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Subject: Response to consultation Paper on Valuation and Reserve Price of Spectrum

Dear Sir,

1. We would like to take this opportunity to compliment TRAI on bringing out an exhaustive consultation paper on "Valuation and Reserve Price of Spectrum".
2. We feel that TRAI should have restrained themselves to the core issues, instead of opening up issues which have already been decided at the highest level like refarming, E GSM Band, Spectrum Trading etc.
3. The guiding principle of Spectrum Management should be to maximize the overall public benefit. This can be achieved through efficient allocation and optimal utilization of Spectrum. NTP 2012 has also reiterated that "The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the policy is on the multiplier effect and transformational impact of such services on overall economy".
4. The socio-economic benefits emanating from the spread of mobile communication are well-known. The social empowerment, economic upliftment to a better quality of education, health, safety and increased opportunities in almost every sphere of life is being felt at every level of the society.
5. The fixation of realistic Reserve price would help in inclusive growth of the society. The country is poised to move from a Voice Centric mode to Data Centric mode. The implementation of Government initiated Projects like NREGA, Food Subsidy, Mobile Banking etc is dependent on affordable Broadband Mobile Data services reaching out to people at the bottom of the pyramid. While recommending Reserve Price, TRAI needs to strike a balance between Consumers, Service providers and the Government.
6. The consultation paper has mentioned that interest on CDMA Technology has diminished. SSTL recently bought 3 carriers in 800 MHz band in 8 circles and had to close down 13 circles. Had the reserve price been realistic, we could have bought additional spectrum in all the eight circles and probably in all LSAs. The Reserve price recommended by TRAI and later corrected by DOT/ Government of India at the EGOM level merits rethinking on the part of TRAI to recommend a fair and justifiable Reserve Price keeping into considerations the prevalent circumstances in the Indian Market.
7. Table 2.8 has listed availability of 107.5MHz of spectrum in 800MHz band. TRAI and DOT to ensure that the spectrum which are made available in the auction should be contiguous. The perils of fragmentation are well known, Fragmented spectrum allocation destroys Trunking efficiency and frequency hopping gains.
8. Further TRAI should also make a recommendation how going forward Govt should award spectrum through administrative process.
9. We are enclosing herewith our question wise response for your perusal. We do hope that TRAI would consider our response while framing the recommendations on valuation & Reserve Price of Spectrum.

Thanking you,

Yours faithfully,
For Sistema Shyam Teleservices Limited

T. Narasimhan
Dy. Chief Executive Officer.

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MTS RESPONSE TO TRAI CONSULTATION PAPER NO. 06/2013
ON VALUATION AND RESERVE PRICE OF SPECTRUM

- Q.1. What method should be adopted for refarming of the 900 MHz band so that the TSPs whose licences are expiring in 2014 onwards get adequate spectrum in 900/1800 MHz band for continuity of services provided by them?**

The issue of refarming of spectrum in 900 MHz band in India is well debated, thoroughly analysed, duly considered by TRAI and approved by Telecom Commission, EGOM and the Cabinet. DOT in its letter to TRAI dated 10th July 2013, has not sought any recommendation on this issue of refarming. SSTL endorses the Government's view on refarming.

Further, in the National Telecom Policy 2012 refarming is one of the policy points to make spectrum available for introduction of new technologies for telecom applications and hence entire 900 MHz spectrum band should be made available for new technologies. The press statement of 15th February 2012 by the Hon'ble Minister of Communications & IT endorses the necessity of 900 MHz band refarming.

Also, no continuity support should be given, by reserving the scarce valuable resource, to the licensees whose licences are expiring in 2014. National resource like spectrum cannot be given on perpetual lease to operators in the name of continuity of service. 900 MHz spectrum band has special characteristics in terms of good ecosystem and better propagation that provides cost, quality and capacity advantages to operators and therefore to promote competition and provide level playing every operator should be given fair chance to acquire 900 MHz spectrum.

To conclude, we suggest that 900 MHz should be fully refarmed and there should be no reservation at all.

- Q.2. In case spectrum is to be "reserved" for such TSPs, should it be restricted to licences expiring in 2014 (metros) or include licences expiring afterwards (LSAs other than metros)?**

There is no need of any spectrum reservation considering the expiry of licenses. Scarce resource such as spectrum should not be reserved and requires to be auctioned as soon as possible to ensure its most efficient utilization.

Further as directed by the Hon'ble Supreme Court Government should immediately auction the entire spectrum in 800 MHz, 900 MHz, 1800 MHz band made available after cancellation of 122 UASLs by the Hon'ble Supreme Court vide its Judgement dated 02nd February, 2012 which remain unsold in 2G auctions in November'2012 and March'2013. Reserving any spectrum may lead to artificial scarcity of spectrum for the auction and will not lead to determination of correct market value of the spectrum in these bands.

To conclude, we suggest that there is no need for any spectrum reservation, and any telecom service provider, irrespective of the date of expiry of its license period may participate and obtain the desired quantum of spectrum necessary for its operations, subject to the capping on the quantum of spectrum prescribed by the Government, through participation in auction.

- Q.3. Is any restriction required to be imposed on the eligibility for participation in the proposed auction?**

No restrictions are required to be imposed on the eligibility for participation in the proposed auction as long as the applicants undertake to comply with the requirements for obtaining Unified License. Any artificial restriction on eligibility for participation in the proposed auction would not only cause loss of revenue to the national exchequer but also cripple competition.

Q.4. Should India adopt E-GSM band, in view of the diminishing interest in the CDMA services? If yes,

- a) How much spectrum in the 800 MHz band should be retained for CDMA technology?**
- b) What are the issues that need to be addressed in the process?**
- c) What process should be adopted for migration considering the various issues involved?**

We strongly oppose the statement made by the Authority in classifying 800 MHz as E-GSM band in this consultation paper. The recommendations on this issue was not sought by the DoT vide its letter dated 10th July, 2013. This issue should not be the subject matter of this consultation process of TRAI on "Valuation and Reserve Price of Spectrum" for discussion.

At the outset, we do not agree that interest of the operators in the CDMA band is diminishing. The lack of interest in the recent auction for CDMA spectrum was because of the yardstick used by TRAI in fixing high reserve price for CDMA spectrum.

It may be noted that SSTL has recently bought 3 carriers in 800 MHz band. It would have acquired more spectrum and in more LSA's to provide scalable services and reliable data services to its subscriber but could not do so for unreasonably high reserve price set for 800 MHz spectrum. The TRAI's proposal for EGSM band is creating unnecessary uncertainty and may impact long term investment by serious players like us in the CDMA based data services in the country.

It may be noted that CDMA technology is still supporting around 100 million customer base and is used to provide robust internet service in large number of cities and towns in the country. The proposals such as EGSM would wipe out only credible competition to the GSM services, waste billions of dollar of investment in the CDMA technology and thus would not be in the overall interest of the country.

We are quite surprised on the timing of raising this issue. In fact this issue should have been raised in 1994-95 before the first auction for Basic Telephony Services. Once the Government decided to award 800 MHz spectrum, and there are 4 existing operators who are providing services in 800 MHz band, and out of available 14 carriers 11 carriers are already being used by operators in larger number of circles after considering surrendering of spectrum by an operator, where is the question of diminishing interest in 800 MHz band. Further as per NIA released on 30th January 2013, the auctioned spectrum has no restrictions on the technology as one can use for GSM, CDMA, WCDMA, LTE and Wi MAX without any restriction, and for use of any other technology prior permission is required from DOT.

Further, we would like to bring to your notice the issues associated with 800 MHz band being used as an E-GSM band as follows. These are in addition to the number of technical and commercial issues already mentioned by the Authority in its consultation paper.

- (i) CDMA spectrum in 800 MHz band has been allocated to the licensees having validity till 2017-2024, and therefore it would be against the contract to withdraw carrier midway.
- (ii) CDMA service providers have already made huge investment in network using 800 MHz band and there is no such growth path/alternate band for CDMA 800 MHz spectrum as 1800 MHz band is available as expansion of GSM services in 900 MHz band.
- (iii) There is no precedent in the world where CDMA spectrum has been re-farmed for GSM services when more than 100 million subscribers are already using CDMA based voice and data services.

- (iv) To our knowledge, CDMA 800 MHz band and GSM 800 MHz band do not co-exist internationally. For Even if co existence of CDMA and GSM services found to be feasible would require investments for deployment of filters to reduce interference.

As rightly acknowledged by the Authority in its consultation paper, CDMA has a different ecosystem, with much lower ARPU and MoU for CDMA operators who do not have an advantage of economies of scale as in case of GSM operators. Dominant GSM operators are already holding excess spectrum, have scope to expand in 900 MHz as well as 1800 MHz and further growing in 2100 MHz as 3G technology. For the existing CDMA operators, there is limited availability of only 20 MHz spectrum in 800 MHz band. In order to enable these CDMA operators to expand their operations, and to meet the growing demand for mobile data services, additional spectrum requires to be immediately made available in the alternate CDMA 1900 MHz and 450 MHz frequency bands.

Internationally, 25 MHz in 800 MHz band i.e. 824-849 MHz paired with 869-894MHz, has been harmonised for CDMA services but in contrary, only 20 MHz CDMA spectrum is allocated in 824-844 MHz paired with 869-889 MHz in India.

CDMA operators have entered into valid agreements with the government to use spectrum till validity of the license till 2017-2024. The proposal to vacate CDMA spectrum in 880-890 band for GSM services within the validity of license would impair the legality of the license and may open flood gate of litigations.

EGSM is also technically not feasible as in the E-GSM downlink (925-935 MHz), there are 448 assignments to different users for captive use and 7 MHz is being used by defence.

In view of the above mentioned reasons, we do not see any logic or reason that 880-890 MHz band being made available for GSM services.

- Q.5. Should roll out obligations for new/existing/renewal/quashed licenses be different? Please give justification in support of your answer.**
- &**
- Q.6. Is there a need to prescribe additional roll-out obligations for a TSP who acquires spectrum in the auction even if it has already fulfilled the prescribed roll-out obligations earlier?**

The Roll out obligations as specified in clause 34.2 of CMTS/UASL license of existing licensees are as follows:

Quote:

"LICENSEE shall ensure that

- (i) Atleast 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.
- (ii) The licensee shall also be permitted to cover any other town in a District in lieu of the District Headquarters.
- (iii) Coverage of a DHQ/town would mean that at least 90% of the area bounded by the Municipal limits should get the required street as well as in-building coverage.
- (iv) The District Headquarters shall be taken as on the effective date of Licence.
- (v) The choice of District Headquarters/towns to be covered and further expansion beyond 50% District Headquarters/towns shall lie with the Licensee depending on their business decision.
- (vi) There is no requirement of mandatory coverage of rural areas."

Unquote

The recent concluded auction held in Nov 2012 and March 2013, has created a level playing issue by suggesting to cover up to Block Head quarters. Any additional rollout obligations over and above the existing rollout obligations in the license are not warranted.

Any additional roll out obligations imposed would be counter productive, as Government has already created USO fund for covering the uncovered.

In case of any new entrant obtaining spectrum in the auction, the five-phase roll-out obligations are to be prescribed as in the NIA dated 30th January, 2013, then considerable rebate should be given for the contribution of Universal service Obligation Fund.

Q.7. What should be the framework for conversion of existing spectrum holdings into liberalised spectrum?

The framework for migration of existing spectrum holding to Liberalized spectrum holding has already been laid down by the Government. The NIA dated 30th January, 2013 for the auction held in March, 2013 stated the following:

"Existing Licensees will be allowed to use the additional spectrum block(s) allotted through this auction to deploy any technology by combining with their existing spectrum holding in the same band after converting their entire existing spectrum holding into liberalised spectrum in the same band as per the terms and conditions to be specified.

Existing CMTS/ UAS/ UL (AS) licensees can liberalise their existing spectrum holding in 1800MHz band after payment of auction determined price."

However if the issue raised by the Authority is that, for liberalisation of existing spectrum holdings, "which auction determined price should be applied i.e. November'2012 auction determined price or March Price or upcoming auction price", SSTL is of the view that the price to be applied for such liberalization should be the latest available auction determined price at the time of application made by the service provider for such liberalization of its existing holdings.

Q.8. Is it right time to permit spectrum trading in India? If yes, what should be the legal, regulatory and technical framework required for trading?

TRAI has not supported "Spectrum Trading" in its recommendations dated 11th May, 2010 and had recommended that the spectrum should not be allowed to be traded as the amount of spectrum available is limited.

Based on TRAI's recommendation, Department of Telecommunications (DoT) on 15th February, 2012, after consideration of the aforementioned recommendations of the TRAI by the Telecom Commission decided that "Spectrum trading will not be allowed in India, at this stage. This will be re-examined at a later date."

The situation has changed drastically, the auctions have failed miserably, Spectrum Trading probably would also help in setting the market price. Spectrum Trading would be like market determined inter banking rates; therefore reconsideration is required in the changed circumstances.

- Q.9. Would it be appropriate to use prices obtained in the auction of 3G spectrum as the basis for the valuation in 2013? In case the prices obtained in the auction of 3G spectrum are to be used as the basis, what qualifications would be necessary?**

It is not appropriate to use the price obtained in the auction of 3G spectrum in 2010 as the basis for valuation of spectrum in 1800 MHz band three years later. The market has undergone severe changes over the last three years and it is essential to have a fresh valuation in sync with current realities of the market.

Further spectrum valuation is dependent on a very large number of factors. The scenario at the time of 3G auction in 2010 from the one prevailing now and present auction is primarily for 2G and not for 3G.

Hence it would be appropriate to assess/ analyse the value of spectrum to be auctioned now, under the present circumstances rather than linking with 3G auction pricing held in 2010.

- Q.10. Should the value of spectrum for individual LSA be derived in a top-down manner starting with pan-India valuation or should valuation of spectrum for each LSA be done individually?**

The LSAs have been treated as a separate entity for number of purposes. Further the economic, demographic and other parameters differ drastically from one another. As each LSA is distinct from one another and represents unique business case and hence its valuation should also suitably reflect this inter-region variation.

Any attempt to work out pan India spectrum value or application of reserve price/ valuation of spectrum uniformly irrespective of the economy of the different Circles, would invite risk or error.

Spectrum value is dependent on the revenue expectations from a service area based on the subscriber projections, likely adoption rate for mobile services, ARPU parameters, as well as the cost structure of the service area both in terms of network build-out and operational costs. In India, as evident from the data presented in the consultation paper, while the service areas are a priori categorized based on their profitability or revenue potential, there are remarkable differences between the LSAs both in the revenue as well as cost parameters. Further, operators have the flexibility to bid for spectrum in the LSA of their choice.

The choice of LSA and the price of spectrum are driven by the business case for the LSA which is unique for each LSA (based on underlying revenue and cost assumptions) and hence, demands individual scrutiny.

A bottom-up assessment yields more realistic values for the likely price of the spectrum as it factors the regional market characteristics and geographical differences of the LSAs. In terms of operational costs as well, a bottom-up assessment becomes important given the wide variations in telecom infrastructure availability in the LSAs, like power availability. Logically price derived on a top-down manner may not differ significantly from the one arrived at through a bottom-up assessment, the latter approach provides a more realistic value for spectrum in individual LSAs. Hence, valuation of spectrum for each LSA should be done individually.

- Q.11. Is indexation of 2001 prices of 1800 MHz spectrum an appropriate method for valuing spectrum in 2013? If yes, what is the indexation factor that should be used?**

In spite of the fact that in 2001 the prices were derived through the auction, however the price in 2001 is reflective of demand conditions and economic prospects at that point of time viz. about 12 years ago. The telecom sector as well as the economy has undergone major changes since then. In a world of rapid economic change, a decade is a very long time. Moreover, there have been significant advances in technology that have led to new ways of using spectrum and new services for which it can be used. The telecom industry has undergone radical change from the voice-centric usage paradigm to the data-driven and value added services model. The growing economy has set higher benchmarks and desire for services that has driven the growth of

the telecom sector and also opened up new areas of expansion. These various developments clearly indicate that merely indexing the prices of 2001 is really not reflective of all the changes that have occurred in the intervening period. Indexing may be good for measuring valuations over a shorter time period, not over a long-haul such as 2001 to 2013.

As enumerated above, Valuation of spectrum is an assortment of complex factors and there interplay. Therefore we do not support the idea of indexation of 2001 prices as an appropriate method for valuing spectrum in 2013.

Q.12. Should the value of spectrum in the areas where spectrum was not sold in the latest auctions of November 2012 and March 2013 be estimated by correlating the sale prices achieved in similar LSAs with known relevant variables? Can multiple regression analysis be used for this purpose?

We do not agree with the view that the value of spectrum in the areas where spectrum was not sold in the latest auctions of November 2012 and March 2013 be estimated by correlating the sale prices achieved in similar LSAs with known relevant variables.

As enumerated in our response to Question No 10, wherein fixing of Reserve price needs to be done LSA wise. The areas where spectrum was not sold in the last auction in November 2012 & March 2013 may not have co-relation with the sale price in similar LSAs. The opportunity, market dynamics and unique characteristics of each LSA may not correlate. Therefore value of spectrum in the areas where spectrum was not sold in the latest auctions of November 2012 and March 2013 should not be estimated by correlating the sale prices achieved in similar LSAs with known relevant variables.

Q.13. Should the value of spectrum be assessed on the basis of producer surplus on account of additional spectrum? Please support your response with justification. If you are in favour of this method, please furnish the calculation and relevant data along with results.

The producer surplus approach hinges on the inverse relationship between the quantum of spectrum available with an operator and the costs incurred in servicing the subscriber base. As it assesses the network cost elements by factoring the spectral efficiency of the spectrum band under consideration, it provides the engineering value of the spectrum.

The engineering value may not always be a good indicator of the prices eventually discovered through auctions as evident from the Swedish experience of 800 MHz and 2.6 GHz auctions held in 2011 and 2008, respectively. In both these auctions, the value discovered through auctions was a fraction of the engineering value estimated for the spectrum. The deviation between the engineering value and auction prices ranged from a factor of 1.5 to as high as a factor of 10^3 .

Further, engineering value may not be an appropriate representation of the full economics of cellular business. Mobile business valuation depends on a host of parameters including existing and potential tele-density, mobile subscriber base, competitive intensity, voice & data revenue, capital expenditure on network and other elements, operating expenses including non-network related expenses such as personnel and marketing, etc. A player looking to enter the cellular business would evaluate all these parameters together to estimate the price it can pay for the spectrum. While the producer surplus approach offers close assessment of the network requirements and costs thereof, it overlooks the revenue potential of the market under consideration, as well as the non-network costs of running a wireless business. Hence, it provides only a limited view of the business dynamics and consequent price an operator would be willing to pay for spectrum.

- Q.14.** Should the value of spectrum in the 1800 MHz band be derived by estimating a production function on the assumption that spectrum and BTS are substitutable resources? Please support your response with justification. If you are in favour of this method, please furnish the calculation and relevant data along with results.

And

- Q.15.** Apart from the approaches discussed in the foregoing section, is there any alternate approach for valuation of spectrum that you would suggest? Please support your answer with detailed data and methodology.

The value of spectrum in 1800 MHz cannot be derived by estimating a production function on the assumption that spectrum and BTS are substitutable resource due to various factors and parameters.

The best approach is the one using "business modelling". The Discounted Profit (DP) approach that seeks to calculate the maximum price an operator would be willing to pay for spectrum after factoring for all the costs and a targeted return, is a more comprehensive approach for valuing spectrum. The revenue and cost parameters are estimated for a pragmatic, average operator, having a fair share of the market. The price of spectrum is computed after evaluating the economic, engineering and commercial aspects in offering cellular services in the country with a given quantum of spectrum in a particular frequency band.

The DP method provides the commercial value of the spectrum and is used by players participating in spectrum auctions to estimate their bid price. Notably, this method takes into account the revenue potential and non-network costs of running a cellular business for arriving at the spectrum price thereby, providing a holistic view of the spectrum value.

TRAI has all the relevant data of all service providers in the form of Accounting Separation Reports which could be used to derive the average industry revenues and costs for all services. Based on the data TRAI could derive the Spectrum prices for each LSAs.

- Q.16.** Should the premium to be paid for the 900 MHz and liberalised 800 MHz spectrum be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band?

800 MHz

The 800 MHz band cannot be compared with respect to 1800 MHz as there is no practical compatibility over the technologies that can be offered today on the two bands. CDMA equipment deployed in 800 MHz spectrum band cannot be used in 1800 MHz spectrum band and thus the premium to be paid for 800 MHz spectrum cannot be based on the additional CAPEX and OPEX that would be incurred on a shift from 800 MHz bands to the 1800 MHz band is not applicable.

Further, no premium is payable for 800 MHz over 1800 MHz spectrum band as its spectrum valuation is much lower due to poor ecosystem. The government also admits that 800 MHz spectrum has lower value compared to 1800 MHz as is evident from the reserve prices fixed for these two spectrum bands. The pan India reserve price for 5 MHz in 800 MHz band is Rs 9100 crores against Rs 11,893 crs for 5 MHz spectrum in 1800 MHz band. Therefore, it would have been more appropriate to have consultation on discount to be offered on 800 MHz spectrum band rather than payment of premium for this band over 1800 MHz spectrum band.

900 MHz

However, we agree that using valuation of the 1800 MHz band, the value of the 900 MHz may be derived based on the additional capex and opex that would be incurred for shifting from 900 MHz to 1800 MHz.

Being a sub 1 GHz frequency band, 900 MHz has inherent advantages over 1800 MHz due to its better propagation characteristics and consequent advantage in terms of lesser base station requirement for coverage. This results in economic benefits in both network capital as well as operating costs.

The value of spectrum in 900 MHz could be estimated from the model described in Q.15 keeping the subscriber base and revenue assumptions unchanged. In such a scenario, the cost saving accruing from the deployment of network in a technically superior band would result in a premium over the 1800 MHz band valuation.

At present reserve price for 900 MHz is almost 2.6 times the reserve price for 800 MHz spectrum band. For any recommendation on reduction of reserve price for 900 MHz spectrum band, there should be corresponding reduction in reserve price for 800 MHz spectrum band so as to maintain the relative value for these two spectrum bands.

Q.17. Should the valuation of spectrum and fixing of reserve price in the current exercise be restricted to the unsold LSAs in the 1800 MHz band, or should it apply to all LSAs?

The fixation of reserve price should not only be restricted to the unsold LSAs in the 1800 MHz band but also for other LSAs and for all 2G Access Spectrum. i.e. 1800 MHz, 900 MHz and 800 MHz. To discover the right price for 800/1800 MHz spectrum bands which truly reflects the current market conditions is the absolute need of the hour. A high reserve price for spectrum has reduced spectrum demand which has resulted in inefficient outcome and incorrect price discovery.

The correct reserve price would make auction more competitive and greater participation. In view of this we suggest reserve price for all LSAs may be revisited.

However, TRAI must also recommend an adjustment formula that if the final market determined price is lower in the ensuing auction, how DOT would provide adjustments / refunds to operators who won spectrum in the recent auction, since TRAI had recommended a faulty Reserve price in 2011 based on 3G price for a 2G auction.

Q.18. a) Should annual spectrum usage charges be a percentage of AGR or is there a need to adopt some other method for levying spectrum usage charges? If another method is suggested, all details may be furnished.

b) In case annual spectrum usage charges are levied as a percentage of AGR, should annual spectrum charges escalate with the amount of spectrum holding, as at present, or should a fixed percentage of AGR be applicable?

c) If your response favours a flat percentage of AGR, what should that percentage be?

The Spectrum Usage Charge (SUC) is paid for the use of spectrum and the amount of this SUC has also been varying from time to time. The latest revision for SUC was made by the DoT on 25th February, 2010 which has been reproduced by TRAI at Table 3.12 of the Consultation Paper.

We understand that the current system of slab-wise spectrum usage charge percentage akin very much to the income tax rate slab methodology being used for the following reasons-

- As the amount of spectrum holding increases due to increased trunking efficiency, the benefit derived from the spectrum also are higher as with larger chunks of spectrum, there will be larger SUC percentage.
- Graded system also creates a barrier to an operator holding / hoarding excessively large amount of spectrum that it does not really need.

Spectrum Usage Charge on graded basis was part of the auction rules for previous two auctions and bidders had factored it while bidding... The Government has already sold 127.5 MHz spectrum in November, 2012 and 30 MHz in March, 2013 auctions. Changing auction rule to provide flat spectrum usage charge would result in loss of Government revenues and providing post auction benefit to operators.

- Further the graded SUC provides level playing field to all operators - existing as well as new set of operators. , Our submission is as follows:
 - i. Annual Spectrum Usage Charge should be levied as the percentage of AGR.
 - ii. SUC should escalate (slab-wise) with the amount of spectrum holdings.
 - iii. Since the revenue earned from the spectrum obtained administratively and through auction in different bands cannot be segregated, the cumulative amount of 900 & 1800 MHz spectrum allocated administratively and through auction should be counted for calculating the slab of the total spectrum holding by a service provider for levy 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.
 - iv. For an 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.

Q.19. What should be the ratio adopted between the reserve price for the auction and the valuation of the spectrum?

The median of the data provided by TRAI is approximately 50% reserve price to valuation ratio. Hence, it is illogical and difficult to suggest that ratio should be 80% as used in the last auction by TRAI.

While setting high reserve prices may result in unsold spectrum, low reserve prices may result in collusion and loss of revenue. On the other hand high reserve price for spectrum reduces spectrum demand and also reduces the opportunity for correct price discovery. Thus high reserve prices can lead to an inefficient outcome. For an auction to be competitive and efficient there needs to sufficient demand for spectrum. The Authority should work towards greater participation which can contribute towards a more efficient outcome and may also lead to greater revenues.. Thus setting optimal reserve price is one of the most important facet of an auction design, that determine the eventual success of the auction in meeting its objectives.

As per the data provided in the consultation paper on the reserve price to auction discovered price ratio from recent auctions, the mean and median values lie in the range of 0.46 to 0.60. Further, there are several instances of spectrum selling at the reserve price. Also, in the same year for the same band with similar reserve prices, very different results have been experienced for the eventual auction price for two European countries. This indicates the wider implication on the role played by other factors, such as auction design and market characteristics, in deciding auction outcomes.

Hence, international benchmarking data clearly provides that reserve price has to be lower than expected spectrum value. In line with the international indicators SSTL suggests the reserve price to spectrum valuation ratio to be between 40% to 50%.