



**RCOM Comments on Consultation on
Auction of Spectrum**

Comments on Consultation Paper on Auction of Spectrum

- (i) Without prejudice to our rights to have Spectrum up to 6.2 MHz as part of Contractual Commitment between Govt and RCOM
- (ii) RCOM welcomes the opportunity to comment on issues concerning Auction of Spectrum. **RCOM's comments on consultation paper on Auction of Spectrum are entirely without prejudice to and under reservation of our right to receive 2x6.2 MHz GSM Contracted spectrum against the entry fee already paid.**
- (iii) The Unified Access Service licensees have valid contractual agreement with the Government to receive 2x6.2 MHz GSM spectrum and 2x5 MHz CDMA spectrum bundled with the license against the one entry fee. It is a legitimate right and existing contractual compliance requirement to receive this 2x6.2 MHz GSM and 2x5 MHz CDMA spectrum.
- (iv) We have concerns and apprehensive of the fact that the Supreme Court Judgment in the matter of Centre for Public Interest Litigation and others Vs UOI in the Civil writ petition no 423 of 2010 **has not examined in detail on the issue of allocation of additional spectrum within contracted spectrum against the entry fee, considering the legacy allocations of Initial Spectrum, Contracted Spectrum and Spectrum beyond Contracted Spectrum to incumbent players, new players and Dual technology players. Therefore, the Supreme Court judgment for allocation of spectrum through Auction may not be extended for allocation of additional 2G spectrum within in the Contracted limit to the existing UASL holders against auctioning.**
- (v) **The existing UAS Licensees eligible to receive additional spectrum** i.e amount over and above initial 4.4 MHz spectrum and upto contracted limit of 6.2 MHz **2G spectrum within the contracted limit should be considered to have the deemed first right to receive the spectrum even before allocation of spectrum through auction.** The total quantity of 2G spectrum to be put for auctioning should be decided only after meeting the requirement of eligible UAS/CMTS licensee.
- (vi) RCOM welcomes the allocation of 2G spectrum through auction in the 800 and 1800 MHz spectrum after the spectrum requirement of existing service providers under the terms laid down in the UAS License and within the contracted limit is met. The Auction would certainly bring **transparency** and **equality** in the allocation of 2G spectrum.

Our Response to the consultation paper is given below:

Q1. How can the various principles outlined by the Hon'ble Supreme Court in various observations brought out in Para above be sufficiently incorporated in the design of spectrum auction?

The issues of **competition, equality, public interest, public trust** have been outlined in the Supreme Court judgment. The auction design based on the following suggestions would help these principles to be addressed truly:

Equality:

- (i) Obligation of the Government towards the existing operators for their requirement to be met upto the contracted spectrum i.e 6.2/5 MHz for GSM/CDMA.
- (ii) Adequate 2G spectrum is put for auction in each LSA to ensure that the existing players can have upto the prescribed limit of 8/10 and 5/6.25 MHz 2G spectrum so that they are able to compete on equal terms with the old incumbent players.
- (iii) By restricting the incumbent operators who have more than 6.2 MHz spectrum from participation in the forthcoming Auction and thus help achieve the objective of equitable distribution of spectrum.
- (iv) Balance the supply/demand situation of Spectrum by ensuring that the sufficient quantum is put up for 2G auction of 1800/800 MHz.
- (v) To create a level playing field amongst incumbents, new and prospective TSPs for equal **quantum in 900 MHz and 1800 Mhz** spectrum band.

Competition:

- (i) Liberalisation would distort and deflect the intended direction of the Supreme Court for 2G Auctions and also prevent the desired principles outlined by SC as above to be properly addressed. Liberalisation of spectrum at this stage should not be allowed as it will be a complete deviation from the Supreme Court Directive to auction 2G spectrum.
- (ii) An entirely free and open auction allowing all the players has a substantial risk in that the old incumbent operators who already have large spectrum holdings beyond the Contracted and Prescribed Limits may resort to such practices in auction preventing entry of new operators .These old incumbent operators are also likely to affect the possibility of additional allocation of Spectrum with in the Contracted and Prescribed Limits to the new existing operators by bidding for more spectrum beyond the Regulator defined 2G CAP limits and thus inhibit the competition in the 2G industry. Competition is to be promoted through 2G spectrum Caps.

Public interest-

- (i) The aim of the auction should be just not only to maximize revenue to the National Exchequer. The affordable, ubiquitous service to the consumer thro a sustainable Telecom operator industry should be at the heart of all telecom policies. In line with **that sufficient spectrum should be made available to meet the 2G spectrum demand** for telecom Operators to come out with sustainable business plans to meet the demands from varied segments of the society ,especially at this stage of the growth where different Socio Economic Class of India expects to be part of the Inclusive India. Regulatory recommendation should help achieve this Public Interest of the 2 major stake holders i.e Telcos and Consumers and ensure that the auctioned spectrum price do not get to the inflated levels through artificial scarcity created in the Auction design/process.
- (ii) Public interest of affordable, scalable and QoS enabled 2G service can only be ensured through a sound and stress tested techno-economic model based reasonable reserve price to be set for 2G spectrum, considering the true reflection of current market conditions in 2012-13.

Public Trust

- (i) The auction design for 2G spectrum to encourage sincere bidding which is free from collusion, predation, artificial demand reduction etc.

Q2. What are the key objectives to be kept in mind in the auction of the spectrum?

The objectives to be met through Auction are suggested below:

Level Playing Field

- (i) To ensure a level playing field between TSPs by giving them an opportunity to be able to have access to the critical mass of spectrum of atleast 6.2 MHz and also providing forward path upto the **“Prescribed Limit.”**
- (ii) To create a level playing field amongst incumbents, new and prospective TSPs for equal quantum of spectrum as per the Prescribed Limit by specifying this as cap limit.
- (iii) To create a level playing field amongst incumbents, new and prospective TSPs for equal **quantum in 900 MHz and 1800 MHz** spectrum.

Optimal

- (i) Uncertainty in 2G Industry to be removed and, sustainability

- Quantum of Spectrum** should be the most important criterion by putting enough spectrums for auction of 1800/800 MHz spectrum.
- (ii) To ensure the adequate availability of spectrum for the forthcoming expansion need of the society especially from the hinterland India.
- Current Market Reflected**
- (i) To decide the Reserve Price of spectrum considering the current 2012-13 driven market conditions of higher generic costs ,higher levels of capex, opex, significantly new current tariffs ,both local and STD being the same level different supply, demand and demographics scenarios ,different terrain to be covered during 2013-14 onwards etc.
- (ii) The Reserve prices should reflect the Government objective for Tele-density improvement rather than only addressing the maximising revenue potential for National exchequer.
- Focus on 2G and Responsive to Supreme Court's observations**
- (i) Hon'ble Supreme Court of India direction is triggered by 2G related issues for grant of licence and allocation of spectrum in 2G band in 22 Service Areas and thus auction is recommended to be implemented .Thus there should not be any and linkages to the Liberalization of Spectrum Use. **Liberalisation is itself a fairly involved and a new concept and this alone requires a new Consultation as is being done in the rest of the world.**

Q3. What should be the amount of spectrum which should be auctioned?

- (i) The amount of spectrum to be auctioned should take into account the following:
- a. Ability to meet the requirement of all existing TSPs for **initial/contacted** limit.
 - b. To provide growth path for all current Spectrum holders who do not have Prescribed Limit of Spectrum to go upto the Prescribed Limit
 - c. Prevent any operators to hold spectrum more than the Prescribed Limit
- (ii) After meeting the requirement of eligible operators for additional spectrum upto the Contracted limit, the remaining spectrum in 1800 MHz and 800 MHz spectrum should be allocated through auction for 2G GSM and CDMA based services respectively upto the Prescribed Limit.

- (iii) **The incumbent operators holding excess spectrum beyond Contracted Spectrum of 6.2 MHz should be asked to surrender the excess spectrum held by them.**
- (iv) **The spectrum that is going to be made available by Defence forces in next 400 days and the excess spectrum surrendered by the incumbent operators should be included in the available spectrum for auction.**
- (v) **The 900 MHz spectrum band should be refarmed immediately. The current holder should be relocated in the 1800 MHz spectrum band. The vacated 900 MHz spectrum band should be allocated in blocks of 2.2 MHz to existing operators on auction discovered price for 1800 MHz at 1.5 times.**
- (vi) Balance the supply/demand situation of the 2G Spectrum by ensuring sufficient quantum of spectrum to be put for 2G auction of 1800/800 MHz spectrum. Creation of artificial scarcity of 2G spectrum for revenue maximisation for National Exchequer should be avoided as that is not consistent with the Telecom Policy objective of affordable services and Sustainable Industry and also against Supreme Court outlined principles as mentioned in our response to Question1 .
- (vii) **Hence all available spectrum should be auctioned and nothing should be withheld.**
- (viii) **In 1800 MHz the total spectrum to be put for auction should include spectrum available in the following categories:**

Spectrum available as per the information on WPC website

(+)Spectrum vacated on cancellation of 122 licenses

(+)Spectrum withdrawn from operators holding excess spectrum i.e above 6.2 MHz

(+) Spectrum to be vacated by Defence in next 400 days.

(-)Spectrum in 1800 MHz allocated to incumbent operators in lieu of their current holding in the 900 MHz spectrum band

Q4. Should the spectrum be liberalised before it is put to auction?

- (i) Hon'ble Supreme Court of India in its judgment has directed that TRAI shall make fresh recommendations for grant of licence and allocation of spectrum in 2G band in 22 Service Areas by auction. Liberalization of 800/1800 MHz for possible use of advanced UMTS/LTE technologies will distort the 2G Auction process ,disturb the level playing field ,affects the Govt policy of

acquiring right value for Spectrum for such use in relevant bands and for applicable quantum considered essential for such liberalised usage. **Also this Liberalisation is beyond the scope of the directive of SC Directive and Govt's intended objectives.**

- (ii) The trigger for 2G auction is Supreme Court judgment and accordingly spectrum should be auctioned as per the principles and direction of that judgment.
- (iii) Auction of spectrum linked to Liberalisation for use of advanced 3G/4G service will change the dynamics of the market which is already plagued with many issues of Non Level playing field. The spectrum should not be liberalised unless level playing field is ensured.
- (iv) The liberalised use of 800 MHz and 900/1800MHz at this stage will distort competition in the Indian mobile markets. This distortion arises because there is uneven holding of 900/1800 MHz spectrum bands. The incumbent operators would be able to dedicate some part of the spectrum for existing 2G operations and the rest they would use for advanced 3G/4G services. Thus liberalisation will directly alter the established balance of long-term network capacity between operators and the service delivery capability of the operators.
- (v) The larger spectrum holdings by incumbent operators would provide them with significant technical and commercial advantages with the liberalised use.
- (vi) The imbalance to be caused by spectrum liberalisation will substantially distort the mobile market and would lead to marginalisation or even lead to the exit of network operators within sufficient spectrum holdings.
- (vii) The Service providers have paid Rs 16,750.58 cr for 2x5 MHz pan India spectrum in 2.1 GHz spectrum band for 3G services. **Liberalisation of 900/1800MHz spectrum will lead to increase in the total 3G spectrum supply from current level to a much higher level without any payment being involved.** Thus operators who have enough spectrum and are able to provide 3G services in 900/1800 MHz will hugely benefit without having to pay Rs 16,750 cr for 2x5 MHz spectrum for upgrading to 3G services.
- (viii) The liberalised use of spectrum is to be allowed only after level playing field is achieved through equitable distribution of spectrum and through payment of higher license/spectrum charges applicable for 3G/4G service. **Without meeting the level playing field objective of the 2G spectrum**

liberalisation may be unlawful and also cause huge loss to the National Exchequer.

- (ix) TRAI is requested to keep a note of the Supreme Court judgment, principle of equality, level playing field enunciated in the judgment, and disparities between the holdings of different operators while deciding the liberalisation policy. **Without equitable distribution spectrum, liberalisation will only distort competition in the market. It is therefore suggested that spectrum should not be liberalised at this stage.**

Q5. For the re-farming of 800 and 900 MHz bands from the existing licensees, which of the three options given above should be adopted? Please elaborate with full justification.

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Q6. What are the issues that may arise in the above mentioned re-farming process?

First proposal: Withdrawal of 800/900 MHz spectrum

800 MHz Spectrum

- (i) Withdrawal of 800 MHz spectrum can be considered only when alternate spectrum is available for relocation of CDMA subscriber base. However there is no discussion in the paper for any alternate path for CDMA operations.
- (ii) At present, re-farming of 800 MHz spectrum is not an appropriate decision as sufficient spectrum in 2G band is to be made available in 22 Service Areas for existing operators as well as new operators so that they have scalable operations and are able to effectively compete in the market.

900 MHz

- (iii) The 900 MHz should be refarmed immediately as sufficient spectrum is available in 1800 MHz to relocate existing operators. It will not be possible to carryout refarming subsequently as spectrum to relocate incumbents in the 1800 MHz spectrum band would not be available.
- (iv) No operator needs more than 2.2 MHz spectrum in 900 MHz for coverage. The remaining spectrum in 900 MHz is being used for the purpose of capacity. **As the capacity requirement upto 6.2 MHz can be met using 1800 MHz spectrum band, the existing 900 MHz operators for spectrum requirement**

beyond 2.2 MHz can be relocated in 1800 MHz spectrum band without hurting any operator and any sacrifice to QoS/capacity and coverage requirements..

- (v) 2.2 MHz spectrum in 900 band will help new operators to reduce significant number of sites over 1800 band network and it will be economically viable to deploy GSM network in Rural India. 2.2 MHz spectrum in 900 band will be sufficient for Rural India to meet the coverage & capacity objective as population density is very low. To meet the coverage / capacity requirement in Urban India, operator may acquire additional spectrum in 1800 band.
- (vi) The refarming of 900 Mhz spectrum band immediately will be in line with the principle of quality laid down by the SC for allocation of spectrum. Thus it is suggested that 900 MHz spectrum band should be immediately refarmed and allocated in block sizes of 2.2 MHz.
- (vii) The pricing of 2.2 MHz should be based on auction discovered price for 1800 MHz and at 1.5 times the 1800 MHz price

Second and Third Option: Spectrum Refarming of 800/900 MHz to provide 4G services

- (viii) We strongly oppose second and third option as it will distort competition in the Indian mobile markets, The proposals will benefit only existing holders of 900 MHz spectrum band as they have large holding in 900 and 1800 MHz spectrum bands which can be combined. These operators will be able to planning the allocation and utilising the spectrum for advanced 4G services.
- (ix) The benefit to provide advanced UMTS/LTE services in existing band to only few incumbent operators would provide them with significant technical and commercial advantages with the liberalised use in providing mobile data at high download speeds.
- (x) The imbalance likely to be caused by spectrum refarming in the proposed second and third option will lead to a highly skewed factor in the mobile operator market and would lead to marginalisation or even lead to the exit of new 3G operators who do not have access to sub-GHz spectrum band.
- (xi) **Not ensuring the equitable access to the spectrum for use of advanced UMTS/LTE services would lead to a non-level playing field. It will also not be in the public interest and would not be supported by public trust.**

Conclusion

In view of the above it is suggested that

- **900 MHz spectrum bands should be refarmed immediately.**
- **900 MHz spectrum band should be allocated equally in block size of 2.2 MHz.**

Q7. For new technologies e.g. UMTS/LTE, 5 MHz is the minimum amount of spectrum required. Certain licensees have only 4.4 MHz spectrum in 900 MHz band and 2.5 MHz spectrum in 800 MHz band. What are the possible options in case of such licensees?

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Q8. Some GSM spectrum allocations may be interleaved between operators; to avoid fragmentation, reconfiguration between operators may be required. Whether frequency reconfiguration is required and what are the challenges and possible solutions?

- (i) It has been submitted above that the Hon'ble Supreme Court of India in its judgment has directed that TRAI shall make fresh recommendations for grant of licence and allocation of spectrum in 2G band in 22 Service Areas by auction.
- (ii) **Liberalization of 800/1800 MHz for advanced UMTS/LTE is beyond the scope of SC judgment.** The trigger for 2G auction is Supreme Court judgment and 2G spectrum should be auctioned as per the principles and direction enunciated in the judgment. **Any matters related to the standard Channel plans i.e sub 5Mhz or 5 MHz or 10 MHz etc to be adopted for launching new LTE Advanced services should be a part of a PURE Play 4G Auction plan.** First step is to ensure the level playing field amongst the existing 2G players by helping all of them to have access to 6.2 MHz each and 900 MHz spectrum is equally distributed. Let the GSM industry attain that status. A stable and sustainable 2G industry is a must for a possible 4G launch where in the available 2G NW Infra of Towers, BTS /BackHaul and the Core NW are supposed to be exploited.3GPP2 proposed schemes like Carrier Aggregation (CA) to help utilise multi band Spectrum holding by Operators would address the issues of fragmented Spectrum/ Contiguous Spectrum etc. As mentioned above 4G Auction needs to be entirely separate spreading across the 2 bands of 700 MHz and 2500 MHz bands. **Carrier Aggregation techniques can be used effectively used.** In any case Auction of spectrum for advanced 3G/4G service at this stage will change the dynamics of the market. Therefore this issue is not relevant at this stage.

- (iii) Further, it has also been submitted above that the incumbent operators have large spectrum holding and they would be able to dedicate some part of the spectrum for existing 2G operators and the rest for advanced 3G/4G services. Thus liberalisation at this stage will only benefit operators with large spectrum holding and directly alter the established balance of long-term network capacity between operators.
- (iv) Therefore, the **Liberalised use of spectrum at this stage will not be possible.**
- (v) **The option of Liberalised use of existing 2G spectrum bands for UMTS/LTE services may be considered only after 2G spectrum is equitably distributed to meet the 2G Auction objectives as outlined above.**

Q9. Should the re-farming of spectrum in 800/900 MHz bands be dealt independently or should a comprehensive approach be adopted linking it with the availability and auctioning of 700 MHz band?

- (i) **The 900 MHz spectrum bands may be re-farmed immediately as spectrum in 1800 MHz spectrum band is available to relocate existing holders. The re-farming of 900 MHz and reallocation in blocks of 2.2 MHz at this stage will help new operators to cost effectively cover rural areas.**
- (ii) **800 MHz can be refarmed when spectrum in alternate band is available to relocate current holders.**

Q10. Which of the two approaches outlined above be adopted?

At present 800/ 900 MHz spectrum band is being used for 2G services. The 700 MHz spectrum band will be auctioned for advanced LTE services. **Debarring existing 2G licenses from participation in 700 MHz would be extremely unfair and highly discriminatory.** Also all over the world all existing TSPs use their established NW Infra, NW operations and marketing NW to be able to launch the 4G services on incremental investment basis. This would help them to offer 4G Broadband services at most economical level. Regulator cannot deny the availability of 700 MHz Spectrum access chance to the existing 2G/3G operators .They should be given a fair chance to enable them to provide and effectively compete on advanced broadband services market segment.

Therefore when auction takes place, all licensees should be allowed to participate in the auction.

Q11. When should 700 MHz spectrum be auctioned?

Q12. Should the auction in 700 MHz band be linked with the granting permission for the liberalized use of 800/900 MHz band?

Q13. How much spectrum in 700 MHz band should be put to auction initially and what should be the amount of spectrum which a licensee should be allowed to win in that auction?

- (i) **4G services cannot be launched at affordable level by any operator without stable and sustainable 2G operation.** 4G operators require to exploit the existing NW / Operational ,Customer Support and Marketing infrastructure thus minimizing the investments for incremental 4G network related CAPEX and OPEX. **Also the 4G Industry all over the world is in nascent stage with only soft launches done with very limited coverage and very limited Devices availability.** In developed countrymarkets where there is a supposedly available 4G market , inspite of high cost of device, high CAPEX per subscriberlevel and abundant availability of 4G spectrumthem,TSPs are not finding a viable business case. In India the situation is entirely different where the 2G services have not yet reached the level of sustainability,3G service adoption is pretty low at high cost with minimal 3G spectrum holding on per operator basis.
- (ii) **Nowhere in the World 4G has reached a level of affordability with a scalable and sustainable business plan.** India can ill afford the adoption of 4G in 2013 time frame,as we do not even align with the Globally harmonised Spectrum Plan in the 698 -706 band. We need device eco system for meeting our channel plan. Multiband (8 band support for Global roaming use)2G/3G/4G Smart Phones are required for the launch. China is still contemplating on its own home grown TDD mode for 700. **Hence the timing is not right for 700 Auction and not to be mixed with 2G Auction.**
- (iii) The 700 MHz spectrum availability is very limited in India. To have an effective 4G service with enough competition, the spectrum in 700 MHz would have to be combined with spectrum in other bands 2500 MHz. Hence the 700 MHz spectrum auction should only be taken up once the spectrum in 2500 MHz spectrum band is also available.
- (iv) **Thus any action contemplated for 700 MHz should be deferred till global market matures with available devices and infrastructure in 2015.**

Q14. What should be the structure of the auction process?

- (i) After meeting the requirement of additional 1.8 MHz spectrum for existing eligible licensees upto the Contracted spectrum limit, the allocation in 1800 MHz may be considered for Start Up and additional allocation of spectrum.

- (i) Independent auction should be conducted for the following categories:
 - **Auction of 4.4 MHz GSM for Start-up spectrum needs for new licensees**
 - **Auction of 2.5 MHz CDMA Start up spectrum needs for new licensees**
 - **Auction of additional 1.8 MHz GSM spectrum beyond the Contracted spectrum for existing licensees subject to the condition that the spectrum cap i.e Prescribed limit is not violated.**
 - **Auction of additional 1.25 MHz CDMA spectrum for existing licensees subject to the condition that the spectrum cap i.e Prescribed limit is not violated.**

Q15. Should auction be held in single stage or multi stage?

RCOM suggest that the Simultaneous Multiple-Round Auction(SMRA) format should be adopted.

- (i) Typically most SMRA use eligibility points to manage the auction which should also be used for 2G Auction.

- (ii) Eligibility points are a means to ensure that bidders do not increase the amount of spectrum they bid on from one round to the next and that switching from one category to another is broadly consistent with the expected relative values of these categories. For example eligibility point for Circle A and metro should be higher than Circle B or Circle C. **By specifying eligibility points bidders will not be able to bid for a package with an associated eligibility that is greater than the eligibility of its bid in the previous round.**

- (iii) Properly chosen eligibility points in a clock auction facilitate the truthful expression of values among alternative licensed areas. Poorly selected eligibility points can result in unduly long auctions.

- (iv) In India spectrum can be auctioned simultaneously for 22 circles but separately for four categories mentioned above in response to the Q 14. The eligibility

points for these circles can be decided based on ARPU, Geography, teledensity etc.

- (v) The auction should not end when for the 1st time demand in all circle is Zero or negative. It should continue for one more round to enable bidders who have lost out in the last round due to demand moving in from others circles.
- (vi) **There should be separate SMRA for 4 categories mentioned under Q14 for Start-up and Additional GSM and CDMA spectrum in 1800 MHz and 800 MHz spectrum band.**

Q16. Should there be a simultaneous auction for spectrum in 800 and 1800 MHz bands?.

- (i) No, there should **not** be simultaneous auctioning for 800 and 1800 MHz spectrum band.
- (ii) **800 MHz is for CDMA and 1800 MHz for GSM services. Auctions for 800 MHz and 1800 MHz frequency should therefore be treated as entirely two separate auctions. The mobile services on CDMA platform and GSM platform have totally different ecosystems associated with them and the revenue/MHz are significantly different. This has direct bearing on spectrum valuation.**
- (iii) In views of the above it is suggested that the spectrum in 800 MHz and 1800 MHz should be auctioned separately for a true and fair determination of their respective market values. However CDMA and GSM spectrum for 22 circles may be auctioned simultaneously.

Q17. What should be the block size of the spectrum?

Q18. Should the block size be dependent on the frequency? If so, what should be the block size in each band?

- (i) **The total quantity of 2G spectrum to be put for auctioning may be decided only after meeting the requirement of eligible UAS/CMTS licensee to receive the additional spectrum within the Contracted limit .**
- (i) Block size will depend on Spectrum as separate auctions are proposed for CDMA and GSM.

- GSM spectrum in 1800 MHz band should have block sizes of 4.4/1.8 MHz for Start-up/Additional spectrum.
- CDMA spectrum in 800 MHz band should have block sizes of 2.5/1.25 MHz spectrum band for Start-up/additional spectrum.

Q19. Should there be a cap on amount of spectrum one can bid? If so, what should it be?

- (i) As submitted above, existing licensees have widely varying amounts of spectrum which tend to minimise and suppress competition. Incumbents have large spectrum holding upto 10 MHz which has become a constraint on the availability of adequate spectrum for Auction for Equitable distribution.
- (ii) Policies which support unlimited access to spectrum, administratively or through an auction, will provide strong incentive for incumbent operators to acquire a level of spectrum holdings and this may marginalise or foreclose their competitors, undermining their ability to compete sustainably with the incumbents in the future.
- (iii) TRAI has held that Indian operators have spectrum requirement only upto the prescribed limit i.e 8/10 MHz for GSM and 5/6.25 MHz for CDMA for serving the Indian Subscriber base with reasonable market share. If operators holding spectrum more than the prescribed limit are allowed to participate in the auction then it would make it impossible for few operators to reach even the minimum efficient scale with 6.2 MHz spectrum. The spectrum holding beyond the Prescribed limit by incumbents would create spectrum capacity constraint for new operators preventing effective competition.
- (iv) Adherence to the Prescribed limits will protect effectively against strategic bidding being employed to reduce competition. Spectrum caps thus would create a “level playing field”. **RCOM considers application of Prescribed limit cap which is 10 MHz in Delhi & Mumbai and 8 MHz in other circles for GSM and 6.25 MHz in Delhi & Mumbai and 5 MHz in other circles for CDMA will substantially equalise spectrum holdings that would secure optimum competition in the Telecom market and going forward would facilitate spectrum liberalisation.**
- (v) In view of the above RCOM recommends that there should be a cap equivalent to the prescribed limit.

Q20. Should there be a separate cap on the total amount of spectrum one can hold; if so, what amount should it be?

- (i) Yes, there should be band wise separate caps. The CDMA spectrum and GSM spectrum should have following spectrum caps:

	<u>GSM</u>	<u>CDMA</u>
Delhi/Mumbai	2x10 MHz	2x6.2 MHz
Rest of India	2x8 MHz	2x5 MHz

Q21. Should there be a cap on the amount of spectrum one can hold in respect of sub-GHz spectrum? If so, what should it be?

- (i) Supreme Court Directive is for level playing field in 800/1800 MHz spectrum allocation. We already commented earlier with sufficient justification that liberalization should not be done at this stage of auction.
- (ii) We also explained why re-farming of 800 MHz spectrum band is not possible as the alternate spectrum to relocate existing CDMA operators is not available.
- (iii) The 900 MHz should be refarmed and allocated to operators in block size of 2.2 Mhz to meet their coverage requirement. Thus giving any reference for sub-GHz spectrum by remotely hinting combinatorial usage of spectrum spread across 700, 800 and 900 MHz bands is highly unjustified at this stage of auction for 2G spectrum.
- (iv) Therefore at this stage when we are considering 2G auction, the issue of consideration a cap on the amount of spectrum one can hold in respect of sub – GHZ band is not appropriate.
- (v) **This issue can be considered after spectrum has been liberalized and re-farmed. The Only CAP to be applied now is the Prescribed Limit .**

Q22. Who all should be eligible to participate in the auction?

- a. Only licensees whose licences have been cancelled;
- b. Only eligible applicants as on 10.01.2008;
- c. Only licensees whose licences have been cancelled and all new eligible entrants at the time of auction; or
- d. Open to all including the existing Licensees.

- (i) The eligibility condition to participate in the 2G spectrum auction is suggested as under:

For New GSM and CDMA Spectrum License

- All entities which undertake to take UASL after successful bid

For Additional Allocation of Spectrum beyond 6.2 MHz GSM Spectrum and 5 MHz CDMA spectrum

- All existing UASL and CMTS operators except operators holding spectrum beyond the 'Prescribed Limit' spectrum of 8 MHz/10 MHz for GSM in circles and metros respectively and 5 MHz/ 6.25 MHz for CDMA in circle and metros respectively from participating in the auction. **The operators holding spectrum equal to or beyond the Prescribed Limit should not be allowed to participate in the auction.**

Q23. What should be reserve price per MHz of spectrum in the year 2012 for 1800 MHz band?

- (i) The reserve price can be fixed on the basis of final bid price of the 4th Cellular license i.e. Rs. 1658/- crore pan India for 1800 MHz spectrum for a period of 20 years as this is the last reference price available for 2G spectrum price. Considering the time value of money, the amount of Rs. 1658 crore can be suitably indexed for both inflation and cost of money i.e PLR. However, the reserve price based on indexation on 2001 price alone will be improper as the societal conditions, demography, affordability etc have changed. The changes that have taken place since 2001 are given below:

S No	Criteria	Unit	2001	2014	Change
1	Total Addressable market	Mn	600	180	-70%
2	MOU	Minutes	600	331	-45%
3	ARPU	Rs/sub	500	93	-81%
4	Opex for passive/Active NW	Rs Mn/sub	100	172.61	-73%
5	SAC	Rs / gross add	450	150	67%
6	IUC charge	Rs/min	0.5	0.23	54%
7	Churn	% per annum		24%	
8	Spectrum quality (coverage and capacity)				
9	Capex				-28%
10	Fibre backbone costs (24 core) including ROW	Rs Mn/km	0.44	0.68	-56%
11	Terrain coverage	Sq km of area/sub addition	40	160	-300%

- (ii) The weighted average impact of various competitive indices mentioned above is around 66% on the 2001 auction discovered price for 6.2 MHz spectrum. Effectively the Indexed price should be discounted by at least 3 times to get the equivalent reserve price.
- (iii) **Therefore the reserve price based on Indexation method for 1800 MHz band for 6.2 MHz block on Pan India basis should be in the range of Rs 1800 crores to Rs 2100 crores.**
- (iv) Expert Committee based report taken as the reference by TRAI had many questionable assumptions and all Operators expressed serious reservations. Thus the EXPERT Committee report of TRAI is to be ruled out.
- (v) All over the world recent auctions have all been for 4G and therefore globally auction discovered prices for 800/1800MHz spectrum for 4G services has no relevance to the reserve price for 2G spectrum auction. Therefore option to decide 2G spectrum reserve price based on global auctions for 4G services should be ruled out.
- (vi) To establish the right level of Reserve price for 1800 MHz spectrum for 2G services which truly reflects the current market conditions is the absolute need of the hour. Therefore TRAI may consider the 2001 price benchmark as adjusted for PLR but discounted for various competitive indices mentioned above which have impacted the telecom sector since 2001 .
- (vii) A high reserve price for spectrum is likely to reduce spectrum demand and also reduces the opportunities for price discovery. Thus high reserve prices can lead to an inefficient outcome. For an auction to be competitive and efficient there needs to be excess demand for spectrum relative to the available supply. Greater participation can contribute towards a more efficient outcome and may also lead to greater revenues.
- (viii) In view of the above it is requested that TRAI should:
 - consider the 2001 price benchmark as adjusted for PLR but discounted for various competitive indices mentioned above which have impacted the telecom sector since 2001 for deciding the reserve value of spectrum
 - **The reserve price based on Indexation method mentioned above for 1800 MHz band for 6.2 MHz block on Pan India basis should be in the range of Rs 1800 crores to Rs 2100 crores..**

Q24. What should be the reserve price per MHz of spectrum in the 700/800/900 MHz bands.

Reserve Price for 700/800/900 MHz Spectrum for 4G

- (i) The 800/900 MHz spectrum value for 4G services should not be discussed at this stage as explained sufficiently above.
- (ii) Even the 700 MHz spectrum auction for LTE technology at this stage is not mature, device eco system is not adequate, infrastructure equipment not available in scalable production volumes with right configurations etc . Propagation models for indoor/outdoor suiting the Indian terrain for Micro/Macro/Femto/Pico deployment of 700 MHz are not yet attempted. Indian industry yet to get familiar to evolve a techno economic and business feasibility models for 700 MHz based 4G network deployment. Even voice over LTE is not proven and standards are still being evolved.
- (iii) **It may be noted that 700 MHz spectrum band has much higher coverage advantage compared to the 2.3 GHz spectrum band. Hence the value of 700 MHz spectrum should be atleast 3 times the auction discovered price of BWA in 2.3 GHz band.**

Reserve Price for 800 MHz Spectrum for CDMA

- (i) As mentioned above the reserve price for 800 MHz spectrum band should not be based on earlier prices as the market conditions have significantly changed. Further, the eco system for CDMA and GSM technologies are different resulting in entirely different valuation of 800 MHz spectrum for CDMA and 1800 MHz spectrum for GSM.
- (ii) The CDMA spectrum in 800 MHz has much lower value compared to 1800 MHz as has been estimated below based on change completeive parameters for CDMA market:

S No	Criteria	Unit	2001	2014	Change
1	Total Addressable market	Mn	600	23.2	-96%
2	MOU	Minutes	600	230	-62%
3	ARPU	Rs/sub	500	71	-86%
4	Opex for passive/Active NW	Rs Mn/sub	100	172.61	-73%
5	SAC	Rs / gross add	450	300	33%
6	IUC charge	Rs/min	0.5	0.23	54%
7	Churn	% per annum		18%	
8	Spectrum quality (coverage and capacity)				
9	Capex				-28%
10	Fibre backbone costs (24 core) including ROW	Rs Mn/km	0.44	0.68	-56%
11	Terrain coverage	Sq km of area/sub addition	40	160	-300%

- (iii) The weighted average impact of various competitive indices mentioned above is around 80% on the 2001 auction discovered price for 5 MHz CDMA spectrum. Effectively the Indexed price should be discounted by at least 5 times to get the equivalent reserve price.
- (iv) **Therefore the reserve price based on Indexation method for 800 MHz band for 5 MHz block on Pan India basis should be in the range of Rs 1000 crores to Rs 1200 crores.**
- (v) Considering the above mentioned reasons the reserve price for 800 MHz should be much lower than the 1800 MHz spectrum. **The TRAI's earlier recommendation to price 800 MHz spectrum band for CDMA at 1.5 times the 1800 MHz spectrum band is not based on any techno-economic study and not consistent with market realities and was simply done based on a simple coverage criterion .**

Therefore it is suggested that:

- a. the reserve price for 800 MHz spectrum band for CDMA service should be lower than 1800 MHz spectrum band for GSM service.
- b. the reserve price based on Indexation method for 800 MHz band for 5 MHz block on Pan India basis should be in the range of Rs 1000 crores to Rs 1200 crores.
- c. The 700 MHz spectrum band has much higher coverage advantage compared to the 2.3 MHz spectrum band. Hence the value of 700 MHz spectrum should be at least 3 times the auction discovered price of BWA in 2.3 GHz band.

Q25. Whether the reserve price should be uniform across the country or service area wise?

- (i) No, reserve price should not be uniform.
- (ii) The reserve price depends on available market, buying power, geography, number of operators etc. Each circle differs significantly on these parameters and therefore reserve price should be decided circle-wise.

Q26. What should be the roll out obligations linked to the auctioned spectrum?

What should be the roll out obligations linked to the auctioned spectrum?

- (i) Given that spectrum is a valuable and scarce natural resource, any spectrum allocated should be efficiently used. For level playing field rollout obligation similar to the obligation provided in the UAS License may be linked to the auctioned spectrum.

- (ii) In case any bidder already has spectrum in the 800, 900 or 1800 MHz spectrum band and has already met the rollout obligations provided in their UAS license then there should not be any additional rollout obligation applicable for the Post 2G Auction now .
- (iii) The following rollout obligations as already laid down in the UASL is recommended for 2G spectrum allocated through auction to new operators:
 - Circles
 - At least 10% of the District Headquarters (DHQs) will be covered in the first year and 50% of the District Headquarters will be covered within three years of effective date of Licence.
 - Coverage of a DHQ/town would mean that at least 90% of the area bounded by the Municipal limits should get the required street coverage.

Metro

- To provide coverage in 90% of the service area at street within one year of the effective date.

27. What should be the annual spectrum usage charge for the spectrum being auctioned?

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Q28. Should the spectrum usage charge be in line with present criteria of escalating charge with the amount of spectrum holding or a fix percentage as was done for 3G and BWA spectrum?

- (i) There is a legacy of payment of spectrum usage charges depending upon the quantum of spectrum held by the service provider. As revenue earned from the spectrum allocated administratively and through auction cannot be segregated, the spectrum usage charge for GSM & CDMA spectrum respectively should be on the on the respective revenues earned on the GSM and CDMA services.
- (ii) The cumulative amount of 900&1800 spectrum allocated **administratively and through auction** should be counted for calculating the slab of the total spectrum holding by a service provider for levies of spectrum usage charges for GSM services. Similarly **the cumulative amount of 800 MHz spectrum allocated administratively and through auction should be counted** for calculating the slab of the total spectrum holding by a service provider for levying of spectrum charges for CDMA services.

- (iii) **For a 2G operator who has obtained spectrum only through auction the spectrum usage charge should be as per the charges defined on slab basis for an existing operator.**

29. What should be the period of validity of spectrum?

- (i) The validity of 2G spectrum allocated through auction should be 20 years.
- (ii) If the period of an existing UAS/ CMTS licence of an operator expires before the expiry of the right to use the 2G Spectrum awarded by means of the current auction, then the validity of the UAS/ CMTS licence with respect to the auctioned 2G Spectrum should be extended to 20 years.

Q30. What should be the period of price of spectrum?

- (i) As all future spectrum allocation is through auction only; there is no validity period for such price is required.

Q31. Should the government allow deferred payment schedule of the spectrum auction fee, or should the payment be upfront in nature?

- (i) The flexible auction payment programme will have lot of beneficial effect on Telecom growth and merits serious consideration. In many countries Phased payment plans have been adopted for successful bidders to pay their winning bids in instalments over the term of the license. The instalment payment reduces funding cost which will help faster rollout of services especially in hinterland areas.
- (ii) The lump sum payment of bid amount puts difficult financial burden on winning bidders just at the time when they are beginning to invest in infrastructure. To overcome this, it is suggested that the winning bidders may be permitted to pay the amount of their winning bid in instalments over a long term horizon.
- (iii) The TRAI is requested to consider formulation of the yearly payment plan of winning bid amount. The yearly payment of bid amount in instalments would help debt ridden industry to limit cost and provide affordable services to the citizens. The annual payment of bid amount can be indexed against the wholesale /consumer price index so that government revenues are protected.

- (iv) There are number of options to devise payment schedule for bid amount. The TRAI may consider that winning bidders pay only 25% of the amount of their bids after auction and remaining 75 per cent would be paid in future instalments.
- (v) TRAI may consider options of payment of remaining 75% of the bid amount in 10 to 15 years. **Given this staggered payment schedule, the payments can be revenue-neutral for the government in present value terms by indexing it against the WPI.**
- (vi) **The Government can securitise the Spectrum Fee by specifying the bank gurantee equivalent to the annual spectrum auction fee instalment.**
- (vii) Many regulators around the world who have implemented auction payments in instalments.
- (viii) **In view of the above it is suggested that a deferred payment schedule of the spectrum auction fee may be adopted. This will increase the bid amount which would be a win win situation for the bidder and the government.**

Q32. Should Spectrum trading be allowed in India?

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Q33. (a) Among the various models discussed above, in your opinion which model of spectrum trading is best suited for India?

(b) In your opinion is there any other model which can be implemented in India? If yes, please describe.

&Q34. What should be the eligibility criteria to trade the spectrum?

Q35. Whether the spectrum assigned for 3G and BWA services be allowed to trade? If yes, give reasons.

- (i) **The current licensing framework does not permit spectrum trading. The TRAI in its recommendations dated 11.5.2010 had recommended that the spectrum trading should not be allowed to be traded as the amount of spectrum available is limited.**
- (ii) **The Government in its recent decision dated 15th February, 2012 has accepted TRAI recommendation that spectrum should not be allowed to be traded.**
- (iii) We have adopted a policy that there should be effective competition in the market with more than number of players rather than to have a policy of spectrum allowed to be traded. The spectrum trading will only encourage spectrum hoarding so that it can be traded at a premium.

- (iv) Spectrum if traded at premium may have implication on tariff. Therefore, trading may prove to be counterproductive.
- (v) Spectrum is a national asset with Govt having a sovereign right over it. Natural resource is allowed for use for a certain period and should not be allowed to be traded during that period. The TRAI should specify spectrum cap equivalent to the Prescribed limit so that there is no excess spectrum, no hoarding and no possibility of Trading.
- (vi) In view of the above it is suggested that spectrum trading should not be allowed.**

Q36. Can spectrum be allowed to be mortgaged for raising capital for telecom purposes?

- (i) Yes Spectrum should be allowed to be mortgaged.
- (ii) The Telecom licences which are bundled with the spectrum are assigned to the lender based on the tripartite agreement entered among lenders, licensor and the licensee. This gives the right to lenders in case of default to replace the licensee by new operator but with the consent of the licensor. The Tripartite Agreement takes care of possible eventualities in the case of material default by the licensee or termination of telecom licenses by the licensor.
- (iii) The Tripartite agreement has served a very useful purpose for raising capital for telecom projects. This should continue even after delinking of spectrum from the license.**
- (iv) The license/ spectrum fee paid by the licensees is considered as an intangible asset in the books of the licensees. As per RBI instructions, the licenses/ spectrum fees are to be treated as intangible assets. Spectrum is a primary asset of any telecom operator and is an essential requirement for any operator to implement its business. Since spectrum is classified as intangible asset, when banks provide funds for rollout of business plan or for meeting entry fee/ BG requirement, the loans to that extent have to be treated as unsecured loans, even though the licenses are assigned in favour of the lenders.**
- (v) Holding unsecured assets on the banks books have in turn several implications in terms of lower ratings, higher provisioning, etc. In case the future spectrum is priced at higher levels, as in the case of 3G spectrum then lenders may not be in a position to fund these business plans considering the unsecured nature of the lending.**
- (vi) Hence TRAI may recommend that the spectrum may be allowed to be mortgaged.**