



भारतीय दूरसंचार वनियामक प्रा धकरण

**Telecom Regulatory Authority of India**



**Recommendations on  
Telecommunication Infrastructure Sharing,  
Spectrum Sharing and Spectrum Leasing**

(Response to the back reference dated 13<sup>th</sup> February 2025 received from DoT  
on the TRAI's recommendations dated 24<sup>th</sup> April 2024)

New Delhi, India

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## CHAPTER I: INTRODUCTION AND BACKGROUND

### A. DoT's Reference

- 1.1 Department of Telecommunications (DoT), Ministry of Communications, Government of India, through the letter No. 20-405/2013-AS-I dated 07.12.2021 (**Annexure I**), sent a reference to Telecom Regulatory Authority of India (hereinafter also referred to as "TRAI", or "the Authority") under Section 11(1)(a) of the TRAI Act, 1997 on sharing of core network elements among telecom operators. The reference is reproduced below:

*"The Department of Telecommunications has received request from Cellular Operator Association of India (COAI) for allowing sharing of core network elements also such as Mobile Switching Center (MSC), Home Location Register (HLR), Intelligent Network (IN), etc., among telecom operators. The copy of COAI reference is enclosed.*

*2. At present, as per the provisions contained in Unified License, the sharing of active infrastructure is limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only. The relevant condition of Unified License Agreement is reproduced as under:*

*"33. Sharing of infrastructure:*

*33.1 Sharing of active/ passive infrastructure shall be governed by the terms and conditions of respective service authorization and amendment/ guidelines to be issued by the Licensor from time to time.*

*33.2 Sharing of Active infrastructure amongst Service Providers based on the mutual agreements entered amongst them is permitted. Active infrastructure sharing will be limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only. Sharing of infrastructure related to Wi-Fi equipment such as Wi-fi router, Access Point etc. is allowed. Sharing of backhaul is also permitted.*

*33.3 The Licensee may share its own active and passive infrastructure for providing other services authorized to it under any other telecom license issued by Licensor.*

*33.4 An authorized Gateway Hub operated by the satellite provider itself is permitted to be shared with the satellite bandwidth seeker."*

*3. In view of above, TRAI is requested to submit its recommendations under Section 11(1)(a) of TRAI Act, 1997 (as amended) on allowing sharing of core network elements also such as MSC, HLR, IN etc., among telecom operators."*

1.2 Thereafter, DoT, through the letter No. 20-405/2013-AS-I dated 10.02.2022 **(Annexure II)** to TRAI, while mentioning its earlier reference dated 07.12.2021, mentioned as below:

*"2. In order to promote optimum resource utilization among the licensees, it is proposed to allow sharing of all kinds of telecom infrastructure and network elements among all categories of service providers, licensed under the Section 4 of Indian Telegraph, Act, 1885, for provision of authorized telecom services.*

*3. Therefore, TRAI is requested to submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended) on this issue."*

## **B. Issues Related to the Sharing and Leasing of Spectrum**

1.3 In the year 2020, during the TRAI's consultation process on 'Methodology of applying Spectrum Usage Charges (SUC) under the weighted average method of SUC assessment, in cases of Spectrum Sharing', a few stakeholders requested the Authority that inter-band spectrum sharing as well as leasing of spectrum should be permitted in the country. The Authority considered the requests from such stakeholders and observed that inter-band spectrum

sharing and leasing of spectrum could involve larger issues which need to be well-examined and consulted with stakeholders. As the issues related to inter-band spectrum sharing and leasing of spectrum were not part of the consultation process at that point of time, the Authority decided that such issues would be examined separately.

- 1.4 In view of the above, the Authority decided to take up the issues related to spectrum sharing and spectrum leasing along with the issues related to infrastructure sharing, through a single consultation paper.

**C. TRAI's Recommendations Dated 24.04.2024**

- 1.5 On 13.01.2023, the Authority issued a consultation paper on 'Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing' for soliciting comments of stakeholders on the issues related to telecommunication infrastructure sharing, spectrum sharing and spectrum leasing. After a comprehensive consultation process, Authority, on 24.04.2024, sent its recommendations on Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing (hereinafter also referred to as, "the Recommendations dated 24.04.2024") to DoT.

**D. DoT's Back-reference Dated 13.02.2025**

- 1.6 DoT, through its letter dated 13.02.2025 (**Annexure III**) on the subject- 'Back reference to TRAI on Recommendations dated 24.04.2024 on 'Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing'" (hereinafter, also referred to as "the Back-reference"), informed, *inter-alia*, as below:

*"This is in reference to the TRAI recommendations dated 24.04.2024 on Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum*

*Leasing'. The prima-facie views of Government on each of these recommendations is tabulated and given at Annexure-A.*

*2. As per Section 11(1) of the TRAI Act, 1997 (as amended), such recommendations dated 24.04.2024 on 'Telecommunication. Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing, where the Government has reached to a prima-facie conclusion that these recommendations may not be accepted or need modification are being referred back to TRAI for its reconsideration. TRAI is requested to provide its recommendations within 15 days of receipt of this back reference.'*

1.7 In the Annexure-A to the Back-reference, DoT mentioned as below:

*"1. In respect of recommendations no. 3.1 relating to "Telecommunication infrastructure sharing", the Government has considered these recommendations along with TRAI recommendations dated 18.09.2024 on the 'Framework for Service Authorisations to be granted under the Telecommunications Act, 2023'. The reference back to TRAI has already been sent vide letter no 20- 1350/2024-AS-I dated 14.01.2025.*

*2. Regarding recommendations no. 3.2 to 3.8 relating to "Need for mandatory sharing of Government funded infrastructure" & "Connectivity issues being faced by the subscribers in remote and far-flung areas of the country", "Inter-band Spectrum Sharing Among TSPs", "Authorised Shared Access (ASA) of Spectrum" and "Leasing of Spectrum", the prima-facie views of the Government are as follows:*

<i>Rec. No.</i>	<i>Recommendation</i>	<i>Views of the Government</i>
...		

"

1.8 In short, through the Back-reference, DoT has mentioned that the Government has reached a *prima-facie* conclusion that some of the recommendations, which were part of the Recommendations dated 24.04.2024, may not be accepted or may need modification. DoT has requested TRAI to provide its reconsidered recommendations in respect of such recommendations.

## **E. The Present Response**

1.9 The Authority has carefully examined the views expressed by DoT in the Back-reference. Based on a conscientious analysis, the Authority has arrived at the present response to the Back-reference. This chapter provides an introduction and background to the subject. Chapter II provides the issue-wise response of the Authority to the Back-reference.

## CHAPTER II: ISSUE-WISE RESPONSE TO THE BACK REFERENCE

- 2.1 This chapter provides the response of the Authority to the views expressed by DoT in the Back-reference in respect of the recommendations on which the Government has reached a *prima-facie* conclusion that such recommendations may not be accepted or may need modification. Such recommendations have been presented sequentially, and descriptions thereon have been organized in the following manner:
- (a) First, the text of the recommendation has been reproduced, in respect of which, the Government has reached a *prima-facie* conclusion that it may not be accepted or may need modification.
  - (b) Then, the views expressed by DoT in the Back-reference in respect of such recommendation have been reproduced.
  - (c) Thereafter, the response of the Authority has been provided.
- 2.2 **Recommendation No. 3.2(b):** *In the already assigned projects of USOF, DoT should explore the feasibility of issuing instructions to such USPs that the USP shall not refuse to share the passive infrastructure laid under the project with at least two other telecom service providers on a transparent and non-discriminatory basis.*
- 2.3 **DoT's Views on the Recommendation No. 3.2(b):** *May not be accepted.*
- 2.4 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.2(b):**
- 2.4.1 DoT has expressed that the Recommendation No. 3.2(b) may not be accepted. However, it has provided no justification or rationale in support of its view. **In absence of any supporting justification or rationale provided by DoT for not accepting the recommendation, the Authority is constrained to reiterate the Recommendation No. 3.2(b).**



- 2.5 **Recommendation No. 3.2(d)**: *The sharing of active infrastructure laid under the projects of USOF (or Digital Bharat Nidhi) should be voluntary and based on mutual agreements.*
- 2.6 **DoT's Views on the Recommendation No. 3.2(d)**: *May be accepted subject to license conditions.*
- 2.7 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.2(d)**: Noted
- 2.8 **Recommendation No. 3.3(a)**: *In the interest of consumers, a telecom service provider, which has built mobile network infrastructure in the remote and far-flung areas of the country with full or partial funding from the Government under USOF (or Digital Bharat Nidhi), should be mandated to allow roaming to other TSPs on its network in such remote and far-flung areas initially for a period of three years. Later, the Government/ TRAI may review the need for extending this mandate beyond three years.*
- 2.9 **DoT's Views on the Recommendation No. 3.3(a)**: *May be accepted in principle. Intra circle roaming on commercial basis, for the period for which Viability Gap Funding is given, may be made mandatory in the future projects of USOF.*
- 2.10 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.3(a)**:
- 2.10.1 DoT has expressed a view that the Recommendation No. 3.3(a) may be accepted in principle. DoT has further mentioned that in the future projects of USOF, the intra-circle roaming on a commercial basis may be made mandatory for the period for which Viability Gap Funding is given.

2.10.2 In this regard, it may be noted that in the Recommendations dated 24.04.2024 it was mentioned that it is expected that with the implementation of recommendation with respect to the sharing of passive infrastructure laid under the USOF projects, the benefits of competition will accrue to the consumers in remote and far-flung areas also; however, it might take some time. Therefore, TRAI's recommendation No. 3.3 was aimed at providing an immediate solution to the hardships faced by subscribers in such areas due to connectivity issues of the home network provider, initially for a period of three years. The reasons and justification for the recommendation were clearly mentioned in para 2.67 to 2.70 of the recommendations dated 24.04.2024, as reproduced below:

*"2.67 The Authority examined the comments of stakeholders w.r.t. the Q9 and Q10. While a few stakeholders have mainly suggested that the Government should provide financial incentives to TSPs, if they permit roaming to other TSPs in their networks in remote and far-flung areas, a few others have mainly suggested a regulatory provision of mandatory roaming to ease out the hardships faced by the subscribers in remote and far-flung areas due to connectivity issues of the home network providers. The Authority is cognizant of the fact that the Government is already in the process of making available telecom connectivity in remote and far-flung areas through Universal Service Providers (USPs), which are funded partially or fully, as the case may be, through the USOF. It is expected that the Authority's recommendations given in para 2.60 above (with respect to the sharing of passive infrastructure laid under the USOF projects), once implemented, will help bring plurality of service providers in remote and far-flung areas; as a result, the benefits of competition (choice, better quality of service, affordable tariffs, etc.) will accrue to the consumers in remote and far-flung areas also. It, however, might take some time.*

*2.68 In the meantime, a mechanism needs to be put in place to ease the hardships faced by the subscribers in remote and far-flung areas due to*

*connectivity issues of the home network providers. A few stakeholders have averred that, to ease out the hardship faced by the subscribers in remote and far-flung areas due to connectivity issues of the home network provider, mandatory roaming should be offered by all TSPs in the remote and far-flung areas of the country. The Authority notes that mandatory roaming is, generally, prescribed by the national regulators to facilitate new operators (green field operators), that too for a limited period. The chief argument against the provision of mandatory roaming is that it proves to be counter-productive in the long run, as there will be no incentive to a TSP to build telecommunication infrastructure, particularly in the less economically attractive areas, in case the facility of roaming is available to the TSP.*

*2.69 The Authority is of the opinion that the provision of mandatory roaming in remote and far-flung areas may provide an immediate solution to the hardships faced by the subscribers in such areas due to connectivity issues of the home network provider. However, the Authority is mindful that the provision of mandatory roaming may take away the numerous incentives of building telecommunication infrastructure such as the first movers' advantage, competitive advantage arising out of a larger footprint of network and a better quality of service etc. and thereby it may discourage the TSPs from investing in building telecom infrastructure in remote and far-flung areas. Accordingly, the Authority is of the opinion that a regulatory provision of mandatory roaming on the privately funded telecommunication infrastructure in remote and far-flung areas may not be desirable.*

*2.70 Having said that, the Authority is of the view that in the interest of the consumers, it would be reasonable to mandate roaming, albeit for a limited period, on the telecommunication infrastructure in remote and far-flung areas, which has been funded, either fully or partially, by the Government through USOF. Initially, such a mandate may be kept for a period of three years. Later, the Government/ TRAI may review the need for extending this mandate beyond three years."*

- 2.10.3 It is worth noting that through the Recommendation No. 3.3(b)(ii), the Authority also recommended that in case the Government agrees with the Recommendation No. 3.3(a), “*TRAI will establish a regulatory framework for roaming charges among service providers in such remote and far-flung areas, while adequately protecting the interest of the USP.*”
- 2.10.4 However, in the Back-reference, DoT has proposed to implement the recommendation No. 3.3(a) in a partial manner; it has proposed that intra-circle roaming should be mandated only in the future USOF projects. The Authority is of the view that mandating intra-circle roaming only in the future USOF projects may not yield the desired outcome i.e. to provide an immediate solution to the hardships faced by the subscribers in remote and far-flung areas due to connectivity issues of the home network provider.
- 2.10.5 In view of the above, **the Authority reiterates the Recommendation No. 3.3(a).**
- 2.11 **Recommendation No. 3.4(b):** *A TSP should not be allowed to enter into inter-band access spectrum sharing with more than one TSP in a spectrum band category in an LSA. Further, inter-band access spectrum sharing in an LSA should be permitted subject to the condition that, post-sharing, there will be at least two independent wireless access networks in the LSA.*
- 2.12 **DoT’s Views on the Recommendation No. 3.4(b):** *May be accepted in principle. However, a clarification is required from TRAI on the following: If an Operator- A and Operator-B are sharing the spectrum in one spectrum band category, whether operator A will be allowed to share spectrum with operator —C in a different spectrum band category? In such cases, although two independent wireless access networks in a LSA shall exist technically but not commercially.*

2.13 **Response of TRAI w.r.t. DoT's Views on the Recommendation No.**

**3.4(b):**

2.13.1 In the analysis which led to the Recommendation No. 3.4(b), the Authority made the following observations through para 2.95 of the Recommendations dated 24.04.2024:

*"2.95 At present, there are four wireless access service providers in each licensed service area (LSA). As the inter-band spectrum sharing may involve the integration of radio access networks of the participating TSPs in the LSA, it would be desirable to impose certain restrictions on the inter-band sharing to ensure the plurality of radio access networks in the LSA. Accordingly, the Authority is of the view that a TSP should not be allowed to enter into inter-band sharing with more than one TSP in a spectrum band category in an LSA. Further, inter-band spectrum sharing in an LSA should be permitted subject to the condition that post-sharing, there should be at least two independent wireless access networks in the LSA."*

2.13.2 Clearly, the intent of the Authority while making the recommendation No. 3.4(b) was to ensure that the plurality of radio access networks in the LSA is not compromised in any manner on account of the inter-band access spectrum sharing. Keeping this in mind, **the Authority is of the view that if Operator-A and Operator-B are sharing the spectrum in one spectrum band category, Operator-A should be allowed to share spectrum with Operator-C in a different spectrum band category subject to the condition that post-sharing, there will be at least two independent wireless access networks in the LSA.**

2.14 **Recommendation No. 3.4(c):** *Any frequency spectrum should be permitted to be shared under inter-band access spectrum sharing only after a lock-in period of two years from the date of its acquisition.*

2.15 **DoT's Views on the Recommendation No. 3.4(c):** *May be accepted in principle. The Government noted the difference between the provisions of NIA and the current guidelines of intra-band spectrum sharing. As per the decision of the union cabinet auction of the available spectrum is required to be done every year. In this scenario, maintaining lock in period of two years may pose implementation difficulties. Therefore, clarification is required from TRAI in the light of lock in period for newly acquired spectrum.*

2.16 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(c):**

2.16.1 In the analysis which led to the Recommendation No. 3.4(c), the Authority made the following observations in para 2.97 of the Recommendations dated 24.04.2024:

*"2.97 The Authority noted that as per the existing provisions of notice inviting application (NIA) for auction of frequency spectrum, intra-band spectrum sharing is permitted to TSPs after a lock-in period of one year, and TSPs are allowed to trade their spectrum after a lock-in period of two years. Considering the concerns relating to competition and dynamics of spectrum auction raised by stakeholders from inter-band sharing, the Authority is of the view that it would be appropriate to keep a lock-in period of two years from the date of acquisition of such spectrum. Therefore, any frequency spectrum should be permitted to be shared under inter-band access spectrum sharing only after a lock-in period of two years from the date of its acquisition."*

2.16.2 Clearly, the intent of the Authority in making the recommendation to permit the sharing of any frequency spectrum (under the inter-band access spectrum sharing) after the lock-in period of two years from the date of its acquisition was to mitigate the possibility of any adverse impact of the provision of inter-band access spectrum sharing on competition and the dynamics of spectrum auction.

2.16.3 In this background, the Authority examined the DoT's concern of operational difficulties which may arise due to the condition of the lock-in period of two years on a newly acquired spectrum. The Authority noted that there could be a situation where an access service provider, holding a significant amount of access spectrum in a particular frequency band (say 'B<sub>1</sub>'), acquires a small amount of additional spectrum in the frequency band B<sub>1</sub> at the time T<sub>0</sub>. Considering the Recommendation No. 3.4(c) in the present form, the access service provider would become ineligible to share its entire access spectrum in the frequency band B<sub>1</sub> for a period of two years from the time T<sub>0</sub>. The Authority is of the view that such a situation could be avoided if access spectrum in any frequency band is permitted to be shared under the inter-band spectrum sharing if a large majority of the spectrum holding in the frequency band meets the condition of the lock-in period of two years from the date of acquisition. The Authority is of the view that a threshold of 80% is adequate<sup>1</sup> for this purpose considering the fact that in the recent auctions of access spectrum which were held in the year 2021, 2022 and 2024, some access service providers acquired the access spectrum in small quanta (as a top-up spectrum) in 900 MHz band and 1800 MHz band in some LSAs, ranging between 0.2 MHz to 1.4 MHz, which was 3% to 18% of the total spectrum held by such access service providers post-auction.

2.16.4 Based on the foregoing discussion, **the Authority has reconsidered the Recommendation No. 3.4(c) and is of the view that the Recommendation No. 3.4(c) should be read as below:**  
**'The access spectrum in any frequency band should be permitted to be shared under inter-band access spectrum sharing if at least 80% of the spectrum holding in the frequency band meets the condition of the lock-in period of two years from the date of its acquisition.'**

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<sup>1</sup> In statistical hypothesis testing analysis, statistical power (i.e. the probability of detecting a given effect if that effect actually exists) is, generally, kept as 80% for ensuring adequacy of the test. Source: [https://ethen8181.github.io/Business-Analytics/ab\\_tests/frequentist\\_ab\\_test.html](https://ethen8181.github.io/Business-Analytics/ab_tests/frequentist_ab_test.html)

2.16.5 Illustration: Suppose an access service provider which was holding 4.4 MHz of spectrum in the 900 MHz band in an LSA since the year 2006 has acquired an additional amount of spectrum in the 900 MHz band in the spectrum auction of 2024. The following table depicts two scenarios to evaluate the eligibility to share the spectrum in the 900 MHz band under inter-band access spectrum sharing:

Item	Legend	Scenario-1	Scenario-2
Original spectrum holding in the 900 MHz band since 2006 (meeting the two-year lock-in period requirement)	P	4.4 MHz	4.4 MHz
Additional spectrum in the 900 MHz band acquired in the 2024 auction (not meeting the two-year lock-in period requirement)	Q	0.6 MHz	5.6 MHz
Total spectrum holding in the 900 MHz band, at present	$R=P+Q$	5 MHz	10 MHz
The percentage of spectrum which meets the condition of the lock-in period of two years from the date of its acquisition	$S=P/R$	88%	44%
Is the frequency spectrum in 900 MHz band eligible for sharing under inter-band access spectrum sharing?	Whether $S \geq 80\%$ ?	Yes	No

2.17 **Recommendation No. 3.4(d)**: *The frequency spectrum proposed to be shared by the access service providers should have been acquired through spectrum auction or spectrum trading, or market price should have been paid*



*by the respective access service providers for acquiring such spectrum. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.*

2.18 **DoT's Views on the Recommendation No. 3.4(d)**: *May be accepted in principle with following modification:*

*The frequency spectrum proposed to be shared by the access service providers should have been acquired through spectrum auction or spectrum trading, or should have been liberalized as per the extant guidelines. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.*

2.19 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(d)**:

2.19.1 One of the strategies of the National Telecom Policy (NTP)-2012 was to "*move at the earliest towards liberalisation of spectrum to enable use of spectrum in any band to provide any service in any technology...*". In this regard, on 05.11.2015<sup>2</sup>, DoT issued the guidelines for the liberalisation of the administratively allotted spectrum in the 800 MHz band and 1800 MHz band. Subsequently, on 06.09.2016<sup>3</sup>, DoT amended the guidelines and included the provision of the liberalisation of spectrum in the 900 MHz band as well. Therefore, the extant guidelines for the liberalisation of administratively allotted spectrum apply only to the frequency spectrum assigned on an administrative basis in 800 MHz, 900 MHz and 1800 MHz bands. As per the extant guidelines for the liberalisation of spectrum, the spectrum can be liberalised for the balance validity period of its right to use after the payment of pro-rated auction determined price (after deducting the entry fee already

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<sup>2</sup> <https://dot.gov.in/sites/default/files/Guidelines%20for%20liberalisation%20of%20800%20and%201800%20MHz.pdf>

<sup>3</sup> <https://dotws.cdota.in/sites/default/files/Liberalisation%20of%20900%20MHz%20band.pdf>

paid) for the balance validity period. If the auction determined price is more than one year old, the prevailing market rates are calculated by indexing the last auction determined price. In short, to liberalize its access spectrum in 800 MHz, 900 MHz and 1800 MHz bands, the service provider is required to pay market price for such spectrum for the remaining validity period.

2.19.2 Further, it is also noteworthy that the Government assigns access spectrum to the PSU operator (which providing wireless access services) on an administrative basis at the market determined price for the spectrum. Besides, Section 4(4) of the Telecommunications Act, 2023 provides that "*The Central Government shall assign spectrum for telecommunication through auction except for entries listed in the First Schedule for which assignment shall be done by administrative process.*" The 18th entry of First Schedule of the Telecommunications Act, 2023 is "Bharat Sanchar Nigam Limited (BSNL) and Mahanagar Telephone Nigam Limited (MTNL)".

2.19.3 In view of the above, to cover all types of cases i.e. liberalised spectrum as well as spectrum assigned administratively at the market price, the Authority, through the Recommendation No. 3.4(d) recommended, *inter-alia*, that *the frequency spectrum proposed to be shared by the access service providers should have been acquired through spectrum auction or spectrum trading, or market price should have been paid by the respective access service providers for acquiring such spectrum.* In case the DoT's view on the Recommendation No. 3.4(d) is implemented, the PSU operator would not be eligible for the inter-band access spectrum sharing.

2.19.4 Considering the above, **the Authority does not agree with the modification suggested by DoT in the Recommendation No. 3.4(d) and reiterates the Recommendation No. 3.4(d).**

2.20 **Recommendation No. 3.4(e)**: *For spectrum cap, entire holding of the access service providers in the spectrum bands being shared should be*

*counted in both the sharing access service providers. In other words, the spectrum holding of any access service provider, post inter-band spectrum sharing should be computed by adding the frequency spectrum of the partner access service provider in the frequency band(s) being shared, to the original access spectrum held by the access service provider.*

2.21 **DoT's Views on the Recommendation No. 3.4(e):** *May be accepted in principle*

*Government noted the differences in the provisions of Intra band spectrum sharing guidelines and current recommendations of TRAI. The Government is of view for harmonizing the provisions of both, while framing the rules on spectrum sharing under Telecommunication Act, 2023, there may be a common set of rules for both type of sharing namely inter-band and intra-band.*

2.22 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(e):**

2.22.1 DoT has expressed a view that there may be a common set of rules for both inter-band spectrum sharing and intra-band spectrum sharing. In this regard, it is noteworthy that in the Recommendations dated 24.04.2024, the Authority, after detailed examination and deliberation, recommended different set of rules for inter-band spectrum sharing *vis-a-vis* intra-band spectrum sharing in respect of the following items:

- (a) Lock-in period from the date of acquisition of spectrum
- (b) Spectrum sharing fee
- (c) Counting of spectrum holdings for the purpose of spectrum cap

2.22.2 With respect to the aspect of the lock-in period of two years for the inter-band spectrum sharing, the Authority's response in sub-paras under the para 2.16 above may kindly be referred to. Further, with respect to the aspect of the

inter-band spectrum sharing fee, the Authority's response in sub-paras under the para 2.28 below, may kindly be referred to.

2.22.3 It is noteworthy that under the extant guidelines for intra-band spectrum sharing, the spectrum holding of any licensee post-sharing is counted after adding 50% of the spectrum held by the other licensee in the band being shared to the original spectrum held by the licensee in the band for the purpose of spectrum cap. Through the Recommendation No. 3.4(e), the Authority has recommended that for spectrum cap, the spectrum holding of any access service provider, post inter-band spectrum sharing should be computed by adding the frequency spectrum of the partner access service provider in the frequency band(s) being shared, to the original access spectrum held by the access service provider. In the analysis, which led to the Recommendation No. 3.4(e), the Authority made the following observations in para 2.99 of the Recommendations dated 24.04.2024:

*"2.99 The Authority is of the opinion that it may be practically difficult to assess as to whether the shared frequency spectrum is being used by both the TSPs, or largely by a single TSP. Considering the concerns related to the dynamics of spectrum auction raised by stakeholders from inter-band spectrum sharing, the Authority is of the view that in case of inter-band spectrum sharing, entire spectrum holding of the participating TSPs in the spectrum bands being shared should be counted in the spectrum holdings of both the participating TSPs, for the purpose of spectrum cap."*

2.22.4 The Authority is of the view that the concerns related to the adverse impact on the dynamics of spectrum auctions are more pronounced in case of the inter-band spectrum sharing *vis-à-vis* the intra-band spectrum sharing.

2.22.5 Considering the foregoing discussion, **the Authority is of the view that the rules under the inter-band spectrum sharing on certain aspects such as lock-in period, spectrum sharing fees and spectrum cap should be**

**different from the extant guidelines for intra-band spectrum sharing. As far as the matter related to 'spectrum cap' is concerned, the Authority reiterates the Recommendation No. 3.4(e).**

2.23 **Recommendation No. 3.4(f)**: *In case a TSP, which is involved in the inter-band spectrum sharing, wishes to acquire additional access spectrum through future auction, but the spectrum cap restricts it from participating in the auction, such TSP(s) should be permitted to participate in the future spectrum auction provided it furnishes an undertaking that it will bring down its spectrum holding to comply to the applicable spectrum cap within a period of one year from the date of assignment of access spectrum through auction. In such a case, for the purpose of spectrum cap, only the frequency spectrum held by the licensee (without including the shared spectrum of the partnering TSP) should be considered to assess its eligibility to bid for additional frequency spectrum in the spectrum auction.*

2.24 **DoT's Views on the Recommendation No. 3.4(f)**: *May be accepted in principle.*

*However, the Government is of view that similar treatment may be given to all TSPs which are involved in intra/inter-band spectrum sharing irrespective of reaching the spectrum cap or not on account of spectrum sharing.*

2.25 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(f)**: Noted

2.26 **Recommendation No. 3.4(g)**: *The TSPs involved in the inter-band spectrum sharing should be liable to pay a non-refundable inter-band spectrum sharing fee to the Government. The inter-band spectrum sharing fee payable by a TSP should be 0.5% of the applicable market price of the frequency spectrum shared by the partnering TSP prorated for the term (period) of spectrum sharing. For the purpose of computing the inter-band spectrum sharing fee, the latest market determined price available on the*

*effective date of spectrum sharing should be applicable. If the market determined prices are more than one-year old, the prevailing market price should be applied by indexing the last market determined price using the applicable Marginal Cost of funds based Lending Rate (MCLR) of SBI.*

2.27 **DoT's Views on the Recommendation No. 3.4(g):** *May be accepted in principle.*

*However, the Government is of view that "non-refundable inter-band spectrum sharing fee" may be charged for minimum one year and sharing for any period less than 1 year will be considered as complete year for charging purpose. Both the provisions under intra-band spectrum sharing guidelines and the current recommendations may be harmonized while framing the rules on spectrum sharing under Telecommunication Act, 2023.*

2.28 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(g):**

2.28.1 The Authority has noted the Government's view that the non-refundable inter-band spectrum sharing fee may be charged for minimum one year and sharing for any period less than one year will be considered as complete year for charging purpose.

2.28.2 With respect to the DoT's view that the provisions for the intra-band spectrum sharing and the inter-band sharing may be harmonized while framing the rules on spectrum sharing under Telecommunication Act, 2023, it is noteworthy that the Authority deliberated the aspect of inter-band spectrum sharing fee in detail in the Recommendations dated 24.04.2024. In this regard, the para 2.102 and 2.103 of the Recommendations dated 24.04.2024 are reproduced below:

*"2.102 In the consultation process, a few stakeholders were of the view that the charges for inter-band spectrum sharing should be mutually agreed*

*between the operators; to cater to the administrative expenses, only a nominal fee should be levied by the Government on the operators before allowing inter-band spectrum sharing. On the other hand, a stakeholder suggested that spectrum usage charges should be levied on the TSPs who share the inter-band spectrum. While examining the comments of stakeholders on this issue, the Authority took note of the following aspects:*

*(a) At present, the 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 13.10.2015, which were amended last on 11.10.2023, govern the intra-band spectrum sharing in the country. Hereinafter, these guidelines, will also be referred as "the intra-band spectrum sharing guidelines" in this document. Under these guidelines, a non-refundable processing fee of Rs. 50,000/- is payable individually by each access service licensee for each licensed service area at the time of intimation to WPC Wing of DoT. It is noteworthy that the original intra-band spectrum sharing guidelines of 2015 provided, inter-alia, that "Spectrum Usage Charge (SUC) rate of each licensee post-sharing shall increase by 0.5% of Adjusted Gross Revenue (AGR)." However, this condition has been removed in the revised intra-band spectrum sharing guidelines, which were notified on 11.10.2021.*

*(b) The trading of access spectrum in the country is governed through the 'Guidelines for Trading of Access Spectrum by Access Service Providers' dated 12.10.2015 (as amended). Hereinafter, these guidelines will also be referred to as "the spectrum trading guidelines". In respect of the charges associated with spectrum trading, these guidelines provide that "[a] non-refundable transfer fee of one percent (1%) of the transaction amount of aforesaid trade or one percent (1%) of the prescribed market price, whichever is higher shall be imposed on all spectrum trade transactions, to cover the administrative charges incurred by Government in servicing the trade."*

*(c) Inter-band access spectrum sharing has features which are distinct from both the intra-band access spectrum sharing and the access spectrum trading. A participating TSP, involved in the inter-band spectrum sharing, will get*

*access to the access spectrum in a new frequency band (i.e. a frequency band, in which it does not hold access spectrum yet), in a shared manner.*

*2.103 Considering the above, the Authority is of the view that each participating TSP should be levied an inter-band spectrum sharing fee equivalent to 0.5% of the applicable market price of the frequency spectrum shared by the partnering TSP prorated for the term (period) of spectrum sharing. The sharing fees payable by each TSP equivalent to 0.5% of the prorated applicable market price of spectrum of the partner TSP would be reasonable considering the fact that both the participating TSPs will share the frequency spectrum unlike the case of spectrum trading, where the buyer TSP utilizes the purchased spectrum exclusively and pays 1% of prorated market price of spectrum.*

2.28.3 Accordingly, through the Recommendation No. 3.4(g), the Authority recommended an inter-band spectrum sharing fee of 0.5% of the applicable market price of the frequency spectrum shared by the partnering TSP prorated for the term (period) of spectrum sharing.

2.28.4 **The Authority is of the view that as far as the aspect of the inter-band spectrum sharing fee is concerned, the rules under the inter-band spectrum sharing should be different from the extant guidelines for intra-band spectrum sharing. Accordingly, the Authority reiterates the Recommendation No. 3.4(g).**

2.29 **Recommendation No. 3.4(i)**: *The TSPs involved in the inter-band spectrum sharing should be given the option to make payment of the inter-band spectrum sharing fee either by way of an upfront payment, or equal annual instalments, duly protecting the Net Present Value (NPV) of the inter-band spectrum sharing fee at the applicable rate of interest. In case a TSP opts for equal annual instalments, each instalment should be paid in advance at the beginning of each year.*



2.30 **DoT's Views on the Recommendation No. 3.4(i):** *May be accepted to the extent of upfront payment only.*

2.31 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(i):**

2.31.1 In respect of the Recommendation No. 3.4(i), DoT has expressed a view that it may be accepted to the extent of upfront payment only. In essence, DoT is of the view that the option to make payment of the inter-band spectrum sharing fee by way of equal annual instalments, duly protecting the NPV of the inter-band spectrum sharing fee at the applicable rate of interest should not be given to TSPs. However, DoT has provided no justification or rationale in support of its view. **In absence of any supporting justification or rationale for not accepting the recommendation to give an option to TSPs for making the payment of the inter-band spectrum sharing fee by way of equal annual instalments, the Authority is constrained to reiterate the Recommendation No. 3.4(i).**

2.32 **Recommendation No. 3.4(I):** *The TSPs should be mandated to provide a suitable exit clause in inter-band spectrum sharing agreements for termination of the spectrum sharing arrangement.*

2.33 **DoT's Views on the Recommendation No. 3.4(I):** *May be accepted in principle.*  
*Further the Government is of view that there may not be any refund of spectrum sharing fee to any of the TSP on account of prior exit from the spectrum sharing arrangement.*

2.34 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(l):**

2.34.1 The Government has expressed a view that there may not be any refund of spectrum sharing fee to any of the TSP on account of prior exit from the spectrum sharing arrangement. In this regard, it is worth noting that the Authority, through the Recommendation No. 3.4(g), has recommended as below:

*"(g) The TSPs involved in the inter-band spectrum sharing should be liable to pay a non-refundable inter-band spectrum sharing fee to the Government. ..."*

2.34.2 Clearly, the DoT's views on the Recommendation No. 3.4(l) are in line with the Recommendation No. 3.4(g).

2.35 **Recommendation No. 3.4(o):** *The other terms and conditions of the inter-band spectrum sharing should be kept analogous to the terms and conditions of the intra-band spectrum sharing as given in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021.*

2.36 **DoT's Views on the Recommendation No. 3.4(o):** *May be accepted in principle.*

*The Government proposes to converge the various guidelines relating to spectrum sharing while framing the rules on spectrum sharing under Telecommunication Act, 2023.*

2.37 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(o):**

2.37.1 As far as the DoT's proposal to converge the various guidelines relating to spectrum sharing while framing the rules on spectrum sharing under the

Telecommunication Act, 2023 is concerned, **the Authority's response in sub-paras under the para 2.22 above may kindly be referred to.**

- 2.38 **Recommendation No. 3.4(p)**: *The Authority will monitor the developments in the wireless access services segment and may review its recommendations, as and when need arises. In this regard, DoT should share the details of the spectrum sharing arrangements within 15 days of their effective date with the Authority.*
- 2.39 **DoT's Views on the Recommendation No. 3.4(p)**: *May be accepted with the following modification:  
Concerned TSPs may share the details of the spectrum sharing arrangements within 15 days of their effective date with the TRAI.*
- 2.40 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.4(p)**: Noted
- 2.41 **Recommendation No. 3.6**: *The Authority recommends that DoT should explore the possibility of implementing authorized shared access (ASA) technique-based spectrum sharing in India, under which, the spectrum assigned to Government agencies or other entities (non-TSPs) in the globally harmonized spectrum bands for IMT services, can be assigned to access service providers as secondary users. Once the Government takes an administrative decision in this regard, DoT may, if deemed fit, seek recommendations of TRAI on a detailed regulatory framework for such a regime.*
- 2.42 **DoT's Views on the Recommendation No. 3.6**: *May be accepted. The Government noted that spectrum in IMT bands has also been assigned to entities other than TSPs. The Government is of view that further action may be taken about the assignment to the secondary user, after the conclusion of*

*coexistence study in certain IMT bands being undertaken by Ministry of Defense through CEWiT, Chennai and outcome of the study.*

2.43 **Response of TRAI w.r.t. DoT's Views on the Recommendation No.**

**3.6:** Noted

2.44 **Recommendation No. 3.8(a):** *Access service providers should be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or for which market price has been paid, to other access service providers in a licensed service area. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.*

2.45 **DoT's Views on the Recommendation No. 3.8(a):** *May be accepted in principle with the following change:*

*Access service providers may be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or should have been liberalized as per the extant guidelines, to other access service providers in a licensed service area. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.*

*In addition, clarification is required from TRAI on exactly which conditions of DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, are relevant for spectrum leasing.*

2.46 **Response of TRAI w.r.t. DoT's Views on the Recommendation No.**

**3.8(a):**

2.46.1 With respect to the DoT's view that Access service providers may be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or should have been liberalized as per the extant guidelines,

to other access service providers in a licensed service area, the response of the TRAI in sub-paras under the para 2.19 above may kindly be referred to.

2.46.2 With a view to cover all types of cases i.e. liberalized spectrum as well as spectrum assigned administratively at the market price, the Authority, through the Recommendation No. 3.8(a) has recommended, *inter-alia*, that “*Access service providers should be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or for which market price has been paid, to other access service providers in a licensed service area*”. In case the DoT’s view on the Recommendation No. 3.8(a) is implemented, the PSU operator would become ineligible for the leasing of its access spectrum. Considering the above, **the Authority reiterates the recommendation that Access service providers should be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or for which market price has been paid, to other access service providers in a licensed service area.**

2.46.3 Further, DoT has sought a clarification from TRAI on exactly which conditions of DoT's Guidelines for Sharing of Access Spectrum by Access Service Providers dated 11.10.2021, are relevant for spectrum leasing. In this regard, the Authority perused the DoT's Guidelines for Sharing of Access Spectrum by Access Service Providers dated 11.10.2021 and is of the view that **the following conditions may be included under spectrum leasing:**

**(a) The right to lease the spectrum shall be subject to the fulfilment of the terms and conditions under the relevant telecommunication service license/ authorisation and any other terms and conditions that may be specified by the Central Government by both, the Lessor and the Lessee.**

**(b) A TSP shall not be eligible to lease its spectrum if it has been established that it is in the breach of the terms and conditions of the relevant telecommunication service license/ authorisation, and the Central Government has ordered for the**

**revocation/ termination of its telecommunication service license/ authorisation.**

- (c) Both the lessor and the lessee shall give an undertaking that they are in compliance with all the terms and conditions of rules/ guidelines for spectrum leasing and the terms and conditions under telecommunication service license/ authorisation and will agree that in the event, it is established at any stage in future that either of the entity was not in conformance with the terms and conditions of the rules/ guidelines for spectrum leasing or/ and of the telecommunication service license/ authorisation at the time of giving intimation for leasing of spectrum, the Central Government will have the right to take appropriate action which *inter-alia* may include annulment of leasing arrangement.**

2.46.4 With respect to the computation of spectrum usage charges (SUC) post spectrum leasing, the Authority is cognizant that in case the weighted average SUC applicable for the lessee is computed by including the spectrum taken on lease, it might result in an increase or a decrease in the weighted average SUC rate for the lessee. Further, it may be noted that it has been envisaged through the Recommendations dated 24.04.2024 that TSPs can lease their excess or unutilized access spectrum in the entire LSA or limited geographical areas of the LSA for a specific period including on a short-term basis. Therefore, it would be appropriate that the spectrum taken on lease is not taken into consideration for computing weighted average SUC for the lessee. The Authority notes that under the extant guidelines for the spectrum sharing, the spectrum shared by the partnering TSP is not considered for the computation of the weighted average SUC rate post spectrum sharing.

2.46.5 In view of the above, **the following condition may also be included under spectrum leasing:**

**Spectrum taken on lease shall not be taken into account for the calculation of the applicable weighted average SUC rate for the lessee.**

2.47 **Recommendation No. 3.8(b)**: *A licensee should be permitted to lease its frequency spectrum to another licensee only after a lock-in period of two years from the date of acquisition of the spectrum.*

2.48 **DoT's Views on the Recommendation No. 3.8(b)**: *May be accepted in principle.*

*The Government noted the difference between the provisions of NIA and the current guidelines of intra-band spectrum sharing. As per the decision of the union cabinet, auction of the available spectrum is required to be done every year. In this scenario, maintaining lock in period of two years may pose implementation difficulties.*

*Therefore, clarification is required from TRAI in the light of lock in period for newly acquired spectrum.*

2.49 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(b)**:

2.49.1 In the analysis, which led to the Recommendation No. 3.8(b), the Authority made the following observations through para 2.182 to 2.184 of the Recommendations dated 24.04.2024:

*"2.182 The Authority also examined the appropriateness of not mandating any lock-in period for the leasing of spectrum. The Authority is of the view that in case no lock-in period is prescribed for the leasing of spectrum, the possibility of the TSPs entering into informal pre-auction agreements for spectrum leasing cannot be ruled out, which may pose difficulties in determining the market price for the spectrum in the auctions.*

*2.183 The Authority further examined the appropriateness of mandating a lock-in period of two years from the date of acquisition of the spectrum as a condition for spectrum leasing. In this regard, the Authority took note of the following aspects:*

*(a) As per the extant regulatory framework for trading of access spectrum, access service providers are permitted to trade their spectrum, acquired through auction or for which market price has been paid, after a lock-in period of two years from the date of acquisition of the spectrum.*

*(b) The possibility of a TSP using spectrum leasing route in place of spectrum trading cannot be ruled out. Similar to the case of spectrum trading, the lessee can potentially hold the leased spectrum until the validity period of the spectrum.*

*2.184 Considering the above, the Authority is of the view that a lock-in period of two years, as applicable in the case of spectrum trading, should be made applicable for spectrum leasing among access service providers. Such a condition will also discourage a TSP from acquiring access spectrum with spectrum leasing as a key objective."*

2.49.2 In this background, the Authority examined the DoT's concern of operational difficulties which may arise due to the condition of the lock-in period of two years on a newly acquired spectrum. It is noteworthy that with a view to discourage TSPs from acquiring access spectrum with spectrum leasing as the key objective, the Authority made the following recommendations through the Recommendations dated 24.04.2024:

Recommendation No. 3.8(b): *"A licensee should be permitted to lease its frequency spectrum to another licensee only after a lock-in period of two years from the date of acquisition of the spectrum".*



Recommendation No. 3.8(c): "A service provider should not be permitted to lease more than 50% of its qualifying spectrum holding (i.e., that meets the condition of lock-in period) in a frequency band in an LSA."

2.49.3 As the Recommendation No. 3.8(b) and 3.8(c) together enable TSPs to lease 50% of their spectrum that meets the condition of lock-in period in a frequency band in an LSA, the concern of the Government that the provision of a lock-in period of two years may pose implementation difficulties appears to be unfounded. Accordingly, **the Authority reiterates the Recommendation No. 3.8(b).**

2.50 **Recommendation No. 3.8(d)**: *A service provider should be permitted to lease its access spectrum in a frequency band in an LSA upto the balance period of the access service license or upto the period of right to use the relevant access spectrum, whichever is earlier.*

2.51 **DoT's Views on the Recommendation No. 3.8(d)**: *May be accepted in principle.*

*However, a clarification is required from TRAI on the following:*

*As per NIA provision, in case the UAS License/ Unified License with access service authorization is cancelled or terminated for any reason, the right to use spectrum shall stand withdrawn and cancelled forthwith. In that case the following condition may be applied:*

*1. If the UAS License/ Unified License (with access service authorization) of lessee is cancelled or terminated for any reason, then the leased spectrum may be returned to lessor.*

*2. If the UAS License/ Unified License (with access service authorization) of lessor is cancelled or terminated for any reason, then the spectrum leased by lessor to lessee may also return to DoT.*

*Further, the leasing of spectrum should be for minimum one year.*

2.52 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(d):**

2.52.1 DoT has expressed a view that under spectrum leasing "*the following condition may be applied:*

*1. If the UAS License/ Unified License (with access service authorization) of lessee is cancelled or terminated for any reason, then the leased spectrum may be returned to lessor.*

*2. If the UAS License/ Unified License (with access service authorization) of lessor is cancelled or terminated for any reason, then the spectrum leased by lessor to lessee may also return to DoT."*

2.52.2 **The Authority concurs with the afore-mentioned view of DoT.**

2.52.3 With respect to the DoT's view that "*the leasing of spectrum should be for minimum one year*", the Authority is of the view that there could be a requirement of spectrum leasing for a shorter duration, such as an event-specific requirement. A minimum period of one year for spectrum leasing, as suggested by DoT may prove to be a deterrent for such short-term leasing agreements. Accordingly, **the Authority does not agree with DoT's suggestion that the leasing of spectrum should be for a minimum period of one year.**

2.53 **Recommendation No. 3.8(i):** *For the purpose of spectrum cap, the quantum of access spectrum leased by the lessor to the lessee should continue to be counted in the spectrum holding of the lessor and it should also be counted in the spectrum holding of the lessee for the relevant geographical area i.e., the area where spectrum leasing is agreed.*

- 2.54 **DoT's Views on the Recommendation No. 3.8(i):** *May be accepted with following modification:*  
*In case the Spectrum is leased in multiple geographies in an LSA in same band with same lessee, highest amount of spectrum leased may be counted in the spectrum holding of the lessee for entire LSA.*
- 2.55 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(i):** Noted
- 2.56 **Recommendation No. 3.8(j):** *In case the lessee wishes to acquire access spectrum in the concerned frequency band through a future auction, but the spectrum cap limits it from participating in the auction, the lessee should be permitted to participate in a future auction provided it gives an undertaking that it will bring down its spectrum holding to comply to the applicable spectrum cap within a period of one year from the date of assignment of such spectrum. In such a case, the frequency spectrum held by the licensee on lease from another TSP should not be counted for the purpose of spectrum cap to assess its eligibility to bid for frequency spectrum in the auction process.*
- 2.57 **DoT's Views on the Recommendation No. 3.8(j):** *May be accepted in principle*  
*The Government is of view that similar treatment may be given to lessee to whom the spectrum cap doesn't restrict from participating in the auction.*
- 2.58 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(j):** Noted
- 2.59 **Recommendation No. 3.8(k):** *For entering into spectrum leasing, the participating TSPs should be required to submit a prior joint intimation of 45 days before the date from which spectrum leasing is proposed to become effective. While giving the joint intimation, the TSPs should provide the details*

*of spectrum leasing such as frequency band, quantum of spectrum proposed to be leased, date of acquisition of such spectrum by the lessor, geographical boundaries of the area of spectrum lease, proposed effective date of spectrum leasing, period of lease (in number of days), spectrum held by the lessor and lessee before the proposed spectrum leasing and post such spectrum leasing, details of any other existing and proposed spectrum leasing agreements of lessor and lessee, etc. DoT should raise objections, if any, within 30 days of receipt of the joint intimation with details thereof and offer an opportunity to the TSPs to respond to the objections raised by DoT.*

2.60 **DoT's Views on the Recommendation No. 3.8(k):** *May be accepted with the following modification:*

*Subject to the compliance of the Rules (to be notified) for leasing of spectrum, the assignees may enter into leasing agreement and pay the required amount of fee to the Government. The details of such leasing agreement shall be informed to the Government, in the form and manner as specified, within 7 days of signing of such agreement. The agreement shall have a provision that, in case of any objection of the Government, the agreement may get amended.*

2.61 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(k):**

2.61.1 From the views expressed by DoT, it appears that DoT is of the opinion that the Recommendation No. 3.8(k) may be accepted with the modification that instead of prior intimation, the TSPs may inform to the Government the details of spectrum leasing agreement within seven days of signing of such an agreement. In this regard, it may be worth mentioning that the existing guidelines for spectrum sharing and spectrum trading, both require the TSPs to give prior intimation of at least 45 days to the Government.

2.61.2 Further, DoT has suggested that the spectrum leasing agreement shall have a provision that, in case of any objection of the Government, the agreement

may get amended. The Authority is of the view that the possibility of any objection of the Government after the TSPs have entered spectrum leasing agreement and have paid the requisite leasing fee to the Government may cause business uncertainty for the concerned TSPs. Considering that the spectrum leasing fee is non-refundable, inclusion of such a provision may not be appropriate.

2.61.3 In view of the above, **the Authority reiterates the Recommendation No. 3.8(k).**

2.62 **Recommendation No. 3.8(l):** *The TSP taking spectrum on lease should pay to the Government a non-refundable leasing fee of 1% of the transaction amount of spectrum leasing or 1% of the applicable market price prorated on the principle enunciated in the NIA for auction of spectrum for the population of the area for which spectrum has been leased and the term (period) of such spectrum leasing, whichever is higher. For the purpose of computation of spectrum leasing fee, the latest market determined price, available at the time of spectrum leasing becoming effective, should be applicable. If the market determined prices are more than one year old, the prevailing market price should be applied by indexing the last market determined price using applicable Marginal Cost of funds based Lending Rate (MCLR) of SBI.*

2.63 **DoT's Views on the Recommendation No. 3.8(l):** *May not be accepted. Calculation of 1% of the applicable market price prorated on the principle enunciated in the NIA for auction of spectrum for the population of the area for which spectrum has been leased, in each case, would be time consuming exercise to some extent and hence is of view that instead of linking leasing fee with the price of spectrum, the non-refundable leasing fee may be charged at Rs. 1 lakh per instance per LSA.*

2.64 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(I):**

2.64.1 DoT has expressed a view that the Recommendation No. 3.8(I) may not be accepted. DoT has further mentioned that the calculation of 1% of the applicable market price prorated on the principle enunciated in the NIA for auction of spectrum for the population of the area for which spectrum has been leased, in each case, would be time consuming exercise to some extent and hence is of view that instead of linking leasing fee with the price of spectrum, the non-refundable leasing fee may be charged at Rs. one lakh per instance per LSA.

2.64.2 With respect to the DoT's view that calculation of 1% of the applicable market price prorated on the principle enunciated in the NIA for auction of spectrum for the population of the area for which spectrum has been leased, in each case, would be time consuming exercise to some extent, the Authority is of the view that the only information that would be needed to plug into the mathematical formula is the population data, which does not appear to be a time consuming exercise.

2.64.3 Further, the spectrum leasing could be of several types, as outlined below:

- (a) Leasing of spectrum in the entire LSA, or for a shorter geographic area within the LSA (geographical area)
- (b) Leasing of spectrum for a short term, or for a long term (time period)
- (c) Leasing of a small quantum of spectrum or a large quantum of spectrum (quantum of spectrum)
- (d) Leasing of spectrum in sub-GHz band, or of a rather inexpensive spectrum in milli-meter wave band (deal size)

2.64.4 A flat leasing fee of Rs. one lakh per instance per LSA, as suggested by DoT, may not be appropriate as it would fail to consider the variations in geographical area, time period, quantum of spectrum and deal size.

Importantly, the Authority recommended terms and conditions for spectrum leasing in line with those applicable for spectrum trading keeping in view the possibility of TSPs using spectrum leasing route in place of spectrum trading. Any differential treatment for spectrum leasing vis-à-vis spectrum trading may bring in an arbitrage opportunity.

2.64.5 In view of the above, **the Authority reiterates the Recommendation No. 3.8(l). The Authority is also of the view that DoT may prescribe a minimum leasing fee of Rs. 1 lakh per instance per LSA.**

2.65 **Recommendation No. 3.8(m):** *The lessee should be given the option to make payment of leasing fee either by way of an upfront payment or equal annual instalments, duly protecting the net present value (NPV) of the leasing fee at the applicable rate of interest. In case the Lessee opts for annual instalments, each instalment should be paid in advance at the beginning of each year.*

2.66 **DoT's Views on the Recommendation No. 3.8(m):** *May be accepted to the extent of upfront payment.*

2.67 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(m):**

2.67.1 In respect of the Recommendation No. 3.8(m), DoT has expressed a view that it may be accepted to the extent of upfront payment only. In essence, DoT is of the view that the option to make payment of the leasing fee by way of equal annual instalments, duly protecting the NPV of the leasing fee at the applicable rate of interest should not be given to the lessee. However, DoT has provided no justification or rationale in support of its view. **In absence of any supporting justification or rationale for not accepting the recommendation to give an option to the lessee for making the payment of the leasing fee by way of equal annual instalments, the**

**Authority is constrained to reiterate the Recommendation No. 3.8(m).**

2.68 **Recommendation No. 3.8(s)**: *The Authority will monitor the developments in the wireless access services segment and may review its recommendations, as and when need arises. In this regard, DoT should share with the Authority the details of spectrum leasing arrangements within 15 days of the effective date, and the details of terminations of spectrum leasing arrangements.*

2.69 **DoT's Views on the Recommendation No. 3.8(s)**: *May be accepted with the following modification:  
In this regard, concerned TSPs may share the details of the spectrum leasing arrangements within 15 days of their effective date with the Authority.*

2.70 **Response of TRAI w.r.t. DoT's Views on the Recommendation No. 3.8(s)**: Noted



# ANNEXURES

## Annexure I: DoT's Reference dated 07.12.2021

F. No. 20-405/2013 AS-I  
Ministry of Communications  
Department of Telecommunications  
(Access Service Wing)  
20, Ashoka Road, Sanchar Bhawan, New Delhi

Dated the 07<sup>th</sup> December, 2021

**Subject: COAI reference on "Facilitating the Infrastructure Sharing between the Telecom Operators- seeking recommendations of TRAI- reg**

The Department of Telecommunications has received request from Cellular Operator Association of India (COAI) for allowing sharing of core network elements also such as Mobile Switching Centre (MSC), Home Location Register (HLR), Intelligent Network (IN), etc., among telecom operators. The copy of COAI reference is enclosed.

2. At present, as per the provisions contained in Unified License, the sharing of active infrastructure is limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only. The relevant condition of Unified License Agreement is reproduced as under:

*"33. Sharing of infrastructure:*

*33.1 Sharing of active/passive infrastructure shall be governed by the terms and conditions of respective service authorization and amendment/guidelines to be issued by the Licensor from time to time.*


*33.2 Sharing of Active infrastructure amongst Service Providers based on the mutual agreements entered amongst them is permitted. Active infrastructure sharing will be limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only. Sharing of infrastructure related to Wi-Fi equipment such as Wi-Fi router, Access Point etc. is allowed. Sharing of backhaul is also permitted.*

*33.3 The Licensee may share its own active and passive infrastructure for providing other services authorized to it under any other telecom license issued by Licensor.*

*33.4 An authorized Gateway hub operated by the satellite provider itself is permitted to be shared with the satellite bandwidth seeker."*

3. In view of above, TRAI is requested to submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended) on allowing sharing of core network elements also such as MSC, HLR, IN etc., among telecom operators.

Encl.: As above.

  
(S.B. Singh) 7/12/2021  
Deputy Director General (AS)  
Phone: 23036918

To

The Secretary  
Telecom Regulatory Authority of India,  
Mahanagar Doorsanchar Bhawan,  
Jawaharlal Nehru Marg (Old Minto Road)  
New Delhi - 110002.



10/2

DG/COAI/2021/371  
November 29, 2021

Sh. K. Rajaraman, IAS,  
Secretary,  
Department of Telecommunications,  
Sanchar Bhawan, 20 Ashoka Road,  
New Delhi 110 001

*Handwritten notes:*  
K(T)  
Let's have a print  
in the TRAI sec.  
in this

Subject: Facilitating the Infrastructure Sharing between the Telecom Operators

Reference: 1. COAI letter no. SPK/COAI/2020/310 dated 12<sup>th</sup> Nov 2020 (Copy enclosed)  
2. COAI letter no. DG/COAI/2021/038 dated 26<sup>th</sup> Feb 2021 (Copy enclosed)  
3. COAI letter no. DG/COAI/2021/139 dated 19<sup>th</sup> May 2021 (Copy enclosed)

Dear Sir,

This is with reference to our above cited letters vide which we had requested your good office to allow infrastructure sharing between telecom operators. In this regard, we wish to humbly reiterate the following:

- a. Telecom being capital intensive needs huge investments for growth and expansion of service. Therefore it is important for TSPs to have a model which enables them to share infrastructure i.e. Passive, Active and Core, to reduce CAPEX, OPEX and maximise network capacity and capabilities.
- b. As per BEREC<sup>3</sup> there can be a cost saving of 16%-35% in passive Infrastructure sharing in both CAPEX and OPEX, while for Active Infrastructure sharing, the cost savings can be as much as 45%.
- c. In addition to the cost savings, sharing the active Infrastructure will provide the following benefits:
  - i. Avoid duplication of investment by the TSPs
  - ii. Improved Quality of Service
  - iii. Positive incentives to provide services in underserved areas
  - iv. Attract Investments from the entities providing Infrastructure Funds

*Handwritten notes:*  
Pls discuss  
Dir (AS-E)  
2/12/21  
1/12/21  
2/12/21

<sup>3</sup> [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/download/0/8164-berec-report-on-infrastructure-sharing\\_0.pdf](https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/8164-berec-report-on-infrastructure-sharing_0.pdf)

14, Bhal Veer Singh Marg, New Delhi – 110 001

tel: +91-11-23349275 fax: +91-11-23349276 email: contact@coai.in website: www.coai.in



- v. Help TSPs to concentrate on their Core Business /Competency
- vi. Accelerate roll out of digital services
- d. Moreover, currently active Infrastructure sharing is allowed to TSPs for only antenna, feeder cable, Node B and transmission systems.
- e. The policy on infrastructure sharing should be further liberalized to allow sharing of core infrastructure such as MSC, HLR, IN etc. among licensees having UL (Access Authorization).
- f. Sharing of core network elements such as MSC, HLR, IN etc. among the TSPs will reduce cost for the TSPs and facilitate faster rollout.
- g. Considering the above, we humbly request DoT to allow sharing of core network elements, such as such as MSC, HLR, IN etc. between the Telecom operators.

We request for your kind consideration and support on this issue.

Thanking you,

Yours faithfully,

**Lt. Gen. Dr. S. P. Kochhar**  
Director General

- Cc: 1. Sh. Hari Ranjan Rao, Jt. Secy. (Telecom), DoT, Sanchar Bhawan, New Delhi  
2. Sh. S.B. Singh, DDG (AS), DoT, Sanchar Bhawan, New Delhi  
3. Sh. R.K. Sahu, Director (Policy), DoT, Sanchar Bhawan, New Delhi



**Annexure II: DoT's Reference Dated 10.02.2022**

**F. No. 20-405/2013 AS-I  
Ministry of Communications  
Department of Telecommunications  
(Access Service Wing)  
20, Ashoka Road, Sanchar Bhawan, New Delhi**

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**Dated the 10<sup>th</sup> February, 2022**

**Subject: Facilitating the Infrastructure Sharing amongst the Telecom Operators- seeking recommendations of TRAI- reg**

This has reference to this office letter of even number dated 07.12.2021 (copy enclosed) wherein, the Department of Telecommunications requested TRAI to submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended) on allowing sharing of core network elements also such as MSC, HLR, IN etc., among telecom operators.

2. In order to promote optimum resource utilization among the licensees, it is proposed to allow sharing of all kinds of telecom infrastructure and network elements among all categories of service providers, licensed under the Section 4 of Indian Telegraph, Act, 1885, for provision of authorized telecom services.
3. Therefore, TRAI is requested to submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended) on this issue.

**Encl.: As above.**

  
**(S.B. Singh)**

**Deputy Director General (AS)  
Phone: 23036918**

**To**

**The Secretary  
Telecom Regulatory Authority of India,  
Mahanagar Doorsanchar Bhawan,  
Jawaharlal Nehru Marg (Old Minto Road)  
New Delhi - 110002.**

## Annexure III: DoT's Back-reference Dated 13.02.2025

No. 15/01/2024-LPC  
Government of India  
Ministry of Communications  
Department of Telecommunications  
(Licensing Policy Wing)  
20-Ashok Road, New Delhi-110001

Dated: 13/2/25

**Subject: Back reference to TRAI on Recommendations dated 24.04.2024 on 'Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing' - reg.**

This is in reference to the TRAI recommendations dated 24.04.2024 on 'Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing'. The prima-facie views of Government on each of these recommendations is tabulated and given at Annexure-A.

2. As per Section 11(1) of the TRAI Act, 1997 (as amended), such recommendations dated 24.04.2024 on 'Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing', where the Government has reached to a prima-facie conclusion that these recommendations may not be accepted or need modification are being referred back to TRAI for its reconsideration. TRAI is requested to provide its recommendations within 15 days of receipt of this back reference.
3. This has the approval of the competent authority.

  
(Sunil Kumar Singhal)  
Deputy Director General (Licensing Policy)  
Phone: 23036836

To,

The Secretary  
Telecom Regulatory Authority of India  
7<sup>th</sup> Floor, Tower-F  
World Trade Centre, Nauroji Nagar,  
New Delhi-110029

**Views of the Government on TRAI Recommendations dated 24.04.24 on Telecommunication Infrastructure Sharing, Spectrum Sharing and Spectrum Leasing**

1. In respect of recommendations no 3.1 relating to “Telecommunication infrastructure sharing”, the Government has considered these recommendations along with TRAI recommendations dated 18.09.2024 on the ‘Framework for Service Authorisations to be granted under the Telecommunications Act, 2023’. The reference back to TRAI has already been sent vide letter no 20-1350/2024-AS-I dated 14.01.2025.
2. Regarding recommendations no. 3.2 to 3.8 relating to “Need for mandatory sharing of Government funded infrastructure” & “Connectivity issues being faced by the subscribers in remote and far-flung areas of the country”, “Inter-band Spectrum Sharing Among TSPs”, “Authorised Shared Access (ASA) of Spectrum” and “ Leasing of Spectrum”, the prima-facie views of the Government are as follows:

Rec. No	Recommendations	Views of the Government
<b>Need for Mandatory Sharing of Government Funded Infrastructure</b>		
3.2 (a)	In the future projects of Universal Service Obligation Fund (USOF ) under the Indian Telegraph Act, 1885 (or Digital Bharat Nidhi under the Telecommunications Act, 2023), DoT should include a provision in the agreement with the Universal Service Provider (USP) that the USP shall not refuse to share the passive infrastructure laid under the project to at least two other telecom service providers on a transparent and non-discriminatory basis.	May be accepted.
3.2 (b)	In the already assigned projects of USOF, DoT should explore the feasibility of issuing instructions to such USPs that the USP shall not refuse to share the passive infrastructure laid under the project with at least two other telecom service providers on a transparent and non-discriminatory basis.	May not be accepted.
3.2 (c)	In case the Government agrees, in-principle, with the above	May be accepted in principle.

	recommendations (a) and (b), DoT may, if deemed fit, seek the recommendations from TRAI on a detailed mechanism of the passive infrastructure sharing, including the commercial aspects, considering the varying amount of funding through USOF (or Digital Bharat Nidhi) .	
3.2(d)	The sharing of active infrastructure laid under the projects of USOF (or Digital Bharat Nidhi) should be voluntary and based on mutual agreements.	May be accepted subject to license conditions.
3.2 (e)	To help the creation of common digital connectivity infrastructure (passive as well as active) in underserved areas of the country, DoT should take an early decision on the TRAI's recommendations dated 08.08.2023 on 'Introduction of Digital Connectivity Infrastructure Provider (DCIP) Authorization under Unified License (UL)	Noted.
Connectivity Issues being Faced by the Subscribers in Remote and Far-flung Areas of the Country		
3.3(a)	In the interest of consumers, a telecom service provider, which has built mobile network infrastructure in the remote and far-flung areas of the country with full or partial funding from the Government under USOF (or Digital Bharat Nidhi), should be mandated to allow roaming to other TSPs on its network in such remote and far-flung areas initially for a period of three years. Later, the Government/TRAI may review the need for extending this mandate beyond three years.	May be accepted in principle. Intra circle roaming on commercial basis, for the period for which Viability Gap Funding is given, may be made mandatory in the future projects of USOF.
3.3(b)	In cases, the Government agrees with the recommendation in (a) above:	
	(i) DoT should identify and notify such remote and far-flung areas in the country, and	May be accepted
	(ii) TRAI will establish a regulatory framework for roaming charges among service providers in such remote and far-flung areas while adequately protecting the interest of the USP.	May be accepted
Inter-band Spectrum Sharing Among TSPs		
3.4 (a)	The Authority recommends that inter-band access spectrum sharing between access service providers (which may be implemented	May be accepted.

	<p>either by way of pooling of access spectrum held by the participating access service providers in different frequency bands through common radio access networks, or by way of allowing the partnering access service providers to use the radio access networks of each other operating in the shared frequency band(s)) in an LSA should be permitted subject to the following terms and conditions –</p> <p>(a) Inter-band access spectrum sharing in an LSA should be restricted within the frequency bands falling within a spectrum band category as defined below:</p> <p>(i) Category-1: Sub-1 GHz bands (600 MHz, 700 MHz, 800 MHz, and 900 MHz bands);</p> <p>(ii) Category-2: 1800 MHz and 2100 MHz;</p> <p>(iii) Category-3: 2300 MHz, 2500 MHz and 3300-3670 MHz bands;</p> <p>(iv) Category-4: 26 GHz, and newly identified bands (37-37.5 GHz, 37.5-40 GHz, 42.5-43.5 GHz)</p>	
3.4 (b)	<p>A TSP should not be allowed to enter into inter-band access spectrum sharing with more than one TSP in a spectrum band category in an LSA. Further, inter-band access spectrum sharing in an LSA should be permitted subject to the condition that, post-sharing, there will be at least two independent wireless access networks in the LSA.</p>	<p>May be accepted in principle.</p> <p>However, a clarification is required from TRAI on the following:</p> <p>If an Operator- A and Operator-B are sharing the spectrum in one spectrum band category, whether operator A will be allowed to share spectrum with operator —C in a different spectrum band category ? In such cases, although two independent wireless access</p>



		networks in a LSA shall exist technically but not commercially.
3.4 (c)	Any frequency spectrum should be permitted to be shared under inter-band access spectrum sharing only after a lock-in period of two years from the date of its acquisition.	<p>May be accepted in principle.</p> <p>The Government noted the difference between the provisions of NIA and the current guidelines of intra-band spectrum sharing. As per the decision of the union cabinet auction of the available spectrum is required to be done every year. In this scenario, maintaining lock in period of two years may pose implementation difficulties.</p> <p>Therefore, clarification is required from TRAI in the light of lock in period for newly acquired spectrum.</p>
3.4 (d)	The frequency spectrum proposed to be shared by the access service providers should have been acquired through spectrum auction or spectrum trading, or market price should have been paid by the respective access service providers for acquiring such spectrum. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.	<p>May be accepted in principle with following modification :</p> <p>The frequency spectrum proposed to be shared by the access service providers should have been acquired through spectrum auction or spectrum trading, or should have been liberalized as per the extant guidelines. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated I 1.10.2021, if specific type of cases warrant so.</p>
3.4 (h)	For the purpose of spectrum cap and inter-band spectrum sharing fee, it should be considered that the licensees are sharing their entire	3.4 (h): May be accepted

	spectrum holdings in the concerned frequency bands in the entire LSA.	
3.4 (e)	For spectrum cap, entire holding of the access service providers in the spectrum bands being shared should be counted in both the sharing access service providers. In other words, the spectrum holding of any access service provider, post inter-band spectrum sharing should be computed by adding the frequency spectrum of the partner access service provider in the frequency band(s) being shared, to the original access spectrum held by the access service provider.	May be accepted in principle Government noted the differences in the provisions of Intra band spectrum sharing guidelines and current recommendations of TRAI. The Government is of view for harmonizing the provisions of both, while framing the rules on spectrum sharing under Telecommunication Act, 2023, there may be a common set of rules for both type of sharing namely inter-band and intra-band.
3.4 (f)	In case a TSP, which is involved in the inter-band spectrum sharing, wishes to acquire additional access spectrum through future auction, but the spectrum cap restricts it from participating in the auction, such TSP(s) should be permitted to participate in the future spectrum auction provided it furnishes an undertaking that it will bring down its spectrum holding to comply to the applicable spectrum cap within a period of one year from the date of assignment of access spectrum through auction. In such a case, for the purpose of spectrum cap, only the frequency spectrum held by the licensee (without including the shared spectrum of the partnering TSP) should be considered to assess its eligibility to bid for additional frequency spectrum in the spectrum auction.	May be accepted in principle. However, the Government is of view that similar treatment may be given to all TSPs which are involved in intra/inter-band spectrum sharing irrespective of reaching the spectrum cap or not on account of spectrum sharing.
3.4 (g)	The TSPs involved in the inter-band spectrum sharing should be liable to pay a non-refundable inter-band spectrum sharing fee to the Government. The inter-band spectrum sharing fee payable by a TSP should be 0.5% of the applicable market price of the frequency	May be accepted in principle. However, the Government is of view that “non- refundable inter-band spectrum sharing fee” may be charged for minimum one year

	spectrum shared by the partnering TSP prorated for the term (period) of spectrum sharing. For the purpose of computing the inter-band spectrum sharing fee, the latest market determined price available on the effective date of spectrum sharing should be applicable. If the market determined prices are more than one-year-old, the prevailing market price should be applied by indexing the last market determined price using the applicable Marginal Cost of funds based Lending Rate (MCLR) of SBI.	and sharing for any period less than 1 year will be considered as complete year for charging purpose. Both the provisions under intra-band spectrum sharing guidelines and the current recommendations may be harmonized while framing the rules on spectrum sharing under Telecommunication Act, 2023.
3.4 (i)	The TSPs involved in the inter-band spectrum sharing should be given the option to make payment of the inter-band spectrum sharing fee either by way of an upfront payment, or equal annual instalments, duly protecting the Net Present Value (NPV) of the inter-band spectrum sharing fee at the applicable rate of interest. In case a TSP opts for equal annual instalments, each instalment should be paid in advance at the beginning of each year.	May be accepted to the extent of upfront payment only.
3.4 (j)	The amount received by the TSPs on account of inter-band spectrum sharing should form part of their Adjusted Gross Revenue (AGR) for the purpose of levy of license fee and spectrum usage charges.	May be accepted.
3.4 (k)	In case any of the participating TSPs acquires additional frequency spectrum in the shared frequency bands in the future,  i. Inter-band spectrum sharing fee in respect of the additional frequency spectrum acquired by a TSP should be levied on the partner TSP based on the same principle as enunciated above. ii. Compliance to the spectrum cap should be re-examined. In case of any case of any violation of the provision related to spectrum cap, the TSPs should be given a period of one year to bring down their spectrum holdings within the prescribed spectrum cap.	May be accepted.

3.4 (l)	The TSPs should be mandated to provide a suitable exit clause in inter-band spectrum sharing agreements for termination of the spectrum sharing arrangement.	May be accepted in principle. Further the Government is of view that there may not be any refund of spectrum sharing fee to any of the TSP on account of prior exit from the spectrum sharing arrangement.
3.4 (m)	The TSPs should be liable to intimate DoT about the termination of an existing inter-band spectrum sharing arrangement within 15 days of the termination of such arrangement.	May be accepted.
3.4 (n)	DoT should include appropriate provisions to facilitate the TSPs to import/ purchase the required network equipment in respect of the shared frequency bands.	May be accepted.
3.4 (o)	The other terms and conditions of the inter-band spectrum sharing should be kept analogous to the terms and conditions of the intra-band spectrum sharing as given in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021.	May be accepted in principle. The Government proposes to converge the various guidelines relating to spectrum sharing while framing the rules on spectrum sharing under Telecommunication Act, 2023.
3.4 (p)	The Authority will monitor the developments in the wireless access services segment and may review its recommendations, as and when need arises. In this regard, DoT should share the details of the spectrum sharing arrangements within 15 days of their effective date with the Authority.	May be accepted with the following modification : Concerned TSPs may share the details of the spectrum sharing arrangements within 15 days of their effective date with the TRAI.
3.5	The Authority reiterates its earlier Recommendation that a suitable exit clause for intimation of termination of an existing spectrum sharing arrangement by the TSPs should be included in the access spectrum sharing guidelines.	May be accepted.

Authorized Shared Access (ASA) of Spectrum		
3.6	The Authority recommends that DoT should explore the possibility of implementing authorized shared access (ASA) technique-based spectrum sharing in India, under which, the spectrum assigned to Government agencies or other entities (non-TSPs) in the globally harmonized spectrum bands for IMT services, can be assigned to access service providers as secondary users. Once the Government takes an administrative decision in this regard, DoT may, if deemed fit, seek recommendations of TRAI on a detailed regulatory framework for such a regime.	May be accepted. The Government noted that spectrum in IMT bands has also been assigned to entities other than TSPs. The Government is of view that further action may be taken about the assignment to the secondary user, after the conclusion of coexistence study in certain IMT bands being undertaken by Ministry of Defense through CEWiT, Chennai and outcome of the study.
3.7	The Authority recommends that a field trial of ASA technique-based spectrum sharing between the willing access service providers should be conducted under the supervision of DoT. Based on the learnings and outcome of the field trial, a detailed regulatory framework for ASA technique-based spectrum sharing between access service providers can be devised. DoT may, if deemed fit, seek recommendations of TRAI on a detailed regulatory framework for ASA technique-based spectrum sharing between access service providers.	May be accepted.

Leasing of Spectrum		
3.8	The Authority recommends that the leasing of access spectrum should be permitted among access service providers. The following terms and conditions should be made applicable on the leasing of access spectrum:	
(a)	Access service providers should be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or for which market price has been paid, to other access service providers in a licensed service area. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.	<p>May be accepted in principle with the following change:</p> <p>Access service providers may be permitted to lease their access spectrum, acquired through spectrum auction or spectrum trading, or should have been liberalized as per the extant guidelines, to other access service providers in a licensed service area. On this aspect, DoT may impose other conditions, as provided in the DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, if specific type of cases warrant so.</p> <p>In addition, clarification is required from TRAI on exactly which conditions of DoT's 'Guidelines for Sharing of Access Spectrum by Access Service Providers' dated 11.10.2021, are relevant for spectrum leasing.</p>
(b)	A licensee should be permitted to lease its frequency spectrum to another licensee only after a lock-in period of two years from the date of acquisition of the spectrum.	<p>May be accepted in principle.</p> <p>The Government noted the difference between the provisions of NIA and the current guidelines of intra-band spectrum sharing. As</p>

		<p>per the decision of the union cabinet, auction of the available spectrum is required to be done every year. In this scenario, maintaining lock in period of two years may pose implementation difficulties.</p> <p>Therefore, clarification is required from TRAI in the light of lock in period for newly acquired spectrum.</p>
(c)	A service provider should not be permitted to lease more than 50% of its qualifying spectrum holding (i.e., that meets the condition of lock-in period) in a frequency band in an LSA.	May be accepted.
(d)	A service provider should be permitted to lease its access spectrum in a frequency band in an LSA upto the balance period of the access service license or upto the period of right to use therelevant access spectrum, whichever is earlier.	<p>May be accepted in principle.</p> <p>However, a clarification is required from TRAI on the following:</p> <p>As per NIA provision, in case the UAS License/ Unified License with access service authorization is cancelled or terminated for any reason, the right to use spectrum shall stand withdrawn and cancelled forthwith. In that case the following condition may be applied:</p> <ol style="list-style-type: none"> <li>1. If the UAS License/ Unified License (with access service authorization) of lessee is cancelled or terminated for any reason, then the leased spectrum may be returned to lessor.</li> <li>2. If the UAS License/ Unified License</li> </ol>

		(with access service authorization) of lessor is cancelled or terminated for any reason, then the spectrum leased by lessor to lessee may also return to DoT.  Further, the leasing of spectrum should be for minimum one year.
(e)	The lessee, who has taken access spectrum on lease in a frequency band in an LSA, should not be permitted to lease out spectrum in that frequency band in that LSA to any other accessservice provider.	May be accepted.
(f)	Spectrum leasing should be permitted in the block size for the relevant frequency band as prescribed in the latest Notice Inviting Applications (NIA) for spectrum Auction, in which, the relevant frequency band was put to auction.	May be accepted.
(g)	The condition related to the use of technology for the leased frequency spectrum should be governed by the latest NIA for spectrum Auction, in which the relevant frequency band was put to auction.	May be accepted.
(h)	The lessor will continue to be responsible for compliance of the roll out obligations associated with the concerned frequency band.	May be accepted.
(i)	For the purpose of spectrum cap, the quantum of access spectrum leased by the lessor to the lessee should continue to be counted in the spectrum holding of the lessor and it should	May be accepted with following modification: In case the Spectrum is leased in multiple geographies in an LSA in same band with



	also be counted in the spectrum holding of the lessee for the relevant geographical area i.e., the area where spectrum leasing is agreed.	same lessee, highest amount of spectrum leased may be counted in the spectrum holding of the lessee for entire LSA.
(j)	In case the lessee wishes to acquire access spectrum in the concerned frequency band through a future auction, but the spectrum cap limits it from participating in the auction, the lessee should be permitted to participate in a future auction provided it gives an undertaking that it will bring down its spectrum holding to comply to the applicable spectrum cap within a period of one year from the date of assignment of such spectrum. In such a case, the frequency spectrum held by the licensee on lease from another TSP should not be counted for the purpose of spectrum cap to assess its eligibility to bid for frequency spectrum in the auction process.	May be accepted in principle The Government is of view that similar treatment may be given to lessee to whom the spectrum cap doesn't restrict from participating in the auction.
(k)	For entering into spectrum leasing, the participating TSPs should be required to submit a prior joint intimation of 45 days before the date from which spectrum leasing is proposed to become effective. While giving the joint intimation, the TSPs should provide the details of spectrum leasing such as frequency band, quantum of spectrum proposed to be leased, date of acquisition of such spectrum by the lessor, geographical boundaries of the area of spectrum lease, proposed effective date of spectrum leasing, period of lease (in number of days), spectrum held by the lessor and lessee before the proposed spectrum leasing and post such spectrum leasing, details of any other existing and	May be accepted with the following modification:  Subject to the compliance of the Rules (to be notified) for leasing of spectrum, the assignees may enter into leasing agreement and pay the required amount of fee to the Government. The details of such leasing agreement shall be informed to the Government, in the form and manner as specified, within 7 days of signing of such agreement. The agreement shall have a provision that, in case of any objection of the

	proposed spectrum leasing agreements of lessor and lessee, etc. DoT should raise objections, if any, within 30 days of receipt of the joint intimation with details thereof and offer an opportunity to the TSPs to respond to the objections raised by DoT.	Government, the agreement may get amended.
(l)	The TSP taking spectrum on lease should pay to the Government a non-refundable leasing fee of 1% of the transaction amount of spectrum leasing or 1% of the applicable market price prorated on the principle enunciated in the NIA for auction of spectrum for the population of the area for which spectrum has been leased and the term (period) of such spectrum leasing, whichever is higher. For the purpose of computation of spectrum leasing fee, the latest market determined price, available at the time of spectrum leasing becoming effective, should be applicable. If the market determined prices are more than one year old, the prevailing market price should be applied by indexing the last market determined price using applicable Marginal Cost of funds based Lending Rate (MCLR) of SBI.	May not be accepted. Calculation of 1% of the applicable market price prorated on the principle enunciated in the NIA for auction of spectrum for the population of the area for which spectrum has been leased, in each case, would be time consuming exercise to some extent and hence is of view that instead of linking leasing fee with the price of spectrum, the non-refundable leasing fee may be charged at Rs. 1 lakh per instance per LSA.
(m)	The lessee should be given the option to make payment of leasing fee either by way of an upfront payment or equal annual instalments, duly protecting the net present value (NPV) of the leasing fee at the applicable rate of interest. In case the Lessee opts for annual instalments, each instalment should be paid in advance at the beginning of each year.	May be accepted to the extent of upfront payment.
(n)	The amount received by the Lessor from the leasing of spectrum should form part of Adjusted Gross Revenue	May be accepted

	(AGR) of the Lessor for the purpose of levy of license fee and spectrum usage charges.	
(o)	In case a TSP surrenders a partial or complete spectrum in an LSA-band combination, it should be barred to take spectrum on lease in that LSA-band combination for a period of two years from the date of surrender of spectrum.	May be accepted
(p)	In case a TSP has taken spectrum on lease in an LSA-band combination, a lock-in period of two years from the effective date of spectrum leasing will be applicable, before becoming eligible to surrender the qualifying spectrum in the LSA-band combination acquired earlier.	May be accepted
(q)	The TSPs should be mandated to provide a suitable exit clause in the spectrum leasing agreement for termination of the spectrum leasing arrangement.	May be accepted
(r)	The TSPs should be liable to intimate DoT about the termination of an existing spectrum leasing arrangement within 15 days of the termination of such leasing arrangement.	May be accepted
(s)	The Authority will monitor the developments in the wireless access services segment and may review its recommendations, as and when need arises. In this regard, DoT should share with the Authority the details of spectrum leasing arrangements within 15 days of the effective date, and the details of terminations of spectrum leasing arrangements.	May be accepted with the following modification: In this regard, concerned TSPs may share the details of the spectrum leasing arrangements within 15 days of their effective date with the Authority.