q. No. 32 and Q. No. 33. We recommend that the pricing of 6 GHz spectrum should be 25% of the 3300 MHz spectrum pricing which shall be further reduced by 60%-75% to provide for loss to the TSPs due time spectrum being kept idle for requirement for development of the necessary ecosystem for the upper 6 GHz band which may take more time.

Q41. 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 the above spectrum bands, or some other approach like taking weighted mean etc. should be followed? Please support your answer with detailed justification.

VIL Comments to Q.No.41

Please refer to our above comments to Q. No. 40

Q42. What ratio should be adopted between the reserve price for the auction and the valuation of the spectrum in 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, 26 GHz, 6425- 6725 MHz & 7025-7125 MHz and 600 MHz bands and why? Please support your answer with detailed justification.



VIL Comments to Q.No.42

Ratio of 70% between the reserve price for the auction and the valuation of the spectrum should be adopted, as has been recommended by TRAI in its last recommendations i.e. on “Auction of Spectrum in frequency bands identified for IMT/5G” dated April 11, 2022.

Q43. What should be the payment terms and associated conditions for the assignment of 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, 26 GHz bands, 6425- 6725 MHz & 7025-7125 MHz bands and 600 MHz bands relating to:

(i) Upfront payment

(ii) Moratorium period

(iii) Total number of instalments to recover deferred payment

(iv) Applicable interest rate for protecting the NPV of bid amount

Please support your answer with detailed justification.

VIL Comments to Q.No.43

1. In the NIA dated March 08, 2024, DoT provided the following two options to successful Bidders to make the payment:

Option 1: Full or part upfront payment of the bid amount within 10 days of declaration of final price. Where part upfront payment has been made, which can be a multiple of complete years with a minimum of two years, the buyer shall have the option of availing moratorium for the corresponding number of years for which the upfront payment has been made, and the balance amount shall be payable in equal annual instalments over the remaining period, payable in advance at the beginning of each year, after the period of moratorium if any, duly protecting the Net Present Value (NPV) of the bid amount at the applicable rate of interest. The annual instalments shall become due and payable on the Effective Date anniversary of each following year.

Option 2: Payment of 20 equal annual instalments of the bid amount, duly protecting the NPV of the bid amount at the applicable rate of interest, in advance at the beginning of the year, the first instalment becoming payable within 10 days of declaration of final price. The balance 19 instalments shall become due and payable on the Effective Date anniversary of each following year.

2. We hereby submit that the payment mechanism which provides the above two options shall continue in the forthcoming auctions.
3. The One-year prevalent SBI MCLR is considered as the applicable interest rate.



However, this should be rationalized and brought closer to the RBI Repo rate.

4. As per telecom reforms package of 2021, for auctions held henceforth, no Bank Guarantee is required to secure installment payments. This should continue for the forthcoming auction as well.

Q44. Any other suggestion relevant to the subject may be submitted with detailed justification.

VIL Comments to Q.No.44

1. **Bundling Backhaul spectrum:** We reiterate our comments provided under TRAI Consultation Paper on Assignment of Spectrum Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and V-Band dated 28.05.2025 that as the backhaul spectrum in itself is a non-revenue generating spectrum, along with the administrative allocation, two carriers of radio backhaul should be bundled with the different bands of access spectrum being provided through the auctions e.g. 40 MHz of 5G spectrum in 3300 MHz giving 2 carriers of E-band bundles, 5 MHz of spectrum in 1800 MHz giving 2 blocks of MWA/MWB carriers.
2. **Increased validity of Spectrum:** The spectrum validity should be made more than 20 years which can be done by giving choice to the TSPs to increase spectrum validity by 10 or 20 years before expiry, basis original acquisition price or the last auction price whichever is lower, without any indexation. The price so determined shall be payable by the TSPs at the end of 20 years based on the 2 payment options as explained above from the expiry of 20 years period of the original spectrum acquisition.
3. **Spectrum Surrender:** While the need of spectrum surrender has been upheld however, the option has not been provided for spectrum acquired through auctions before the auction of 2022. Given that the spectrum taken from auctions even before 2022, were at market determined price, it is important that spectrum surrender right is also extended to the spectrum acquired through auctions before 2022 auction. We request Authority support for recommending the same to DoT.

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