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Subject: COAI Counter Comments/Additional Comments to the Consultation Paper on Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz and 42.5-43.5 GHz bands Identified for IMT

Dear Sir,

1. This is with reference to the TRAI Consultation Paper on “Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT” issued on April 04, 2024.
2. In this regard, please find enclosed the COAI Counter Comments/Additional Comments to the said Consultation paper.

Looking forward to your kind consideration and esteemed support on the above.

Thanking you,

Sincere regards,

Lt. Gen. Dr. S.P. Kochhar, AVSM**, SM, VSM, ADC, KIGA
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**COAI Additional Comments/Counter Comments to the Consultation Paper on
“Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz
bands Identified for IMT”.**

We thank the Authority for providing us with the opportunity to share the Additional Comments/ Counter Comments to the Consultation paper on Auction of Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT.

Key aspects for Consideration:

1. We submit that Spectrum is a critical resource for mobile networks. Availability of ‘adequate spectrum’ at the ‘right price’ and ‘right time’ is central to the growth of the telecom sector. The right price means that prices should be at a level that should ensure the financial sustainability of the mobile industry and affordability of the services.
2. **Long-term roadmap for spectrum assignment:** As Spectrum is the key resource for telecom services and availability of adequate spectrum at affordable price is crucial for good quality of service and customer experience, a robust policy on spectrum is necessary for its efficient management and allocation. In the context of emerging technologies like 5G & 6G, which would serve diverse applications, new spectrum requirements would emerge. Therefore, a policy on spectrum needs to address issues such as having a long-term roadmap for spectrum assignment and ensure availability of spectrum to the TSPs. Hence, it is imperative that at least a 10-year Auction schedule with spectrum availability is prescribed by DoT.

Also, it is to be noted that the financial viability and sustainability of players remains a challenge and the sector requires massive investments for 5G rollout. Hence, spectrum pricing should ensure more and sustainable investment in networks.

3. **Telecom Reforms:** The Government recognized the importance of the telecom sector and approved telecom reforms in September 2021. The availability and pricing of spectrum should be in consonance with the objective of these reforms which are to generate employment, promote competition, protect consumer interests, ensure sustainability of mobile industry, encourage sustainable investment, and reduce regulatory burden on TSPs.
4. **Spectrum Harmonisation:** Industry has in the past, faced several challenges with respect to interference caused from various sources, which has adversely affected the quality of services or has rendered the spectrum unusable. Therefore, spectrum auction should aim to provide harmonized interference-free and immediately deployable spectrum.
5. **Contiguous Spectrum:** It is also most desirable to make available contiguous blocks for auction. In case an operator is already having blocks of the spectrum in a particular band, and they acquire additional block in the same band, DoT should strive to ensure contiguity of the holdings so as to ensure efficient utilization of spectrum and better user experience.
6. Our key submissions on the issue raised in the Paper are as below:
 - a. The **entire available spectrum** in each of the frequency ranges 37-37.5 GHz, 37.5- 40 GHz, and 42.5-43.5 GHz, **should be kept for IMT.**



- b. The bands 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz should be **assigned for a validity period of 20 years.**
- c. The spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz, **should only be assigned for the existing licensed service areas (LSAs) for Access Service (i.e. Telecom Circles/ Metros).** As in case of the other spectrum bands, it is important that for providing the benefits to every subscriber in our country, these spectrum bands be assigned for the existing LSAs.
- d. The **existing eligibility conditions** for participation in Auction as specified in the NIA for the spectrum Auction to be held in 2024 should continue for all the bands.
- e. The ratio between the **reserve price for the auction and valuation of the spectrum in these bands should be 50%** to ensure greater participation and market discovery of the spectrum price.
- f. The **interest rates on deferred payment instalments may be lowered to be in line with repo rate prevailing in the country.**

Our detailed response on some of the specific questions raised in the Consultation Paper are as below:

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.

COAI Response:

1. The adoption of a TDD-based duplexing configuration for the specified frequency ranges, along with a thoughtful approach to managing the overlap in frequencies, is justified by the need to support the advanced capabilities required by future mobile technologies.
2. TDD's flexibility in dynamically adjusting uplink and downlink capacity according to demand is particularly suited to the variable traffic patterns anticipated with emerging applications, including enhanced mobile broadband (eMBB), ultra-reliable low-latency communications (URLLC), and massive machine-type communications (mMTC).
3. Also, some of the stakeholders have stated that at least a paired 250 MHz spectrum (FDD 250MHz x2) in the 37.5-40 GHz and 42.5-43.5 GHz bands should be kept reserved specifically for Microwave Point-to Point (PTP) applications as a backhaul spectrum.
4. **We disagree with this suggestion.** These stakeholders are equally eligible to acquire Access licensees and acquire sufficient licensed bands spectrum, only then the MWA/MWB assignment can be made to them as per prevailing policy for access service licensees.
5. Further in this regard, we would like to submit that due to the overlapping of frequencies in the band plans n260 (37-40 GHz) and n259 (39.5-43.5 GHz), the choice of band plan should be left to the operators.



6. Similarly, we submit that the TDD-based duplexing configuration should be adopted for the frequency ranges under consideration.

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.

COAI Response:

1. Yes, as prevalent for the existing frequency bands, the bands 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz should also have **validity period of 20 years**. It is important that to fully utilise these higher spectrum bands, the operators will need significant time to develop the ecosystem and to find adequate use cases. Therefore, the aspect of the period of validity for such spectrum bands should be similar to other frequency bands.
2. In this regard, some of the stakeholders have stated that the spectrum in the above frequency ranges under consideration should not be assigned for a validity period of 20 years, as prevalent in the existing frequency bands, but for a shorter validity period.
3. However, we would like to submit that Telecom is capital intensive sector with huge payback periods. Shorter validity periods may not provide sufficient time for TSPs to recover their investments. 20-year validity period is a must for ensuring investment stability in the sector.
4. Further, the 20-year validity period 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 for 20 years. There is no reason to change the validity period for these specific bands.
5. Furthermore, longer validity periods have enabled technological development, 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.
6. Shorter validity periods may also attract non-serious players in the industry – which would not be in the interests of either the consumers or the exchequer. Also,
7. In any case, 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 rationale for having a shorter validity period.
8. There is also no appreciable logic to keeping the validity period as either 10 years or 15 years with a provision of a 5-year extension – as suggested by some stakeholders. It is important to highlight here that there is no further renewal concept in case of an auction scenario. Once the term (of 20 years) of auctioned spectrum expires, the spectrum goes back to the auction pool again. Hence, keeping the duration shorter and then extending it further makes no sense.



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.

COAI Response:

1. The spectrum in (a) 37-37.5 GHz, (b) 37.5-40 GHz, and (c) 42.5-43.5 GHz frequency ranges **should only be assigned for the existing licensed service areas (LSAs)** for Access Service (i.e. Telecom Circles/ Metros). As in case of the other spectrum bands, it is important that for providing the benefits to every subscriber in our country, these spectrum bands be assigned for the existing LSAs.
2. It is to be noted that some of the stakeholders have stated that the spectrum in mmWave should be assigned at Secondary Switching Areas/ SDCA or District level so as the effective utilization of the spectrum is achieved.
3. Further, some of the stakeholders have stated that the limited range of mm Wave makes mm Wave suitable for licensing for a service area much smaller to LSA based allocation prevalent as of now.
4. Historically, the auctioning of IMT spectrum has centered around licensed service areas (LSA) levels, aligning with the dynamics of TSPs who operate freely across diverse zones such as urban, rural, etc., depending on the traffic demands of their existing networks.
5. The SDCA model, once applicable to landline systems, is now obsolete. In any case, the concept was never relevant for wireless. Further, **there are 2645 SDCAs and 806 districts across India, and managing the interference and harmonization at such granular levels would be next to impossible and extremely complex.**
6. **Assignment in service areas smaller than LSAs would give rise to select pockets of coverage in urban areas** or to a scenario where no TSP would want to acquire spectrum in rural or even semi-urban areas without adequate population density. **This would completely derail the Digital Inclusion and Digital India mission of the Government.**
7. However, as stated above, the spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz frequency ranges should only be assigned for the existing licensed service areas (LSAs) because an assignment for smaller service areas may give rise to selective pockets of coverage in densely populated urban areas, leaving the rural and semi-urban areas uncovered. This would add up to the digital divide that the Government wishes to eradicate.
8. It is to be noted that access spectrum has consistently been assigned on an LSA-level basis – irrespective of assignment method. This approach is also consistent with the Indian licensing regime. Hence it is only appropriate that the same approach may be continued. 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. There is no reason to change the service areas for these specific bands. Further, Access services licenses/authorizations are granted LSA-wise; and the approach for spectrum has to be consistent with that.



9. 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.
10. Any assignment on a smaller service area basis will also bring in complexities and inconsistencies in various related matters like valuation, deployments, spectrum caps, block-size, etc.
11. In addition, the fragmentation of spectrum may lead to inefficient utilization of this scarce resource due to presence of multiple small operators in localized areas. On the other hand, larger TSPs may not be able to deploy nation-wide or LSA-wide networks and enjoy economies of scale, due to disjointed spectrum holdings.
12. Besides, it would be highly challenging for WPC to ensure interference management and harmonization with smaller service areas.
13. Furthermore, some stakeholders have suggested that to facilitate Industry 4.0 or Special Economic Zones (SEZ) requirements, a smaller area may be prescribed. We wish to highlight that **DoT has already issued guidelines for the leasing of spectrum to CNPN licensees by Access Service Providers.**¹ Thus, the specific business cases can easily be met through the enabling CNPN framework. There is no need to create another carve-out in the form of spectrum assignment at the level of smaller areas.

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.

COAI Response:

1. We recommend continuing with the present approach of prescribing no rollout obligations if an existing licensee has already met these obligations once using any technology in any band.
2. TRAI has already recommended roll-out obligation for 26GHz hence there should be no rollout obligations if an existing licensee has already met these obligations for 26 GHz band.
3. This ensures that while the operator has the due flexibility to meet the rollout obligations using any technology and band, the objectives of the Government for coverage are also met.
4. For a new entrant, **the rollout obligations should be as defined as have been done in earlier NIAs including that of 2022 auction.**

¹ <https://dot.gov.in/sites/default/files/Spectrum%20leasing%20guidelines%20dated%2027062022.pdf>



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.

COAI Response:

1. **We are of the view that no change is required in the eligibility conditions.** The existing eligibility conditions for participation in Auction as specified in the NIA for the spectrum Auction to be held in 2024 should continue for all the bands.
2. In their response to the consultation paper some of the stakeholders have stated that the allocation of spectrum in these frequency bands can serve the purpose of provision of high-capacity point to point links for an Enterprise, and hence it is suggested that the eligibility criteria for the allocation of these bands should include TSPs other than Access Service providers including ISPs. The revision in the eligibility criteria will certainly promote the usage /adoption of these spectrum and would give a boost to development of Enterprise based use cases.
3. In this regard, we would like to submit that the present eligibility conditions ensure that only serious players bid for the spectrum and also after winning they put the spectrum to optimal and efficient use.
4. Further the eligibility conditions specified in the NIA 2024 are quite flexible as they allow even non-licensees to bid for the spectrum, so long as they give an undertaking that they will procure the necessary license. If a service provider wishes to provide services using licensed spectrum, the existing regime allows it to obtain an Access Service Authorisation and acquire the requisite spectrum through auctions on payment of auction-determined prices. In fact, in 2010, when DoT permitted both UASL and ISP operators to acquire the BWA spectrum, both had to undergo the same auction process and acquire the spectrum after paying the same auction-determined prices – in order to maintain the level playing field.
5. As regards enterprise requirements, the **DoT has already issued guidelines for the leasing of spectrum to CNPN licensees by Access Service Providers.**² Thus, the specific business cases can easily be met through the enabling CNPN framework. There is no need to create another carve-out in the form of spectrum assignment at the level of smaller areas.

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.

COAI Response:

1. We are of the view that to mitigate any inter-operator interference due to TDD-based configuration, **the approach adopted for 3300-3670 MHz and 26 GHz bands should**

² <https://dot.gov.in/sites/default/files/Spectrum%20leasing%20guidelines%20dated%2027062022.pdf>



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.

2. The approach considered is that:
 - a) In case a TSP acquires more than one block, the entire spectrum should be assigned in a contiguous manner.
 - b) Cross border interference issues between LSA can be mitigated by assigning same frequency spots across different LSAs, to the extent possible.
 - c) Further interference mitigation be left to the mutual coordination between the TSPs.

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

COAI Response:

1. We submit that determining appropriate reserve prices for spectrum auctions is a predicament, as high reserve prices reduce the probability of a fair participation in the auction.
2. Conversely, if reserve prices are set at a very low-level, the same may permit the entry of bidders lacking judicious financial commitment, thereby undermining the integrity of the auction process.
3. It is pertinent to note that an unsuccessful or even a partially successful auction results in a missed opportunity for the economy, as well as lowers the investors interest in the industry, causing revenue loss to the exchequer along with the inefficient allocation of spectrum and therefore, setting a sensible reserved price is quintessential.
4. We submit that the ratio between the reserve price for the auction and valuation of the spectrum in these bands should **be 50% to ensure greater participation and market discovery of the spectrum price.**
5. Further, we believe that the suggested ratio between reserve price for auction and valuation of spectrum in any band for future auctions should remain 50% as this will help in ensuring greater participation from the industry.

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**
- v. **Please support your answer with detailed justification.**

COAI Response:

Besides the existing options provided by DoT under NIA, 2024, we recommend an additional option given as below from point no. 1 to 3:



1. **Upfront payment:** There should be no requirement of upfront payment.
2. **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.
3. **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.
4. **Rate of discount in respect of deferred payment and prepayment:** The obligation to pay huge interest on deferred spectrum payments ultimately burdens the TSPs' finances and impairs their ability to make investments for network rollout, thus defeating the purpose of providing a moratorium. Therefore, no interest should be levied on deferred payments. In case interest has to be levied, the **interest rates should be lowered to be in line with repo rate prevailing in the country**, as repo rate is adequate to protect the time value of money (as opposed to SBI PLR/MCLR, which imposes an unwarranted financial burden on TSPs).

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

COAI Response:

1. Spectrum roadmap:

- a. Spectrum is the key resource for telecom services and availability of adequate spectrum at affordable price is crucial for good quality of service and customer experience. Thus, a robust policy on the spectrum is necessary for its efficient management and allocation. In the context of emerging technologies like 5G, which would serve diverse applications, new spectrum requirements would emerge. Therefore, a policy on spectrum needs to address issues such as having a long-term roadmap for spectrum assignment and ensure availability of spectrum to the TSPs.

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

- a. 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 was not put to auction in the previous auctions, the past recommended reserve prices (without indexation) should be used. There is no question of indexing the reserve prices.**

3. Calculation of Interest on Spectrum Installments:

- a. 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.
- b. **Therefore, the interest on spectrum instalments should only be applicable from the date of issue of the frequency assignment letter and not earlier.**



4. Spectrum identified for IMT Services should not be delicensed.

a. The consequences of delicensing spectrum are as below:

- (i) **Irreversibility of Delicensing:** Once a spectrum band is delicensed and the device ecosystem is established, reversal of the same becomes extremely challenging, disruptive, and often impractical as well as leveraging the spectrum bands becomes very difficult for future use cases such as IMT in the licensed telecom spectrum space due to the loss of regulatory oversight and control. Also, it may make extant investments and innovations obsolete. Further, reversing the decision may lead to legal and administrative challenges. Therefore, delicensing should be avoided.
- (ii) **Loss to Exchequer:** Delicensing at such an early stage, may prevent the government from realising the full economic value of the spectrum, which is not in the best interests of the Indian economy.

Thus, we recommend that:

- (i) **No delicensing of any spectrum band which has already been identified or being considered for IMT.**
- (ii) **No delicensing of any spectrum in below 2GHz frequency band even in non-IMT band.**
- (iii) **Any decision on Delicensing of a new band(s) should be taken only after demand studies, current usage audit, impact on competition, impact on existing investments and recommendation from TRAI.**

5. 6 GHz: we recommend that at present, identification of the entire 5925-7125 MHz i.e., 1200MHz will be the most optimal allocation for supporting IMT applications in the country. 6 GHz is the only mid-band spectrum range where a contiguous bandwidth to the order of 300-400 MHz per TSP is possible to make it available for the evolving demands towards 2030.
