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TRAI/FY23-24/080

6th March 2023

Shri Akhilesh Kumar Trivedi
Advisor (Networks, Spectrum and Licensing)
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
JawaharLal Nehru Marg,
New Delhi – 110 002

Subject : Bharti Airtel's Comments on Consultation Paper on *Assignment of Additional Spectrum to Indian Railways for its Safety and Security Applications*

Reference : TRAI's Consultation Paper dated 07th February 2024

Dear Sir,

This is in reference to TRAI's Consultation Paper on *Assignment of Additional Spectrum to Indian Railways for its Safety and Security Applications* dated 07.02.2024.

In this regard, we are pleased to enclose our comments on the said consultation paper for your kind consideration.

Thanking You,

Yours' Sincerely,
For **Bharti Airtel Limited**

A handwritten signature in blue ink, appearing to read 'Rahul Vatts', is written over a faint blue circular stamp.

Rahul Vatts
Chief Regulatory Officer

Encl: a.a

Executive Summary:

Airtel thanks the Authority for issuing this important consultation paper and providing Airtel with the opportunity to present its response.

Spectrum is a critical resource because it can help build bridges towards digital inclusion and ensure that the economic and social benefits of mobile services are available to all communities. This paper is crucial, not just for the spectrum needs of the Indian Railways (“IR”) and other such commercial public sector undertakings (“PSUs”) and Government agencies, who, as new users, are increasingly seeking commercial IMT bands – bands which have a huge bearing on the larger public good – but also for telecom service providers (“TSPs”), since such demands put immense pressure on the entire mobile ecosystem, including the present and future spectrum needs of all TSPs and mobile networks.

Post the issue of the instant Consultation Paper, the Government, via a Cabinet decision¹, seems to have already decided to reserve an additional 5 MHz (paired) spectrum in the 700 MHz band for IR – what is not clear in view of this decision is whether the deliberation under this consultation is relevant any longer. Irrespective, Airtel believes it is an important deliberation and that the Authority should continue to engage with it.

Having said that and having considered the views presented in the paper with regard to allotting 5 MHz of spectrum in the 700 MHz band to IR, Airtel believes that IR should not be allowed to use this additional spectrum for any commercial services. Like the original 5 MHz allotted to IR in the 700 MHz band in 2021, the additional 5 MHz should also be used for captive use only.

Also, 900 MHz band that IR was required to vacate in lieu of the 700 MHz band allocated to it in 2021 should concurrently be expedited as it has been done in only a few LSAs until now. Airtel further iterates that in order to address such rising demands for spectrum, it is imperative that a clear roadmap is created for all such commercial PSUs and for the TSP industry as well.

As regards the charging of spectrum, a uniform spectrum charging methodology may be adopted for IR as well as NCRTC and other RRTS/Metro rail networks – based on the opportunity cost of this commercially important band.

Lastly, there are other important IMT bands as well, like 1800/2100/2300/3300 MHz bands, which have been assigned to various Government ministries/departments/agencies. It is necessary to develop time-bound plans for shifting these usages to non-IMT bands, so that IMT bands may be effectively utilized to cater to the public at large.

¹<https://www.thehindu.com/news/national/traai-nod-notwithstanding-cabinet-approves-spectrum-for-railways/article67829737.ece>; and <https://www.moneycontrol.com/news/business/cabinet-approves-spectrum-auction-across-multiple-bands-reserves-spectrum-for-railways-12226171.html>

In summary:

- ✓ *The use of the additional 700 MHz spectrum to IR must also be restricted to captive use, as in the case of the original assignment of 5 MHz of spectrum in the 700 MHz band in 2021. The IR should not be allowed to offer any commercial services like Internet/Wi-Fi onboard.*
- ✓ *Irrespective of whether additional spectrum is assigned to IR or not, a clear and time-bound plan must be devised for vacating the 900 MHz band spectrum from IR and putting up the same for auction.*
- ✓ *A uniform spectrum charging methodology may be adopted for IR as well as for NCRTC and other RRTS/Metro rail networks, as they use the same spectrum band for similar purposes.*
- ✓ *The spectrum charging methodology must consider the opportunity cost of (auctioning) this spectrum – both the financial costs as well as the costs in terms of the larger public good.*
- ✓ *DoT must immediately devise a time-bound plan to shift the operations of the various Government ministries/departments/agencies, including MoD, from IMT bands such as 1800/2100/2300 MHz to non-IMT bands, in order to free up these important IMT bands for auction.*
- ✓ *There must be a clear and time-bound plan for testing and implementation of the test results for redefining the exclusion areas that have been prescribed for the 3.3 GHz band due to Defence/NavIC operations.*
- ✓ *Efforts should also be made to shift the Defence/NavIC operations from 3.3 GHz band to alternate spectrum bands.*

Further to this, Airtel has provided its replies to the specific questions asked in the sections that follow.

Q1. Whether an additional 5 MHz (paired) spectrum in the 700 MHz band should be assigned to Indian Railways (IR) in order to meet its requirement for safety and security applications? Kindly provide a detailed response with justification.

Q2. In case your response to Q1 is negative, –

(a) In what manner, the requirement of the IR for safety and security applications may be fulfilled?

(i) Specifically, whether it would be appropriate to devise a framework under which the 10 MHz (paired) spectrum [5 MHz (paired) assigned to IR, and 5 MHz (paired) reserved for NCRTC and other RRTS/ Metro rail network] in the 700 MHz band may be used by all types of rail networks on shared basis, subject to the outcome of the field trial recommended by the Authority in its recommendations on ‘Spectrum Requirements of National Capital Region Transport Corporation (NCRTC) for Train Control System for RRTS Corridors’ dated 28.12.2022? If yes, please suggest the key features which should be included in such a framework?

(ii) Any other suggestion may be provided with detailed justification.

(b) In case your response to Q(2)(a)(i) is affirmative, whether a frequency spectrum of 10 MHz (paired) in the 700 MHz band would be sufficient to meet the requirement of different rail networks in India particularly in the overlapping zones? Kindly provide a detailed response with justification.

Q3. In case it is decided to assign an additional 5 MHz (paired) spectrum in the 700 MHz band to IR, whether there is a need for harmonization of spectrum in the 700 MHz band to make the spectrum assigned to IR, and NCRTC and other RRTS/Metro Rail Networks contiguous? Kindly provide a detailed response with justification.

Airtel Response:

At the outset, the Authority must take note of the decision of the Union Cabinet², which has recently been announced (post the issue of the instant Consultation Paper), regarding the issues raised above. It is understood that the Union Cabinet has already decided to reserve an additional 5 MHz of spectrum in the 700 MHz band for IR.

In any case, a majority of the spectrum in the 700 MHz band has already been allocated for the use of different Government ministries/departments/agencies – 10 MHz for the Ministry of Defence (“**MoD**”), 5 MHz for IR, 5 MHz for NCRTC, and 10 MHz for BSNL. With another 10 MHz

² <https://www.thehindu.com/news/national/traai-nod-notwithstanding-cabinet-approves-spectrum-for-railways/article67829737.ece>;
<https://www.moneycontrol.com/news/business/cabinet-approves-spectrum-auction-across-multiple-bands-reserves-spectrum-for-railways-12226171.html>

having been acquired by a TSP in the 2022 Auctions, only 5 MHz is vacant in the 700 MHz band, as also noted by the Authority in para 2.19 of the instant Consultation Paper. Since such a meagre quantity may not be sufficient for any new TSP on a standalone basis, Airtel does not foresee any new entity being interested in the same.

However much Airtel might want the deliberation on this extant consultation paper to continue on merit, in view of the Cabinet's decision, and the meagre quantity of (vacant) spectrum left in the 700 MHz band, it is unclear whether this consultation on the issue of assignment of additional 5 MHz to IR is relevant any longer.

Having said that, it is important to highlight that the original assignment of 5 MHz of spectrum in the 700 MHz band to IR in 2021 came with the condition that *"This spectrum assignment is being made for captive use along the Railway track only and not to offer any Commercial Services such as Internet/Wi-Fi onboard"*³. Needless to say, if any additional spectrum is assigned to IR, it is imperative that the above condition is retained, i.e., **the use of the additional spectrum must also be restricted to captive use, and IR should not be allowed to offer any commercial services like Internet/Wi-Fi onboard.**

Additionally, irrespective of whether the Government decides to assign additional spectrum to IR in the 700 MHz band, **a clear and time-bound plan must be devised for withdrawing the 900 MHz band spectrum from IR and putting it up for auction.**

Vacating the 900 MHz band was the condition upon which the original assignment of 5 MHz of the 700 MHz band spectrum to IR was contingent:

It is highlighted that since 2003, IR had been allotted 1.6 MHz paired spectrum in the 900 MHz band on a pan-India basis for its GSM-R based Mobile Train Radio Communications (MTRC) system. When the request for 700 MHz band spectrum was originally received from IR in 2019, it was to enable IR to migrate to an LTE-based network in view of the imminent decommissioning of the GSM communication systems.

On DoT's reference, the Authority examined IR's requirements and, after a detailed consultation process, released its recommendations on the matter on 25.10.2019 stating that 5 MHz of spectrum in the 700 MHz band may be allocated to IR, and that ***"the 1.6 MHz spectrum already assigned to IR in 900 MHz band may be taken back from IR upon migration to LTE based network"***.⁴

In line with the above recommendations and based on the Union Cabinet's approval, DoT allotted the 5 MHz of spectrum in the 700 MHz band to IR on 22.10.2021. Again, one of the conditions

³ Copy of DoT's letter no. L-14001/01/2019-NTG(Pt.) dated 22.10.2021 available at Annexure-1.1 of the instant Consultation Paper

⁴ https://tra.gov.in/sites/default/files/Recommendations_25102019.pdf

contained therein was that “The 1.6 MHz (paired) spectrum already assigned to Indian Railways in 900 MHz band will be taken back from Indian Railways upon migration to LTE based network”.⁵

While more than two years have passed since then, as noted in para 2.6 of the instant Consultation Paper, **the 1.6 MHz of 900 MHz band spectrum has been surrendered by IR only in seven LSAs, namely Andhra Pradesh, Himachal Pradesh, Karnataka, Kerala, Northeast, Orissa and Tamil Nadu.**

The CAG has also observed that IR should surrender the 900 MHz band:

Even CAG, in its Report No. 2 of 2022 dated 01.04.2022 (“CAG Report”)⁶, has taken note of the inefficient and sub-optimal utilisation of the commercially important 900 MHz band spectrum by IR and observed that it should have been surrendered/re-farmed in accordance with the Authority’s recommendations. The relevant extracts from the CAG Report are reproduced below:

“Spectrum in commercially important 900 MHz band had been earmarked to Railways on pan India basis for deployment of their GSM-R (Global System for Mobile Communication-Railways in 2G) GSM-R based Mobile Train Radio Communications (MTRC) system.

*Audit noticed that MTRC system was commissioned for use only at 3,445 route KM out of the total 5,949 route KM sanctioned, covering 58 per cent of routes planned covering nine service areas out of 22 service areas. **Utilisation of spectrum in this band is inefficient and sub optimal due to non-maintenance of equipment and unavailability of spare parts. However, 1.6 MHz paired spectrum in 900 MHz band was not re-farmed from Railways as recommended by TRAI.**”*

*“An audit observation was made in para No 2.1.7.2 of the CAG’s report No. 21 of 2018. DoT in its ATN stated (Feb 2021) that spectrum in 900 MHz band would be taken back from Railways after the roll-out of LTE based proposed network. Railways were allotted 5 MHz spectrum in 700 MHz band (June 2021) for LTE based network. The fact remains that **1.6 MHz paired spectrum earmarked for Railways since 2003 remained unutilized in 13 service areas and only partly utilized in nine service areas.** Furthermore, spectrum assigned to Railways is susceptible for unauthorized use by TSPs as it remains vacant outside Railways routes/stations in a service area. **Efforts should have been made to surrender the unused spectrum in the valuable Band in coordination with WPC.**”*

⁵ Copy of DoT’s letter no. L-14001/01/2019-NTG(Pt.) dated 22.10.2021 available at Annexure-1.1 of the instant Consultation Paper

⁶ <https://cag.gov.in/en/audit-report/details/116503>

Impact of delay in vacating the 900 MHz band spectrum by IR:

Airtel submits that the delay in vacating this 900 MHz band spectrum by IR is leading to a delay in the spectrum being put up for auction for commercial services. This represents a huge opportunity cost not just for the exchequer in terms of the revenue that the Government may earn through the auction of this valuable spectrum but also the loss of precious public good as the public is denied the improved services that may be offered by TSPs through the use of this spectrum so long as there is a delay.

Therefore, to realise its commitment to its Digital India vision, the Government must immediately prescribe **a clear and time-bound plan for the withdrawal of the 900 MHz band spectrum from IR and put it up for auction**. This plan must be strictly adhered to, with periodic monitoring of progress.

In view of this, Airtel recommends the following:

- (i) Since the Government, via a Cabinet decision, has already decided to reserve an additional 5 MHz (paired) spectrum in the 700 MHz band for IR, and this meagre 5 MHz is the only vacant spectrum left in the band after allocations to various ministries/departments/agencies, the deliberation over the issue of assignment of additional spectrum to IR may no longer be relevant.**
- (ii) The use of the additional 700 MHz spectrum to IR must also be restricted to captive use, as in the case of the original assignment of 5 MHz of spectrum in the 700 MHz band in 2021. The IR should not be allowed to offer any commercial services like Internet/Wi-Fi onboard.**
- (iii) Irrespective of whether additional spectrum is assigned to IR or not, a clear and time-bound plan must be devised for vacating the 900 MHz band spectrum from IR and putting it up for auction.**

Q4. Should a uniform spectrum charging methodology be adopted for Indian Railways as well as for NCRTC and other RRTS/Metro rail networks? If yes, which of the following spectrum charging methodology be adopted in this regard:

- (i) Spectrum charging methodology based on Auction Determined price (ADP) as recommended in the TRAI's recommendations on 'Spectrum requirements of National Capital Region Transport Corporation (NCRTC) for train control system for RRTS corridors' dated 28.12.2022.
- (ii) Spectrum charges as levied for Indian Railways as per DoT's Order No. P-11014/34/2009-PP (II) and P- 11014/34/2009-PP(IV) dated 22nd March 2012 (revised vide DoT's order dated 11.12.2023).
- (iii) Apart from the methodologies highlighted in (i) and (ii) above, any other uniform spectrum charging methodology that may be adopted in this regard?

Details with justification may kindly be provided.

Q5. If answer to Q4 above is no, whether the existing charging methodology as per DoT's Order No. P-11014/34/2009-PP (II) and P- 11014/34/2009-PP(IV) dated 22nd March 2012 (revised vide DoT's Order dated 11.12.2023) be continued for Indian Railways or some other spectrum charging methodology may be adopted specifically for Indian Railways? Please provide detailed response with justification.

Q6. If a spectrum charging methodology similar to NCRTC and other RRTS/Metro rail networks, is adopted for Indian Railways, what should be the payment terms and associated conditions relating to:

- i. Upfront payment
- ii. Moratorium period
- iii. Total number of installments to recover deferred payments
- iv. Rate of interest in respect of deferred payment and prepayment

Please support your answer with detailed justification.

Airtel Response:

As mentioned in Airtel's combined response to Q1-3 above, 5 MHz of spectrum in the 700 MHz band was allotted by DoT to IR in 2021 for public safety and security services at stations and in trains for captive use. Thereafter, 5 MHz of spectrum in the 700 MHz band was provisionally assigned to the National Capital Region Transport Corporation ("NCRTC") in 2022, for similar purposes.

However, as noted in the DoT's reference dated 26.07.2023, the spectrum charging methodology is different for IR and NCRTC. While spectrum charges are to be paid annually by IR on a formula basis similar to other captive users, 0.5 times the auction-determined price ("ADP") is levied on NCRTC based on the area of LSA and on a pro-rata basis for the assignment of spectrum for a period of ten years. Thus, the per km spectrum charges for NCRTC vary from LSA to LSA based on the ADP, whereas for IR charges are fixed irrespective of the LSA.

Accordingly, DoT has observed that *"spectrum charges for NCRTC is many fold greater than that of IR in the LSAs having more ADP, whereas in some LSAs where ADP is less and LSA area is more, spectrum charges for IR is many fold greater than that of NCRTC. Hence TRAI may be requested to recommend a uniform spectrum valuation and charging methodology considering similar usages in the same spectrum band."*

Airtel completely agrees with DoT's suggestion. Since these users are using the same spectrum band for similar purposes, **it may be appropriate to adopt a uniform spectrum charging methodology for IR as well as for NCRTC and other RRTS/Metro rail networks. Further, any spectrum charging methodology must recognise the scarce and valuable nature of spectrum resources and should be structured such that it incentivises the user to utilise the spectrum as efficiently as possible.**

Even the CAG Report recognised the drawback with the present spectrum-charging methodology under which spectrum has been assigned to different Government ministries/departments/agencies. The relevant extracts from the CAG Report are reproduced below:

*"Pricing of spectrum assigned for captive uses on formulae basis revised in 2012 was not reviewed till date despite DoT Committee recommending for periodical review in 2013. **Present pricing method does not incentivize Ministries/Departments/Agencies to use spectrum efficiently.**"*

The CAG Report also contains suggestions to encourage better and more efficient utilisation of the spectrum by Government ministries/departments/agencies. The relevant extracts from the CAG Report are reproduced below:

*"the pricing formula should be such as to incentivize Ministries/Departments/Agencies to use spectrum efficiently in the important IMT bands and also to encourage use of spectrum in higher frequency bands presently not in use. Further, **the pricing formula should be based on the opportunity cost of spectrum i.e. the more valuable the spectrum (e.g. in the IMT band) the more the price as well as to encourage users to shift to spectrum in non-IMT bands through viable pricing methods in view of availability of alternate communication systems.**"*

Consequently, the CAG Report recommended that DoT may review the spectrum-charging mechanism for Government ministries/departments/agencies. The relevant extracts from the CAG Report are reproduced below:

“DoT may review the pricing mechanism of Spectrum for Captive Users in order to incentivize Ministries/Departments/Agencies for optimal utilisation of available Spectrum and maintain spectrum management discipline. They may consider differential pricing depending on the features and usage of various spectrum Bands.”

In line with the observations contained in the CAG Report, the spectrum-charging mechanism for the 700 MHz band assigned to IR, as well as to NCRTC and other RRTS/Metro rail networks, should be based on the opportunity cost of this prime IMT band. It must consider that this spectrum, if auctioned, would readily be acquired by TSPs at exorbitant prices – and would be used to provide services to a much larger user base than that served by IR/NCRTC. Further, usage by TSPs would result in a much more efficient utilisation of this scarce natural resource, as it would be used in the entire LSA, as opposed to specific locations as in the case of IR/NCRTC.

Hence, the spectrum-charging mechanism for IR, NCRTC and other RRTS/Metro rail networks must account for the opportunity cost of (auctioning) this spectrum, in terms of both the higher revenues that may accrue to the exchequer as well as the larger public good that may be served through its usage by TSPs.

Therefore, Airtel recommends the following:

- (i) A uniform spectrum-charging methodology may be adopted for IR as well as for NCRTC and other RRTS/Metro rail networks as they use the same spectrum band for similar purposes.**
- (ii) The spectrum-charging methodology must be based on the opportunity cost of (auctioning) the critical 700 MHz band, in terms of the huge value that it may bring to the Government exchequer as well as the public at large.**

Q7. Any other suggestions relevant to the subject may kindly be made with detailed justification.

Airtel Response:

In addition to Airtel’s submissions in Q1-6 earlier, there are certain other issues arising due to the assignment of spectrum to Government ministries/departments/agencies in important IMT bands that need to be highlighted.

Re-farming of Spectrum assigned to various Government ministries/departments/agencies, including the MoD:

Various Government ministries/departments/agencies have been assigned spectrum over the years in different bands, including commercially important IMT bands. While some of this spectrum in the 900/1800 MHz bands was vacated and auctioned in the 2022 auctions, a huge amount of spectrum in bands like the 1800/2100/2300 MHz bands is still held by Government ministries/departments/agencies, including MoD.

The CAG Report has recognised the sub-optimal/under-utilisation of such spectrum by these users. The relevant extracts from the CAG Report are reproduced below:

“The audit observations on utilization of spectrum by Ministries/Departments/Agencies who had been assigned spectrum on Administrative basis, indicate that IMT bands were either sub-optimally/under-utilized or not utilized at all due to various reasons. Some bands had been identified to roll out 5G services in the country or there is a possibility that other bands are going to be offered to TSPs for 5G services due to technological advancement worldwide. Railways, Department of Space and other Government users, particularly had been assigned spectrum where there was a possibility for sharing or re-farming of spectrum for better utilization from economic point of view. DoT in consultation with other Ministries/Departments needs to take decision in this regard for re-farming/sharing and optimal utilisation of spectrum in various bands.”

In line with the CAG’s suggestion, these important IMT bands must be urgently vacated and put up for auction. Shifting the operations of the various Government ministries/departments/agencies, including MoD, to non-IMT bands, would require a clear, well-thought out and time-bound plan. Successfully executing this would not only bring significant revenues to the Government exchequer but also benefit consumers by providing a better service experience and connecting the unconnected.

Airtel also welcomes the recent decision of the Cabinet to constitute a Committee of Secretaries (CoS) to consider the re-farming of existing spectrum usage to increase spectrum availability to meet the future needs of telecommunications services.

In view of this, Airtel recommends that DoT immediately devise a time-bound plan to shift the operations of the various Government ministries/departments/agencies, including MoD, from IMT bands like the 1800/2100/2300 MHz bands to non-IMT bands, in order to free up these important IMT bands for auction.

Immediate removal of restrictions placed on the usage of 3.3GHz band due to Defence and NavIC infrastructure:

The Hon'ble Prime Minister of India launched 5G services in October 2022. In line with the Hon'ble PM's vision, Airtel 5G Plus is now available across all 28 states and 8 union territories, making it one of the fastest rollouts in the country. Airtel customers nationwide are now on the digital superhighway and enjoying blazing-fast network speeds.

In order to enable 5G services, the 3.3 GHz band was auctioned in 2022. However, the 2022 Auctions NIA contained certain restrictions on some blocks of the band due to the existence of Defence/NavIC infrastructure.⁷ The relevant extracts from the NIA are reproduced below:

“(1) In 6 LSAs namely Karnataka, Kerala, Madhya Pradesh, North East, Rajasthan and West Bengal LSAs, spectrum block no. 21 to 23 above are not available for assignment to telecom services at 6 locations (one location in each of these 6 LSAs). Exact details of the polygon area where spectrum block no. 21 to 23 is not available for assignment will be provided to the qualified bidders separately.

(2) In 6 LSAs namely Himachal Pradesh, Gujarat, Jammu & Kashmir, North East, Rajasthan and Uttar Pradesh (West) LSAs, block nos. 24 to 33 above are not available for assignment in 50 km from the international border. Details of the area where spectrum block no. 24 to 33 are not available for assignment will be provided to the qualified bidders separately.”

While Airtel acquired 100 MHz spectrum in the 3.3 GHz band across all LSAs, the spectrum blocks assigned to it in 9 LSAs, viz. Karnataka, Kerala, Madhya Pradesh, Northeast, Rajasthan, West Bengal, Himachal Pradesh, Jammu & Kashmir and Uttar Pradesh (West), are bound with the restrictions stated above. Accordingly, Airtel's spectrum holding at various locations in these LSAs is not contiguous, thereby depriving the citizens in these locations from enjoying world-class 5G services.

Due to the absence of an operational 5G network at the time of auction, the exclusion areas defined at the time were not based on actual field tests. Since Airtel's 5G network deployment is now almost complete, **it is essential that proper field testing is conducted for these regions to determine the exact polygon areas and the test results are implemented in a clear and time-bound manner.** This is critical if Airtel's high-class 5G services are to reach the millions of people living in these regions without compromising the Defence/ISRO operations.

In addition, as already submitted under the previous head, the CAG Report has taken note of the sub-optimal/under-utilisation of important IMT spectrum bands by various Government ministries/departments/agencies and has suggested re-farming of such spectrum. Similarly, **it is necessary that the Defence/ NavIC operations are moved to alternate spectrum bands and**

⁷ https://dot.gov.in/sites/default/files/NIA_Version_Dated_15_06_2022.pdf

Airtel is allotted a contiguous chunk of 100 MHz of spectrum in the 3.3 GHz band. This exercise must be conducted in a clear and time-bound manner.

Therefore, Airtel recommends the following:

- (i) A clear and time-bound plan for the testing and implementation of test results for redefining the exclusion areas should be prescribed in order to ensure that world-class 5G services similar to those available in other areas are enjoyed by all of the people residing within these exclusion zones, without compromising the Defence/NavIC operations.**

- (ii) Efforts should be made to shift the Defence/NavIC operations from the 3.3 GHz band to alternate spectrum bands, as also suggested by the CAG for other IMT bands assigned to various Government ministries/departments/agencies.**
