

RJIL/TRAI/2023-24/265

27<sup>th</sup> December 2023

To,

**Shri Akhilesh Kumar Trivedi,  
Advisor (Networks, Spectrum and Licensing),**

**Telecom Regulatory Authority of India**

Mahanagar Doorsanchar Bhawan

Jawaharlal Nehru Marg, New Delhi - 110002

**Subject: RJIL's counter comments on TRAI's Consultation Paper dated 27.09.2023 on "Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)".**

Dear Sir,

Please find enclosed the counter comments of Reliance Jio Infocomm Limited (RJIL) on the Consultation Paper dated 27.09.2023 on **"Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)"**.

Thanking you,

Yours Sincerely,

For **Reliance Jio Infocomm Limited**

**Kapoor Singh Guliani**

Authorized Signatory

**Enclosure:** As above

**Reliance Jio Infocomm Limited's counter comments on TRAI's Consultation on "Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)" dated 27<sup>th</sup> September 2023.**

1. Reliance Jio Infocomm Limited (RJIL) thanks the Authority for giving us the opportunity to respond to stakeholders' comments on the Consultation Paper ('CP') on **"Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)"**.
2. **At the outset, it is submitted that the use of spectrum is evolving at a never before pace in last decade or so and no one can claim with authority that a particular spectrum band would only continue to be used as per its current usage over the years, the same applies to so-called backhaul spectrum. The spectrum in microwave bands and E-band is increasingly being planned for Integrated Access Backhaul (IAB). Central Government has envisaged use of spectrum in a flexible, liberalized and technology neutral manner in recently enacted "The Telecommunication Act 2023". RJIL has already sought DoT's permission to use the already allocated E-Band spectrum for both access and backhaul use vide letter dated 21<sup>st</sup> August 2023.**
3. **Further, a part of spectrum in V-Band (66 GHz to 71 GHz) has already been identified for IMT services by ITU and the remaining part of the V-Band (52.4 GHz to 66 GHz) has been identified by 3GPP for IMT and is likely to be identified for IMT by ITU also. Keeping in view of the identification of band by 3GPP as well as likely by ITU and technological development, this band is not covered in the criteria prescribed for administrative assignment of spectrum in the recently enacted "The Telecommunication Act, 2023". Therefore, the spectrum in these bands must be assigned only through the fair and transparent auction.**
4. **It is further submitted that at present MWA and E-Band spectrum are allocated LSA wise on exclusive basis and not on point-to-point link basis, therefore do not fall in the provisions for administrative assignment of spectrum envisaged in Telecom Act, 2023 and therefore must be assigned only through auction. Being part of the commercial network and assigned on exclusive basis for full LSAs, this spectrum does not qualify the criteria set out for administrative assignment in "The Telecommunication Act, 2023".**
5. We have had the opportunity to go through the responses submitted by the various stakeholders and the stakeholder's comments can be divided into the following broad categories:
  - A. **Administrative assignment of spectrum in Microwave Access (MWA) Carriers and Microwave Backbone (MWB) bands**
  - B. **Administrative assignment of spectrum in E-Band and V-band spectrum.**

- C. P2P assignment of MWA/MWB for TSPs holding other than Access Service Authorisation and non-TSPs
- D. Spectrum cap: restrict the MWA assignment to 2022 guidelines and upto 2 carriers for MWB, upto 4 carriers for E-band, and upto 40 carriers of 50 MHz for V-band
- E. Delicensing of V-Band and 6 GHz band
- F. Pricing of spectrum
- G. Use of spectrum 17.7-19.7 GHz frequencies by Earth Stations
- H. Allocation of E band administratively only for backhaul/FLB/satellite.
- I. 2-year lock-in period for surrender of backhaul spectrum.

A. **Administrative assignment of spectrum in MWA and MWB bands:** some of the arguments put forth by other stakeholders are as below:

- Backhaul spectrum is not the same as access spectrum, it is only a supporting infrastructure to the access network.
- No benefit that a standalone backhaul spectrum will offer to a TSP network. It does not generate any revenue.
- its supply far exceeds its demand, no logic of an auction does not even apply here.
- TRAI's 2014 Recommendations and International practices support administrative assignment.
- Risk of winner's curse & destruction of (multiplier effect of) public good element of spectrum.
- Auction of backhaul spectrum is not relevant to the 2G Judgement.
- No need to change status quo in a matured Indian market.
- Auctioning access spectrum is fundamental from a market access and competition perspective no such case here.

**RJIL Response:**

1. In wireless communications, backhaul is as important as the access, backhaul alone connects the wireless network node and its standalone worth can be determined by removing it from the equation. **Thus, no standalone utility of backhaul spectrum is a rhetorical argument, and the networks are a sum of many things, which includes backhaul bands under Microwave Access (MWA) Carriers and Microwave Backbone (MWB).**
2. It is reiterated that the use of spectrum is evolving at a never before pace in last decade or so and **no one can claim with authority that a particular spectrum band would only continue to be used as per its current usage over the years, the same applies to so-called backhaul spectrum.**

3. The evolution of technologies, as symbolized by Integrated Access Backhaul (IAB), would imply that any spectrum can be considered to be useful for access services. Thus, it is important that bands currently used for microwave 'line-of-sight' wireless communication technology are treated in technology agnostic manner and not perpetually restricted as backhaul bands. Further technology neutrality can only be ensured with auctions, as administrative assignment is done for a defined usage and spectrum liberalization is required for any other use of said spectrum. Furthermore, the Hon'ble Supreme Court judgement does not envisage a separate dispensation for backhaul spectrum.
4. Therefore, we reiterate that considering the importance of these spectrum bands, the Authority should focus on a legally tenable, predictable, transparent and investor friendly mode of spectrum assignment for these bands. In compliance with the Hon'ble Supreme Court's order in 2012, India has used the most beneficial and transparent mode of Auction to assign spectrum for use in commercial public networks in the country and there is no reason or justification to reverse the Hon Supreme Court decision for MWA, MWB carriers and/or spectrum in E-Band and V-Band.
5. We submit that administrative assignment with restricted use is always an adamant policy and should be avoided in all circumstances. It is also reiterated that the administrative assignment of spectrum is not a prudent or legally tenable policy. This policy will invariably sink to the dreaded 'First Come First Serve' policy, which was deemed most unsuitable for assigning public resource like spectrum by Hon'ble Supreme Court. We submit that spectrum auction, besides being the only legally tenable mean of assigning spectrum is also the only mode of spectrum assignment that delivers the full promise of technology to the actual owners of the spectrum i.e., consumers.
6. The Authority's 2014 recommendations were rooted in the milieu of that time. There was no 4G, 5G or a whisper of IAB. These were issued in the era of inefficient 2G/3G networks and cannot be held to be the final word on assignment of MWA, MWB and E-Band spectrum. **It is worthwhile to point out that said recommendations were not accepted at the time and the Government has issued a new reference, consequently said recommendations have no relevance in current process.**
7. The risk of winner's curse is always a theoretical possibility in every auction exercise and is already addressed under the Simultaneous Multiple Rounds Ascending Auction (SMRA) and should be completely discounted. Further, under a fair and transparent auction, the bidders will juxtapose their auction bids with the replacement costs and revenue projections and the destructive bidding, as feared by some, may not be feasible. Furthermore, we have already recommended that the existing MWA holdings of TSPs should be protected subject to their opting to acquire right to use same number of carriers in the auction, this should take care of any misapprehensions.

8. The continuation of existing policies or status quo can never be a regulatory objective especially with respect to spectrum. Further, this submission is also restrictive, as they do not want to change the auction methodology while simultaneously seeking discounts in applicable charges. Thus, clearly a self-serving submission and should be ignored.

**B. Administrative assignment of spectrum in E-Band and V-band spectrum:** some of the arguments put forth by other stakeholders are as below:

- E-Band and V-Band are useful for backhaul only and should be treated as backhaul spectrum.
- TRAI, in 2014, itself recommended the administrative assignment of E band.
- One stakeholder has noted that V-Band is useful for 5G so it should auctioned, but E-Band should be assigned administratively.
- Government may alternatively consider allocating the E-band spectrum bundled with the access spectrum on a prospective basis, as the latter is already auctioned

**RJIL Response:**

9. **At the outset, we submit that it is evident from the DoT reference that the decision has already been taken for assigning the spectrum in E-band and V-band through auction and therefore there is no need to examine any other mode of assignment of this spectrum.**
10. Further, there is no technical basis to consider both E-Band and V-Band as only backhaul, as these are suitable for both high capacity backhaul for 4G/5G, 6G and beyond mobile networks and also suitable as access spectrum for delivering broadband services to the end users and have multiple usage under IAB technology under 5G.
11. It is reiterated that WRC-19 has already identified the upper portion of V band (66-71 GHz) for IMT / 5G services, and **no country has delicensed this band post that. 3GPP has already identified 52.6-71 GHz for 5G NR (New Radio).** With passages of time, therefore, the lower portion of spectrum is likely to be considered for IMT (5G/6G) services. In currently developed NR-IAB, some nodes serve both backhaul and access. In absence of a wired connection, wireless technologies are used to offer backhaul / relay service. In IAB, a single node can offer broadband services/ relay services or a combination thereof. The expected coverage range is approximately 300m to 500m.
12. It is also reiterated that spectrum auction, besides being the only legally tenable mean of assigning spectrum is also the only mode of spectrum assignment that delivers the full promise of technology to the actual owners of the spectrum i.e., consumers. The auctions promote efficient utilization and put spectrum in hands of those most suitable to use the

spectrum. Auction brings the much-wanted competition and innovation in services and pricing and helps deliver services at their most affordable levels. Auction is the only blemish free mode of assignment as it delivers fairness, transparency and prevents cartelization and leads to additional infrastructure creation that has a trickle-down effect on the economy, especially in rural areas.

13. We have already submitted on the TRAI recommendations of 2014 and submit that any such assignment will encourage the principle of 'first come first serve' which was denounced by Hon'ble Supreme Court in 2G case. We also submit that proposal of bundling E-Band with access spectrum has already been junked by the Authority and DoT, as the same proposal was shared at the time of 5G auction in 2022.
14. Further, the proposal for administrative assignment or delicensing of E and V Band Spectrum should be completely rejected **as it is not only legally untenable but also encourages favoritism, non-level playing field, violates "Same Service Same Rule" principle apart from coming at a great loss to the exchequer; causing technical issues like interference; bringing in inherent inefficiencies and is detrimental to investor's confidence.**
15. It is reiterated that any other mode of spectrum assignment for any other usage/service will not be feasible, as co-existence of exclusive use spectrum with non-exclusive use spectrum in same bands would lead on major interference issues. Further, the spectrum use by majority of the user categories are not for the uses which are different from the broadband services but they either fall under the subset (e.g. VPN, MPLS, CNPN etc) of the broadband services or are substitute (e.g. public Wi-Fi, GMPCS, VSAT) of IMT based broadband services. Therefore, there is no need of any different assignment methodology under the guise of uses by other user categories.
16. In view of the above and considering the importance of these spectrum bands, the Authority should focus on a legally tenable, predictable, transparent and investor friendly mode of spectrum assignment for these bands. In compliance with the Hon'ble Supreme Court's order in 2012, India has used the most beneficial and transparent mode of Auction to assign spectrum for use in commercial public networks in the country and there is no reason or justification to reverse the Hon Supreme Court decision for MWA, MWB carriers and spectrum in E-Band and V-Band.

- C. **P2P assignment of MWA/MWB for TSPs holding other than Access Service Authorisation and non-TSPs:** This suggestion has been made only on the grounds on continuing with the extant policy.

**RJIL Response:**

17. We submit that the proposal of continuation of link-by-link allocation has been floated simply to continue with the status quo position, without providing any technical justification. We reiterate our submission that this **would lead to in-efficient utilization of spectrum resource**. The interference caused by link-to-link allocations would be difficult to manage and timely mitigation of such issues on a daily basis would be nearly an impossible and herculean task for the WPC.
18. The more prudent approach is allocating the spectrum on LSA basis through auction. This will provide the service providers with exclusive use spectrum and provide them much-needed flexibility for usage of the spectrum based on the evolving requirement. We understand and recognize the need for link-by-link spectrum and the same for spectrum for smaller geographical locations or captive use and have already proposed a liberal and decentralized spectrum leasing policy that will enable the smaller players to lease this spectrum in some specific areas from multiple parties.
19. It is also reiterated that the link-by-link allocation of a large number of short-haul links has proven to be an inadequate arrangement in longer run. MWA spectrum was also initially allocated on link-to-link cases, however, with increasing number of BTS, administration of such allocation became a herculean task and effectively compelled the Government to migrate to exclusive LSA based assignment with license fee as percentage of AGR. Further, with high frequency in E and V band, the number of links are expected to be in multiples times of MWA links making such an allocation impractical. Furthermore, due to short range of the E&V band spectrum, it would be impossible to detect and enforce the illegal/unlicensed use of these bands by WPC/WMO/DoT. On the other hand, LSA wise assignment to any entity will resolve such problem.

**D. Spectrum cap: Restrict the MWA assignment to 2022 guidelines and upto 2 carriers for MWB, upto 4 carriers for E-band, and upto 40 carriers of 50 MHz for V-band-** some of the arguments put forth by other stakeholders are as below:

- At present, there is no supply or demand issue, and current guidelines are sufficient for MWA carriers. Further, it is estimated that the operators with limited fiber infrastructure would need to acquire 2 MWB carriers initially, in order to meet their backhaul requirements. Thus, a ceiling of 2 MWB carriers per LSA, in all categories of LSAs, should be sufficient.
- In 2022 itself, DoT has doubled the number of MWA-MWB carriers which can be assigned to Access service providers. This shows that with growth in traffic, the demand for backhaul spectrum would continue to rise as such, it would be imperative to reserve spectrum in these bands for backhaul purposes for access service providers.

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- For E-band, the current ceiling of 2 carriers should be increased to 4 carriers per LSA immediately.
- For V-band, a ceiling of 40 carriers per LSA should be prescribed.

### RJIL Response:

20. A plain reading of the arguments advanced indicate the self-contradictions and anomalies. **On one hand the stakeholders feel that requirement of so-called backhaul spectrum in MWA and MWB bands will continue to increase, on the other they are proposing that the current assignment limits are optimum.**

21. This argument is made despite the marked under-utilization. The CP itself indicates around 20% utilization. **Thus, the composite proposal is to continue using the same amount of spectrum at a lesser charge, if accepted by DoT, while a pile of spectrum sits idle at the cost to Exchequer.**

22. We submit that all these contradictions are a byproduct of habitual rantings against auction of spectrum. The Auctions will come out with the market value of spectrum and will increase the utilization. It may be borne in mind that same stakeholders were happy with pre-2010 auction, administrative spectrum assignments of 6.4 MHz to 10 MHz.

23. **However, sometimes to achieve national goals certain status quo has to be broken. Thus, we submit that all spectrum should be put to auction and overall cap of 40% for MWA, MWB and E-Band and V-Band should be implemented.**

E. **Delicensing of V-Band and 6 GHz band-** some of the arguments put forth by other stakeholders are as below:

- For 6GHz spectrum band, the band should be made license exempt for Wi-Fi services and for applications in research and innovation. As evident through extensive co-existence studies carried out, existing incumbent FS & FSS services can harmoniously co-exist with Wi-Fi/RLAN services.
- V band: 5GHz (66-71Ghz) should be exclusively allocated to TSPs for backhaul purposes, while the lower V band (57-66GHz) should be delicensed for use by all
- 6 GHz band (i.e., 5925-6425 MHz) may be delicensed for Wi-Fi 6E devices which can deliver high-throughput, real-time immersive experiences to the customers. Delicensing of V Bands (57-64GHz) as an enabler for proliferation of FLB services and in line with policy adopted by many countries.
- 6 GHz band as mentioned in this consultation paper as 5.925GHz -6.425 GHz should be extended as 5.925GHz -7.125GHz in accordance with the global standards and spectrum Regulations. entire 6 GHz band (5.925GHz -7.125GHz) should be delicensed in line with the Global regulations.



**RJIL Response:**

24. It is reiterated that WRC-19 has already identified the upper portion of V band (66-71 GHz) for IMT / 5G services, and **no country has delicensed this band post that. 3GPP has already identified 52.6-71 GHz for 5G NR (New Radio)**. With passages of time, therefore, the lower portion of spectrum is likely to be considered for IMT (5G/6G) services.
25. Further, the 5G deployment and 6G developments in India are at a nascent stage and the international assessments including that by GSMA indicate that for a ubiquitous 5G and 6G coverage at least 2 GHz mid-band spectrum per TSP is required. As 6 GHz band is the only mid-band spectrum available for IMT services, **full 6 GHz (1200 MHz i.e. 5925-7125 MHz) band should be earmarked for IMT so that around 300 MHz to 400 MHz is available to each of the TSP for growth of 5G and introduction of 6G services**.
26. It is pertinent to mention that due to technological advancement, the same broadband services (internet access services) can be provided through Wi-Fi technology or 5G (NRU) network built over delicensed spectrum. Therefore, delicensing of spectrum not only create a cost arbitrage between the operator providing services on licensed spectrum and other operators but will also leads to huge loss to exchequer. **Therefore, the study of competition and value of such spectrum should be at the heart of any decision-making process on delicensing of spectrum in any band**.
27. Further, delicensing is an irreversible process and always leads to indiscriminate and inefficient use and is normally done in spectrum band which are not suitable for the IMT technologies for example 5 GHz band in which around 750 MHz is delicensed can only be used in low power mode due to its co-existence with satellite communication. **However, 6 GHz band (1200 MHz) is critically required for the growth of 5G and introduction of 6G in the country. Pertinently, the countries which have delicensed entire 6 GHz band for Wi-Fi services are now facing difficulty to reverse their decision when a large part of the band (i.e. 6.425 GHz to 7.025 GHz) is being considered for IMT in WRC-23**.
28. Notwithstanding the above, it may be noted that over 800 MHz of spectrum already delicensed is not fully utilized anywhere and therefore the demand for additional delicensing need to be considered keeping in view availability of this huge chunk of unutilized spectrum.
29. We reiterate that the demands to delicense V band and 6 GHz for use in public Wi-Fi networks are not justified, as public Wi-Fi, even without full mobility and only hotspot coverage will be directly competing with 5G and **would be a substitutable broadband service and thus should only be provided through licensed spectrum only following principle of "Same Service Same Rule"**. Further, wide, and indiscriminate adoption of

delicensed spectrum will cause serious interference issues thus rendering these bands technically unusable for IMT services.

**F. Pricing of the spectrum-** some of the arguments put forth by other stakeholders are as below:

- The pricing of backhaul spectrum in India is clearly exorbitant and should be aligned with global trends.
- The pricing per carrier for MWA-MWB should continue to be as per DoT's October 2015 circular without any change for 6/7/13/15/18/21/23 GHz spectrum bands, however, there is an immediate need to rationalise the spectrum charges to be paid for MWA/MWB spectrum.
- Weighted average rate should be implemented, basis the current applicable rate of MW charges for MWA and MWB and nil MW charges for E and V Band spectrum acquired by operators.
- The pricing of MWA/MWB spectrum was fixed at 0.15% of AGR for 1 carrier (with non-linear increase with additional no. of spots) at a time when access spectrum was being provided administratively. From 2010 onwards, access spectrum is provided through auction, and it takes care of the revenue potential from access services.
- While the AGR-based spectrum charging mechanism may be continued with, the extant rates must be significantly rationalised.
- The valuation of E/V bands or MWA/MWB carriers should not be calculated based on the auction determined prices of spectrum bands for IMT/5G services or by using the spectral efficiency factor on the value of other bands. It is a totally flawed approach as a spectrum that is used for backhaul purposes cannot be equated with access spectrum.

**RJIL Response:**

30. We agree that the existing formula for pricing of MWA and MWB spectrum is flawed and leads to exorbitant costs that prevents the TSPs from acquiring more backhaul spectrum. Evidently this approach needs to be changed. However, **the optimum mode to replace this formula would be to follow a market-based pricing approach that can be obtained only through auction rather than another administrative charge.** There is no justification for keeping another administrative formula.

31. As mentioned above all the argument are manufactured around a simple thread that will help these stakeholders maintain their existing holdings at reduced charges while simultaneously blocking any other stakeholder to acquire more spectrum at market price. Further, in some quarters, there is an expectation to get the spectrum in E-band and V-Band for no charge, while using its same allocation to reduce the spectrum outgo on weighted average model. Evidently the arguments are self-serving without any substance and should be ignored.

32. Further, bald assertions are made that while the access spectrum was not auctioned the charge for MWA spectrum was on administrative basis, and as the access spectrum is now auctioned it takes care of revenue potential, backhaul spectrum should continue to be assigned administratively with a lower charge. However, no justification is provided as to why should the revenue potential of microwave spectrum be not realized through auction. **As mentioned before, the import of the assertion remains that same amount of spectrum should be provided with lower charges while simultaneously scuttling the competition.**

G. **Use of spectrum 17.7-19.7 GHz frequencies by Earth Stations:** some of the arguments put forth by other stakeholders are as below:

- Another important consideration for spectrum assignment in the 17.7-19.7 GHz frequencies is the operation of uncoordinated earth stations with space-based communication services. This concept allows receiving earth stations to be deployed anywhere without constraining the operations and future development of P2P services.
- Any new spectrum assignment procedures for the MWA service in the 17.7-19.7 GHz band (18 GHz band) facilitates continued access by space-based communication systems operating receiving earth stations that include both satellite gateway earth stations and customer terminals in this shared spectrum band.
- TRAI should extend the blanket licensing procedures for the licensing of satellite customer terminals to the 18 GHz band, to allow ubiquitous deployment of uncoordinated satellite customer terminals.

**RJIL Response:**

33. We submit that the auction-based spectrum assignment with facility of lease spectrum for a long-term basis takes care of these requirements. The only change would be that instead of free assignment, the Earth stations would need to agree to commercial terms for their commercial services, which is a fare arrangement in a market-based mechanism.

34. 18 GHz band is an important band for microwave backhaul technology and should not be reserved for any one technology. However, in case multiple use cases emerge during the auction of this spectrum, sufficient safe guards should be ensured to help provide interference free operations.

H. **Allocation of E band administratively only for backhaul/FLB/satellite:** some of the arguments put forth by other stakeholders are as below:

- E-band has been defined by 3GPP as appropriate neither for access services nor for integrated access and backhaul (IAB). Consequently, the ecosystem for E-band-

compatible radios/handsets/FWA, based on 3GPP technologies does not even exist currently. In such a scenario, access connectivity to customers through E-band is completely out of the question.

- Also, in the previous WRC-19 cycle, spectrum access requirements from 2020 to 2027 were analysed, as were subranges spanning 24 GHz to 95 GHz. E/V bands were excluded from identification for IMT. Even in the National Frequency Allocation Plan (NFAP) 2022, E/V bands have not been defined for IMT in line with WRC resolutions.
- We would request Authority to recommend for democratization of E band (71-76/81-86 GHz) for the backhaul connectivity of Fixed Line Broadband (FLB) services and to be allotted to all types of TSPs irrespective of the Authorisation they hold. Light licensing regime for the allocation of E Band spectrum on administrative basis with minimum charges as proposed in 2014 TRAI recommendations.
- Given the international timeline, the TRAI should continue its 'light touch regulation' approach to spectrum management in E-band frequencies where applicants, terrestrial and spacebased alike, are responsible for demonstrating compatibility with other primary service allocations.
- TRAI to ensure space-based communication systems can obtain nationwide licenses through administrative assignment of spectrum, with equitable access alongside terrestrial systems.
- E-band for use by FSS gateway earth stations in a non-exclusive basis
- TRAI may defer the proposal to consider assignment of Spectrum in E&V Bands for Microwave Access (MWA) & Microwave Backbone (MWB), till WRC-27 final outcomes and reiterates that existing frequency bands are obviously adequate to meet the MWA/MWB backhaul needs as of now.

**RJIL Response:**

35. The arguments itself are a proof **that there is massive competition for acquiring the right to use this spectrum.** Further, multiple use cases are also provided for, as detailed below:

- a. **Backhaul for access spectrum, as being done currently on an ad-hoc administrative assignment.**
- b. **Light licensing framework for backhaul connectivity of Fixed Line Broadband (FLB) services.**
- c. **Administrative assignment for space-based services**
- d. **Non-Exclusive assignment for FSS gateway earth stations.**

36. In addition to these use cases, RJIL firmly believes that E-band has value as IAB and would be critical in connecting some areas as both access and backhaul. Evidently, there is massive competition for acquiring the right to use this spectrum.

37. **We submit that all these use cases lead to only one conclusion i.e. E-band spectrum seems to be most wanted and should be made available for all kind of use cases, through a fair and transparent auction. The successful bidder will be free to deploy it as per its own requirements.**

38. There is another apparent contradiction, if we treat E-band as solely backhaul spectrum while simultaneously demanding it for satellite communications, then the same cannot be allowed as satellite is not a backhaul service. E-band and V-band spectrum are commercially required for terrestrial IMT networks and there is a clear demand, as illustrated above.

39. Further, in case we want to go only by WRC, then in accordance with Resolution 775 (WRC-19), it can be deduced that there is no need to consider E-band spectrum for satellite-based communication network at present times and that requirement may come at a later date.

**I. 2-year lock-in period for surrender of backhaul spectrum.**

**RJIL Response:**

40. Such low lock-in period for surrender of spectrum can be used to game the auction bid highly at one point to prevent competition and then surrender the spectrum after 2 years. Another misuse can be in the form of surrendering the high value spectrum when a lower value substitute is available in subsequent auction, at a cost to Exchequer.

41. Accordingly, we request you to keep the surrender of spectrum lock-in unchanged for all spectrum bands.