



Broadband India Forum

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BIF RESPONSE TO TRAI CP ON METHOD OF ALLOCATION OF SPECTRUM FOR PMRTS (including Auction) AS A TRANSPARENT MECHANISM

Q1. Do you agree that existing License Service Area (LSA) based authorization criteria for PMRT service license is appropriate? If not, should there be a city/district based authorization aligned with spectrum allocations?

BIF RESP:

Yes, we agree with the current licensing framework under which the Service Area of PMRTS is the LSA area is appropriate and may be continued , similar to that for all UL licensees. PMRTS is more akin to a Point to Point or a Point to Group Radio Communications. It has widespread applications in the area of Public Safety , New Projects , Emergency & Disaster Recovery Services, Utilities, Transportation & Service industry We feel that this is appropriate in view of the expanding geographical boundaries of cities and need for PMRTS services to be offered to customers across large areas outside the city limits/metro areas where industrial clusters are located and new ones are coming up. Such clusters on their own may not be viable but availability of PMRTS services in those outlying areas could help support communication needs for development of these clusters and thereby fulfil an important requirement.

We are also of the opinion that the spectrum allocation for PMRTS services should be done based on service area (LSA) and not city wise, as at present . This way the PMRTS service operators will derive better economies of scale and it will be easier for DoT also to manage PMRTS licensees and spectrum allocation thereof. On their part, PMRTS operators will be able to offer services to its customer base across a wider geographical area which in turn will not

only encourage PMRTS operators to rollout more services but will enable better revenue generation for PMRTS operator as also for DoT.

Q2. Do you suggest any other criteria/change in license/ area of authorization for PMRT service? Elaborate your suggestions with supporting facts.

BIF RESP:

One other potential barrier is the spectrum allocation for PMRTS, which is still done based on city basis. This doesn't help the PMRTS service operator in any way and in fact hampers its growth potential as its customer base is spreading with the ever expanding city boundaries. There is a need to enlarge the service area to cover Metro city and its satellite towns to enable services to be offered across a larger service area.

Another major challenge for the growth of PMRTS service today is the requirement to obtain license for import of the PMRTS handsets. While handsets for cellular Mobile are freely allowed to be imported/manufactured, the PMRTS handsets are restricted and strictly rationed by the DOT through import licenses. This policy leads to inefficient utilisation of the service as well as associated resources viz. spectrum.

Q3. Do you suggest any change in the duration of license from the present duration of 20 years? Please provide supporting justification.

BIF RESP:

For the sake of cost & service continuity, the present duration of 20 years for the PMRTS license should be maintained. However, there should be an option to extend the license at end of the 20 year period.

Q4. Keeping in view the existing PMRT services market size and growth potential, which methodology of allocation of spectrum will be most suitable for PMRT services? (a) Auction (or) (b) Administrative allocation Kindly provide supporting arguments for your choice.

BIF RESP:

We support Administrative allocation of spectrum for PMRTS for reasons given below.

PMRTS is a relatively very small industry (as compared to those of access service providers) with total subscriber base being a mere 52,000 as on September' 2017, serves a niche market and has limited potential for horizontal & vertical growth. Also the service is restricted to only a few cities or a few LSAs in the circle (DOT's own reference cited in the said CP suggests that

after considering additional /new demand, only 16 LSAs have demand for PMRTS out of 22 which implies that scope and opportunities for business are fragmented across the country.

BIF is of the view that the Hon'ble SC guidelines of 2012 on method of spectrum allocation does not preclude consideration of other methods of allocation of spectrum other than auction. PMRTS service a niche service unlike cellular access services and hence methodology of spectrum allocation should not be similar. BIF also agrees with the authority's view that assignment of spectrum through auction can only be considered if there is a clear cut demarcation of spectrum for public (PMRTS) & captive trunking (CMRTS) bands to ensure balance between demand & supply of spectrum.

Based on the above, it may be surmised that market size and business prospects for PMRTS are not comparable with access services and hence the current methodology of allocating spectrum (as required & as available) on a LSA basis in an administrative manner may be continued. This will enable the market to grow to a sizeable level and the service to permeate to all LSAs and other cities within the LSA and the resultant Circle and across pan-India.

Q5. Do you propose any other methodology other than the options provided in Q4. above for allocation of spectrum for PMRTS? Please provide detailed justifications.

BIF RESP:

We propose administrative allocation. However, we also propose that the handsets for trunking services should be allowed freely for import and these should be removed from the restricted list under the import-export policy and delinking of the same from spectrum allocation. This will promote growth of the PMRTS services.

Q6. If you have opted for auction as the methodology for allocation of spectrum for PMRTS, (a) What criteria/norms should be there for auction of spectrum so that efficient utilization of the spectrum is ensured? Should there be preference for Digital PMRTS networks? (b) Should the spectrum auction be held on LSA basis or city basis? (c) What should be the effective date of allocation of spectrum (if won through the process of auction)? (d) What should be the rollout obligations for PMRT service providers? What should be the penalty to be imposed in case of non-compliance of roll out obligation? Please provide detailed justifications?

BIF RESP:

Not applicable as BIF has opted for the administrative method

Q7. If you feel administrative allocation is the best methodology, then (a) Are the existing criteria of assignment of RF carriers sufficient or should there be different criteria/norms for assignment of spectrum? If existing criteria is not sufficient, what are the proposed criteria for such assignments so that efficient utilization of the spectrum is ensured? (b) Should

administrative price of spectrum be calculated LSA wise? If yes, what should be the basis and formula for determination of administrative price? Suggest alternate calculations, if any.

BIF RESP:

a) As per current license conditions for PMRTS, not more than five channels (frequency pairs) are allotted initially for Analog system and for Digital systems upto 30 frequency channels (25KHz each) depending on the availability and justification. Any additional RF frequency pair is allocated only when 90% of capacity is reached. The capacity calculations are driven by the consideration of loading of 90 radios per channel.

Most of the current PMRTS networks are Analog and hence have very limited frequency allotted. There are two key parameters that determine the requirement of frequencies or number of RF carriers i.e. Coverage and Capacity. Typically a PMRTS service provider will need to rollout a network to cover the entire city or service area from the very beginning in order to provide services to its customers. Given that these PMRTS networks are deployed using high power repeater sites so as to cover maximum area with minimum number of sites, the frequency reuse is also limited. Lastly, in terms of capacity, the PMRTS service provider would aim to garner maximum possible users across its network. However, the repeater sites within main city area would always have higher loading as compared to repeater sites on the periphery.

The framework of considering 90 radios per channel is only a guiding factor. It should not form the basis of allocation of spectrum. Allocation of frequency should not be limited to 5 pairs. It should be based on the technical evaluation and justification based on coverage and capacity calculations.

PMRTS service providers should be encouraged to migrate to Digital from currently mostly Analog networks. They should be incentivised to do so and further extension of current licenses after expiry of the same should perhaps not be permitted in the Analog domain.

If the PMRTS operator can load more users per channel, then the same should be permitted & incentivised. Limiting number of users on per channel basis is impacting the growth of PMRTS service and also limiting revenue of DoT & PMRTS operator. Adding more subscribers per channel will not only lead to more efficient use of spectrum but also enable generation of more revenue for operator and lead to higher revenues for DoT.

In order to promote migration to Digital, there should be technology standardisation based on open standards like TETRA, APCO P25 and DMR which are globally recognised & truly open standard technologies and are also adopted by ITU.

b)

Administrative price of spectrum should be calculated based on the number of base/repeater stations. Typical formula use in many countries is as below:

Number of outdoor base stations	x	
Number of in-building base stations	y	
Total number of base stations	x+y	
Public Mobile Network licence fee for 1 to 300 base stations	₹ 5,000.00	Per base stn.
Public Mobile Network licence fee for 301 to 500 base stations	₹ 4,000.00	Per base stn
Public Mobile Network licence fee for 501 to 700 base stations	₹ 3,000.00	Per base stn
Public Mobile Network licence fee for >701 base stations	₹ 2,000.00	Per base stn
Total annual licence fee for base stations		
Spectrum Application and Processing fees (Only applicable for newly assigned frequencies)		
Per 25 kHz channel per freq per annum	₹ 5,000.00	
Per 25 kHz pair of frequencies	₹ 10,000.00	
Application & processing fee for	N	pair
Annual fees for radio frequency		

Frequencies for Networks; for exclusive use; for 25 kHz single frequency	₹ 5,000.00	per frequency
Frequencies for Networks; for exclusive use; for 25 kHz pair	₹ 10,000.00	per pair
Radio freq fee per annum		pairs
Licence fees per annum:		
Public Mobile licence fee (a)	$(x+y)*5000$	
Radio frequency fee for N pairs (b)	$N*10000$	
Total annual fees	A+B	

Q8. Out of the bands discussed in Table 3.2 above, which are the preferable bands for the PMRT services in India? List out in the order of priority. Are the bands suggested by DoT as mentioned in the Table 3.3 will be adequate to cater for the spectrum requirements of PMRTS?

BIF RESP:

BIF is of the opinion that spectrum assignments should be globally harmonized with other administrations and should be aligned to ITU-R Recommendations for spectrum assignment for such services and aligned to provisions made for this service in NFAP.

Based on all of the above and also global market trends, it is felt that spectrum in the 800Mhz bands shall be most preferable .

In order of priority they may be assigned as below:

1. 819-824Mhz paired with 864-869Mhz : 2x5Mhz (IND 43)
2. 814-819Mhz paired with 859-864 Mhz: 2x5 Mhz(IND 42)
3. 811-814 Mhz paired with 856-859 Mhz: 2x 3 Mhz(IND 41)
4. 336-340 Mhz paired with 346-350Mhz: 2x 4Mhz (IND 27)
5. 380-389.9Mhz paired with 390-399.9 Mhz(2x 9.9 Mhz) (IND 29)

As indicated by DOT as preferable frequency bands for PMRTS in Table 3.3 , if the entire bandwidth of 12 Mhz were to made available, perhaps that would have been adequate. But out of the 3 bands proposed by DOT in the said table, in the band 864-869Mhz, 2 Mhz is already delicensed (867-869Mhz) for use of low power equipment /devices with maximum transmitted power of 1W, Max Eirp of 4W& Max. Channel BW of 200Khz , it entails that this entire band of 864-869Mhz (along with its associated paired spectrum) may not be available for PMRTS. In view of this, the available bandwidth of 12 Mhz shrinks to 7Mhz and hence there may be need to identify new candidate bands to supplement the spectrum need for serving the growing demands of this sector.

Q9. Taking into consideration the existing allocation by DoT and Authority's latest recommendation for delicensing spectrum for M2M, would it be feasible to consider the band 819-824 MHz/ 864- 869 MHz for allocation to PMRTS licensees?

BIF RESP:

As already mentioned in response to Q8 above, this spectrum band of 5Mhz may not be available for PMRTS and hence there may be need to identify new candidate bands to supplement the need of spectrum requirement for this sector.

Q10. Which other candidate band will be most suitable for PMRTS if the band 819-824 MHz/ 864-869 MHz (5 MHz) is not to be considered for allocation to PMRT services? Please support your answer with facts.

BIF RESP:

Instead we could possibly look to identify any of the following candidate bands:

814-819Mhz paired with 859-864 Mhz: 2x5 Mhz(IND 42)

OR

811-814 Mhz paired with 856-859 Mhz: 2x 3 Mhz(IND 41)

OR

380-389.9Mhz paired with 390-399.9 Mhz(2x 9.9 Mhz) (IND 29)

OR

A combination of all the above

Considering the availability of equipment for open technology standards like TETRA, APCO P25 and DMR, the other candidate band could be IND 29 wherein upto 3 MHz spectrum could be allotted for PMRTS services.

Q11. What should be the minimum block size of spectrum to be put for auction? How contiguity of spectrum can be ensured.

BIF RESP:

BIF has argued its case for spectrum to be allotted in administrative manner rather than through an auction (See Response to Q4 above). Hence this question is irrelevant to the context.

Q12. In case spectrum is to be auctioned, which methodology / approach(s) should be adopted for valuation and associated reserve price of Spectrum for PMRTS and why? Please justify your answer.

BIF RESP:

BIF has argued its case for spectrum to be allotted in administrative manner rather than through an auction (See Response to Q4 above). Hence this question is irrelevant to the context.

Q13. In case spectrum is to be auctioned, which methodology/ approach(s) should be adopted for calculation of spectrum usage charge? Please justify your answer.

BIF RESP:

BIF has argued its case for spectrum to be allotted in administrative manner rather than through an auction (See Response to Q4 above). Hence this question is irrelevant to the context.

Q14. Whether the concept of spectrum cap shall be applicable on assignment of spectrum to the licensees for PMRTS? Justify your answer.

BIF RESP:

No. The concept of spectrum cap is typically considered to prevent the various service providers from hoarding large chunks of spectrum and working in an anti-competitive manner. Such spectrum cap makes sense for critical Cellular access spectrum. However, in this case of PMRTS, there are very few service providers and there is no lack of spectrum. Hence there should not be any spectrum cap applicable on assignment of spectrum to licensees for PMRTS at this stage

Q15. In case you are of the view that provision of spectrum cap should be there, what should be the mechanism for applicable spectrum cap? (a) Whether any one of the spectrum cap i.e. intra-band or overall shall suffice the requirement as of now or (b) both caps should be made applicable simultaneously? (c) What should be the appropriate criteria for spectrum cap?

BIF RESP:

As mentioned in response to Q14 above, we are of the view that Spectrum Cap is not applicable to administrative assignments of spectrum and that too for assignments other than access spectrum

Q16. What should be the duration/validity of assignment of spectrum to PMRT service provider? Should it be with the same duration as that of the license (20 Years)? Please support your answer with facts.

BIF RESP:

The duration of validity of the allocation of spectrum should be aligned to the validity of the PMRTS license i.e. 20 years. The assignment of spectrum needs to be administered on long term basis to boost confidence of PMRTS service providers and the industry as they invest large CAPEX for rollout of such PMRTS networks and need adequate time duration to recover their costs and make their operations viable.

Q17. If the duration of validity of spectrum is to be made lesser than the validity of license, should there be an option with the licensee to renew? What should be the specific conditions for such renewal?

BIF RESP:

The duration of validity of spectrum should be aligned to the validity of the PMRTS license. There can be certain conditions like Rollout obligation for the service area for which PMRTS license and spectrum has been allotted.

In either case, there should be option for renewal of license. Conditions of renewal should be based on the existing conditions subject to review of license /spectrum assignment & allocation policy prevailing at that time.