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Dr J S Sarma
Chairman
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan
Jawaharlal Nehru Marg
New Delhi 110 002.

Sub : **Consultation Paper on Overall Spectrum Management and Review of License Terms & Conditions (Consultation Paper No. 6/2009)**

Dear Sir,

I have carefully gone through the various issues raised in the Consultation Paper and the background of the various policy changes which have been introduced by the DoT from time to time since 1994 till date. Before any new policy is implemented in lieu of the existing policy of issuing new UASL on payment of the specified entry fee for each service area based on the informed 3 stage bidding for 4th Cellular Licenses held in 2001, it will be necessary to keep in view the objectives of the Government for which the earlier policy was adopted viz. improving teledensity in the country and making available the telecom services to the consumers at affordable rates. India is now having more than 500 million phones (2nd highest in the world next to China only), the lowest tariffs in the world, and teledensity of more than 43 as compared to less than 5 in 1994. The very fact that these objectives have not only been met but also surpassed the Government's expectations/targets speaks volumes of the success of these policies and fully justifies their adoption. In the past it has been recongnised by the Authority that the Government's objective should not be to raise the financial resources from telecom licensing but to encourage building of adequate telecom infrastructure in the country and improving teledensity in all areas.

The fact that spectrum is a precious limited resource and should be optimally and efficiently utilized was well known to the Government right from the very beginning when Cellular Mobile Services were opened to competition and the first two Cellular Mobile Licenses issued during 1994/1995. This fact is enshrined in NTP 1999 based on which the licensing policy was changed from fixed license fee to revenue sharing regime. Keeping in view the limited availability of spectrum in India in commercial 2G Bands (800 MHz/900 MHz/1800 MHz), the Government had decided to club the spectrum with the license, initially allocate spectrum of 4.4.+4.4 MHz and allot additional spectrum beyond the start up spectrum based on a stringent "subscriber linked" (SLC)criteria for spectrum allocation, so that there is no hoarding of spectrum and it is efficiently utilized by the deserving operators. In case of auction of spectrum there is a possibility that not only the cost of spectrum may become prohibitively high but also it may be cornered beyond their requirement by the operators having strong financial muscle thus depriving their competitors of this essential resource. Suitable safeguards must, therefore, be built into any new policy for allocation of spectrum to CMTS/UAS Licensees so that competition is not compromised. After due process of consultation the Authority had stated in Para 2.79 of its recommendations dated 28th August, 2007 that in the 2G Bands (800/900/1800 MHz), the allocation through auction may not be possible as the service providers were allocated spectrum at different times of their license and the amount of spectrum with them varied from 2x4.4 MHz to 2x10 MHz for GSM technology and 2x2.5 MHz to 2x5 MHz for CDMA technology. This position still exists and no new developments have taken place in the last 2 years for availability of spectrum in these bands necessitating any change in policy.

There are already 12-14 CMTS/UAS Licensees who have been allocated varying 2G spectrum for providing Cellular Mobile Services in different service areas. Even if all the spectrum in these bands is made available for allocation to telecom operators, it will not be enough to provide spectrum even upto 2x8 MHz to all the existing 2G players. Therefore, no new licenses should be issued for providing 2G services. Since Government has decided to auction spectrum for 3G and BWA services and the companies who are not having UAS License at present are eligible to bid and if successful they will have to acquire UASL for providing the services, in our view, it is necessary to delink the allocation of spectrum from the new UASL to be

issued in future. Since the market based price will be charged for 3G and BWA spectrum, any new successful company which is not having UASL at present should be issued new license without 2G spectrum for a nominal payment. The entry fee amount may be decided keeping in view the entry fee for NLD/ILD licenses which have been issued on all India basis on payment of nominal entry fee of Rs. 2.5 crores.

In the light of the above general remarks, I am giving in the annexure my detailed response to the various questions listed in Chapter 4 of the Consultation Paper. This is based on my association with Telecom sector in India for the last about 50 years. I hope the authority will find these inputs useful in making its recommendations to DoT.

Thanking you & with kind regards,

Yours sincerely,

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Encl : as above

CC : 1. Mr R N Prabhakar-Member

2. Mr R Ashok-Member

2. Mr Sudhir Gupta-Advisor

Spectrum requirement and availability

1. **Do you agree with the subscriber base projections? If not, please provide the reasons for disagreement and your projection estimates along with their basis?**

Ans: Yes, I agree with the subscriber base projection given by TRAI in the Consultation Paper. At present about 14-15 million phases are being added every month. Even if this rate comes down to about 10 millions per month, the subscriber base will grow by 550 to 600 million in the next 5 years. Therefore, by end of 2014 India is likely to have more than one billion wireless subscribers.

2. **Do you agree with the spectrum requirement projected in ¶ 1.7 to ¶1.12? Please give your assessment (service-area wise).**

Ans : We are already having 12-15 licensees in different service areas for 2G GSM networks. Even if, it is presumed that 8 MHz is adequate for providing optimum spectrum efficiency in the dense business district in the service area and the entire 100 MHz GSM spectrum in 900/1800 MHz bands is available for telecom services, it will not be adequate to meet the requirement of all the existing operators.

The Authority has assumed that there will be only 5 operators in each service area for providing 3G/BWA services. Since there are already 12-15 operators for 2G services in different service areas if, only 5 operators are provided spectrum for providing 3G/BWA services, the remaining 2G operators may find it difficult to compete with the operators providing both 2G and 3G services.

Because of intense competition for 2G services the present tariffs in India are the lowest in the world. This has helped in phenomenal growth of the number of subscribers (about 15 million per month). With only 5 player for 3G Broadband services, the competition is going to be limited and, therefore, tariffs are likely to be comparatively high. In my view more spectrum for 3G and high speed data services like HSPA etc. should be made available for telecom services.

The Authority has projected total requirement of spectrum in various bands to the extent of 582 MHz (approx) for the next 5 years. I feel that this is too short a period and the spectrum requirements may be

projected for the next 10 years. Timely action should be taken for reforming the spectrum presently being used by the departments like Defence, I&B and Department of Space etc.

3. How can the spectrum required for Telecommunication purposes and currently available with the Government agencies be re-farmed?

Ans : Since there is a tendency among all Government Departments to protect their present spectrum allocations and to over project their future requirements, I suggest that Government may set up a committee of independent experts, who are not associated with any Department, to work out a plan for re-farming all spectrum in various bands which have been internationally harmonized for providing 2G, IMT and Broadband wireless services. The committee may also recommend as to how the existing users should be financially compensated so as to enable them to adopt new and more efficient technologies or to shift to frequency bands not in use for commercial telecom services.

4. In view of the policy of technology and service neutrality licences, should any restriction be placed on these bands (800,900 and 1800 MHz) for providing a specific service and secondly, after the expiry of present licences, how will the spectrum in the 800/900 MHz band be assigned to the operators?

Ans : (i) While the telecom licenses are technology neutral, the spectrum is not technology neutral. The various frequency bands have been internationally harmonized so as to avoid interference between networks using different technologies. For example, the GSM and CDMA networks can not co-exist in 900/1800 MHz bands. If, in a particular frequency band no interference is caused due to co-existence of different technologies, no restriction need be placed for providing a specific service.

(ii) The present CMTS/UASL are extendable by 10 years at a time on terms and conditions mutually agreed between the licensee and the licensor. The companies who have invested thousands of crores of rupees for setting up the networks and have millions of subscribers will definitely get their licenses extended on expiry of the present term of the license. Therefore, in my view it will be hypothetical to suggest as to how the spectrum in 800/900 MHz bands should be assigned to the operators after the expiry of the present licenses.

5. **How and when should spectrum in 700 MHz band be allocated between competitive services?**

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6. **What is the impact of digital dividend on 3G and BWA?**

Ans : The spectrum availability in 700 MHz band should be determined. We understand that except for a few assignments of spectrum to AIR for digital radio in a few places, the entire 700 MHz band is available and should be assigned for providing telecom services as soon as possible. Entire 700 MHz band (698-806 MHz) be allocated for mobile broad band services in FDD duplexing mode with a 2 x 50 MHz arrangement (with 8 MHz center gap).

Chapter 2

Licensing issues

7. **Should the spectrum be delinked from the UAS Licence? Please provide the reasons for your response.**

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8. **In case it is decided not to delink spectrum from UAS license, then should there be a limit on minimum and maximum number of access service providers in a service area? If yes, what should be the number of operators?**

Ans : Since UAS License will be required by any new company not having UAS License at present and getting 3G/BWA spectrum in the proposed auction, it is recommended that the spectrum should be delinked from UAS License. As the entire 2G spectrum if made available (800/900/1800 MHz bands) for telecom services will not be adequate to provide even 2 x 8 MHz spectrum to each of 12-15 operators in different service areas, we recommend that no new 2G license should be issued. If, the spectrum is continued to be clubbed with the UASL the new stand alone 3G/BWA operators will have to pay very high entry fee for the UASL without getting any 2G spectrum in the near future. This will discourage new operators to bid for 3G/BWA spectrum in the forthcoming auctions.

9. **What should be the considerations to determine maximum spectrum per entity?**

Ans : The following considerations should be kept in view while determining the maximum spectrum per entity.

i) The subscriber density in the most dense business district
ii) The minimum distance required between adjoining BTS to avoid interference
iii) The minimum spectrum required for getting optimum efficiency of spectrum utilization
iv) The optimum cost (Capex) for providing a network to cater to the anticipated subscriber base.
v) Total spectrum availability for providing a particular service and the number of licensees for that service in a specific service area. There should not be too wide a disparity between spectrum assignment to different licensees for sake of fair competition.

10. Is there a need to put a limit on the maximum spectrum one licensee can hold? If yes, then what should be the limit? Should operators having more than the maximum limit, if determined, be assigned any more spectrum?

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11. If an existing licensee has more spectrum than the specified limit, then how should this spectrum be treated? Should such spectrum be taken back or should it be subjected to higher charging regime?

Ans : Keeping in view the considerations mentioned in reply to Q 9, there is a need to specify the upper limit for spectrum for a licensee. Since the present M&A guidelines permit the merged entity to have up to 40% of the subscribers in the service area and also it is likely that some of the existing operators will be providing both 3G and 2G services the maximum limit for spectrum for one licensee be fixed as 25% of the total 2G and 3G spectrum available in the service area.

At present no entity (except MTNL) is having more than 10 MHz+10 MHz spectrum in any service area. This is below the suggested limit of 25% of total spectrum availability (both for 2G and 3G) in service area. Even if, an operator having 10 MHz of spectrum gets one slot of 3G spectrum, the total spectrum availability will not exceed 2 x 15 MHz. Therefore, in the near future possibility of any entity having more than 25% of spectrum in a service area does not exist. However, in the event of merger of 2 companies if the total spectrum of the merged entity exceeds the upper limit specified, the merged entity should be asked to surrender the additional spectrum within a period of one year.

12. In the event fresh licenses are to be granted, what should be the Entry fee for the license?

&

13. In case it is decided that the spectrum is to be delinked from the license then what should be the entry fee for such a License and should there be any roll out condition?

Ans : The present entry fee of Rs. 1651 crores for a PAN India license is entirely due to the spectrum being clubbed with the license. In my opinion if the spectrum is delinked from the license the UASL for each service area may be issued on payment of the following nominal amounts.

i) Metro and "A" category circles - Rs. 1 crore
ii) "B" category circles - Rs. 50 lacs
iii) "C" category circles - Rs. 25 lacs

14. Is there a need to do spectrum audit? If it is found in the audit that an operator is not using the spectrum efficiently what is the suggested course of action? Can penalties be imposed?

Ans : Since spectrum is at present being allocated based on a strict subscriber linked criteria (SLC) and all spectrum is proposed to be auctioned in future, there is no need to carry out any audit for determining whether an operator is using the spectrum efficiently or not. There should be no penalties as in case an operator does not use the spectrum efficiently, it will not be able to survive in intensely competitive market which exists in India.

15. Can spectrum be assigned based on metro, urban and rural areas separately? If yes, what issues do you foresee in this method?

Ans : No, Spectrum should not be assigned separately for metro, urban and rural areas. It will be too difficult to manage such assignments as it will be difficult to segregate the entire subscriber base into area wise subscribers (metro, urban, rural subscribers) when the entire circle is a single service area and any subscriber can purchase a SIM at any place in the service area. Moreover, the license fee and spectrum charges are being charged for the AGR of the entire service area. It will be unfair to the operators to assign different spectrum for different parts of the same service area.

16. Since the amount of spectrum and the investment required for its utilisation in metro and large cities is higher than in rural areas, can asymmetric pricing of telecom services be a feasible proposition?

Ans : Asymmetric pricing of Cellular Mobile Services in large cities and rural areas in a service area is not a feasible proposition. Since a subscriber can buy a SIM in a rural area and use it in any city/town without paying any roaming charges in the same service area, asymmetric pricing of service may lead to pilferage of revenue of an operator by unscrupulous subscribers. Moreover, in actual practice the cost of providing services in the rural areas is much more than in the cities and in fact the telecom services in rural areas are already being subsidized by the urban subscribers.

M&A issues

17. Whether the existing licence conditions and guidelines related to M&A restrict consolidation in the telecom sector? If yes, what should be the alternative framework for M&A in the telecom sector?

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18. Whether lock-in clause in UASL agreement is a barrier to consolidation in telecom sector? If yes, what modifications may be considered in the clause to facilitate consolidation?

Ans : In view of the unsustainable competition at present with 12-15 licensees (CMTS/UASL) in each service area, it is necessary for the health of the industry that consolidation should be encouraged and facilitated. The restriction on merger of a new licensee with another company for a period of 3 years and the sale of equity by the promoters should be removed. However, it is necessary that suitable safeguards be provided in any M&A policy to ensure that there is adequate and fair competition in any service area.

19. Whether market share in terms of subscriber base/AGR should continue to regulate M&A activity in addition to the restriction on spectrum holding?

Ans : Yes, the present limit of 40% in terms of subscriber base/AGR for the merged entity should continue.

20. Whether there should be a transfer charge on spectrum upon merger and acquisition? If yes, whether such charges should be same in case of M&A / transfer / sharing of spectrum?

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21. Whether the transfer charges should be one-time only for first such M&A or should they be levied each time an M&A takes place?

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22. Whether transfer charges should be levied on the lesser or higher of the 2G spectrum holdings of the merging entities?

Ans : Since spectrum has so far been clubbed with licenses and is allocated beyond the initial start up spectrum based on SLC, a reasonable spectrum transfer charge may be levied for the spectrum allocated beyond 2 x 6.2 MHz for GSM and 2 x 5 MHz for CDMA. This charge should not be too high as otherwise this will discourage the M&A activity. The spectrum usage charges may be levied on the lesser of the spectrum holdings of the merging entities.

23. Whether the spectrum held consequent upon M&A be subjected to a maximum limit?

Ans : Yes, the spectrum held consequent upon M&A should be subjected to a maximum limit of 25% of the total spectrum (2G+3G) allocated in the service area to all the licensees.

<u>Spectrum Trading</u>

24. Is spectrum trading required to encourage spectrum consolidation and improve spectrum utilization efficiency?

Ans : Spectrum trading should be allowed only in respect of 3G and BWA spectrum which is proposed to be auctioned. Since spectrum at present is allocated based on a strict subscriber linked criteria and the total spectrum allocated to any entity is minimal and a less than the average spectrum allocation in other countries, there is hardly any possibility of an operator having any spare spectrum to be traded. Consolidation of spectrum should be encouraged by facilitating M&A.

25. Who all should be permitted to trade the spectrum ?

Ans : Spectrum is a precious limited resource and should be efficiently utilized for providing various telecom services. Trading may lead to hoarding and black marketing of spectrum as any entity having strong financial muscle may get the spectrum in an open auction. Higher cost of spectrum will lead to higher tariffs and may impact the teledensity in rural and remote areas where the people may have lesser affordability.

26. Should the original allotteex who has failed to fulfill "Roll out obligations" be allowed to do spectrum trading?

Ans : If the Government in its wisdom decide to permit spectrum trading, there should be no restrictions to fulfill the roll out obligations because after the net work has been rolled out the spectrum can not be delinked from the network for trading.

27. Should transfer charges be levied in case of spectrum trading?

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28. What should be the parameters and methodology to determine first time spectrum transfer charges payable to Government for trading of the spectrum? How should these charges be determined year after year?

Ans : Any spectrum trading charges if levied should be reasonable as otherwise this will adversely effect the cost of spectrum for the user resulting in higher tariffs for the subscribers. These charges may be fixed as 10-15% of the per MHz price of spectrum determined on the basis of the latest auction held for similar spectrum in the specific service area**.**

29. Should capping be limited to 2G spectrum only or consider other bands of spectrum also? Give your suggestions with justification.

Ans : Since 2G, 3G and WIMAX spectrum can be used for providing similar services like voice, data, video etc. any capping of spectrum holding by an entity should include spectrum in all bands which can be used for providing cellular services.

30. Should size of minimum tradable block of spectrum be defined or left to the market forces?

Ans : The minimum tradable block of spectrum should be left tto the market forces.

31. Should the cost of spectrum trading be more than the spectrum assignment cost?

Ans : Yes, normally the sale price of spectrum by an entity will be more than the spectrum assignment cost. However, it will depend on "supply and demand" in the service area. It is likely that in some cases an entity may get spectrum at a very high cost in an open auction and may not be subsequently able to find a buyer at a higher price.

Spectrum sharing

32. Should Spectrum sharing be allowed? If yes, what should be the regulatory framework for allowing spectrum sharing among the service providers?

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33. What should be criteria to permit spectrum sharing?

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34. Should spectrum sharing charges be regulated? If yes then what parameters should be considered to derive spectrum sharing charges? Should such charges be prescribed per MHz or for total allocated spectrum to the entity in LSA?

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35. Should there be any preconditions that rollout obligation be fulfilled by one or both service provider before allowing the sharing of spectrum?

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36. In case of spectrum sharing, who will have the rollout obligations? Giver or receiver?

Ans : In order to encourage consolidation and more efficient utilization of spectrum, spectrum sharing amongst various operators in a service area should be encouraged. Each licensee should fulfill its roll out obligation under the license. There should not be such a precondition that spectrum sharing shall be allowed only after the roll out obligation has been fulfilled by both the service providers. Since all the licensee sharing the spectrum will be paying their own entry fee, license fee

and the spectrum charges etc., there should be no additional charge for spectrum sharing.

Perpetuity of licenses

37. Should there be a time limit on licence or should it be perpetual?

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38. What should be the validity period of assigned spectrum in case it is delinked from the licence? 20 years, as it exists, or any other period

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39. What should be the validity period of spectrum if spectrum is allocated for a different technology under the same license midway during the life of the license?

Ans : The UAS licenses, if delinked from spectrum may be issued in perpetuity. All the existing licenses have been granted for 20 years but are extendable for a further period of 10 years at a time on suitable terms and conditions mutually agreed to between the licensor and the licensee. We recommend that this provision may be modified and the licenses may be extendable for a period of 10/20 years at a time depending upon the choice of the licensee. The spectrum, if delinked from the license should be valid for a period of 20 years. Spectrum allocated for providing dual technology networks under the existing UASL is linked with the license and hence should be co-terminous with the license period. All the spectrum under existing terms and conditions of the UASL is not allocated at the same time but on achievement of subscriber base and traffic as per the prescribed SLC from time to time. But the validity of the spectrum assigned at different times will be ending on the same date as the validity period of the license.

40. If the spectrum assignment is for a defined period, then for what period and at what price should the extension of assigned spectrum be done?

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41. If the spectrum assignment is for a defined period, then after the expiry of the period should the same holder/licensee be given the first priority?

Ans : At the end of the defined validity period of the spectrum assignment the existing holder should have the first right of refusal. The one time charge for the extension of the validity period of the spectrum assignment be determined prorata to the price determined during the last auction for a nearby spectrum band and for providing similar type of services.

Uniform License Fee

42. What are the advantages and disadvantages of a uniform license fee?

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43. Whether there should be a uniform License Fee across all telecom licenses and service areas including services covered under registrations?

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44. If introduced, what should be the rate of uniform License Fee?

Ans : It will be advantageous to have uniform license fee for all types of telephone licenses viz CMTS, UASL, NLD, ILD etc. This will remove the possibility of any arbitrage and the manipulation of revenues earned by the operators for providing telecom services under different licenses. Since at present the minimum license fee for NLD, ILD and UASL in category "C" service areas is 6% of AGR, this should be charged as the uniform license fee for all types of telecom services. Since all licensees are not PAN India integrated service providers, any enhancement of the license fee on account of arriving at weighted average of license fee at present, would be unfair and may lead to litigation.

Chapter 3

Spectrum assignment

45. If the initial spectrum is de-linked from the license, then what should be the method for subsequent assignment?

Ans : If the initial spectrum is de-linked from the license for any new UASL to be issued in future for stand alone 3G/BWA winners, than

subsequent assignment of spectrum should also be through the auction process.

46. If the initial spectrum continues to be linked with license then is there any need to change from SLC based assignment?

Ans : If the initial spectrum is continued to be linked with the license, than there is no need to change the present SLC system for assignment of additional spectrum beyond the initial start up spectrum.

47. In case a two-tier mechanism is adopted, then what should be the alternate method and the threshold beyond which it will be implemented?

Ans : In case a two-tier mechanism is adopted, which I highly recommend, spectrum up to 2 x 10 MHz for GSM systems and 2 x 5 MHz for CDMA systems should be assigned as per SLC. Spectrum beyond this threshold may be assigned by auction process or by charging a fixed one time spectrum charge as recommended by the Authority vide Para 2.77 of its recommendations dated 28th Aug, 2007 on "Review of License Terms & Conditions and Capping of number of Access Providers". This is necessary for ensuring level palying field amongst all existing licensees.

48. Should the spectrum be assigned in tranches of 1 MHz for GSM technology? What is the optimum tranche for assignment?

Ans : Spectrum beyond 2 x 6.2 MHz for GSM technology may be assigned in tranches of 1 MHz.

49. In case a market based mechanism (i.e. auction) is decided to be adopted, would there be the issue of level playing field amongst licensees who have different amount of spectrum holding? How should this be addressed?

Ans : As recommended earlier, no new UASL should be issued for providing 2G services as total available spectrum is not adequate even for the existing 12-15 licensee in each service area. If any new mechanism (auction) is adopted for assignment of spectrum to existing licensees beyond the initial start up spectrum of 4.4/6.2 MHz, it will definitely lead to issues of level playing field as some of the existing operators have already been allocated spectrum beyond 6.2 MHz up to 10 MHz under the SLC applicable from time to time. It is on these considerations that the Authority had earlier recommended vide Para

2.79 of its recommendation dated 28th Aug, 2007 that in the 2G bands (800/900/1800 MHz) the allocation through auction may not be possible as the service providers were allocated spectrum at different times of their license and the amount of spectrum with them varies 2 x 4.4. MHz - 2 x 10 MHz for GSM and 2 x 2.5 MHz - 2 x 5 MHz for CDMA technology. This situation still exists and therefore, no change in earlier recommendations by TRAI is warranted.

50. In case continuation of SLC criteria is considered appropriate then, what should be the subscriber numbers for assignment of additional spectrum?

Ans : Since new and more efficient technologies will continue to be developed over time, the SLC criteria may be reviewed once in 3 years. The present criteria has been laid down only about a year back and should continue to be adopted at least for the next 2 years.

51. In your opinion, what should be the method of assigning spectrum in bands other than 800, 900 and 1800 MHz for use other than commercial?

Ans : Spectrum in bands other than 800/900/1800 MHz for uses other than commercial may be assigned either by auction or by payment of a fixed one time charge and spectrum usage charges based on the extent of demand and availability. In case the demand is much more than the availability, an open auction will be the most transparent and fair mechanism for assignment of spectrum.

Spectrum pricing

52. Should the service providers having spectrum above the committed threshold be charged a one time charge for the additional spectrum?

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53. In case it is decided to levy one time charge beyond a certain amount then what in your opinion should be the date from which the charge should be calculated and why?

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54. On what basis, this upfront charge be decided? Should it be benchmarked to the auction price of 3G spectrum or some other benchmark?

Ans : The existing service providers having spectrum beyond 2 x 6.2 MHz for GSM system have been assigned spectrum on payment of higher spectrum usage charges depending upon the total quantum of spectrum assigned to them. These assignments have been done based on stringent SLC after due consideration by the Government at the highest level, keeping in view the objectives of continued growth of telecom services and desired QOS. The additional spectrum was allotted as per guidelines, orders and eligibility criteria prevalent from time to time. DoT has taken a similar stand recently in a matter pending before the TDSAT. In the light of this the question of charging one time charge for additional spectrum beyond any committed threshold does not arise. However, if the Govt. in its wisdom decide to levy one time charge for spectrum beyond the committed threshold of 6.2 MHz, option should be given to the existing operators having spectrum beyond 6.2 MHz to pay prorata one time charge for the remaining period of their licenses and pay spectrum usage charge @ 3%. Per MHz charge may be determined based on the average price determined in the forthcoming 3G auction for Metro, Category A, B & C service areas. One time charge should be uniform for each category of service area.

55. Should the annual spectrum charges be uniform irrespective of quantum of spectrum and technology?

Ans : It will be highly desirable to have uniform annual spectrum charges irrespective of the quantum of spectrum assigned and the technology deployed. Since spectrum beyond the initial start up spectrum of 4.4 MHz for GSM and 2 x 2.5 MHz for CDMA systems has been assigned based on a strict subscriber linked criteria, an operator who has been assigned higher quantum of spectrum will be having higher number of subscribers and accordingly the higher annual revenue (AGR). He will thus be paying higher spectrum charges even in case of a uniform spectrum usage charge of 2-3%.

56. Should there be regular review of spectrum charges? If so, at what interval and what should be the methodology?

Ans : In my opinion, there is no need for regular review of spectrum usage charges. In order to enable the operators to take informed business decisions and make huge capital investments in developing telecom infrastructure, there should be certainty of the levies payable by them towards license fee, one time spectrum charges, if any, and the annual spectrum usage charges.

Structure for spectrum management

57. What in your opinion is the desired structure for efficient management of spectrum?

Ans : National Frequency Allocation Plan (NFAP) is already being reviewed every 2-3 years based on inputs from various user organizations and the international developments. This mechanism should be continued.

Since spectrum is a limited precious resource, all the users including Government Departments/Agencies like Defense, Department of Space, I&B etc. must pay for it. Their present assignments should be reviewed by a high level committee of independent experts not belonging to any of these organizations. The various organizations using old and inefficient technologies should be made to switch over to new technologies requiring lesser amount of spectrum. They may be suitably compensated for the additional cost involved in this process from the spectrum charges realized from various users.