



21st March 2012

**Mr. Sudhir Gupta,
Principal Advisor (MS)
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan
Jawahar Lal Nehru Marg (Old Minto road)
New Delhi-110002**

**Subject: Tata Teleservices response to TRAI Consultation Paper No 04/2012
on "Auction of Spectrum" dated 7th March 2012.**

Dear Sir,

With reference to your Consultation Paper dated 7th March 2012 on '**Auction of Spectrum**' seeking comments of the stakeholders, please find attached herewith the comments of Tata Teleservices Limited and Tata Teleservices (Maharashtra) Limited [together referred as TTL].

This is for your information and records please.

Thanking you and assuring you of our best attention always.

Yours sincerely,

**Anand Dalal
Senior Vice President – Corporate Regulatory Affairs
Tata Teleservices Limited
and
Authorized Signatory
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Enclosure: As above

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Tata Teleservices Response to TRAI Consultation Paper No 04/2012 on “Auction of Spectrum” dated 7th March 2012.

Notes:

- The replies to various questions are without prejudice to the Review Petition filed by Tata Teleservices Limited (TTL).
- We note that the Authority, based on public consultations had, in the years 2007 and 2010, recommended against auction of 2G spectrum in 800, 900 and 1800 MHz bands. We therefore assume that the current consultation process is in response to the mandate of the Hon’ble Supreme Court and that it does not necessarily mean that the Authority has changed its earlier stand on this issue.

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?

A1. The Hon’ble Supreme Court has recognized spectrum as natural resource and the State is the legal owner of the natural resources as a trustee of the people. It is empowered to distribute the same but the process of distribution must be guided by the constitutional principles including the doctrine of equality and larger public good. It has also held that auction is the best method to distribute the spectrum. The various principles outlined by the Hon’ble Supreme Court of India may be sufficiently incorporated if the auction is designed keeping in mind the following basic principles:

- **Equality & Competition** - Adequate amount of spectrum should be put on block for auction without creating artificial scarcity. This would lead to fair discovery of the actual market price of the natural resource. This would also ensure fair competition in the market.
- **Public Trust** - The auction should ensure public trust by making it transparent and fair. All policy issues should be explicitly covered in the auction document and any subsequent clarifications issued which should be explicitly in writing. The unfortunate stand taken by DoT before Hon’ble TDSAT that various clarifications issued by it before 3G auction are not



binding on it has created atmosphere of uncertainty amongst operators and investors.

- **Public interest** – Spectrum is a natural and hence national resource and it should be utilized for the welfare of “Aam Aadmi”. The aim of auction should be to lead to affordable services to public. Revenue earnings by the GoI is a byproduct and maximization of revenue should not be an objective for the auction.
- **Non – arbitrary & Transparent** - The views of the stakeholders must be considered while framing the rules of auction.

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

A2. It has been seen that an auction is not universally a successful method of spectrum allocation to meet national objectives. Several auctions in India and abroad have failed to lead to subsequent network rollout and the creation of affordable services to the public, but were hailed as success because of high revenues collected by the exchequer. Some examples are as follows:

- **United States 1995:** The first US auction netted huge bids. Soon after, a number of “successful” bidders declared bankruptcy. This was repeated in the 1995-1996 “C”-Block auctions.
- **India 1994:** This auction in 1994 was followed by various problems for operators from overbidding and default. The sector recovered only after many years, when the bids were set aside in favour of revenue-sharing after announcement of NTP-99. It took almost a decade before a reduction in revenue share (lower fees) and tariffs (calling party pays) led to explosive growth in mobile telephony from mid-2004.
- **United Kingdom 2000/European Union 2001 (3G):** Considered as spectacular success, netting about \$35 billion in the UK, followed by high bids in Austria, Germany and Italy that netted over \$100 billion, these auctions raised about ten times the amount expected. The markets collapsed thereafter, and the bidders couldn’t service the debts incurred. Companies have taken a decade to recover, moving cautiously even now on 4G. Indian telecom sector, unfortunately, is travelling on the same path due to misplaced



priorities (revenue considerations rather than affordability of services to consumers) .

- **India 2010 (3G and BWA):** Hailed as a success, with over Rs 1,06,262 crores bid, lacklustre performance has followed, as companies struggle with having paid too much to corner spectrum. 3G operators have struggled to get customers and revenues to offset the cost of spectrum and none of the BWA operators has even launched services nearly two years after the auction. The model inherently was flawed and led to revenue maximization and not a true determination of market value for the spectrum. Such mechanisms should be kept out of the construct of the auction model & process. Opportunities for gaming the auction model should be prevented.

Notwithstanding above, spectrum has a substantial economic value. Telecommunication services derived from spectrum are purchased not just directly by customers, but also form a key input into nearly every sector of a modern economy. Therefore, it is essential that Governments should have appropriate over-all growth objectives when allocating spectrum in order to realize these benefits for the economy and citizens. The following key objectives should be kept in mind for the auction process:

- **Efficient Utilization of Spectrum for the greater good:** It means placing spectrum in the hands of those who are able to create greatest overall economic and societal benefit from it. Given the importance of services derived from spectrum for the wider economy, it would be best to seek to maximize the overall benefit to society from spectrum, rather than simply maximizing receipts from spectrum sales in the short-run.

Revenue generation should not be an objective of the Government through the auction process. Tenth Five year Plan ending in 2007 also had its objective as follows: “*With a view to ensuring optimum growth in the coming years, Government’s broad policy of taxes and regulation for the telecom sector has to be promotional in nature. **Revenue generation should not be a major determinant of macro policy governing the sector.** The licence fees need to be aligned to the cost of regulation and administration of Universal Service Obligation (USO).*”



In fact Government has continued with the same thinking when it indicated similar views through the draft National telecom Policy. Quote *“In achieving the goals of National Telecom Policy 2011 revenue generation will play a secondary role.”* Unquote.

- **Efficient Allocation of Spectrum – create downstream competition:** It must ensure that downstream competition in providing spectrum-derived services to end-users remains effective. Allowing concentration of spectrum weakens downstream competition – thus creating a monopoly in services. This would come at the expense of consumers and effective long-run use of spectrum would be undermined by lack of competition amongst operators. **Competition for spectrum should be maximized by providing as much spectrum as possible and ensuring as many bidders as possible for spectrum with a level playing field.**
- **Separate but simultaneous auction for different bands** of 800/1800 MHz spectrum and allow true neutrality in terms of what the spectrum can be used for within the terms of the new Unified licenses. Spectrum in different bands is not entirely fungible across services and global bands have emerged where there is an aggregation of operators for specific services around the world. This harmonization has led to scale advantages for operators and technology providers and has thus led to the most efficient use of spectrum and creation of value to consumers. It is also clear that not all spectrum bands have equal use and therefore equal values.

For example with the deterioration in the CDMA ecosystem, the value of the 800 MHz spectrum for CDMA operators is not the same as the value for 900 MHz for GSM operators. Deriving a value for such spectrum by linking the pricing for the two is incorrect, distorts the true value of the two bands and places one set of operators who are already disadvantaged by being in the limited availability 800 MHz band at an even further disadvantage in terms of being able to compete in the market. Therefore each band should be auctioned independently and its own true value independently determined without recourse to linking it to the value of spectrum in other bands. Since all operators have the option to bid in any of the bands, the price so determined would be a fair market price.



- Build an auction model that is fair and seeks to determine a true market price from people who actually wish to buy that particular spectrum. The auction model for 3G and BWA of 2010, by virtue of the way the model was constructed and administered, distorted the fair market price of spectrum by permitting bidders to game the model. This should be avoided.
- Transparency should be observed throughout the auction process where the rules are clear and known to all prior to the auction.
- Level playing field should be maintained amongst all the participants. Operators should be allowed to bid for spectrum upto the Prescribed limit of 8 /10 MHz GSM spectrum and 5 / 6.25 MHz CDMA spectrum in circles and metros respectively.
- Clarity in current spectrum availability and time line for future availability. This ensures that all bidders have a clear view on what is available currently and what will be available in what time frame. Perceived scarcity was one of the factors that also drove up the prices for 3G/BWA spectrum in 2010 and this should be avoided.
- Fair reserve price so as to lead to real market discovery. As the Authority has pointed out in its consultation paper setting too high or low a reserve price does not lead to true market price discovery based on the experience of others in the past.

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

A3. TTL is of the view that the entire spectrum available with the Government including the spectrum made available due to cancellation of licenses and likely to be vacated by the defence should be put to auction and no artificial scarcity of the spectrum should be created by limiting the amount of spectrum put to auction. As discussed in A2, for any scarce resource, the primary economic objective of the Government should be to maximize the net benefits to the society that can be generated from that resource by ensuring an efficient distribution of resources; no purpose will be served by keeping such a resource idle. The unused spectrum brings no benefit to society, consumers or Government. Spectrum allocated to the mobile industry will bring cheaper voice and data services to more people, increase productivity and support other



industries, and reduce the need for additional base stations which in turn mean lower EMF radiation.

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

A4. As opposed to many European countries, there are no policy restrictions in India on usage of any particular band of spectrum for providing a particular type of services. The new Unified license seeks to clarify this even further.

- a) NTP '99 and conditions of UAS license confirm existence of technology and spectrum neutrality. Frequency Allocation Plan (NFAP – 2008) also does not restrict a particular band of frequency for any particular technology but specifies only generic Cellular Telecommunication System.
- b) Access voice, data and video services can be provided using 800, 900/1800 MHz bands (generally known as 2G), 2.1 GHz band (generally known as 3G) and so on. The only difference is that progressively newer technologies use the frequency more efficiently and provide more bandwidth per unit of spectrum.
- c) At the time of 3G auction while replying to a query on whether 3G services can be rolled out in 2G spectrum, DoT had clarified that 'provision of services is governed by the licence held by the service provider' (and not by the spectrum).
- d) Issues which are being raised by various operators or associations are more driven by the intense competition in the market than on any meaningful regulatory basis.
- e) TTL is therefore of the view that there already is sufficient spectrum liberalization in the policy though the implementation in some cases can be strengthened.
- f) There is a need for refarming and harmonization of spectrum in line with the future plans for the telecom sector in the country in order to benefit from the global volumes that this would drive. It is recommended that the harmonization with international bands be done and spectrum that has the potential to be applied for the provision of future services start to be accumulated by the Government for future allocation through a market price determining process in the future.



In this context, it is requested that this be seen with our comments on the re-farming issue for 800 and 900 MHz spectrum.

Q5. For the refarming 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 refarming process?

A5-6. TTL has issues with all the 3 options posed by the Authority for the refarming of spectrum. We feel that none of the options comprehensively addresses the issues of the industry. We specifically address this issue below in the context of 900 MHz spectrum. 800 MHz has a different set of issues that are also addressed below but in a separate section

900 MHz

Looking back on the genesis of the issue, it may kindly be noted that –

- a. The basis for this issue is that operators who came into the market starting from the mid 1990s when services were first launched in mobile were allocated the entire 900 MHz spectrum that was available. Allocations were in many cases done on a first come first served basis and in cases in excess of the contracted spectrum. The allocations were largely based on the criteria of subscriber numbers that were progressively tightened making it more difficult for later entrants to get spectrum as compared to operators who came in before them. Consequently, later entrants were denied spectrum in this band resulting in a differential cost structure for them and the creation of a non-level playing field.
- b. The Government had decided to open the market to multiple entrants without ceilings on the number of players. As a result there are more than 10 operators in each circle competing for scarce resources like spectrum, several of whom have not even been allocated start-up spectrum in some circles or districts. Unless all of them have opportunities to access the same resources, the level playing field issue will never truly be eliminated and one set of operators will face a disadvantage in perpetuity.
- c. Even if we were to assume that there will be consolidation in the market over time, there is never going to be enough spectrum in the 900 MHz band and



- giving each of the operators an equal share of the limited spectrum is going to leave it allocated in sub-optimal chunks in the hands of each of the operators.
- d. The two choices before the Government are to take it away altogether today from the incumbents and either find a way to use it in an “equal opportunity” manner by all operators in the market or to retain it to be allocated for some future applications or services.
 - e. We believe that the only feasible way in the short run is to have it all taken back by WPC and a common network created and access provided to all the operators. This would correct some LPF imbalances as currently few incumbents enjoy 900 MHz band and admittedly make significant savings in CAPEX and OPEX. We have proposed this principle in multiple submissions earlier.
 - f. Examining the 3 proposals of the Authority we find that none of them create this level playing field. Examining each option –
 - i. Option 1 takes back the entire 900 MHz spectrum today from the incumbent operators who have the spectrum and gives them an equivalent amount of 1800 MHz spectrum in its place. But in order to do this it takes out of the inventory a lot of the 1800 MHz spectrum available today for auction leaving inadequate amounts for even the operators who had their licenses cancelled to get the bare minimum start-up level of 4.4 MHz on a pan India basis. This would clearly be unfair to them.
 - ii. Options 2 and 3 leave 5 MHz behind in the hands of the operators who hold the spectrum today with the intention of their offering future services on UMTS/LTE with that spectrum. Our contention is that this would be further unfair to newer operators who not only never got the benefit of the 900 MHz spectrum for even 2G use, but now will never be able to access the spectrum even for future generation services. This is the equivalent of creating a differential access right (practically a right of first refusal) to some operators for future generation telecom services and for the totally unrelated reason that they were the first bidders for 2G services 15 years earlier. This would be a further major distortion of the level playing field principles.
 - iii. Just making the incumbents pay for the value of the spectrum does not also serve the purpose. If the intention is that this 900 MHz spectrum is to be kept for future generation services, then everyone in the business must have an opportunity to bid and acquire it. Let it be taken back by the WPC, aggregated and made available through a separate auction process to all operators.



- iv. There are several parallels in other industries where the Government has exercised its right to take back resources for the larger public good eg. land acquisition for public projects. Just because someone owns a piece of land that is required for a public project (say a bridge or a flyover), he cannot get exclusive rights for such construction on that site nor can he use his right of ownership to prevent such a project that is in the larger public interest. The Government has taken back land for such public purposes where it felt necessary.
- v. Hence we strongly feel that none of the 3 options is fair and truly addresses the issue of the level playing field with respect to 900 MHz spectrum. In fact 2 of the options actually worsen the situation from where it is today.
- g. The alternate solution that we would like to propose is that the spectrum start to be refarmed partially today, to be completed totally as more and more spectrum becomes available for distribution. But in no event should this time period extend beyond the date of extension/renewal of the current licenses starting 2014.
- h. There is a related issue that needs to be addressed. Incumbent operators are currently holding spectrum far in excess of the 6.2 MHz of contracted spectrum. This is partly the reason for limited amounts of spectrum coming into the market for re-bidding. Spectrum in excess of the limits announced by the DoT recently should also be taken back and brought into the auction to increase the total inventory. Spectrum held in excess of 6.2 MHz should also be charged a one-time fee from the date of allocation as per the decision of the Telecom Commission.

800 MHz

- a. Our view on 800 MHz is similar to that is stated above for 900 MHz with the following added complications.
- b. Over the years since 800 MHz was first allocated, its supply has been very limited. Adequate spectrum has never been available for the use of the operators.
- c. Artificial barriers like allocating different levels of spectrum for the same level of subscribers across GSM and CDMA have been set up to effectively constrict the use of this spectrum and the underlying CDMA technology. For example as per the latest spectrum allocation guidelines an operator on 800 MHz CDMA can only have about half as



much spectrum as a corresponding operator in GSM for the same level of subscribers.

- d. No alternate bands have ever been identified or made available to the operators for growth or expansion in the last 15 years despite repeated requests from the operators and associations.
- e. The impact of all the above is that CDMA operators in 800 MHz band have been facing a totally non level playing field in the market. If the typical spectrum that the GSM operators hold in a circle is in the ballpark of 8 – 10 MHz, then the CDMA operators barely have 5 MHz of equivalent spectrum in CDMA.
- f. Technology neutrality as mandated by NTP 99 has not truly been completely implemented.
- g. However in the interest of ensuring that the issues facing the industry are sorted out fairly, we believe that the treatment of 800 MHz should be the same as that of 900 MHz . However the one caveat that we would make is that there are no alternate bands identified in the last 15 years for 800 MHz in CDMA and no spectrum in alternate bands has ever been made available for use by the operators. Contrast this with GSM where 1800 MHz has been an alternate band to GSM for over the last 15 years and even incumbent operators have a mix of allocation of 900 MHz and 1800 MHz and hence have had adequate opportunity to gain experience and operating knowledge in running networks on both bands in GSM. For CDMA operators it is important that adequate cross-over time to an alternate band (that is yet to be identified) be given to ensure that customers and operations are not impacted and any migration of customers happens smoothly.

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?

A7. The solution here is as described in the answer to the previous question. Allowing the holder of this spectrum to retain any or a part of it as a right for future generation services would go against the principles of a level playing field. It must be reformed, aggregated and if it is to be distributed for future use, it has to happen as per a totally separate process of market price determination.



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?

A8. Fragmented allocation of GSM spectrum has happened due to non availability of contiguous spectrum due to usage of the cellular band by other users for non commercial use. However, in present allocation scenario, reconfiguration would be a very difficult exercise. We suggest that fragmentation issue can be taken at the time of extension/renewal of licences.

Q9. Should the refarming 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?

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

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Q11. When should 700 MHz spectrum be auctioned?

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

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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?

A9-13. TTL is of the view that 700 MHz band spectrum should be independently auctioned immediately. Newer generation services are bandwidth intensive and hence ensuring that each operator has adequate spectrum would ensure that services provided are of quality and it is possible for the operator to optimize his network to deliver this quality at the best possible price to the consumer. Our recommendation would be to allocate spectrum in chunks of 10 MHz for new services like LTE because technically lesser allocations lead to sub optimal use of the spectrum.

We also believe that eligibility for bidding for 700 MHz spectrum should not be linked to ownership of spectrum in other bands such as 800/900 or 1800 MHz.



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

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

A14. In view of the uncertainty created by the order for licence cancellation, TTL is of the view that auction process should be such a way that it is completed as early as possible. The latest auction conducted in India for awarding 3G & BWA spectrum blocks was Simultaneous Ascending e-auction conducted over the Internet. Inherent features of the model such as activity levels and simultaneous closing of all circles led to artificially higher prices than would have been bid in a normal auction. The construct led to overall revenue maximization from the auction but in the process distorted market prices that would otherwise have been paid based on business cases. The major drawback of this auction process is the long duration for its completion. If some of the limitations of this model can be removed, then this would be an acceptable mode of auction.

Alternatively, DoT may also consider the three rounds of "Multi Stage Informed Ascending Bids" as done for the auction of 4th Cellular Licence in 2001.

TTL suggests that separate but simultaneous auction should be conducted for 1800 MHz and 800 MHz spectrum.

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

A16. TTL is of the view that CDMA spectrum in 800 MHz and GSM spectrum in 1800 MHz should be auctioned separately but simultaneously for determining a true and fair determination of their respective market values. CDMA and GSM have different economic values and business models. CDMA has much lower ARPU as compared to GSM. CAPEX of CDMA network is much higher than GSM network due to economy of scale. Therefore, the spectrum in 1800 MHz cannot be used to derive the value of 800 MHz spectrum.



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

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

A17-18 As mentioned already, operators should be allowed to participate in the auction upto the Prescribed Limit of 8/10 MHz GSM and 5/6.25 MHz of CDMA spectrum in circles and Delhi/Mumbai respectively.

The unit may be per MHz but there may be different limits on different categories of participants.

- a) Initial spectrum: Those who do not have any spectrum in a circle may be allowed to bid up to 4.4/2.5 MHz of 1800/800 MHz spectrum.
- b) Additional spectrum :Those who have 4.4/2.5 MHz or more spectrum may be allowed to bid for spectrum to reach 8 MHz GSM or 5 MHz CDMA spectrum Prescribed Limits in circles and 10 MHz GSM/6.25 MHz CDMA spectrum in Delhi and Mumbai.

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

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

A19-20. In our view given that only a limited amount of spectrum is becoming available for bidding, priority should be given to those who are below the DoT announced thresholds for spectrum. In future if more spectrum becomes available, then the market can be opened out to all competitors to bid.

The bidding should be open to all operators. However, the incumbent operators should be allowed to participate in the current auction process only to the level of being able to achieve the maximum 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. This will to some extent ensure a level playing field and prevent monopolization of scarce resource which has been happening for the last several years in the industry.



Any operator holding more than Prescribed Limits of spectrum should be asked to surrender it before auction. Such capping on the spectrum holding will improve level playing field.

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?

A21. Presently, two types of technologies are being used in the sub-GHz band namely GSM and CDMA. As discussed in the A20, TTL is of the view that maximum holding of spectrum should be capped to the prescribed limit of 8/10 MHz in GSM and 5/6.25 MHz in CDMA for circle and Metro respectively. 700 MHz band may be dealt separately. Please refer our answers at A9-13.

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.

A22. TTL is of the view that any new eligible entity including those whose licences have been cancelled and the existing licensees should be allowed to bid for spectrum up to the maximum Prescribed Limit 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.

No one should be allowed to acquire more spectrum than that level from this auction in order to achieve the level playing field and to prevent monopolization of scarce resource.



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

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

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

A23-25. Reserve Price should be as low as possible but enough to ensure a fair market discovery. There should be scope to discover true economic value and as the 3G/BWA auctions showed, if there is a demand and value in the spectrum final bid prices can be multiples of a reserve price. The national Teledensity is 77.57%. Urban teledensity is 168.84% and Rural teledensity is 38.04%. ARPUs have fallen substantially and are at Rs 93 pm for GSM and as low as Rs 71 pm for CDMA. Growth has to come from rural areas and the ARPUs in rural areas are as low as Rs 33 pm. Even the pan India price of Rs.1,659 crores derived in 2001 auction may work out to be high based on the state of the market today.

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

A26. In order to ensure that the available scarce resource is put to most efficient use and also fulfils the service penetration targets of the licensor in line with the national objectives, obligations are required for spectrum. We are of the view that the current rollout obligations as given in the UASL may be prescribed for the start-up spectrum.

However, this in itself is not adequate. The treatment for different levels of holdings of spectrum have to be different. Rollout obligations cannot be the only test of use of a scarce resource like spectrum for someone who holds 4.4 MHz and for someone who holds say 8 MHz in a circle. There is a need to ensure that spectrum that may be bought even through an auction is used and not hoarded leading to sub optimal use and denial of this facility to others. The Authority is to ensure adequate usage of acquired spectrum and we hope that the right, fair and transparent processes would be put in place to ensure this.

The Authority should seek to link the spectrum holdings to traffic metrics that are independently verifiable and where it is found that spectrum is not being put to its full use, it must be returned for offering to others in future auctions. The use of



subscriber data or traffic erlang data as has been done in the past is not adequate and new mechanisms need to be evolved for this especially with a changing service paradigm where a lot of the future revenues is expected to come not from traditional voice, SMS and Internet access but from content, services and solutions eg. m-health or m-commerce.

Q27. 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?

A27-28. TTL is of the view that no change is required in the spectrum usage charge upto 2x5 MHz for 800 MHz and 2x6.2 MHz for 900/1800 MHz. Beyond this amount, spectrum usage charge should be as follows:

> 6.2 MHz – 10 MHz	:	7%
> 10 MHz – 12.4 MHz	:	10%

Q29. What should be the period of validity of spectrum?

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

A29-30. As the ROI (return on investment) period is very high in telecom sector and the investment is very high, validity and price of spectrum should be for 20 years.

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

A31. TTL is of the view that a yearly payment plan may be formulated linked to Consumer Price Index/ Whole Sale Price Index/bank lending rate for converting the winning bid amount into a recurring annual payment. Keeping in mind that the present situation of funding for telecom industry is difficult, the yearly payment of bid amount in installments will help faster rollouts and provide affordable services to the consumers.

The corollary of such a move is that operators have options to surrender spectrum that they may have taken if it is found uneconomical by them. Given the scarcity of spectrum and the demand, this can only be in the interest of the



country and the industry as some other operator who is able to better use this resource can take it and pay future installments of the spectrum value.

There should be very flexible Exit Policy for spectrum .Licensees should allowed to surrender spectrum with appropriate refund.

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.

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

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

A32-35. Spectrum trading of 2G spectrum is not desirable in Indian context where past spectrum allotment have been skewed. Allowing spectrum trading in this scenario will result in improper gain to old operators. Therefore, we strongly oppose the concept of trading in 2G spectrum till the level playing field is truly created.

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

A36. Spectrum should be allowed to be mortgaged for raising capital for telecom purposes. This is one of the core assets of the business and represents a significant part of the value of any business along with the other fixed assets and intangibles like intellectual property. Hence, it is suggested that spectrum fees may be considered as a tangible asset and it should be allowed to be mortgaged for raising capital for telecom purposes.