



RSM/COAI/2017/207

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**Subject: COAI Response to the TRAI Consultation Paper on
Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500
MHz, 3300-3400 MHz and 3400-3600 MHz bands**

Dear Sir,

This is with reference to the TRAI Consultation Paper on Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands, released on August 28, 2017.

In this regard, please find enclosed COAI response to the Consultation Paper.

We hope that our submission will merit your kind consideration and support.

With Regards,

Yours faithfully,

Rajan S. Mathews
Director General

COAI comments on TRAI Consultation Paper

On

Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands

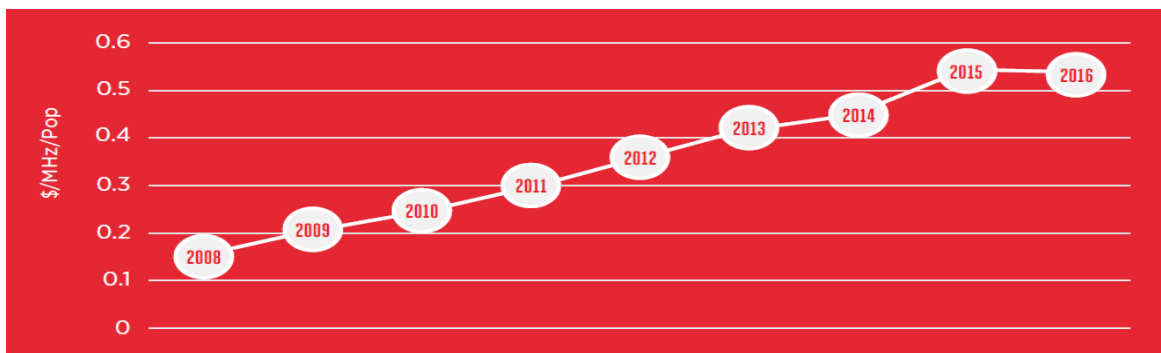
Released on August 28, 2017

Preamble

1. We would like to state that Spectrum is a critical resource for mobile networks and the issue of its 'availability' at the 'right price' is central to the growth of services in the country.
2. **Spectrum Harmonisation:** It is important to allocate harmonized spectrum in all bands after the completion of the auction and this exercise should be conducted well in advance so as to ensure timely allocation. Harmonization exercise should also include fragmented spectrum allocated to Government to be made available for commercial use.
3. **Contiguous Spectrum:** It is most desirable to make available contiguous blocks for auction. In case an operator is already having blocks of the spectrum in a particular band, and they acquire additional block in the same band, DoT shall strive to ensure contiguity of the holdings so as to ensure efficient utilization of spectrum and better user experience.
4. **Interference:**
 - a. It is submitted that DoT is obliged to allot clean, interference free and usable spectrum to the operators in all the bands. The "as is where is" concept cannot be applied to licenced Spectrum. In fact, the NFAP, which is formulated in line with the Radio Regulations of the ITU in order to cater to newly emerging technologies as well as to ensure equitable and optimum utilization of the scarce limited natural resource of radio frequency spectrum, also states that interference issues needs to be resolved. Para 11 of the presently effective. NFAP of 2011 clearly provides that **"All necessary technical, operational, regulatory and administrative measures shall be taken so as to avoid harmful interference."**
 - b. The issue of interference in 2100 MHz is already in the TDSAT and the Hon'ble committee appointed by the Ld. TDSAT has already recommended swap of frequencies for interfering frequencies. Hence, the first priority has to be swap of spectrum for existing spectrum.

5. **Pricing of Spectrum:**

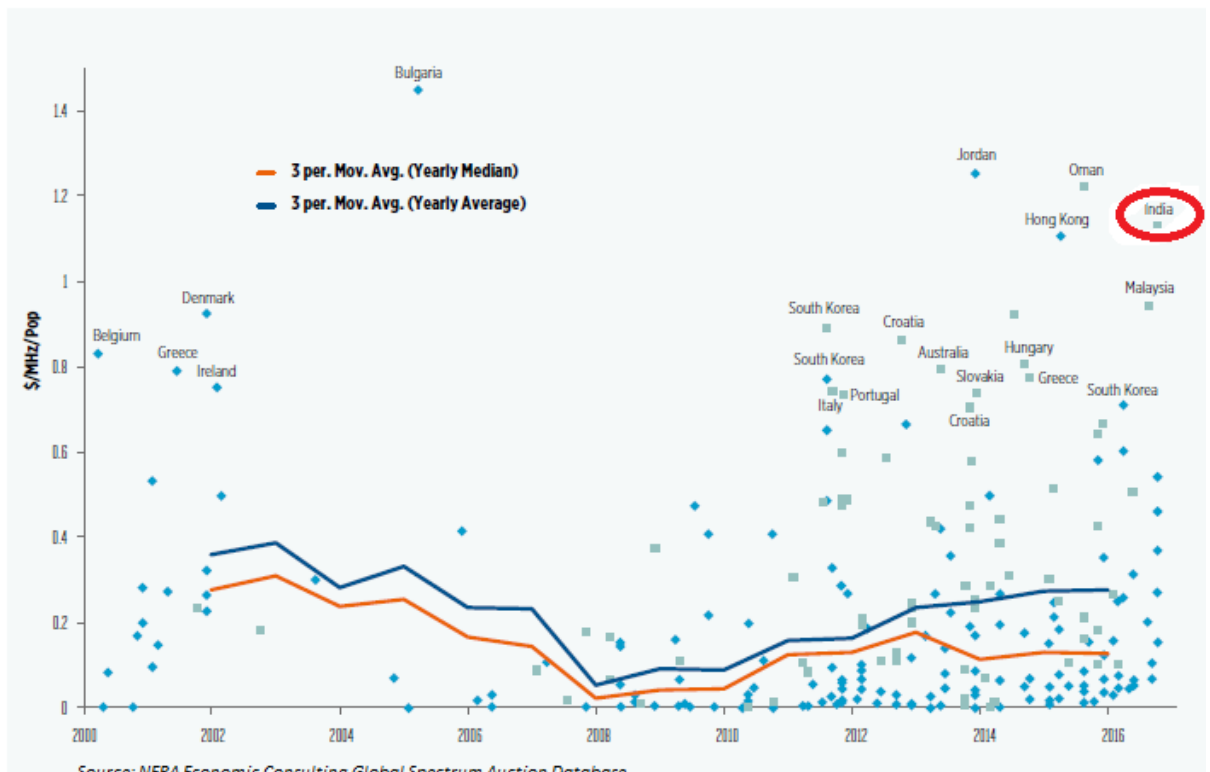
- a. The main rationale for charging a price for spectrum, whether through upfront fees or annual charges (or both), is to promote its efficient use.
- b. The industry has been for a long time demanding adequate availability of spectrum at reasonable prices. While the Govt. has worked towards increasing the availability of spectrum, the Govt. has not paid heed to ensure availability of such spectrum at reasonable price. High spectrum prices have remained a key concern for Indian operators. Spectrum in India is far more expensive as compared to the neighbouring countries like Pakistan, Bangladesh and Sri Lanka.
- c. The high spectrum cost has contributed to the debt burden and this accompanied with high levies has resulted in immense financial pressure on the sector.
- d. A GSMA report on spectrum pricing highlights the increasing cost of spectrum acquisition since 2008, indicating an increase of **250%** since 2008.



Average Spectrum Prices (Source: GSMA)

- e. The report also established statistically that high spectrum spend leads to
 - lower quality and reduced take-up of mobile broadband services;
 - higher consumer prices for mobile broadband data; and
 - lost consumer welfare with a purchasing power of US\$250bn across a group of countries where spectrum was priced above the global median – equivalent to \$118 per person.
- f. In the Indian context, spectrum pricing has been a challenge where operators have so far committed around **INR 3,40,000 Crores** since the spectrum auction of 2010. As per the GSMA report the auctions for bands such as 900 MHz in India, have been one of the most expensive spectrum auctions in the world, **\$3.57 per MHz/Pop** for 900 MHz was spent which was one of the highest in the world. While another problem that is faced is high reserve prices for spectrum; the spectrum auction of 2016 saw no response from operators for 700 MHz due to high reserve price for this band.

GLOBAL TRENDS IN SPECTRUM RESERVE PRICES, BY BAND AND AUCTION, 2000-2016



GSMA Report on Effective spectrum pricing

Note: Green = Reserve prices for coverage bands below 1 GHz (700 MHz, 800 MHz, 850 MHz and 900 MHz); Blue = Reserve prices for capacity bands above 1 GHz (PCS, AWS, 1800 MHz, 2.1 GHz and 2.6 GHz).

- g. Further, to the above, we would like to submit that the Telecom Industry has invested over **INR 9.2 lakh crores** in setting up world class mobile networks over the last 20 years is going through one of its most disruptive phases. The sector is reeling under a heavy debt burden of **INR 4.6 Lakh Crores**.
- h. The Industry for the first time ever, has seen a revenue drop for the full financial year. The AGR of the Industry decreased to **INR 1,404bn** for FY17 with YoY decline of **4.9%**, while the AGR for the Q1FY18 decreased to **INR 283bn** with YoY decline of **27.06%**. The Indian telecom sector is in dire financial straits with only 1% return on investments and except for the market leader; all other operators are currently making negative returns on their investments. Even for the market leader the returns are negligible.
- i. The severe financial stress has triggered a series of consolidation in the industry i.e. companies are divesting distressed assets in an effort to reduce debt.
- j. In light of above, we would like to submit that **Government/Regulator needs to :**
 - a. **Formulate future roadmap for spectrum**
 - b. **Adopt long term perspective w.r.t spectrum pricing i.e. have long term benefits in mind rather than short term benefits in terms of generating revenue from auction**

c. **Set modest reserve prices and**

d. **Release spectrum as soon as it is needed.**

The above highlighted policy of lower reserve price will support TSPs to focus on achieving objective of 'Digital India', while allowing TSPs to make investments in right direction.

6. **Spectrum Usage Charges (SUC):**

- a. The current Spectrum Usage Charge (SUC) regime leads to anomalous results; discourages mergers, hampers investments and represents a significant financial burden on the industry. The rationalization of SUC becomes more important for the Indian telecom market where affordability of the service is paramount.
- b. **SUC Burden on the Operators:** Industries pay-out for SUC has increased at a CAGR of **13.2%** from **Rs. 3,602 Crore to Rs. 7573 crores** from 2010 to 2016 alone. Considering the financial Health of the Industry, currently the Industry is under the debt of around **4.6 Lakh Crores**, SUC has substantial financial burden on the operators.
- c. **SUC only for recovering the Administrative cost:** We believe that when spectrum is acquired through an auction mechanism with the fee payable upfront, there should be no requirement for further annual payments beyond a nominal administrative fee towards spectrum management because the intrinsic value of spectrum has already been paid in the auction in full.
- d. **International Practice:** In European countries most nations have either low annual spectrum fee charges, or no charge at all. This is the practice in countries where the value of spectrum is captured upfront in a single payment either through an auction or a "beauty parade" with a defined payment level. In the United States and Australia, annual fees are meant to cover the cost of management and regulation of the spectrum. Even some of the Asian countries like China have much lower annual spectrum charges.
- e. **High SUC creates stringent barrier for the operators to invest in Infrastructure:** Once the spectrum is allocated through an auction mechanism, continuing with the current escalating charge approach is detrimental to consumers and operators as it works as an inverted duty structure. It increases the input cost of the spectrum leading to excessive burden on operating margins and revenues for the spectrum holders. This leads to an imposition of stringent barriers for the operators to invest in superior quality of services.
- f. **Thus, we request TRAI to recommend to DoT for the reduction of SUC charge to a uniform 1% of AGR across all Spectrum Bands.**

- g. Also, at present the operators have to make advance payments for SUC. It is submitted that the same should be payable at the end of the quarter like in the case of license fees.

Issues for Consultation

Q1. (a) In your opinion when should the next access spectrum auction be held?

(b) If the spectrum auction is held now, should the entire spectrum be put to auction or should it be done in phased manner i.e. auction for some of the bands be held now and for other bands later based on development of eco system etc? Please give your response band wise and justify it.

COAI Response

- a. While deciding the timing of the auction, it is important to take a holistic look at the entire sector.
- b. It is expected that spectrum demand in the next round of auction will be driven by data consumption patterns and how 4G services pick up in the country.
- c. However, at present the industry is undergoing through a phase of substantial mergers and acquisitions. It is important to allow the market to settle down and to allow for predictability and strategic planning by companies when the industry is going through a massive phase of consolidation. Mergers and harmonisation will lead to efficiencies in terms of use of existing spectrum and then the companies would be in a better position to look at additional spectrum needs after all consolidation moves have been announced and they have put their networks together.
- d. Under these circumstances, any untimely auction of spectrum may accrue revenue to the Government, but the commercial exploitation of such scarce resource for the larger interest of the society may not be as expected.

Q2. Do you agree that in the upcoming auction, block sizes and minimum quantity for bidding in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands, be kept same as in the last auction? If not, what should be the band-wise block sizes? Please justify your response.

COAI Response

- a. Yes, the block sizes and minimum quantity for bidding as suggested by TRAI, same as last auction, should be continued.

Q3. What should be optimal block sizes and minimum quantity for bidding in (a) 3300-3400 MHz and (b) 3400-3600 MHz bands, keeping in mind both the possibilities i.e. frequency arrangement could be FDD or TDD? Please justify your response.

COAI Response

- a. As per recent deployments, TDD arrangement (3GPP Band 42) is being implemented in the entire 3400-3600 MHz band, which is consistent with the global trends. It would be a natural outcome of global trends that eco-system in 5G technology will be developed in a gradual manner. But harmonization is vital to achieve the economies of scale in end-user devices, facilitate national/ international roaming and deploy/re-farm to 5G in future. **Therefore, we recommend that TDD arrangement may be adopted as the preferred option for spectrum in 3300-3400 MHz & 3400-3600 MHz.**
- b. Channel bandwidth for future technologies is being planned in increment of 10MHz upto 60MHz & 20MHz beyond 60MHz. A block size of 5MHz has a risk of fragmenting the spectrum and making it non-efficient for usage. **Hence, 10MHz of block size is recommended for the auction.**
- c. Further, 20MHz spectrum should be defined as minimum amount of spectrum for bidding considering the quantum of spectrum available in these bands and the requirement of contiguous large blocks for delivering better performance on wireless broadband networks.
- d. In view of above submission, we recommend that block size and minimum quantity for bidding for spectrum in 3300-3400 MHz and 3400-3600 MHz as per below:
 - **Block size: 10 MHz**
 - **Minimum quantum of spectrum: at least 20 MHz**

Q4. Do you think that the roll-out conditions for 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz stipulated in the last auctions held in October 2016 are appropriate? If no, what changes should be made in the roll out obligations for these bands?

COAI Response

- a. Yes, the roll-out conditions for 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz stipulated in the last auctions held in October 2016 are appropriate.
- b. The Notice Inviting Application for spectrum auction held in October 2016 also allows fulfilment of rollout obligations using any technology in any band. This ensures that while the operator has the due flexibility to meet the rollout obligations using any technology and band, the objectives of the Government for coverage are also met.

Q5. Should there be any rollout obligations in 3300-3400 MHz and 3400-3600 MHz bands? If yes, what should these be? Please justify your response.

COAI Response

- a. There should not be any mandatory roll-out obligations in 3300-3400 MHz and 3400-3600 MHz bands for the reasons below:
- The said bands are likely to be deployed as capacity bands due to their limited coverage radii
 - No certainty with regards to standards, network and device ecosystem in the band limits the operator's ability to rollout networks in a time bound manner.

Q6. Is there a need to prescribe spectrum cap in bands 3300-3400 MHz and 3400-3600 MHz? What spectrum cap provisions should be kept for 3300-3400 MHz and 3400-3600 MHz spectrum bands? Should these bands be treated as same or separate bands for the purpose of calculation of spectrum cap?

COAI Response

- a. Spectrum caps are typically designed and enforced to prevent spectrum concentrations in one or two operators' hand. The Industry concurs with TRAI views and also endorses that appropriate intra-band caps are essential to prevent potential spectrum grabbing or monopolization of the spectrum in a specific band by any single operator. Any spectrum cap should facilitate an outcome where all mobile operators may reasonably be able to claim necessary spectrum holdings in a particular band to deliver viable mobile communication services.

Q7. Whether the prices revealed of various spectrum bands in the October 2016 auction can be taken as the value of spectrum in the respective band for the forthcoming auction in the individual LSA? If yes, would it be appropriate to index it for the time gap since the auction held in October 2016. If indexation is to be done then at what rate?

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Q8. If the answer to above question is negative then, whether as per the practice adopted by TRAI in the previous valuation exercise, the valuation for respective spectrum bands be estimated on the basis of various valuation approaches/methodologies (Referred in Annexure 3.3) including those bands (in a LSA) for which no bids were received or spectrum was not offered for auction?

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Q11. Whether the value of October 2016 auction determined prices be used as one possible valuation for 2300 MHz spectrum for the current valuation exercise? If yes, would it be appropriate to index it for the time gap since the auction held in October 2016? Please justify your response with supporting documents/ report(s), if any.

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Q12. Whether the value of the 2300 MHz spectrum should be derived by relating it to the value of any other spectrum band by using technical efficiency factor? If yes, which band and what rate of efficiency factor should be used? If no, then which alternative method should be used for its valuation? Please justify your response with rationale and supporting documents.

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Q13. Whether the valuation of the 2500 MHz spectrum should be equal to value of similarly placed spectrum band? If no, then which alternative method should be used for its valuation? Please justify your response with rationale and supporting documents /report(s)/ detailed methodology, if any.

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Q15. Is there any other valuation approach than discussed above or any international auction experience/ approach that could be used for arriving at the valuation of spectrum for 700/800/900/1800/2100/2300/2500/3300-3400/3400-3600 MHz bands? Please support your suggestions with detailed methodology and related assumptions.

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Q16. Whether value arrived at by using any single valuation approach for particular spectrum band should be taken as the appropriate value of that band? If yes, please suggest which single approach/ method should be used. Please justify your response.

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Q17. In case your response to Q16 is negative, will it be appropriate to take the average valuation (simple mean) of the valuations obtained through the different approaches attempted for valuation of a particular spectrum band, as adopted by the Authority since September 2013 recommendations? Please justify your response.

COAI Response

- a. Driven by extraneous factors, such as artificial scarcity and the need of re-acquiring of expiry spectrum, spectrum prices in India are one of the highest in the world. Using the existing high prices for determining the valuation of spectrum in the subsequent round of spectrum auctions has led to ever increasing spectrum prices in India which in turn has resulted in a high debt burden on the sector and also spectrum remaining unsold in various auctions.
- b. In light of the above, indexing the value of spectrum for the time gap is an incorrect approach as indexing assumes that the price of spectrum will keep going up, whereas this may not be the case. Given the fact that the sector is going through financial stress at present, the business/ revenue expectations have changed significantly with time and indexing historic prices to estimate current prices will give wrong results.
- c. The market discovered price of spectrum in the Oct. 2016 auctions may be used for arriving at the valuation of 800, 900, 1800, 2100, 2300, 2500MHz bands. Wherever the spectrum remained unsold in various bands, the valuation may be set at 80% of reserve price of the auction held in October 2016.

Q9. Whether the value of 700 MHz spectrum should be derived by relating it to value of other bands by using technical efficiency factor? If yes, with which spectrum band this band be related and what efficiency factor or formula should be used? Please justify your views with supporting documents.

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Q10. Else, what valuation approach should be adopted for the valuation of 700 MHz spectrum band? Please support your valuation approach with detailed methodology and related assumptions.

COAI Response

- a. Factors such as propagation characteristics, technologies which can be deployed and the existing ecosystem should be taken into consideration while arriving at the valuation of the spectrum band.
- b. While the 700 MHz band has similar propagation characteristics as 800 MHz band , the LTE ecosystem in APT 700 MHz is yet to be fully developed, and hence operators might be forced to keep this spectrum underutilized/unutilized for a considerable period of time.
- c. In light of the above we suggest that the value of 700 MHz band may be fixed at 50% of the valuation of 800 MHz band. This will also ensure spread of affordable Broadband service in India.

Q14. Whether the valuation of the 3300-3400 MHz spectrum bands and 3400-3600 MHz spectrum bands should be derived from value of any other spectrum band by using technical efficiency factor? If yes, what rate of efficiency factor should be used? If no, then which alternative method should be used for its valuation? Please justify your response with rationale and supporting documents.

COAI Response

- a. We reiterate that factors such as propagation characteristics, technologies which can be deployed and the existing ecosystem should be taken into consideration while arriving at the valuation of the spectrum band.
- b. In this regard it is pertinent to note that the reduced coverage of 3300-3400 MHz and 3400-3600 MHz bands as compared to 2300, 2500MHz bands would mean higher capex in the network. Moreover, the ecosystem 3300-3400 MHz and 3400-3600 MHz is yet to develop.
- c. Further, since 3300-3400 MHz and 3400-3600 MHz spectrum bands are being auctioned for the first time, the Authority may also consider international benchmarks for valuation of these bands.
- d. On account of the above we do not expect the valuation of 3300-3400 MHz and 3400-3600 MHz spectrum bands to be more than 25% of the price of 2300 MHz/ 2500 MHz band.

Q18. Is it appropriate to recommend Reserve price as 80% of the value? If not, then what should be the ratio adopted between the reserve price for the auction and the valuation of the spectrum in different spectrum bands and why?

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Q19. Whether the realized / auction determined prices achieved in the October 2016 auction for various spectrum bands can be taken as the reserve price in respective spectrum bands for the forthcoming auction? If yes, would it be appropriate to index it for the time gap since the auction held in October 2016? If yes, then at which rate the indexation should be done?

COAI Response:

- a. As highlighted in the preamble, we would like to submit that setting reserve prices is typically a conundrum, because if the reserve price is set too high it increases the probability of auction failure, whereas if set too low frivolous bidders can enter the auction. Every failed auction results in missed opportunity for the economy, lower investor interest in the industry, revenue loss to the exchequer and inefficient allocation of spectrum and therefore sensible reserve prices are important.

- b. In the past, TRAI has fixed reserve price at 80% of valuation. We suggest the reserve price of the all the spectrum bands (Except 700MHz, 3.3-3.4 GHz & 3.4-3.6 G.Hz) be fixed at 80% of valuation.
- c. In case of 700 MHz, we suggest a more conservative approach and suggest a ratio of not more than 70% of estimated valuation, to ensure active participation in the auction. For 3.3-3.4 GHz and 3.4-3.6 G.Hz, we submit that the reserve price may be fixed at 50% of the valuation.
