

RJIL/TRAI/2022-23/438

3<sup>rd</sup> March 2023

To,

**Sh. Akhilesh Kumar Trivedi**

**Advisor (Networks, Spectrum and Licensing)**

**Telecom Regulatory Authority of India**

Mahanagar Doorsanchar Bhawan

Jawaharlal Nehru Marg, New Delhi - 110002

**Subject: RJIL's Comments on TRAI's Consultation Paper dated 13.01.2023 on "Telecommunication Infrastructure Sharing, Spectrum Sharing, and Spectrum Leasing"**

Dear Sir,

Please find enclosed the comments of Reliance Jio Infocomm Limited on the consultation paper dated 13.01.2023 on **"Telecommunication Infrastructure Sharing, Spectrum Sharing, and Spectrum Leasing"**.

Thanking you,

Yours Sincerely,

For **Reliance Jio Infocomm Limited**

**Kapoor Singh Guliani**

Authorized Signatory

**Enclosure:** As above

**Reliance Jio Infocomm Limited's comments on TRAI's Consultation Paper on  
"Telecommunication Infrastructure Sharing, Spectrum Sharing, and Spectrum Leasing"  
dated 13<sup>th</sup> January 2023.**

**Preface:**

1. Reliance Jio Infocomm Limited (RJIL) thanks the Authority for issuing this **consultation paper to deliberate important issues related to infrastructure sharing, spectrum sharing and spectrum leasing.**

**A. Infrastructure Sharing**

2. As noted by the Authority voluntary and market driven passive Infrastructure sharing has proved to be a beneficial concept. **We have seen speedy roll-out and cost savings for the service providers through tower sharing, once passive infrastructure was permitted in India and the same concept of voluntary and market driven passive infrastructure sharing needs to be continued.**
3. We agree with the Authority's observations that passive infrastructure sharing provisions are not implemented equally across all authorizations, however, we submit that this owes to the need for sharable passive infrastructure for roll-out under various service licenses, which is changing rapidly. Further, action is already being taken to further open up facilities for sharing. For instance, one of Authority's recommendation under **Recommendations on Licensing Framework for Establishing and Operating Satellite Earth Station Gateway (SESG) dated 29<sup>th</sup> November 2022**, deals with this aspect only, we are extracting and reproducing the recommendation as below:

*"The service licensees who have established SESGs in the country under the respective service licenses, may provide satellite-based resources to the eligible service licensees/ permission holders."*

4. We submit that market driven passive **infrastructure sharing is already a standard operating model for telecom service providers (TSPs) and we support such network sharing across all authorizations, subject to settling the legacy license conditions and associated security concerns in such a manner that it does not discourage creation of infrastructure.**
5. It is needless to mention that passive infrastructure sharing has flourished and delivered positive dividend in the form of speedy roll-out, cost reduction and creation of stand-alone passive infrastructure providers only because it was driven by market forces. **We understand that such savings can be replicated under 5G, as network costs for 5G**

passive infrastructure will also be shared at many levels and Authority is already working on some aspects of this under its consultation process related to use of street furniture. We would reiterate our submissions that passive infrastructure sharing among operators should be driven by market requirements as present and should not be regulated or mandated.

6. **Nevertheless, we do not envisage similar benefits under active infrastructure sharing. Authority has rightfully highlighted competition related concerns in some aspects of this paper, which also have considerable bearing on active sharing as well.**
7. **We submit that the primary drivers of passive infrastructure sharing like difficulties in acquiring sites for access network do not apply for active sharing and only consideration seems to be the cost of network operations.** However, even from the network cost perspective, while the TSPs are incurring higher cost for deploying 5G networks due to smaller radius of coverage and incessantly increasing demand, but pertinently Radio Access Network (RAN) remains the largest portion of this cost, **which is already a permitted item under the prevailing active sharing framework. Thus, any further sharing does not make any sense from cost perspective as well.**
8. We further submit that shared active infrastructure requires significant co-operation between the operators to ensure effective operation, particularly around maintenance of the infrastructure, which may not be technically easy in case of active infrastructure sharing beyond what has been permitted under DoT license amendment dated 11<sup>th</sup> February 2016 which permits sharing of active elements ranging from Antenna, Feeder Cable, Node B, Radio Access Network (RAN) and transmission systems.
9. On the other hand, the impact of further sharing on competition in a country with 3 private operators with lone 5G Stand Alone (SA) private operator and two Non-SA 5G private operators are obvious. **Active infrastructure sharing while limiting the competition will also have an impact on infrastructure investments with TSPs waiting to piggyback on an established network besides having an impact on spectrum demand in forthcoming auctions, thereby discouraging investment to creation of active infrastructure. it will also hinder the sharing TSPs ability to continuously expand as all changes will require concurrence and/or investment by partner.** Apart from limiting network expansions, any additional active infrastructure sharing will limit the innovations, marginalize services differentiations across operators and lead to concentration of market share.
10. We are aware of the GSMA 2019 report titled 'Infrastructure Sharing: An Overview' mentioning that *"sharing of core telecommunication network (servers and core network functionalities) enables greater cost-saving potential but is complicated to operate and to*

*maintain strategic differentiation. However, it is worthwhile to also mention here that the same report goes on to mention that “ It is important to note that core network sharing has not been popular and only a few cases have been suspected to be so.”* **Thereby clarifying that this concept has scant adoption across the world.**

11. **Consequently, it is submitted that any further relaxations in active infrastructure sharing will have adverse impact on competition and service innovations in sector. It will also adversely impact infrastructure investments and redundancy of networks apart from creation of single points of failures and restricting the possibility of expansion of shared network resources. Accordingly, we reiterate our submissions that there is no need to include further items in permitted list for active infrastructure sharing for proper conduct of telegraph.**

#### **B. Spectrum Sharing**

12. **We submit that the already intra-band spectrum sharing and VNO concept have been implemented, without affecting competition and network redundancy. Further, spectrum sharing has been useful tool to augment capacities in the spectrum bands held by sharing partners and was very effective with spectrum scarcity scenario and this provision should be continued in the current form.**
13. **However, we submit that concept of inter-band spectrum sharing has whole different connotations and would have many negative fall outs. We submit that this will help to provide access to spectrum bands that the TSP has never opted to acquire in spectrum auction and would be detrimental to competition in sector and can lead to collusion among TSPs to bring down the spectrum prices with availability of spectrum for their respective use. We also agree with similar apprehensions expressed in para 3.14 of the consultation paper.**
14. **Further, as spectrum sharing will necessarily be done on LSA level, it will provide the TSPs an opportunity for pre-auction understandings that will impact the fair competition in auction and will lead to fall in market price of spectrum thereby making spectrum auction a failure.**
15. **Furthermore, we understand that inter-band spectrum sharing will have the impact of virtual network sharing and can lead to a situation where two entities have intermingled joint networks in all service areas and act virtually like a giant dominating behemoth without passing through the competition related rigours of mergers and acquisitions. In view of this inter-band spectrum sharing should not be permitted.**

16. **We further submit that spectrum leasing concept has already been indicated in the guidelines for Captive Non-Public Networks (CNPB) and in case, a TSP wishes to offer services in a band where it does not possess spectrum, it can avail spectrum leasing facilities that will also address all the externalities associated with inter-band spectrum sharing and/or active infrastructure sharing.**

### **C. Spectrum Leasing**

17. As noted by the Authority, spectrum leasing is an important tool to facilitate a secondary market and popular in many global markets like US. Further it is one of the modes for availing spectrum for CNPNs under the CNPN guidelines dated 27<sup>th</sup> June 2022 and should be immediately implemented.

18. We submit that spectrum leasing to licensed TSPs and other authorized entities like CNPN will help **decentralizing the rights to use spectrum under leasing arrangements at LSA and sub-LSA level and would help CNPNs avail spectrum at market price while also decentralizing the interference management, as the lessor will be responsible for managing interference**, without any requirement of WPC intervention.

19. We submit that GSMA in its paper<sup>1</sup> on 'Spectrum leasing in the 5G era' has delved extensively on global implementation of spectrum leasing and how this will help proliferate 5G faster while delivering immense economic benefits. **GSMA deems that on one hand Spectrum leasing delivers economic benefits to businesses and on the other hand it is an effective and efficient way for regulators to manage spectrum for greater common good, whereas the gain for mobile operators is optimizing the returns of spectrum holdings.**

20. GSMA notes that the flexibility in duration and area of operations gives edge to vertical applications and local uses experiencing rapid technological change and/or in the early phases of business development, while delivering societal and economic benefits. It has shared the example of Germany where setting aside spectrum led to massive value loss, which could have very well been avoided with spectrum leasing.

21. **Evidently, spectrum leasing is globally recognized as most effective mode of providing spectrum to CNPNs and can also be used by other Licensed TSPs to augment their spectrum resources to offer services in spectrum bands not owned by them, which can help them plan for future auctions, while simultaneously creating a robust secondary market. In view of this, we request that facilitating guidelines for spectrum leasing to licensed TSPs and other authorized entities should be issued on urgent basis.**

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<sup>1</sup> <https://www.gsma.com/spectrum/wp-content/uploads/2022/01/Spectrum-Leasing-5G-Era.pdf>

**D. Other Issues**

22. **Infrastructure created using Universal Service Obligations Fund (USOF):** The USOF is assigned the duty of delivering communication services in remote and rural areas, and **it has carried out many programs and has been instrumental in creating a lot of digital communication infrastructure.** The primary and legally valid modus operandi for creating infrastructure and communication services is a tender based process. **We understand that in order to maintain the sanctity of tender based process, which is also legally tenable process, the infrastructure created through such tenders should not be mandatorily shared, however, tempting.** We submit that this will have negative impact in the form of tender process losing competitive edge and possibility of collusion.

23. **Authorised Shared Access (ASA) of Spectrum:** We submit that ASA or secondary assignment of under-utilized spectrum that is currently being used by Government agencies or other users as a part of non-auction process, appears to be a beneficial idea, however, it has negative connotations of possibility of such valuable and underutilized spectrum never been vacated by the primary assignee. We submit that primary focus should remain on making available all IMT identified spectrum for IMT services. The agencies using such spectrum should be required to vacate the IMT spectrum.

**24. Conclusions**

- 1. Voluntary and market-driven passive Infrastructure sharing should be implemented equally across all authorizations subject to security concerns. However, under no circumstances it should be mandated or regulated as it will prove counter-productive.**
- 2. There is no need for expanding the scope of infrastructure sharing from the current dispensation as it will discourage innovations, creation of infrastructure and adversely impact competition.**
- 3. There is no need of regulate or mandate sharing of infrastructure created using USO Fund through a transparent tender process.**
- 4. Inter-band spectrum sharing is anti-competitive and would lead to loss to Exchequer as well as failure of process of spectrum auction and therefore should not be implemented.**
- 5. Spectrum leasing is an important tool for 5G proliferation and should be permitted for all authorized entities.**
- 6. Spectrum leasing to CNPNs should be the preferred mode of assigning spectrum to CNPNs.**

**Issue wise response:**

## A. Issues relating to Infrastructure sharing

**Q1. Should passive infrastructure sharing be permitted across all telecommunication service licenses/ authorizations? Kindly justify your response.**

**RJIL Response:**

1. The variance in passive infrastructure provisions in different authorizations **predates the Unified License and exist because certain infrastructure was supposed to be linked with the service and it was deemed that only service licensee should be creating such critical infrastructure**, for instance satellite ground station could only be set-up by licensees for satellite-based communication services like GMPCS.
2. However, as the Government is planning to open up these niche services and **contemplating the introduction of facility-based infrastructure providers in these sectors, the uniform passive infrastructure sharing provisions can be implemented for these services as well**. There is no reason to prevent the existing service licensees from availing the benefits of passive infrastructure sharing. **However, as per the current practice the passive infrastructure sharing should continue to be voluntary and market drive and under no circumstance the same should be mandated or regulated.**
3. Therefore, we submit that **passive infrastructure sharing should be permitted uniformly across all service authorizations under Unified License, barring security sensitive facilities, subject to mutual agreement in sharing partners.**

**Q2. 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?**

**And**

**Q3. 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.**

**RJIL Response:**

1. **No, we do not think that there is a need to expand the list of active network elements that can be shared between licensees.** We understand that the current restrictions to limit the active infrastructure sharing to Antenna, Feeder Cable, Node

B, Radio Access Network (RAN) and transmission systems under the License amendment dated 11<sup>th</sup> February 2016 is sufficient and meets the requirements.

2. It is pertinent to mention here that there is always a fine balance between ensuring the robustness and resilience of digital communication networks by ensuring sufficient redundancy and parallel networks and the possibility of cost saving through sharing. Expanding scope of active infrastructure sharing will discourage service innovations and creation of infrastructure.
3. Further, it is also important to note that we already have another level of infrastructure sharing on service level in the form of Virtual Network Operators (VNOs), while spectrum sharing, and Intra-circle roaming are other forms of active sharing. Thus, strategies of NDCP-2018 for the sharing of active infrastructure have already being met and we do not feel that there is a need to expand active infrastructure sharing in access services and internet services.
4. With regards to other service authorizations, we submit that as a first step there is a need to examine the full import of implementing the passive infrastructure sharing as in the case of GMPCS services. Further ILD and NLD are carrier services and active sharing would be at the cost of competition and redundancy and should be avoided.

**Q4. 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?**

**RJIL Response:**

1. **The major negative impact of active sharing is in creation of single points of failure in the networks that can simultaneously bring down all the networks sharing the active infrastructure, which supersede any commercial gains from active infrastructure sharing.** Thus, no number of precautionary clauses can prevent disruptions. Thus, the optimum solution is to have limited or restricted active infrastructure sharing, as is prevailing currently.
2. Nevertheless, in case the Authority wishes to recommend next levels of active infrastructure sharing with precautionary clauses, then the approach should be to ensure that the sharing should not compromise the following:



- a. Encouragement for creation of infrastructure
- b. Robustness of digital communication infrastructure
- c. Prevention of any single points of failure by ensuring sufficient redundancy
- d. Ensuring sufficient competition to deliver the benefit of sharing to consumers
- e. Security and Privacy of information
- f. Accountability

**Q5. 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.**

**RJIL Response:**

1. We submit that there is no need of amendments in the licenses/authorizations to facilitate passive infrastructure sharing. As noted by the Authority, sufficient provisions are available in the general conditions of Unified License and only requirements pertain to facilitating or clarifying the same for other authorizations barring Access and Internet service authorizations.
2. As mentioned in previous replies, we do not support active infrastructure sharing beyond what is permitted as of now, thereby obviating the need of any amendments.

**Q6. 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.**

**RJIL Response:**

1. We have always maintained that there should be **well-defined and transparent tendering process for allocation of USO fund for all activities**. However, for this tender based process to be effective, it is imperative that sufficient competition is maintained otherwise the tender process will meander into a grant-based process.
2. However, sufficient competition can happen only when there is no assurance of getting access to infrastructure even on losing out in the tender process. **Mandatory sharing will lead to anti-competitive pre-tender agreements undermining the tender process. Therefore, it is important that sharing is not mandated for infrastructure created using USO Fund irrespective of partial or full funding.**

3. **Nevertheless, there should be no restrictions on voluntary sharing of the USO funded infrastructure, as this can help in making the operations viable in certain locations.**

**Q7. 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.**

**RJIL Response:**

We reiterate our submission that anti-competitive practice of mandatory sharing of infrastructure created using Funds allocation under a tender based process should be eschewed. **This will not only vitiate the tender process but will also dissuade creation of additional infrastructure.**

**Q8. Any other suggestion to facilitate infrastructure sharing may kindly be made with proper explanation and justification.**

**RJIL Response:** None, in view of the responses to previous questions.

## **B. Connectivity Issues Faced by the Subscribers in Remote and Far-flung Areas of the Country**

**Q9. 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.**

**RJIL Response:**

1. While we are not aware of the reasons for DoT withdrawing the reference for mandatory roaming arrangements among telecom service providers in remote areas of Hill States, LWE affected areas and along International Border, we believe that mandatory roaming is not a permanent solution.
2. **Mandatory roaming should remain an emergency measure, as per the current implementation and instead the focus should be on developing digital communication infrastructure in these areas.**

3. We submit that of all the suggestions provided in the consultation paper, the most optimum solution appears to be the incentivization of a mobile network that permits roaming into its network. **This incentivization can be done in the form of license fee and SUC waiver in an LSA where the licensee opens up its network for intra-circle roaming in identified areas with little access or network of other service providers. The financial benefit will also incentivize the TSPs to invest in such areas.**
4. **Another option can be more focused, fully funded passive infrastructure projects by USO that can optimize the coverage requirements.**

**Q10. 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.**

**RJIL Response:**

1. We submit that the Government has already proposed to allocate 5% of annual collections under the USOF to promote R&D and commercialization of technologies and solutions in order to enable affordable broadband and mobile services proliferation in rural and remote areas, under Union Budget 2022-23.
2. **We submit that these efforts should be bolstered by removing the consumers from clutches of 2G technology.** At present more than 30 Crore telecom subscribers are trapped in 2G technology as they cannot afford operator / service migration that needs additional investments in 4G handsets. **To propel India to the latest and upcoming technologies and to meet digital India objective, such technology migration cost for handsets can be subsidized through USOF.**
3. By facilitating this migration and providing the handset subsidy in remote and far-flung areas, the Authority will create demand for 4G/5G services in these areas that will have an impact on telecom networks proliferation in these areas once the business case is already there and fully funded passive infrastructure is provided by USOF.

**C. Issues relating to inter-band spectrum sharing among access service providers**

**Q11. Whether inter-band access spectrum sharing among the access service providers should be permitted in the country?**

**RJIL Response:**

1. **No, Inter-band spectrum sharing should not be permitted in the country.** We submit that inter-band spectrum sharing, will be equivalent to end-to-end network sharing and would go well beyond the current permissions for active infrastructure sharing guidelines and should not be permitted.
2. **We further submit that the inter-band spectrum sharing would lead to two adverse outcomes in the form of 'end to end network sharing' and 'converging of the spectrum holdings of Provider and Seeker', which will go against the present scope of Unified License and would undermine and vitiate the spectrum auctions.** The country has already witnessed the debacle of anti-competitive 3G-ICR arrangements in the past and consequent lengthy litigations leading to license-based protection to prevent such issues, **therefore contemplating inter-band spectrum sharing will be akin to opening up the same can of worms once again.**
3. **We submit that the Inter-band spectrum sharing, will in turn reduce the CAPEX and OPEX digital infrastructure investments by service providers with easy access to spectrum and network without actually investing, this will adversely impact competition in the sector.** Further, with prevailing forward-looking dispensation of no additional Spectrum Usage Charge for spectrum sharing, this will have adverse impact on National Exchequer. **Therefore, inter-band spectrum sharing should be avoided completely.**

**Q12. 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 intraband access spectrum sharing could be made applicable to interband 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?**

**And**

**Q13. Any other issues/ suggestions relevant to the spectrum sharing between access service providers, may be submitted with proper explanation and justification.**

**RJIL Response:**

1. We reiterate our submissions that **permitting inter-band spectrum sharing would be not only anti-competitive but would also seriously jeopardize success of spectrum auctions in future, while vitiating the previous auctions.**
2. No number of measures can prevent adverse outcomes. Further, it is pertinent to note here that intra-band spectrum sharing is a simple arrangement with no sharing of active network elements and is completely different from inter-band spectrum sharing and the frameworks cannot be replicated.

#### D. Issues relating to Authorised Shared Access (ASA) of Spectrum

**Q14. Whether there is a need to explore putting in place a regime to implement Authorised 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.**

#### **RJIL Response:**

1. **We submit that making available all IMT identified spectrum for IMT services should remain the primary focus of telecom licensors and regulators.** The Authorities should focus on getting the IMT spectrum being held by Government and other users vacated by migrating them to other non-IMT spectrum bands or OFC connectivity, as per requirements.
2. Authorised Shared Access (ASA) of secondary assignment is a useful concept but it has implementation related challenges. The concerns will range from the issues emanating from territorial nature of primary assignees to fragmented availability of spectrum at various locations preventing its optimal use in network planning.
3. **Further, it is pertinent to mention here that for carrier grade services, there is a requirement of a high degree of reliability and quality assurance that may be difficult to provide under ASA.**
4. GSMA in its public policy paper<sup>2</sup> on **Licensed Shared Access (LSA) and Authorised Shared Access (ASA)** had dealt with this issue and following are its policy positions.

*1. The GSMA is in favour of a definition that identifies the LSA/ASA concept as an individual license regime of a limited number of mobile network operator (MNO) licensees in a frequency band that is identified for IMT, and which is already assigned to other incumbent users whose spectrum rights of use have*

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<sup>2</sup> <https://www.gsma.com/spectrum/wp-content/uploads/2013/04/GSMA-Policy-Position-on-LSA-ASA.pdf>

*not been granted through an award procedure for commercial use, for which the additional users are allowed to use the spectrum (or part of the spectrum) in accordance with sharing rules included in the rights of use of spectrum granted to the licensees.*

***2. Identifying additional spectrum for IMT and global harmonisation across ITU regions should remain the main objective for the works of ITU-R.***

***3. Exclusive access through appropriate market-based licensing should remain the main regulatory approach for mobile broadband spectrum.***

*4. The LSA/ASA concept could be one solution for mobile network operators to access complementary spectrum for mobile broadband (e.g., the 2.3GHz band in Europe or 3.5GHz band in the United States) and could be explored to facilitate access to specific capacity bands, within specified geographical or technical limits. Consequently, the LSA/ASA concept is not applicable to bands for which mobile network operators have acquired exclusive spectrum usage rights.*

***5. Authorisation to access additional spectrum using the LSA/ASA concepts should be given by National Regulatory Authorities (NRAs) after public consultation and agreement between incumbents and mobile network operators.***

5. We submit that over the years, the efforts of Regulators and Licensors have made available substantial amount of spectrum for exclusive use of IMT services and there should be no let-up in the same. **However, where ever feasible, the possibility of ASA for all non-auctioned spectrum should also be explored.**

**Q15. 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?**

**RJIL Response:**

1. As mentioned above and also submitted earlier, the first priority should be to make available the entire C-Band (3.3 GHz to 4.2 GHz) (n77), 4.4 GHz to 5.0 GHz (n79), 6 GHz (5.925 GHz to 7.125 GHz), mmWave (26 GHz (24.25 – 27.5 GHz)(n258), 28 GHz (27.5 – 29.5 GHz)(n257), 37.0 – 40 GHz (n260), 39.5 – 43.5 GHz (n259), 47.2 – 48.2 GHz (n262) bands and Sub-GHz (600MHz & 700MHz) bands alongwith spectrum in V-Band (52.4 GHz to 71 GHz identified by 3GPP) and E-Band (71 - 76 & 81 - 86 GHz) for exclusive use for 5G services in India.
2. Further, the approach for ASA has to be based on actual utilization metrics of the spectrum assigned to non-TSPs, instead of what bands should be made available for ASA. We submit the aim has to be optimum utilization of spectrum for greater common good. Therefore, IMT spectrum available under all spectrum assignments to non-TSPs that are deemed to be sub-optimal, should be first examined for freeing and auction. In case, the same is not feasible, the spectrum can be put for ASA.
3. We submit that as the non-TSP assignees will be primarily Government or PSU assignees using the spectrum for non-commercial use, the responsibility of interference management should rest with them. The TSPs should be provided interference free spectrum, as otherwise it will impact QoS for millions of users.

**Q16. 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.**

**RJIL Response:**

1. We do not support ASA technique based dynamic spectrum sharing for access service providers. The Access Services providers already have the option for intra-band spectrum sharing and would also have the option of spectrum leasing going forward, thereby obviating need for any other interventions.
2. Intra-band spectrum sharing is an optimum spectrum sharing solution that provides option to share under-utilized spectrum resources for provider while simultaneously meeting the spectrum needs of seeker on a rather permanent basis. All the reasons

mentioned for not recommending inter-band spectrum sharing and ASA in above responses will be applicable in this case.

**Q17. 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?**

**RJIL Response: Not applicable, in view of response to Q.16.**

**Q18. 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. E. Issues relating to Leasing of Spectrum**

**RJIL Response: Not applicable in view of the above response, we maintain that prevailing intra-band spectrum sharing arrangements in India are optimum.**

**Q19. Where there is a need to permit spectrum leasing among access service providers? Kindly justify your response.**

**RJIL Response:**

- 1. Yes, spectrum leasing to authorized entities like licensed TSPs and CNPN should be permitted. The primary driver for spectrum leasing will be the need to monetize unutilized spectrum in certain areas or to certain niche users for the lessor. Whereas, the lessee can avail spectrum at fraction of a cost (probably proportionate for area**



of use for a niche user) and focus its resources on other aspects of service delivery. From regulator's perspective this will lead to more intense and likely optimum utilization of spectrum.

2. This will also be a boon for Captive Non-Public Networks (CNPN) and would be effectively a corollary to the CNPN guidelines issued by the Government.
3. **Spectrum leasing will also obviate the need for complicated procedures like inter-band spectrum sharing and ASA. Under this regime the seeker can avail a limited amount of spectrum for a limited duration for time and integrate the same into its existing network and supplement its service offerings.**
4. Further, as the spectrum leasing is by design a short-term measure (much lower than spectrum right to use period of 20 years), it can help the service providers test the waters with limited amount of spectrum in their limited areas of interest and can lead to increased competition for spectrum in subsequent auctions, if the lessee is able to monetize the leased spectrum.
5. GSMA has analyzed the economic opportunity of spectrum leasing, which clearly demonstrates that not only is spectrum leasing of immense economic value but also that it is an optimum solution for CNPNs. We are extracting and reproducing the relevant paras of GSMA paper<sup>3</sup> on Spectrum leasing in the 5G era

*Spectrum leasing can drive private economic benefits to businesses. **Most importantly though, it can be an effective and efficient way for public policymakers and regulators to manage spectrum, helping maximise the economic benefits to society.***

*Private benefits from spectrum leasing can be reaped by mobile operators when they obtain an additional financial return from their spectrum holdings. **Leasing can also help achieve benefits other than financial returns.** For example, in the US, where leasing is permitted, mobile operators can achieve their rollout coverage obligations by leasing spectrum to third parties planning to use the leased spectrum to roll out networks in uncovered areas.*

*Spectrum leasing by operators can also play an **important role in meeting the needs of local enterprise users, by permitting innovative services that require local access to spectrum to deploy services more quickly and flexibly than by obtaining spectrum from the regulator.** This flexibility (in terms of contract length and geographical coverage, for example) is particularly important for*

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<sup>3</sup> <https://www.gsma.com/spectrum/wp-content/uploads/2022/01/Spectrum-Leasing-5G-Era.pdf>

*vertical applications and local uses experiencing rapid technological change and/or in the early phases of business development.*

*Most regulators are also concerned with the public or societal benefits that can be achieved through spectrum leasing. **The main question faced by policymakers is whether spectrum leasing can result in more efficient use of radio spectrum than alternative approaches and should therefore be promoted.***

*A good way to help answer this question is to take the case of how best to enable 5G private networks in vertical industries. **Some countries, such as Germany, have set aside spectrum for local use licences. An argument in favour of setting aside spectrum for vertical use is to ensure the availability of spectrum to support enterprise use cases via private or dedicated networks.** However, it has also been argued that these benefits could be achieved under alternative policies that do not require set-asides of spectrum, such as spectrum leasing or sharing.*

*If spectrum demand from local users can be guaranteed under both approaches, it is clear that spectrum set-asides for local verticals achieve the same objective (of letting a vertical access spectrum) but at a much higher cost to society. **Conservative estimates based on the German 5G auction indicate that €1–1.5 billion of private value was lost due to the reservation of 100 MHz of mid-band spectrum for local use, driving a consumer harm of €6–15 billion.**<sup>13</sup> With spectrum leasing, none of this lost value would have materialised.*

*Spectrum leasing can help maximise spectrum use without departing from market-based mechanisms, which could lead to inefficient spectrum use to the detriment of society as a whole. More generally, spectrum set-asides can be seen as a form of ex ante regulation, where remedies are deployed before a market failure has even occurred. Ex-ante regulations can sometimes be justified where extreme and socially unacceptable costs can occur if a market failure materialises (e.g. pharmaceutical drug safety approvals).*

*As illustrated in the case of Germany, spectrum leasing can avoid the high societal costs of departing from a market-based mechanism. Even if market failures materialise in the future (for example, if there are instances where verticals cannot access spectrum because spectrum leasing markets have not developed quickly enough), ex-post regulation could in such a case be considered by regulators without incurring any of the initial societal costs.*

6. In view of the above, we support implementation of spectrum leasing in the country.

**Q20. 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?**

**And**

**(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?**

**RJIL Response:**

- i. Spectrum leasing should be permitted from medium to long term with the minimum term being 5 years.
- ii. We submit that spectrum leasing would involve either setting up a stand-alone network or an integration and optimization within an existing network and would require minimum 5 years to be of any effective value. Further, the spectrum provider will also need to plan for spectrum being not useful for a minimum period of 5 years in order to plan leasing.

**(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?**

**RJIL Response:**

- i. We understand that long term leasing should be permitted, as this will help lessors especially CNPNs to plan their in-house networks with long-term certainty.
- ii. We believe that the competition issues are an evolving scenario with spectrum leasing and the regulators should examine these issues on some visible failures in the system, instead of being fearful of the same. Anyhow, we have sufficient mechanism to handle such issues, as and when they emerge, therefore no need to worry in advance and scuttle a positive policy measure on assumptions.

- iii. The spectrum leasing has a natural maximum duration i.e. the life of spectrum validity and there is no need to change the same.

**(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 roll-out obligations applicable for the Lessor (the access service provider which has leased out the spectrum)? Whether the provisions for roll-out obligation require to be different for short-term and long-term spectrum leasing?**

**RJIL Response:**

- i. We submit that there should not be any roll-out obligations on the lessee, however, in line with international best practices, the roll out by lessee should be included in the roll out obligations of the lessor.
- ii. This will ensure that lessee is not over-burdened by roll-out requirements, which might be relevant for small CNPNs, **on the other hand including the lessee's roll out under lessor roll out obligations would ensure that overall roll-out obligations are met expeditiously.**

**(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?**

**RJIL Response:**

- i. We submit that there should not be any spectrum leasing charges, as the Government has already recovered the market determined price for auction and leasing would only help optimize the spectrum utilization.
- ii. Further, the right to use spectrum and associated obligations are not changing hands under this arrangement. In many ways leasing arrangement would be more similar to spectrum sharing arrangement.

**(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?**

**RJIL Response:**

- i. We believe that Authorities should refrain from adding any superfluous and prohibitive conditions with a policy reform. **Spectrum leasing is long sought-after reform and encumbering the same with lock-in conditions will have the effect of restricting the benefits.**
- ii. For instance, in case a new spectrum band is acquired by service providers and there exist an inherent demand by CNPNs for same spectrum band, then lock-in will only help is wasting the spectrum resources.

**(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?**

**RJIL Response:** We submit that an intimation-based approach will be most suitable. Considering the Ease of Doing Business goals of the Government, this can be done through an online portal, possibly as part of Saral Sanchar portal.

**(h) Whether the spectrum held by an access service provider on shortterm, or long-term lease be included to calculate compliance to spectrum caps?**

**RJIL Response:**

- i. As the spectrum caps are prescribed at LSA levels, the calculation of spectrum caps in the scenario where spectrum is leased for a part of service area, even for long term does not make any sense.
- ii. However, in cases, where a spectrum portion is availed by the service provider under a leasing arrangement for more than 5 years for complete LSA, the spectrum should be added in spectrum cap. Another related aspect is to exclude this spectrum from the cap applicable on lessor. We submit that any assigned spectrum should not be added for spectrum cap calculation of 2 service providers.

**(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?**

**And**

**(j) What other terms and conditions need to be prescribed in respect of spectrum leasing between access service providers?**

**RJIL Response:**

We do not believe there is a need to link surrender of spectrum with spectrum leasing. Spectrum leasing option will be logically exercised much prior to surrender is contemplated. Thus, if at all, better safeguards are required to prevent misuse in case of surrender of spectrum. We do not believe that there is a need to complicate spectrum leasing due to surrender provisions.

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

**RJIL Response: None**