



**DG/COAI/2023/068**

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**Subject: COAI response to the TRAI Consultation Paper on “Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing”.**

Dear Sir,

This is with reference to the Consultation Paper issued by TRAI on “Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing” on 13<sup>th</sup> January 2023.

In this regard, please find enclosed COAI response to the Consultation Paper.

We hope that our submission will merit your kind consideration and support.

Regards,

**Lt. Gen Dr. SP Kochhar**  
**Director General**

Cc:

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## **Response to Consultation Paper on Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing**

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1. We thank the Authority for providing us the opportunity to share the response to this consultation paper on Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing.
2. As a capital-intensive industry, telecom requires significant investments to grow and expand. With operators' attention shifting to the nationwide rollout of 5G Infrastructure, the cost of deploying telecom networks is anticipated to increase even more.
3. The Indian consumer has evolved beyond basic connectivity needs to more digitally aware one. Enterprises are rapidly adopting technological solutions. 5G, connected devices and data analytics –are enhancing productivity and efficiencies. All these are set to drive traffic on telecom networks.
4. In order to enable a variety of new use cases, 5G will offer ultra-fast, low latency, and extremely reliable connectivity. These include improving internet user experiences for consumers as well as huge and mission-critical IoT solutions, such as smart cities. In the 5G network, densification will lead to ten times as many new sites as in the 3G and 4G networks, and each will need a fibre connection and more spectrum.
5. Thus, significant CAPEX expenditure and new operational challenges will result from roll-out of 5G, including agreements and negotiations with various State Government Authorities for utilizing Street Furniture for deployment of telecom network equipment.
6. India's secondary market has played an important role in expanding the infrastructure and services to the customer without any competition concerns. In-fact TSPs have continued to invest in exclusive spectrum in auctions, more rollout, new technology and services while competing vigorously.
7. Infrastructure sharing should only be on the radio access network (RAN) side and not of the core network as this is a very fundamental network element akin to the brain of the entire network. All-important security and subscriber linked policies are formulated and implemented here, that gives necessary trust and confidence to customers of a carrier network.
8. Similarly, spectrum leasing should be permitted among access service providers. The framework for leasing should not be prescriptive.
9. ASA should be permitted between incumbent government primary users holding such spectrum and the access services providers who are secondary users. The ASA framework should be decided separately in discussion with stakeholders, i.e., TSPs, Government users like railways, defence, etc.
10. With regard to passive infrastructure-sharing, we recognize the issue highlighted by the Authority that enabling provisions for passive infrastructure-sharing are present in some specific service authorisations and not others. However, we believe the intention of the Licensor (DoT) was not to give the benefit of passive infrastructure-sharing to some licensees and not to others. It seems that it was inadvertent rather



than intentional that enabling provisions were included in some authorisations and not in others. Hence a much-needed clarity may be brought in under the licensing, addressing this anomaly.

11. The infrastructure sharing charges should be allowed as pass-through while determining AGR for the purposes of payment of License Fee (LF) and Spectrum Usage Charge (SUC) in case of Unified License (UL), just like UL-VNO.
12. We also recommend that there should be no transaction charge on spectrum leasing in the interest of creating a robust, liquid and efficient secondary market.

With the above in background, we hereby submit our response to the Questions raised in the Consultation Paper.

**Q.1. Should passive infrastructure sharing be permitted across all telecommunication service licenses/ authorizations? Kindly justify your response.**

COAI Response:

- a) Passive infrastructure sharing is very well established in India, with India being one of pioneers in infrastructure sharing.
- b) Passive infrastructure sharing may be permitted across all telecommunications service licenses/authorizations barring security sensitive facilities or special infrastructure that is permitted in special type of license. This can lead to cost savings and more efficient use of resources, as well as improved coverage and capacity.
- c) In the interests of bringing clarity, we suggest that enabling provisions for passive infrastructure-sharing may be introduced in all individual service authorizations under the UL and UL-VNO. However, we submit that this suggestion is made only to remove ambiguity, and that passive infrastructure-sharing is already permitted across all telecommunication service licenses/authorizations.

**Q.2. Should other active infrastructure elements deployed by service providers under various licenses/ authorizations, which are not permitted to be shared at present, be permitted to be shared among licensees of telecommunication services?**

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**Q.3. If your response to the Q2 is in the negative, which active infrastructure elements should not be permitted to be shared? Further, which active infrastructure elements should be permitted to be shared with which licensees/ authorization holders? kindly provide details for each authorization with detailed justification.**

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**Q.4. In case it is decided to permit sharing of any additional active infrastructure elements among licensees, (a) What precautionary conditions should be put in place to avoid disruption in telecommunication services due to any unforeseen situation? The response may be provided for each active infrastructure element. (b) Whether there is a need to have a provision for permission from/ intimation to the Licensor before commencement of such sharing? If yes, what provisions and timelines need to be prescribed for each active infrastructure element?**

COAI Response:

- a) The amendment issued by DoT dated 11<sup>th</sup> February 2016 provides for the active infrastructure sharing of antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system. This list of active infrastructure is exhaustive and adequate for sharing among licensees of telecommunication services and there is no requirement to expand the active infrastructure elements.
- b) It is also pertinent to keep in mind that Service providers have already laid out adequate and robust infrastructure and they are now in the process of rolling out 5G. Any further sharing will raise concerns among the competition while also disincentivising potential investors from making new investments into such infrastructure creation.
- c) However, the core network elements such as MSC, HLR, IN etc., cannot be shared. We recommend this should be continued with. Our concern is that if core network elements are permitted to be shared, sufficient infrastructure may not be created and there could be a high level of dependency on shared network elements only.
- d) Sharing core network will have a direct impact on the QoS since most of the intelligent network elements are part of these core network elements. There are also some potential risks such as partner conflict, technical incompatibilities, etc. Further, any failure in the shared network elements, particularly the core network elements, could become a single point of failure and may affect the services of all TSPs involved in sharing. These risks far outweigh any potential cost benefits that may accrue due to the sharing of core network elements.
- e) Therefore, the present scope of access network is sufficient and should be continued with and core network should not be shared. Also, TSP who is offering the infrastructure for sharing, should get deduction of the revenues received from such sharing and there should not be any LF/SUC levied on such revenues.

**Q.5. Whether any other amendment is required to be made in the telecommunication services licenses/ authorizations with respect to the provisions relating to both active and passive infrastructure sharing to bring clarity and remove anomaly? If yes, clause-wise suggestions in the telecommunication services licenses/ authorizations may kindly be made with detailed justification.**



COAI Response:

- a) The provisions allowing active and passive infrastructure sharing in different licences and authorisations were issued at different points in time and pertain to different service requirements and therefore can be deemed to be inconsistent.
- b) As a broad principle we submit that as a matter of abundant caution and to remove any ambiguity as also highlighted by the Authority, uniform and enabling provisions for passive infrastructure-sharing should be introduced in all individual service authorisations under the UL and UL-VNO. To maintain uniformity, such enabling provisions may be in line with clause 4.2(i) of Chapter-VIII of the UL.
- c) In case of active infrastructure-sharing, the extant framework should be continued with and that there is no need to expand the present scope any further. Thus, no amendment is required to be made in the telecommunication services licenses/authorisations with respect to the provisions relating to active infrastructure-sharing.
- d) While we understand that the Authority is already working on opening such passive infrastructure for sharing, we feel that it is important that necessary clarifications may be provided, and license amendment may not be necessary.

**Q.6. Should there be any obligation on telecom service providers to share infrastructure that has been funded, either partially or fully, by the Government through Universal Service Obligation (USO) Fund or otherwise, with other telecom service providers? Kindly justify your response.**

COAI Response:

Members will respond individually.

**Q.7. In case it is decided to impose some obligations on telecom service providers to share the infrastructure funded by Government with other telecom service providers, is there a need to provide a broad framework for sharing of such infrastructure? If yes, kindly suggest the key aspects of such framework with detailed justification.**

COAI Response:

Members will respond individually.

**Q.8. Any other suggestion to facilitate infrastructure sharing may kindly be made with proper explanation and justification.**

COAI Response:

- a) To facilitate the sharing of the active infrastructure elements, **Government should immediately allow the pass-through for any consideration paid by one TSP to another for passive and active infrastructure sharing.** Thus, infrastructure-sharing charges should be allowed as pass-through while determining the AGR for the purposes of payment of LF and SUC in case of UL, just like UL-VNO.



- b) TRAI in its recommendations on “Rating of Buildings or Areas for Digital Connectivity” dated February 20, 2023, has stated as under, which should be implemented:
- i. For development of Buildings in rural/ remote etc. where Model Building Bye-Laws (MBBL) is not directly applicable, the Government may work with State Governments/ UTs for incorporation of suitable provisions for Digital Connectivity Infrastructure (DCI) development in the respective bye-laws/ other laws of State Governments which would facilitate infrastructure sharing.
  - ii. Revenues earned by sharing of active wireless equipment should not attract LF and such revenues should be reduced from GR to arrive at ApGR of such lessor licensee.

**Q.9. What measures could be taken to encourage roaming arrangements among telecom service providers in remote and far-flung areas? What could be the associated regulatory concerns and what steps could be taken to address such concerns? Kindly provide details on each of the suggested measures with justification.**

COAI Response:

Members will respond individually.

**Q.10. What could be the other ways to ease out the hardship faced by the subscribers in remote and far-flung areas due to connectivity issues of the home network provider? Kindly provide detailed response with justification.**

COAI Response:

Members will respond individually.

**Q.11. Whether inter-band access spectrum sharing among the access service providers should be permitted in the country?**

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**Q.12. In case it is decided to permit inter-band access spectrum sharing among access service providers, please provide detailed inputs to the following questions:**

- a. What measures should be put in place to avoid any potential adverse impact on competition and dynamics of spectrum auction? Kindly justify your response.
- b. Considering that surrender of spectrum has been permitted in the country, what provisions need to be included in the guidelines for inter-band access spectrum sharing so that any possible misuse by the licensees could be avoided? Kindly justify your response.



- c. What should be the broad framework for inter-band access spectrum sharing? Whether the procedure prescribed for intra-band access spectrum sharing could be made applicable to inter-band access spectrum sharing as well, or certain changes are required to be made?
- d. What should be the associated charges, and terms & conditions for inter-band access spectrum sharing?

COAI Response:

Members will respond individually.

- Q.13. Any other issues/ suggestions relevant to the spectrum sharing between access service providers, may be submitted with proper explanation and justification.**

COAI Response:

Members will respond individually.

- Q.14. Whether there is a need to explore putting in place a regime to implement Authorized Shared Access (ASA), wherein an access service provider as a secondary user could use the frequency spectrum assigned to a non-TSP primary user (government agencies and other entities) on a dynamic spectrum sharing basis? Kindly justify your response.**

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- Q.15. In case it is decided to implement ASA technique for secondary use of frequency spectrum assigned to non-TSP primary users, please provide your response to the following questions with detailed justification:**
- a. What are the potential spectrum bands in which ASA implementation can be considered?
  - b. What measures should be taken to encourage and motivate the incumbent users for participation in the spectrum sharing through ASA technique?
  - c. What should be the broad framework for implementation of ASA technique?
  - d. Is there a need for putting in place a mechanism for dispute handling including interference issues in case of ASA? If yes, what should be the framework?
  - e. What methodology should be adopted for spectrum assignment to secondary users? What could be the spectrum charging mechanism for such assignment?
  - f. Who should be entrusted the work of managing shared access of spectrum?



COAI Response:

- a) **Yes**, it should be permitted wherein an access service provider as a secondary user could use the frequency spectrum assigned to a non-TSP primary user (mainly government agencies and other such user entities) on a dynamic sharing basis.
- b) Considering the increasing data usage owing to increasing digitalization, uptake of data hungry applications, proliferation of IoT based solutions, there is certainly a need to explore putting in place a regime for authorized shared access of spectrum, wherein the spectrum assigned/ earmarked for Government/ other users on a primary basis could be used by the access service providers on a secondary basis.
- c) Therefore, there is a need to identify the various spectrum bands which have been allocated to Government entities. **The priority should be that the Government entities should vacate the IMT spectrum bands already in use by TSPs.**
- d) India has designated a portion of the globally harmonised spectrum bands for IMT services for use by the government and/or other services. However, it's possible that the spectrum so assigned or reserved won't be used effectively (entire spectrum, at all places, always may not be in use).
- e) Thus, to start with the Government should provide list of spectrum available with Government/other primary users which it intends to use up under ASA and is planning to use in future (at least next 5 years).
- f) Additionally, it may be necessary to put in place a framework for authorised shared access of spectrum, wherein the spectrum assigned/earmarked for Government/other users on a primary basis could be used by the access service providers on a secondary basis along with managing interference issues and future expansion requirements of Government users.
- g) As part of its "Connect India" aim, the National Digital Communications Policy (NDCP) 2018 also acknowledges "supporting the co-use/secondary use of spectrum" as one of the action items for making enough spectrum accessible to be prepared for the new broadband age.
- h) Therefore, **authorized share access (ASA) of spectrum for secondary use in the country should be considered. However, spectrum should be allocated only to licensed TSPs as secondary users.**
- i) There may be several challenges in implementation of ASA, however the same may require a separate deliberation/ consultation with other Government stakeholders such as defence, railways etc.

**Q.16. Whether there is a need to permit the ASA technique-based dynamic spectrum sharing among access service providers? If yes,**

- a. **What are the possible regulatory issues involved and what could be the possible solutions?**
- b. **What measures should be put in place to avoid any adverse impact on competition and dynamics of spectrum auction? Kindly justify your response.**





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**Q.17. In case it is decided to permit ASA technique-based dynamic spectrum sharing among access service providers in the country, please provide your response to the following questions with justification:**

- a. **Whether there is a need for prescribing any framework for such shared use? If yes, what should be the framework?**
- b. **Whether access service providers should be required to obtain approval or intimate to DoT before entering into such arrangement?**
- c. **Whether any fee (one time, or recurring), should be prescribed on the spectrum sharing party(ies)? If yes, what should be the fee and who should be liable to pay such fee?**
- d. **What should be the treatment of spectrum shared through ASA technique for the purpose of computation of spectrum cap?**
- e. **Whether there is a need for an independent entity for managing spectrum access? If yes, who should be entrusted this work? If not, how should the spectrum access be managed?**
- f. **Is there a need for putting in place a mechanism for dispute handling including interference issues or should it be left to the access service providers? If yes, what should be the framework?**
- g. **What other terms and conditions should be applicable for the sharing parties?**

COAI Response:

Members will respond individually.

**Q.18. Suggestions on any other spectrum sharing technique(s), which needs to be explored to be implemented in India, may kindly be made along with the relevant details and international practice. Details of likely regulatory issues with possible solutions, interference management, dispute handling etc. may also be provided.**

COAI Response:

N/A

**Q.19. Where there is a need to permit spectrum leasing among access service providers? Kindly justify your response.**

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**Q.20. In case it is decided to permit spectrum leasing among access service providers, please provide detailed response to the following questions:**

- a. **Whether spectrum leasing should be permitted for short term period only, or for both short-term as well as long term?**



- b. In case only short-term leasing is to be permitted, what should be the maximum duration for such spectrum leasing? Should there be any restrictions on renewal of such short-term lease?
- c. In case it is decided to permit long term leasing, please provide your response to the following questions with justification:
  - i. What measures should be put in place to avoid any adverse impact on competition and dynamics of spectrum auction?
  - ii. Whether there should be a maximum duration for which spectrum leasing may be permitted?
- d. What should be the applicable roll-out obligations for the Lessee (the access service provider which takes spectrum through leasing arrangement from the Lessor)? Whether the spectrum leasing should have any effect on the rollout obligations applicable for the Lessor (the access service provider which has leased out the spectrum)? 40 Whether the provisions for roll-out obligation require to be different for short-term and long-term spectrum leasing?
- e. Should the spectrum leasing charges be levied on similar lines as applicable for spectrum trading? If no, what charges should be made applicable in case of spectrum leasing?
- f. Should there be a lock-in period, after acquisition of spectrum, to become eligible for spectrum leasing as applicable in spectrum trading? If yes, what should be the lock-in period post which, spectrum holder would become eligible to lease it to another access service provider?
- g. Whether there is a need for an approval from, or intimation to DoT before the proposed leasing of spectrum? If yes, whether prior approval/ prior intimation requirement be different for long-term and short-term spectrum leasing? What should be the timelines for approval from, or intimation to DoT in each case?
- h. Whether the spectrum held by an access service provider on short-term, or long-term lease be included to calculate compliance to spectrum caps?
- i. Considering that surrender of spectrum has been permitted in the country, what provisions need to be created in the guidelines for leasing of spectrum between access service providers so that any possible misuse by the licensees could be avoided?
- j. What other terms and conditions need to be prescribed in respect of spectrum leasing between access service providers?

COAI Response:

- a) Having an effective and robust secondary market for spectrum is important for a vibrant spectrum management framework. Any opportunity in the market that brings buyers and sellers of services, whether on an exclusive basis (e.g., trading), a partial basis or a limited basis as lessee and lessor, i.e., through leasing or through sharing, should be permitted to enhance effective market outcomes.
- b) Further, it is pertinent to note that Spectrum leasing can increase the efficient use of spectrum resources and enable new services and technologies. Spectrum leasing can be a cost-effective way for providers to expand their service offerings and increase their coverage area, and also a way for spectrum holders to generate additional revenue.
- c) Thus, spectrum leasing should be permitted.



- d) Leasing can provide a flexible opportunity to meet the specific spectrum demands of industrial or enterprise customers, rural telecoms providers or other mobile operators to catalyse the Industry 4.0. In fact, since DoT has already permitted spectrum leasing from TSP to CNPN Licensees, this should be extended to TSP-TSP leasing as well.
- e) The guidelines should also address the possibility of intermittent or temporary requirements of a much larger bandwidth by one licensee to meet some special event like sports, etc. Thus, spectrum leasing policy be overarching and holistic.
- f) The associated terms **with regard to spectrum leasing should be left to mutual negotiations between the two entities.**
- g) However, there should be a lock-in period after acquisition of spectrum to become eligible for spectrum leasing and leasing should be permitted after 2 years from the date of acquisition of spectrum by the spectrum holder. This is also consistent with trading guidelines.
- h) The duration of leasing the spectrum should be left to market forces as there is no one-size-fit-all solution and TSPs would need this discretion to support varied use cases / market needs depending upon requirements, which may be served under different durations.
- i) In spectrum leasing there is no transfer of legal rights between the two licensees. Further, the leased spectrum can only be for a limited period and specific geography rather than the entire circle. Hence, there should be no additional requirement of rollout obligations for the Lessee, and only the Lessor should be required to conduct rollout obligations for the spectrum it has acquired through respective auctions and should be governed w.r.t the respective auctions NIA. Further, the roll-out carried out by the lessee shall be considered towards the roll-out of the lessor.
- j) Since the surrender of spectrum is permitted only after 10 years of the spectrum acquired through the 2022 auction, we do not foresee any linkage between spectrum surrender and leasing and therefore contend that there is no need to prescribe any ex-ante restrictions / provisions on this count.

**Q21. Any other issues/ suggestions relevant to the spectrum leasing, may be submitted with proper explanation and justification.**

COAI Response:

- a) In order to encourage spectrum leasing, no charge should be levied by the Government on spectrum leasing transactions.
- b) Revenue accruing to a TSP from spectrum leasing and sharing should be allowed as pass thru for the purpose of levy of LF and SUC.

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