



Akshantula Ramesh <ramesh.al.traigmail.com>

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**Fwd: Idea Cellular response on TRAI consultation paper on Valuation and Reserve Price of Spectrum in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands' dated 26.11.2015.**

1 message

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**Sanjeev Banzal, Advisor TRAI** <advmn@traigov.in>

Tue, Dec 22, 2015 at 9:46 AM

To: sbanzal@gmail.com, vinod.kotwal@nic.in, fa@traigov.in, ramesh.al.traigmail.com

----- Original Message -----

From: **Rahul Vatts** <rahul.vatts@idea.adityabirla.com>

Date: Dec 21, 2015 11:04:44 PM

Subject: Idea Cellular response on TRAI consultation paper on Valuation and Reserve Price of Spectrum in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands' dated 26.11.2015.

To: "advmn@traigov.in" <advmn@traigov.in>

Cc: "traijams@gmail.com" <traijams@gmail.com>, Gagandeep Bajaj <gagandeep.bajaj@idea.adityabirla.com>, Rahul Vatts <rahul.vatts@idea.adityabirla.com>

**IDEA/RCA/RV/2015-16/December /213**

December21, 2015

**The Secretary,**

**Telecom Regulatory Authority of India,**

Mahanagar Doorsanchar Bhawan,

Jawahar Lal Nehru Marg (Old Minto Road),

New Delhi-110002

**Kind Attention: Advisor (NSL-II)**

**Sub: TRAI's Consultation on ' Valuation and Reserve Price of Spectrum in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands' dated 26.11.2015.**

**Dear Sir,**

We appreciate the Authority's gesture to come out with this detailed Consultation on this subject.

- At the outset, we request TRAI to strongly re-emphasize through its proposed recommendations, the need for putting to auction the entire spectrum available in 800/900/1800/2100 MHz band.

- Further, Idea Cellular would like to submit that the 700 MHz band should be put to auction only after at least 3-4 years. The Authority is fully aware that existing spectrum is still in process of being fully utilized/operators are planning roll-outs in the recently acquired spectrum - any new auction in 700 MHz, would clearly divert crucial capex towards acquiring 700 MHz band. This is clearly avoidable, for a country which plans to bring broadband to nook and corner of the country as it will doubtlessly result in setting back the vision of Digital India by atleast 3-4 years.
- On the issue of spectrum caps, Idea Cellular would like to submit that the Authority had as recently as July, 2015 defended the current 25/50 spectrum cap. In its Recommendations dated 02.07.2015, the Authority had at Para 1.12 stated the following with respect to the spectrum caps, *"The Authority is of the considered opinion that the purpose of prescribing a spectrum cap is to prevent a TSP from acquiring large holdings of spectrum through auction, M & A, or trading as it may lead to non-level playing field, disturbing the competition in the market. It cannot be left to the market forces alone to decide the maximum spectrum holding of a TSP. Therefore, the Authority is of the view that the provision of cap should continue on the spectrum holding that a TSP may acquire through auction or otherwise"*.
- In this background, we feel that the proposed Sub 1 GHz cap, if enforced, will promote concentration of spectrum of a specific band with a single operator thereby creating its monopoly/dominance over the spectrum in a specific band. This will seriously affect the level playing field and deprive many operators of the rightful opportunity to acquire spectrum in a particular Sub-1 GHz band. Thus, any Regulatory intervention to allow a given operator to monopolize any one of the sub GHz bands, would clearly be anti-competitive, and would also go against the Authority's own recommendations of 02.07.2015.
- On the issue of pricing of spectrum, Idea Cellular would like to state that there is no rationale for considering the price discovered in the last spectrum auction as the value of spectrum. We also believe that it is wrong to assume that value of spectrum only increases with passage of time. There is no doubt that the changes occurring over time in the underlying demand, supply, evolution of technology, market expectations in the sector and the larger economy have important effects on auction outcomes, and the actual valuations change based on the same. Our comprehensive submissions in this regard are covered as Executive Summary as well in response to specific questions, in [Annexure A](#).

Further, please find enclosed herewith our detailed submission as Annexure A in response to the Authority's Consultation Paper.

We earnestly believe that the Authority will give due-consideration to our comments before formalizing the Recommendations.

Should you require any clarifications or further information on the positions set out in this response, please do not hesitate to contact us.

Thanking You,

For **IDEA Cellular Limited**

**Rahul Vatts**

**Vice President – Regulatory & Corporate Affairs**

**IDEA Cellular Limited**

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 **Idea response - Spectrum Consultation (211215).pdf**  
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## Annexure A

We appreciate the Authority's gesture to come out with this detailed Consultation on this subject. While we have provided detailed comments against each of the questions raised by the TRAI, please find below the Executive Summary of our submissions:

**A. At the outset, we wish to submit that we are disappointed to note that the DoT only proposes to auction 37.5 MHz out of the total 76.25 MHz available spectrum in 800 MHz band.** The Authority has shown lot of endeavour in making more spectrum available in 800 MHz in its last recommendation in December 2014 and we thus request TRAI to strongly re-emphasize the need for putting to auction the entire spectrum available with DoT in 800 MHz band in its recommendations.

Further, considering the current inefficient usage of 800 MHz band and inherent intrinsic value of this band (as was borne out of the auctions in March 2015), Idea Cellular would like to submit that the TRAI should strongly recommend to the DoT to ensure that wherever the DOT is auctioning the 800 MHz spectrum it should be at least 5 MHz or more so that the same can be used for deployment of commercial services immediately post allocation. Further, **an operator should be allowed to bid for less than 5 MHz only if all the following conditions are satisfied:**

- a) **Current holding of operator is less than 5 MHz - than Minimum bid should be 5 MHz less current holding and**
- b) **All existing administratively allocated spectrum of the operator is to be liberalised; and**
- c) **Remaining useful life of existing spectrum is more than 8 years**

**In all other cases minimum bid quantity for 800 MHz should be 5 MHz.**

**B. Further though the Authority has sought to highlight the availability issues in 800 MHz, however we request that Authority also take note of the urgency in making available more spectrum in other access bands as follows :**

- 1) **900 MHz** – The total allocation of 900 MHz across the country varies from 14 MHz to 22.2 MHz, out of a total of 25 MHz earmarked for GSM/ UMTS/ LTE in this band. As it is the quantum of earmarked spectrum in this band is the least among all bands and out of that also

only approximately 70% has been made available for commercial use. Thus clearly there is scope for making additional 900 MHz available in circles, who currently have less allocation for telecom services. TRAI should recommend to DoT that this issue should be pursued with Defence and other users so that all incremental spectrum be made available for auction. This additional spectrum could in fact lead to availability of 5 MHz contiguous blocks in some circles, which would also be revenue opportunity for the Government.

2) **1800 MHz** – the issue of harmonization has been under discussion at DoT for nearly last six months and all operators have agreed for such an exercise. It has been clearly demonstrated in the harmonisation discussions that a large amount of additional spectrum would become available for auction post the harmonisation. **Hence it is requested that harmonization of 1800 MHz band be concluded before the start of auction, so that additional spectrum is available for auction and the partial allocation of spectrum in some of the circles can be completed. Even if the harmonization takes time, the spectrum made available due to this exercise, can be put to auction with a condition that payments would be made on allocation of spectrum at subsequent date.** Further the spectrum being kept reserved for some operators should now be put to auction – since such operators have shown no inclination to either acquire further spectrum through auction or otherwise. Such critical natural resource cannot be kept un-utilized, when there is an intrinsic value of the same to the operators, customers and the Government exchequer.

3) **2100 MHz** – we have two submissions :

a) The TRAI is aware about the issue of severe interference faced by operators in Gujarat, Jammu & Kashmir, Punjab, Haryana & Himachal Pradesh. In this regard, the TRAI is also aware that the Ld. TDSAT vide its order dated 30.04.2015, had inter alia constituted a committee (consisting of experts from Wireless Monitoring Organization – Govt. of India, Ministry of Defence, IIT & TSPs) to conduct survey of concerned service areas. The said committee had conducted detailed study and submitted its report. **The said committee had found interference in service areas of Gujarat, Punjab and J&K and recommended the swap of frequencies.** The DoT has already admitted and accepted the said report of the committee, which is recorded in the TDSAT order dated 10.08.2015. Similarly, in respect of Haryana, the Committee has also concluded that there is harmful interference and the Report has been filed in TDSAT. Further, we request the Authority to also kindly note that the Ld. Solicitor General of India, has inter alia, made an

unequivocal statement before the Hon'ble TDSAT that the problem of interference in different regions as noted in the earlier orders would be finally and finally resolved by Mid-January 2016. The same is captured in TDSAT order dated 23.11.2015. In view of the above, we request the Authority kindly consider the above facts while making final recommendations on forthcoming auction of 2100 MHz spectrum, in the service areas **Gujarat, Haryana, Punjab and Jammu & Kashmir** highlighted above. Further, the TRAI in line with its consistent stand that, its earlier recommendations dated 31.12.2014 and taking into account the TDSAT constituted committee report, should reiterate that issue of interference needs to be resolved before putting fresh spectrum blocks to auction. **(Please refer our letter dated 18.12.2015 in this regard – copy enclosed with hardcopy submission).**

**In view of the above, we request that any spectrum auction in 2100 MHz for above-mentioned five service areas, should only be conducted after the swapping of spectrum and resolution of interference issue.**

- b) The 2100 MHz spectrum allocated to erstwhile STEL, should now be included in total quantity available for auction in 2100 MHz.
- C. In addition, **the consultation paper is ambiguous about the auction of MTNL spectrum.** The Authority is required to ensure level playing field for all operators. The Authority is fully aware that just recently the DoT and subsequently even the Supreme Court rejected the extension of licenses signed by operators in 1994-1996, despite there being a specific extension clause in the license. **In view of the same there cannot be any different treatment for MTNL who are governed by the same CMTS license as other operators and hence the spectrum available with them should be put to auction immediately.** It is also submitted that in case Government considers to grant spectrum to MTNL at auction discovered prices (as has been done in the past), then the Authority should ensure that spectrum should be allocated to MTNL only on the basis of traffic justification, since MTNL continues to hold excess spectrum without valid justification for the same. The excess spectrum with MTNL can be used much more effectively by operators who are having dense and congested networks.

- D. The 700 MHz band should be put to auction only after at least 3-4 years - The Authority is aware that operators have made huge investments in acquiring spectrum in last 2-3 years for rolling out 3G / 4G networks. The spectrum acquired in these past auctions have yet to be put to complete use and operators are rolling out massive capex and infrastructure in next 1-2 years. In such a scenario, when existing spectrum is still in process of being fully utilized/ operators are planning roll-outs in the recently acquired spectrum, any new auction in 700 MHz, would clearly divert crucial capex towards acquiring 700 MHz band. This is clearly avoidable, for a country which plans to bring broadband to nook and corner of the country as it will doubtlessly result in setting back the vision of Digital India by atleast 3-4 years.**
- E. Further, whenever 700 MHz is auctioned for the first time it should be ensured that each operator is allowed to bid for only one carrier of 5MHz, as was done in case of 2100 MHz when it was first auctioned in year 2010, to ensure level playing field among all operators, provide for larger participation and prevent spectrum concentration in the hands of few operators. As and when additional capacities are required, a 2<sup>nd</sup> carrier can be auctioned. While the 700 MHz is more efficient in spectrum propagation characteristics than 1800 MHz spectrum, the ecosystem towards 700 MHz is still at its infancy stage. Hence, 700 MHz will remain largely un/under-utilized for next few years and accordingly value of 700 MHz should be not be higher than 1800 MHz. In case the Government chooses to auction immediately, despite the ecosystem constrains, and demand is high, the Government will be able to discover the true price in any case. However if the demand for 700 MHz remains low, the ecosystem issues would lead to holding costs for 4 to 5 years, and hence it would be ideal to keep the prices not higher than 1800 MHz price.**
- F. Regarding the 2500 MHz band, we feel that insufficient detailing is available on 2500 band and hence no auction should take place in this band currently. Infact, any introduction of this band in the Indian spectrum market needs to be preceded by a larger discussion of all stakeholders – WPC, ITU, ATC, IP-1 providers, TSPs, etc. The TRAI should therefore have a separate Consultation process on this band and no auction should be conducted in the 2500 MHz band as present.**
- G. On the issue of spectrum caps, we feel that the current 25/50 spectrum caps as mandated by the DoT, have effectively served the interest of consumers, competition and the Industry. It not only avoids spectrum concentration in a particular band with one or two operators but also leaves scope for others to acquire adequate/proportionate spectrum in the same band. It is thus**

submitted that there is no change required in the present spectrum capping rules – both in terms of spectrum within the band or total spectrum holding.

- H. **On the proposed Sub 1 GHz cap, we feel that, if enforced, it will promote concentration of spectrum of a specific band with a single operator thereby creating its monopoly/dominance over the spectrum in a specific band. This will seriously affect the level playing field and deprive many operators of the rightful opportunity to acquire spectrum in a particular Sub-1 GHz band. Operators would require spectrum in every Sub-GHz band to be able to offer the complete bouquet of services/technologies to their consumers. Any Regulatory intervention to allow a given operator to monopolize any one of the sub GHz bands, would clearly be anti-competitive. It also needs to be noted that the proposal to introduce new spectrum caps tantamount to changing the rules of the game midway.**
- I. **On the issue of Roll-out obligations - we reiterate that for any market driven auctions, there exists no rationale for insisting on any roll-out obligation.** The competitive situation forces the operators to roll-out services wherever a viable business case for the same exists. Hence, ideally roll-out obligations are not essential. The market forces and competition create impetus for the operators to reach out to rural markets and existing proliferation of coverage in rural markets is a proof that operators themselves want to be present in rural markets. Hence the market forces should be encouraged and incentivized to reach rural areas, rather than creating certain artificial rules for forced coverage. Moreover, the coverage criteria, testing procedures, etc. were recently made tougher in 2012 and in fact achieving even that kind of coverage is a huge challenge given the various problems such as the absence of maps for rural areas, complex testing procedures etc. **Hence there is no need to enhance the coverage requirements.**
- J. **Pricing of spectrum - There is no rationale for considering the price discovered in the last spectrum auction as the value of spectrum for all spectrum bands and each band has to be seen individually as explained in detail later. We also believe that it is wrong to assume that value of spectrum only increases with passage of time.** The price derived in any spectrum auction for any specific band depends upon various factors, including the availability and contiguity of spectrum, the demand and supply at a given time (some of the previous auctions have seen higher prices because of artificially constrained supply), the technology for which the specific spectrum band is being deployed globally and the development of ecosystem of equipment and devices etc. There is no doubt that the changes occurring over time in the underlying demand, supply, evolution of technology, market expectations in the sector and the larger economy have important effects on



auction outcomes, and the actual valuations change based on the same. Our submissions in this regard are as follows :

- For 800 MHz, value of spectrum should be considered at last auction discovered price.
- For 900 MHz, value of spectrum should be considered at lower of [50%] of last auction discovered price for 900 MHz or equal to 1800 MHz. The rationale for this is that as far as 900 MHz spectrum is concerned in the last auction, the winners were forced to bid for their current holding of 900 MHz for renewal of the licenses to ensure continuity of the business created and built over 20 years, which is very different for bidding for additional spectrum, based on a business case.
- For 1800 MHz, the price discovered in the last spectrum auction (in 2015 or in 2014) should be taken as value of spectrum without any indexation. Also in the cases where 5 MHz contiguous block is not available for auction the value of spectrum should be reduced, as non-contiguous 1800 MHz can only be used for GSM and not for offering LTE services.
- For 2100 MHz spectrum, in March 2015 auction there was no demand in Andhra Pradesh, Delhi and Mumbai circles and in these circles spectrum value should be reduced. In other circles also only one block of 2100 MHz was auctioned (constrained supply) and in four service areas (Gujarat, Tamil Nadu, Haryana, Maharashtra) the spectrum was bid for only at reserve price (which means that there was demand for only one block at that price and there would have been unsold spectrum, if more than one block was put to auction. Also as the 1800 MHz is now becoming the preferred spectrum to offer broadband services, in these 7 circles (3 circles with no bid and 4 Circles with only one bid at reserve price the value of 2100 MHz spectrum should be the lower of 2 prices, last auction discovered price or 1800 MHz price.

In fact when auction was conducted in 2010, 2100 MHz was the only broadband spectrum and so the winning prices were very high. Subsequently global ecosystem has developed on 1800 MHz for LTE and so the value of 1800 MHz has increased over a period of time and consequently the value of 2100 MHz as the only source of wireless broadband spectrum has declined. The following are the reserve prices of 2100 band (2015 auction) and winning prices of 1800 band (2014 auction) prices for Delhi and Mumbai –

	<u>1800 (Winning Price Feb'14)</u>	<u>2100 (Reserve Price Mar'15)</u>
Delhi	Rs 1820 cr	Rs 3315 cr
Mumbai	Rs 1360 cr	Rs 3245 cr

It is very clear from the above that the reserve price of 2100 was fixed at extremely high level, given the price of 1800 discovered in the same LSAs in the Feb'14 auction. Hence, given the technological evolution, in principle, the value of 2100 MHz cannot be higher than the value of 1800 MHz.

- Lastly, only for the cases where there was no price discovery in the earlier spectrum auctions, there may be a need for a valuation exercise be done (like Kerala and Rajasthan for 800 MHz). These valuations could also be derived based on value of spectrum in other similar and comparable markets and be kept on the lower side of the range, till the price is discovered finally discovered in an auction.

**K. Finally, the TRAI needs to clearly recommend that the effective date of spectrum for calculating the 20 year validity has to be the date of actual allotment of spectrum. Thus, the start date of any financial obligation for an operator should start from the date of allocation of spectrum and not from the date of issue of LOI (Letter of Intent), as is being implemented by DoT. This correction in actual effective date of spectrum from date of allotment should also be made applicable for spectrum allocated in earlier auctions.**

**Our query-wise submissions are as under:**

***Q1. Whether the entire spectrum available with DoT in the 800 MHz band be put for auction? Justify your answer.***

**Idea Response:**

- A. The TRAI has been consistent in its approach on availability of spectrum – **all available spectrum in bands which have been auctioned in the past should be auctioned.** In fact in March 2015 auction, it was TRAI's recommendations which led to increase in availability of 800 MHz.
- B. The Authority in present consultation, has correctly pointed out that the requirement of inter-Operator band needs to be reviewed considering the fact that the spectrum now available is already liberalized and can be used for any technology. It is our understanding that guard band is inclusive of 5 MHz in 800 MHz band and hence no separate spectrum is required for guard band.
- C. Moreover, DoT has the option of re-shuffling the carrier assignment among the TSPs to reduce the Inter-operator guard band. Also the un-utilized 800 MHz spectrum of BSNL in the 7 service areas, as highlighted by the TRAI in para 2.9 of consultation paper as well as spectrum surrendered by TTSL should also be considered by the DOT to be put up for auction.
- D. The results of March 2015 auction clearly highlighted the demand for 800 MHz. Non-auction of the 800 MHz spectrum will result in creation of artificial scarcity, insufficient spectrum to create a block of 5 MHz where the same could be available if all spectrum was auctioned and a general sub-optimal use of natural resource. Thus we request TRAI to strongly re-emphasize the need for putting to auction the entire spectrum available with DoT in 800 MHz band.
- E. **In addition, considering the current inefficient use of 800 MHz in CDMA , we strongly recommend that Authority ensure that an existing operator, is not allowed to bid for less than 5, MHz if validity period of existing spectrum is less than 8 years.**
- F. It is widely acknowledged that the current usage of 800 MHz by existing users is inefficient and that There has been a continuous decline in the number of subscribers being served by the CDMA technology. Infact, taking note of the under-utilization of the 800 MHz band, the Authority itself in its

Feb 2014 Recommendations had said that instead of relying only on CDMA and EVDO, alternate uses of the 800 MHz band should be envisaged. It had further stated:

*“The spectrum assignment should facilitate the adoption of not only EVDO, but other technologies such as HSPA, LTE, LTE-A etc. Fragmented and smaller chunks of spectrum will not only lead to reduced efficiency in the use of spectrum but also pose a hindrance to the adoption of latest technologies in line with international usage. Therefore, large contiguous blocks (at least 5 MHz) and sufficient quantum of spectrum should be made available to the operators to achieve better efficiencies and throughputs.”*

**G. In view of the above, Idea Cellular would like to submit that the TRAI should strongly recommend to the DoT to ensure that wherever the DOT is auctioning the 800 MHz spectrum it should be in the blocks of 5 MHz or more so that the same can be used for deployment of commercial services immediately post allocation. Further, an operator should be allowed to bid for less than 5 MHz only if all the following conditions are satisfied:**

- a) Current holding of operator is less than 5 MHz - than Minimum bid should be 5 MHz less current holding and
- b) All existing administratively allocated spectrum of the operator is to be liberalised; and
- c) Remaining useful life of existing spectrum is more than 8 years

**For all other cases minimum bid should be 5 MHz.**

**H. Further though the Authority has sought to highlight the availability issues in 800 MHz, however we request that Authority also take note of the urgency in making available more spectrum in other access bands as follows :**

- 1) **900 MHz** – The total allocation of 900 MHz across the country varies from 14 MHz to 22.2 Mhz. Thus clearly there is scope for making additional 900 MHz available in some circles, where currently the allocation is less currently. TRAI should recommend to DoT that this issue should be pursued with Defence and other users so that all incremental spectrum be made available for auction. This additional spectrum could in fact lead to availability of 5 MHz contiguous blocks in some circles, which would also be revenue opportunity for the Government.

2) **1800 MHz** – the issue of harmonization has been under discussion at DoT for nearly last six months and all operators have agreed for such an exercise. It has been clearly demonstrated in the harmonisation discussions that a large amount of additional spectrum would become available for auction post the harmonisation. **Hence it is requested that harmonization of 1800 MHz band be concluded before the start of auction, so that additional spectrum is available for auction and the partial allocation of spectrum in some of the circles can be completed. Even if the harmonization takes time, the spectrum made available due to this exercise, can be put to auction with a condition that payments would be made on allocation of spectrum at subsequent date.** Further the spectrum being kept reserved for some operators should now be put to auction – since such operators have shown no inclination to either acquire further spectrum through auction or otherwise. Such critical natural resource cannot be kept un-utilized, when there is an intrinsic value of the same to the operators, customers and the Government exchequer.

3) **2100 MHz** – we have two submissions :

a) The TRAI is aware about the issue of severe interference faced by operators in Gujarat, Jammu & Kashmir, Punjab, Haryana & Himachal Pradesh. In this regard, the TRAI is also aware that the Ld. TDSAT vide its order dated 30.04.2015, had inter alia constituted a committee (consisting of experts from Wireless Monitoring Organization – Govt. of India, Ministry of Defence, IIT & TSPs) to conduct survey of concerned service areas. The said committee had conducted detailed study and submitted its report. **The said committee had found interference in service areas of Gujarat, Punjab and J&K and recommended the swap of frequencies.** The DoT has already admitted and accepted the said report of the committee, which is recorded in the TDSAT order dated 10.08.2015. Similarly, in respect of Haryana, the Committee has also concluded that there is harmful interference and the Report has been filed in TDSAT. Further, we request the Authority to also kindly note that the Ld. Solicitor General of India, has inter alia, made an unequivocal statement before the Hon'ble TDSAT that the problem of interference in different regions as noted in the earlier orders would be finally and finally resolved by Mid-January 2016. The same is captured in TDSAT order dated 23.11.2015. In view of the above, we request the Authority kindly consider the above facts while making final recommendations on forthcoming auction of 2100 MHz spectrum, in the service areas **Gujarat, Haryana, Punjab and Jammu & Kashmir** highlighted above. Further, the TRAI in line with its consistent stand that, its earlier recommendations dated 31.12.2014 and taking into account the TDSAT constituted committee report, should reiterate that issue

of interference needs to be resolved before putting fresh spectrum blocks to auction. **(Please refer our letter dated 18.12.2015 in this regard).**

**In view of the above, we request that any spectrum auction in 2100 MHz for above-mentioned five service areas, should only be conducted after the swapping of spectrum and resolution of interference issue.**

- b) The 2100 MHz spectrum allocated to erstwhile STEL, should now be included in total quantity available for auction in 2100 MHz.
- 4) In addition, **the consultation paper is ambiguous about the auction of MTNL spectrum.** The Authority is required to ensure level playing field for all operators. The Authority is fully aware that just recently the DoT and subsequently even the Supreme Court rejected the extension of licenses signed by operators in 1994-1996, despite there being a specific extension clause in the license. **In view of the same there cannot be any different treatment for MTNL who are governed by the same CMTS license as other operators and hence the spectrum available with them should be put to auction immediately.** It is also submitted that in case Government considers to grant spectrum to MTNL at auction discovered prices (as has been done in the past), then the Authority should ensure that spectrum should be allocated to MTNL only on the basis of traffic justification, since MTNL continues to hold excess spectrum without valid justification for the same. The excess spectrum with MTNL can be used much more effectively by operators who are having dense and congested networks.

**Q2. How can the spectrum in the 800 MHz band, which is not proposed to be auctioned due to non-availability of inter-operator guard band, be utilised?**

- A. It is our understanding, there is no need of inter-operator Guard band in 800 MHz CDMA systems. The longstanding spectrum allocation in India where various CDMA operators are present in the adjacent spectrum spots is testimony of that fact, CDMA technology does not require inter-operator guard band as it implicitly build in the 1.25 MHz single carrier.
- B. In LTE technology, the guard-band is in-built in various bandwidth configurations. For 5MHz bandwidth configuration, the usable bandwidth is 90% of spectrum and rest is guard-band. For

example for a 5 MHz spectrum , the resource block RBs are contained in 4.5 MHz only and remaining 0.25 on either side is in-built guard-band in total 5 MHz BW. Hence it is recommended that all available spectrum should be put for auction. The current guard between the 800 MHz and the 900 MHz can be maintained as the inter-band guards, for the following reasons :

a) **The uplink and down link of the 800 MHz and 900 MHz bands are reversed and hence do cause a lot of interference. Infact there is interference despite the guard band, between the last user of 800 MHz band and the first user of 900 MHz band.**

b) There are prevalent infrastructure present in various circles by each operator.

**C. In view of the above, all available 800 MHz spectrum should be utilized.**

**Q3. What should be the block size in the 700 MHz band?**

**Idea Response:**

A. At the outset, the Authority needs to address the issue on whether the country is ready for auction of 700 MHz spectrum.

B. The Authority is aware that operators have made huge investments in acquiring spectrum in last 2-3 years for rolling out 3G / 4G networks. The spectrum acquired in these past auctions have yet to be put to complete use and operators are rolling out massive capex and infrastructure in next 1-2 years. **In such a scenario, when existing spectrum is still in process of being fully utilized/ operators are planning roll-outs in recently acquired spectrum, any new auction in 700 MHz, would clearly divert crucial capex towards acquiring 700 MHz band.** This is clearly avoidable, for a country which plans to bring broadband to nook and corner of the country.

It may be noted that the existing spectrum deployed for broadband data services and the spectrum that will be further deployed by private operators is as under –

Broadband Spectrum deployed (Mar'15)

3G - 2100 MHz auctioned in 2010	340 MHz
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3G - 900 MHz auctioned in Feb'14	15 MHz
<b>Total</b>	<b>355 MHz</b>
<u>Broadband Spectrum being deployed post Mar'15</u>	
3G – 2100 MHz auctioned in Mar'15	70 MHz
3G - 900 MHz auctioned in Mar'15	20 MHz
4G – 1800 MHz auctioned in Nov'12, Feb'14 & Mar'15	260 MHz
4G – 800 MHz auctioned in Mar'15	20 MHz
(only 5 MHz contiguous blocks considered)	
4G – 2300 MHz auctioned in 2010 (50% of 20 MHz blocks)	440 MHz
<b>Total</b>	<b>810 MHz</b>

**It may be seen from above that a huge broadband capacity creation is already in the pipeline and applying a factor of 1.4 times capacity for 4G over 3G, the capacity of broadband data will increase to more than four times from the Mar'15 levels.** This multiple does not take into account –

- a. Geographical expansion happening on already deployed 2100 MHz spectrum which is also resulting in more capacity creation.
- b. More broadband rollouts planned based on spectrum sharing arrangements

**Hence, time has to be given for this capacity to be absorbed (especially given the very limited current penetration of 4G devices) or else we will have excessive broadband capacity resulting in unfair price competition with such large capacities coming on stream.**

- C. It may also be noted that based on existing roll-outs, there is a surge in data traffic on 2100 MHz band and hence it is critical to augment the supply of 2100 MHz band, for proliferation of broadband. Bringing in 700MHz, which would have few devices and undeveloped eco system would not help in solving the surge in data traffic.
- D. Opening of new 700 band will thus lock a lot of investments in buying the spectrum and this could become a limiting factor in network rollout including expansion of the existing 3G/ 4G network. This undoubtedly will result in setting back the vision of Digital India by atleast 3-4 years.



- E. 700MHz was standardized in the 3GPP bodies only in 2013. Being new band, the eco-systems of the handset manufactures and the equipment manufacturers will remain weak for next 3-5 year. It will take time for market to mature and provide affordable devices in this spectrum range for the subscribers. **Also, as per GSM October 2015 report, at present only 5 countries – Australia, New Zealand, Panama, Taiwan & Papua New Guinea ( only 12 commercial networks in total till date) have commercially launched LTE services using APT700 (700 MHz) spectrum,** all of them using the internationally harmonized FDD band plan configuration known as 3GPP band 28. The operators can use this spectrum efficiently only after the eco-system for this band is developed globally.
- F. An example of putting spectrum in auction before development of spectrum can result in situation similar to introduction of 2300 MHz whose roll-out has been delayed for more than 5 years on account of delay in development of the requisite device and network ecosystem.
- G. **It will take time for the 700 MHz market to mature and provide affordable devices in this spectrum band for the subscribers.** It may be noted that the 700 devices proliferation and availability would be a huge challenge since firstly the 700 band devices used in US (which is currently the largest market for LTE in 700 band) will not be compatible with frequency blocks proposed in India for 700 MHz (APT band) usage and secondly most of the devices are currently on penta-band usage viz. 800/900/1800/2100/2300 and accommodating a new band would be a challenge. **Just for reference current devices in our network with 700 MHz compatibility are less than 0.3% of entire subscriber base** and we feel that while these models have 700 MHz capability, as per literature, the same is not activated in these handset models when sold in India.
- H. Under these circumstances, any untimely auction of spectrum in 700 MHz band may accrue revenue to the Government, but the commercial exploitation of such scarce resource for the larger interest of the society may be permanently impaired if the operators are forced to bid for such auction ahead of its commercial viability.
- I. In our assessment, it will take 2-3 years for 3G UMTS to stabilize & reach the mass market. In fact, even 4G has launches in India in 3 frequency bands namely 800 MHz , 1800 MHz and 2300 MHz bands have just begun and need time to stabilize post which the real commercial scale volumes for mobile broadband using LTE technology will be achieved only around 2018-2019. **In view of this, it is submitted that the auction of 700 MHz band should be delayed by at least 3-4 years.**

- J. **If however, the Authority still decides to recommend auction of 700 MHz, it should be auctioned in standard block sizes of 5 MHz, to be able offer all services that a liberalized spectrum is capable of providing.**
- K. **Further, whenever 700 MHz is auctioned for the first time it should be ensured that each operator is allowed to bid for only one carrier of 5MHz, as was done in case of 2100 MHz when it was first auctioned in year 2010, to ensure level playing field among all operators, provide for larger participation and prevent spectrum concentration in the hands of few operators. As and when additional capacities are required, a 2<sup>nd</sup> carrier can be auctioned.**

***Q4. Whether there is any requirement to change the provisions of the latest NIA with respect to block size and minimum quantum of spectrum that a new entrant/existing licenses/expiry licensee is required to bid for in 800, 900, 1800 and 2100 MHz bands. Please give justification for the same.***

**Idea Response:**

- A. **Idea Cellular believes that the block size for auction should be 5 MHz, as this spectrum size is the most relevant block size for roll-out of new technologies. In addition it is necessary to ensure that the spectrum being sold is contiguous.**
- B. In this regard, please refer to our submissions on increasing the availability of spectrum in 900/1800/2100 MHz made above.
- C. However, some specific band-wise issues need to be kept in consideration, as mentioned below:

**1) 1800 MHz**

The DoT should first complete the harmonisation exercise before auctioning more 1800 MHz spectrum. . It has been clearly demonstrated in the harmonisation discussions that a large amount of additional spectrum would become available for auction post the harmonisation. This will ensure availability of more contiguous 5MHz block which can be used for LTE. It is also a known fact unlike 800 MHz (where the existing use is inefficient and that there has been a continuous decline in the number of subscribers being served by the CDMA technology), in 1800 MHz (which

along with 900 MHz spectrum continues to be used efficiently for voice applications) - due to insufficient availability of spectrum, there are scenarios where the spectrum won in the auction is less than 5 MHz and hence some operators would be interested in buying incremental spectrum of 1800 MHz in a block of less than 5 MHz. Hence it is possible that post harmonisation they can have a 5 MHz contiguous block and use that spectrum to offer LTE services. Also number of subscribers and the voice traffic on GSM is still growing and there continues to be need for more spectrum of 1800 MHz for GSM technology. **Accordingly, the block size for 1800 MHz should be kept at 200 KHz.**

**2) 800 MHz:**

It is important to note that the number of CDMA subscribers and traffic on CDMA networks continues to decline. In last three years itself, CDMA subscriber base has declined from 105 mn in March 2012 to 50 mn March 2015, a decline of more than 52%. Hence, as suggested by the Authority in its Feb 2014 recommendations, instead of relying only on CDMA and EVDO, alternate uses of the 800 MHz band should be envisaged. **Therefore, in order to prevent any further under-utilization of this valuable spectrum, an operator should be allowed to bid for less than 5 MHz only if all the following conditions are satisfied:**

- a) Current holding of operator is less than 5 MHz - than Minimum bid should be 5 MHz less current holding and
- b) All existing administratively allocated spectrum of the operator is to be liberalised; and
- c) Remaining useful life of existing spectrum is more than 8 years

**In all other cases minimum bid quantity for 800 MHz should be 5 MHz.**

**3) 2100 MHz**

Block size should be kept at 5 MHz for 2100 MHz spectrum. In this regard, we reiterate our following submissions:

The TRAI is aware about the issue of severe interference faced by operators in Gujarat, Jammu & Kashmir, Punjab, Haryana & Himachal Pradesh. In this regard, the TRAI is also aware that the Ld. TDSAT vide its order dated 30.04.2015, had inter alia constituted a committee (consisting of experts from Wireless Monitoring Organization – Govt. of India, Ministry of Defence, IIT & TSPs) to conduct survey of concerned service areas. The said committee had conducted detailed study and submitted its report. **The said committee had found interference in service areas of Gujarat,**

**Punjab and J&K and recommended the swap of frequencies.** The DoT has already admitted and accepted the said report of the committee, which is recorded in the TDSAT order dated 10.08.2015. Similarly, in respect of Haryana, the Committee has also concluded that there is harmful interference and the Report has been filed in TDSAT. Further, we request the Authority to also kindly note that the Ld. Solicitor General of India, has inter alia, made an unequivocal statement before the Hon'ble TDSAT that the problem of interference in different regions as noted in the earlier orders would be finally and finally resolved by Mid-January 2016. The same is captured in TDSAT order dated 23.11.2015. In view of the above, we request the Authority kindly consider the above facts while making final recommendations on forthcoming auction of 2100 MHz spectrum, in the service areas **Gujarat, Haryana, Punjab and Jammu & Kashmir** highlighted above. Further, the TRAI in line with its consistent stand that, its earlier recommendations dated 31.12.2014 and taking into account the TDSAT constituted committee report, should reiterate that issue of interference needs to be resolved before putting fresh spectrum blocks to auction. **(Please refer our letter dated 18.12.2015 in this regard).**

**In view of the above, we request that any spectrum auction in 2100 MHz for above-mentioned five service areas, should only be conducted after the swapping of spectrum and resolution of interference issue.**

- D. Further, it needs to be noted that in the previous auctions, **operators have experienced major problems, as products with different values have been auctioned together.** As a result a bidder who was interested in only 5 MHz contiguous spectrum was forced to take either lesser quantity of spectrum or non-contiguous spectrum which it was not interested in. For example if an existing operator who is using 1800 MHz for GSM wishes to acquire a 5 MHz contiguous block for deploying LTE, then that operator will have zero value for spectrum allocation of anything less than 5 MHz contiguous spectrum. Such an operator cannot use the spectrum for GSM as it already has what it needs for GSM and it cannot use it for LTE as a 5 MHz contiguous spectrum is not allocated.

Hence, blocks of contiguous 5 MHz spectrum and other blocks should be auctioned as separate products with separate reserve price as the two are not comparable. We cannot understand as to why such a logical and simple change in auction design has not been made despite requests by all operators in the past. **This fallacy of earlier auction design needs to be corrected, as otherwise the bidders bid for 5 MHz contiguous blocks and actually end up with smaller allocations for which they do not have any use.**

**E. Hence, the following spectrum blocks should be auctioned as separate products in the same auction, with separate bids placed for each of the following categories in a specific band –**

- (i) Contiguous blocks of 5 MHz available across the entire geography of LSA
- (ii) Contiguous blocks of 5 MHz available in part of the LSA
- (iii) Non-contiguous blocks of < 5 MHz available across the entire geography of LSA
- (iv) Non-contiguous blocks of < 5 MHz available in part of the LSA

This would prevent unwanted fragmentation of spectrum and would enable bidders to bid for what they actually need.

***Q5. What should be the block size in the 2300 MHz and 2500 bands?***

**Idea Response:**

- A. Since 2300 MHz band would be used in the TDD mode, the block size for the same should be the same as in the last auction, i.e. 20 MHz
  
- B. Regarding the 2500 MHz band, we feel that insufficient detailing is available on 2500 band and hence no auction should take place in this band currently. Infact, any introduction of this band in the Indian spectrum market needs to be preceded by a larger discussion of all stakeholders – WPC, ITU, ATC, IP-1 providers, TSPs, etc. The TRAI should therefore have a separate Consultation process on this band.**
  
- C. Further, we would like to submit that until the globally harmonized channel plan is followed for allocation in 2500 MHz, there will be no takers for this band. This has already been witnessed in the past auction, where the PSUs were forced to take spectrum in this band and later they had to surrender the spectrum as they could not use it. **Hence no auction should be conducted in the 2500 MHz band as present.**

***Q6. Considering the fact that one more sub-1 GHz band (i.e. 700 MHz band) is being put to auction, is there a need to modify the provisions of spectrum cap within a band?***

**Idea Response:**

The current 25/50 spectrum caps as mandated by the DoT, has effectively served the interest of consumers, competition and the Industry. It not only avoids spectrum concentration in a particular band with one or two operators but also leaves scope for others to acquire adequate/proportionate spectrum in the same band. Hence in response to Question no. 6, it is submitted that there is no change required in the present spectrum capping rules – both in terms of spectrum within the band or total spectrum holding.

***Q7. Is there any need to specify a separate spectrum cap exclusively for the spectrum in 700 MHz band?***

**Idea Response:**

As already submitted, the 700 MHz auction should be deferred for now and TSPs should be allowed to focus on utilization and consolidation of the spectrum already available in various other bands. Further neither the requisite equipment eco-system nor the devices situation are available/ conducive for introduction of 700 MHz.

Further, whenever 700 MHz is auctioned for the first time it should be ensured that each operator is allowed to bid for only one carrier of 5MHz, as was done in case of 2100 MHz when it was first auctioned in year 2010, to ensure level playing field among all operators, provide for larger participation and prevent spectrum concentration in the hands of few operators. As and when additional capacities are required, a 2<sup>nd</sup> carrier can be auctioned.

***Q8. Should a cap on the spectrum holding within all bands in sub-1 GHz frequencies be specified? And in such a case, should the existing provision of band specific cap (50% of total spectrum assigned in a band) be done away with?***

**Idea Response:**

A. TRAI, in its consultation paper, has acknowledged that the spectrum caps are typically designed and enforced to prevent spectrum concentrations in one or two operators' hand. We agree that present spectrum caps (25/50) are essential to prevent potential spectrum monopolization in a specific band by any single operator.

B. However, the proposed Sub GHz cap, if enforced, will promote concentration of spectrum of a specific band with a single operator thereby creating its monopoly/dominance over the spectrum

in a specific band. This will seriously affect the level playing field and deprive many operators of the rightful opportunity to acquire spectrum in a particular Sub-1 GHz band.

- C. The Authority would also acknowledge that the Sub-1 GHz band is considered more efficient since all spectrum bands (700, 800 and 900MHz) have better propagation characteristics. However, these spectrum bands are not directly substitutable, due to their distinct ecosystems and unique usages of the bands based on the legacy use, which allow for distinctive technologies viz. 700MHz for LTE (not for 2G and 3G services), 800MHz for CDMA and LTE (not for GSM services) and 900MHz for 2G and 3G services. Therefore, operators would accordingly require spectrum in every Sub- 1 GHz band to be able to offer the complete bouquet of services/technologies to their consumers through a sub-1 GHz band for each technology. Any Regulatory intervention to allow a given operator to monopolize any one of the sub GHz bands, would clearly be anti-competitive.
- D. It also needs to be noted that the proposal to introduce new spectrum caps tantamount to changing the rules of the game midway. During the last few spectrum auctions when a substantial amount of spectrum in 900MHz and 800MHz band was assigned, the operators were subject to band specific cap rule. Had the proposed spectrum cap been implemented during the past spectrum auctions, operators' spectrum cap limits for 900MHz and 800MHz would have been different and they would have placed their bids accordingly.
- E. Further, currently the 800MHz and 900MHz bands are held by 3-4 operators due to intra-band cap, and no operator has any monopoly over these bands. On the contrary, **the proposed Sub-1 GHz bands cap will allow an operator to acquire a disproportionate amount of spectrum in the 700MHz or 800MHz or 900 MHz band, thereby creating its monopoly over one spectrum band/technology.**
- F. The goal of TRAI for prescribing band wise spectrum cap has been to ensure a level playing field for operators and to provide equal opportunity for acquiring spectrum in each band. We believe that the proposal of a separate spectrum cap of Sub-1 GHz band will only serve the interest of a single operator and enable it to garner excessive / disproportionate spectrum in a particular Sub-1 GHz band, e.g. 800MHz or 700MHz or 900 MHz band and therefore, will defeat the very purpose of prescribing the intra-band spectrum cap.

- G. In that context, the existing prescribed spectrum Cap (25/50 rule) determined on the basis of the Spectrum assigned in the respective band and also on the Total Spectrum assigned in all the bands appears reasonable and should continue.

**In view of the above, it is strongly emphasized that the sub 1 GHz cap should not be recommended / proposed by TRAI and that the present spectrum caps of 25/50 needs to be retained.**

- H. **Idea Cellular would also like to add that for determination of successful bidders in the auction, the first priority should be given to the TSP that does not already hold a block of 5 MHz contiguous spectrum in that band, and only after allocation is made to each such bidder who is bidding for its first contiguous block (first carrier) of 5 MHz in that specific band, should the balance spectrum in that band be made available for allocation to other bidders who already have a holding of 5 MHz contiguous block in that particular band. This objective could be achieved by giving a higher rank for establishing provisional winners in each round to bidders who do not have an existing 5 MHz contiguous block in the given frequency band.**
- I. It is further pertinent to submit that there needs to be a consistency and predictability on the issue of computation of spectrum caps. In the last Auction held in March 2015 there was a lot of ambiguity on the issue as it was not clear as to how spectrum caps had been changed since the earlier auction.
- J. Further, any reduction in earlier notified spectrum cap is unfair and hence in no case, in future, should the spectrum Caps be lower than the ones prescribed in a prior auction. We recommend that the following two principles be adhered to at all times to ensure fairness and equity –
- A spectrum cap once notified should not be reduced subsequently, irrespective of the subsequent developments that may occur in the form of surrender of spectrum etc.
  - Spectrum once acquired by a licensee any time through a valid process at the time of acquisition should always remain valid irrespective of any subsequent developments.
- K. **Idea Cellular wishes to add here that transparency being one of the critical elements of any regulatory process / policy , it is important that the DoT transparently publish the basis on which spectrum caps get derived for each of the participating operators in any Auction.** The DoT would recall that details of the methodology used for such computation were not made available during the



last auction. It is therefore submitted that such details of Band wise, operator wise allocation, Guard band and unallocated spectrum be made available in the auction NIA document without the need for any specific operator requests.

***Q9. Should 2300 MHz and 2500 MHz bands be treated as same band for the purpose of imposing intra-band Spectrum Cap? Please support your suggestions for Q6 to Q9 with proper justifications.***

**Idea Response:**

- A. We have already submitted that there should be no auction in the 2500 MHz band, since insufficient detailing is available on 2500 band and any introduction of this band in the Indian spectrum market needs to be preceded by a larger discussion of all stakeholders – WPC, ITU, ATC, IP-1 providers, TSPs, etc. The TRAI should therefore have a separate Consultation process on this band.
- B. Further, we would like to submit that until the globally harmonized channel plan is followed for allocation in 2500 MHz, there will be no takers for this band. This has already been witnessed in the past auction, where the PSUs were forced to take spectrum in this band and later they had to surrender the spectrum as they could not use it. **Hence no auction should be conducted in the 2500 MHz band as present.**
- C. However, should the TRAI recommend an auction for the same, we have the following submissions:
- For the same reasons as stated above in the preceding query no. 8, we believe that 2300 MHz and 2500 MHz should be treated separately for the purpose of imposing intra-band Spectrum Cap.

Further, it would be incorrect to club 2300 MHz and 2500 MHz together just for the purpose of facilitating the existing operators to buy more spectrum in the same band.

- The current 25/50 spectrum caps have effectively served the interest of consumer, competition and the Industry. It not only avoids spectrum concentration in a particular band with one or two operators but also leaves scope for others to acquire adequate/proportionate spectrum in the same band.

- On the contrary, the proposal of 2300 MHz and 2500 MHz bands being treated as same band for the purpose of imposing intra-band Spectrum Cap, will empower an existing operator to acquire an excessive/disproportionate amount of spectrum in these 2 bands, thereby creating its monopoly/dominance over the spectrum in a specific band.

**Hence 2300 MHz and 2500 MHz should be treated as different bands and no change should be brought over in the present spectrum capping rules.**

***Q10. Suggest an appropriate coverage obligation upon the successful bidders in 700 MHz band? Whether these obligations be imposed on some specific blocks of spectrum (as was done in Sweden and UK) or uniformly on all the spectrum blocks?***

**&**

***Q11. Should it be mandated to cover the villages/rural areas first and then urban areas as part of roll-out obligations in the 700 MHz band?***

**Idea Response:**

- Firstly the Authority needs to take note that the 700 MHz band proliferated in US, whereas it has not been a huge success in Europe, primarily due to a confused Regulatory regime, which required the operators to re-work their business models. Thus, the quoted examples of Europe, should not be mandated in Indian context.
- Secondly, the market forces and competition create impetus for the operators to reach out to rural markets and existing proliferation of coverage in rural markets is a proof that operators themselves want to be present in rural markets. Hence the market forces should be encouraged and incentivized to reach rural areas, rather than creating certain artificial rules for forced coverage.**
- Thirdly, the availability of new technology handsets always starts from the urban areas and then gradually spreads out to rural areas, primarily through secondary market. Thus launching 700 MHz in rural areas with no or low availability of handsets would neither result in revenue for operators nor meet the requirements of broadband penetration. Also, if operators do not get any revenues at outset, then the operators would be laden with networks with low revenues, which would impact any

further coverage. Thus it is critical to ensure surplus with operators to be able to roll-out in rural markets.

- D. Currently, rural penetration is getting enhanced through increase in penetration of 3G coverage and 3G handsets etc. However, introduction of 700 MHz band in such rural markets would not only be too costly for consumers but would also leave operators struggling with low revenues and ARPUs. This would lead to undesirable subsidization of services, which operators may not be able to sustain.
- E. **As has been highlighted in our response earlier, for rural markets, currently it is the availability of 900 and 2100 MHz band that is most critical for increasing the broadband usage and hence availability of these bands should be increased to ensure broadband coverage in rural markets.**
- F. Additionally, the Authority in its recommendations dated 06.01.2015 had noted that the high USOF levy has not achieved the stated purpose of filling the investment gap in the development of telecom services in underserved areas and that the time is ripe for a regulatory reappraisal of the LF regime to stimulate further investments in the sector for its growth and the spill over effects on the rest of the economy. **Accordingly, the Authority had recommended that the component of USO levy should be reduced from the present 5% to 3% of AGR for all licences with effect from 1st April 2015.**
- G. **In view of above, we urge that the TRAI reiterate its earlier recommendations that the Government should consider a phased reduction in the USO levy. This can be also be done by way of incentivizing TSPs to achieve pre-defined milestones and faster rollout of services in uncovered areas. The Government at one stage had approved reduction in license fee by 2% in case operators cover more than 95% of the block headquarters. 90% of on-road coverage shall be treated as sufficient for the purpose of considering a block headquarter as covered. These incentives will encourage operators to rollout services in uncovered area and also meet the universal service objectives. Therefore, it is suggested that license fee may be reduced by 2% if they cover 95% of the block headquarters in a service area.**
- H. **We would also like to bring to the notice of the Authority the issue of testing fees being charged by the operators for the purpose of roll out testing requirement.** We would like to submit that since the operators are acquiring spectrum through a market determined auction price, the roll out testing fees should be recovered from the proceeds of the auction and it should not be an additional financial burden on the operators. **The Authority may consider specific recommendations in this regard.**

- I. Lastly, it is critical that the Government works on providing a conducive environment for the operators to roll-out services in rural areas. Issues such as Right of Way, access to fibre backhaul networks, development of local relevant content, etc. need to be addressed by the Government at the earliest to provide fillip to mobile broadband in the country.
- J. The Authority would also recall that we have consistently maintained that for any market driven auctions, there exists no rationale for insisting on any roll-out obligation.
- K. We have already submitted that we are not in favour of any spectrum auctions to be carried out for 700 MHz at this present point in time. **If however, the Authority still decides to recommend auction for 700 MHz, and therefore associated obligations, the existing methodology of mandating % coverage targets based on DHQs / BHQs should be continued with. Further, specifically for 700 MHz band, the existing 3G Roll-Out Obligations under 2100 MHz can be replicated.**

**Q12. In the auction held in March 2015, specific roll-out obligations were mandated for the successful bidders in 800 MHz, 900 MHz, 1800 MHz and 2100 MHz spectrum bands. Stakeholders are requested to suggest:**

***(a) How the roll-out obligations be modified to enhance mobile coverage in the villages? Which of the approaches discussed in para 2.58 should be used?***

***(b) Should there be any roll out obligation for the existing service providers who are already operating their services in these bands.***

***Please support your answer with justification.***

**Idea Response:**

- A. We reiterate that for any market driven auctions, there exists no rationale for insisting on any roll-out obligation. The competitive situation forces the operators to roll-out services wherever a viable business case for the same exists. Hence, ideally roll-out obligations are not essential.
- B. **The coverage criteria, testing procedures, etc. were recently made tougher in 2012 and in fact achieving even that kind of coverage is a huge challenge given the various problems such as the absence of maps for rural areas, complex testing procedures etc. Hence there is no need to enhance the coverage requirements.**

- C. As submitted above, the need is to address issues such as Right of Way, access to fibre backhaul, development of local relevant content, etc. Any mandates on the lines suggested in Para 2.58 of the CP would go against the spirit of competition and would lead to unwanted interference and dependencies for the TSPs.
- D. You may also note that inadvertently the TRAI recommendations of 2014 or even the NIA of 2015 has failed to specify the time period for 2100 MHz coverage in Metro service areas. For reference this period was 5 years in 2010 auction and the same period needs to be specified for 2014 & 2015, 2100 MHz auction. This discrepancy may kindly be addressed by TRAI.

**Q13. In the auction held in 2010, specific roll-out obligations were mandated for the successful bidders in 2300 MHz spectrum band. Same were made applicable to the licensee having spectrum in 2500 MHz band. Stakeholders are requested to suggest:**

- (a) Should the same roll-out obligations which were specified during the 2010 auctions for BWA spectrum be retained for the upcoming auctions in the 2300 MHz and 2500 MHz bands?  
Should both these bands be treated as same band for the purpose of roll-out obligations?**
- (b) In case existing service providers who are already operating their services in 2300 MHz band acquire additional block of spectrum in 2300 or 2500 MHz band, should there be any additional roll out obligation imposed on them?**

**Idea Response:**

- A. We reiterate that ideally there should not be any mandate for roll-out obligations in any market driven allocation of spectrum. However, if the Authority still feels that there is a need to recommend roll-out obligations, then the same roll-out obligations which were specified during the 2010 auctions for BWA spectrum be retained for the upcoming auctions in the 2300 MHz and 2500 MHz bands.
- B. It needs to be noted that different NIAs have mandated different roll-out obligations for the same spectrum band in the past which has led to avoidable confusion. We recommend that such differences should ideally be avoided and It is best to retain the earlier mandated roll-out obligations for the sake of continuity and uniformity.

C. **We have already submitted that insufficient details are available on 2500 band and hence no auction should take place in this band.** However in case it is being put to auction, then the Authority may note that additional carrier only adds up to capacity requirement and not coverage and hence no additional coverage should be mandated.

**Q14. Keeping sufficient guard band or synchronization of TDD networks using adjacent spectrum blocks are the two possible approaches for interference management. Considering that guard band between adjacent spectrum blocks in 2300 MHz band is only 2.5 MHz in a number of LSAs, should the network synchronization amongst TSPs be mandated or should it be left to the TSPs for the interference free operation in this band? Please support your suggestion with proper justifications.**

**Idea Response:**

It would be beneficial that the synchronisation arrangements amongst the licensees be mandated by the Regulator. This will be best way for providing the better control. If it is left to TSPs then the operational delay of execution and the change at free-will may reduce the available spectrum in LSA.

**Q15. In case, synchronization of the TDD networks is to be dealt by the regulator/licensor, what are the parameters that the regulator/licensor should specify? What methodology should be adopted to decide the values of the frame synchronization parameters?**

**Idea Response:**

Typically in any network , the DOWNLINK traffic is more than the UPLINK traffic , so an appropriate TDD scheme can be mandated by the Regulator for the initial 3 year period and subsequent review period can be every 2-3 years between the licensees of same LSA to switch the TDD schemes based on the traffic. The Phase and frequency synchronisation between the two operators or use of GPS based synchronisation mechanisms could be two possible approaches for the synchronisation.

**Q16. If synchronization of the TDD networks is ensured, is there a need for any guard band at all? If no guard band is required, how best the spectrum left as inter-operator guard band be utilised?**

**Idea Response:**

For synchronised TDD network between operators, there is no need for any guard-band. Also as highlighted earlier, there is already built-in guard-band available in the LTE technology. Since there is different allocations of the spectrum in 2300 MHz in LSA, it is important to have the harmonisation done for 2300 MHz as well. If all the LSAs have same ARFCN and the network are synchronised, then the interference will be minimum and the guard band requirement can be minimised.

***Q17. Whether the ISP category 'A' licensee should be permitted to acquire the spectrum in 2300 and 2500 MHz bands or the same eligibility criteria that has been made applicable for other bands viz. 800 MHz, 900 MHz, 1800 MHz and 2100 MHz band should be made applicable for 2300 MHz and 2500 MHz bands also?***

**Idea Response:**

- A. The eligibility criteria for all the bands should remain the same as was there for the last auction (March 2015), i.e., any licensee that holds a UAS/ CMTS/ UL(AS)/UL with authorization for Access Services for that Service Area; or any licensee that fulfils the eligibility for obtaining a Unified License with authorization for Access Services; or any entity that gives an undertaking to obtain a Unified License for access service authorisation through a New Entrant Nominee as per DoT guidelines/licence was eligible to bid for the Spectrum in 800 MHz, 900 MHz, 1800 MHz and 2100 MHz band, subject to other provisions of the NIA.**
  
- B. TRAI has itself acknowledged in its CP that the same technology that is used in other bands can be used for 2300 MHz and 2500 MHz bands too because of the advances in technology and device ecosystem since the year 2010 when the spectrum in these bands was allocated first. Since the use of the technology no longer is limited to BWA there is no reason why the rules for these bands should be any different from those for other bands. Hence we recommend same eligibility criteria as for other bands. Also, it needs to be kept in consideration that that none of the ISPs allocated spectrum in 2010 have so far been able to launch the services. Hence the eligibility criteria should be as per Point A above.**

***Q18. Stakeholder are requested to comment on***

*(a) Whether the guidelines for liberalisation of administratively allotted spectrum in 900 MHz band should be similar to what has been spelt out by the DoT for 800 and 1800 MHz band? In case of any disagreement, detailed justifications may be provided.*

*(b) Should the liberalization of spectrum in 800, 900 and 1800 MHz be made mandatory?*

**Idea Response**

- A. 900 MHz and 1800 MHz have traditionally been treated as same band in all the auctions conducted by the DoT so far. Hence, we do not see any reason why the guidelines for liberalization of 900 should be any different.
- B. As noted in its CP, the liberalization of spectrum gives liberty to the operators to deploy latest technologies which permit optimal and efficient use of spectrum. Moreover, liberalization is a pre-condition for spectrum sharing and trading. The re-configuration of frequencies for making the spectrum contiguous is also possible only if the spectrum is liberalized.
- C. The guidelines for liberalization of 900 MHz band should therefore be notified at the earliest.

However, liberalization should not be made mandatory and every TSP should be free to take a decision on the same depending on its business case and priorities. However, harmonisation exercise in 1800 MHz band should not be impacted by liberalisation. Harmonisation of spectrum in 1800 MHz band should be done for the non-liberalised spectrum also. Restrictions, if any, should be put on the use of the non-liberalised spectrum post harmonisation.

***Q19. Can the prices revealed in the March 2015 auction for 800/900/1800/2100 MHz spectrum 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 (even if this is less than one year) between the auction held in March 2015 and the next round of auction and what rate should be adopted for indexation?***

**Idea Response:**

There is no rationale for considering the price discovered in the last spectrum auction as the value of spectrum in all bands as explained in detail below. Following points require consideration in this regard:



A. **We believe that it is wrong to assume that value of spectrum only increases with passage of time.**

The price derived in any spectrum auction for any specific band depends upon various factors, including the availability and contiguity of spectrum, the demand and supply at a given time (some of the previous auctions have seen higher prices because of artificially constrained supply), the technology for which the specific spectrum band is being deployed globally and the development of ecosystem of equipment and devices etc. There is no doubt that the changes are occurring over time in the underlying demand, supply, evolution of technology, market expectations in the sector and the larger economy have important effects on auction outcomes, and the actual valuations change based on the same.

B. We have seen 2100 MHz spectrum auction in year 2010 and in the year 2015 and following table summarizes the results of these auctions

Circles	Winning Price 2010	Reserve Price (RP) 2015	Change 2010 vs 2015	Winning Price (WP) 2015	Change RP vs WP
Andhra Pradesh	1,373	1,375	0.1%	0	No Demand
Delhi	3,317	3,315	-0.1%	0	No Demand
Mumbai	3,247	3,245	-0.1%	0	No Demand
Gujarat	1,076	1,290	19.9%	1,290	No Change
Haryana	223	230	3.3%	230	No Change
Maharashtra	1,258	1,505	19.7%	1,505	No Change
Tamil Nadu	1,465	1,720	17.4%	1,720	No Change
Rajasthan	321	435	35.5%	699	60.7%
North East	42	40	-5.4%	55	38.4%
Assam	41	145	249.6%	193	33.2%
Orissa	97	165	70.1%	180	9.2%
Kolkata	544	545	0.1%	578	6.0%
Kerala	312	555	77.6%	589	6.0%
Madhya Pradesh	258	435	68.4%	457	5.0%
Uttar Pradesh (East)	365	430	17.9%	452	5.0%
Karnataka	1,580	1,610	1.9%	1,642	2.0%
Uttar Pradesh (West)	514	515	0.2%	525	2.0%

C. It is very clear from the above that :

- **Indexation is not the right way to determine the price of spectrum** –Out of the 17 circles where spectrum was put to auction, in 5 circles the Reserve Price for 2015 was equal to Winning price of 2010 and in another 7 circle the increase over 2010 Winning Price was less than 20%. Despite

no or low increase in reserve price, spectrum remained unsold in three circles and in four circles there was only one bidder and the winning price was equal to reserve price This clearly establishes that there is absolutely no need for indexation.

- **Value of Spectrum has declined** - In the circles of Andhra Pradesh, Delhi and Mumbai even though the price was kept at 2010 level, there is no demand. **This implies that the value of spectrum has declined for these circles.**
- **It is also important to see that the results of 2015 auctions in 2100 MHz band are in a scenario where only one block of 5 MHz was put to auction. If all the 3 to 4 blocks which were available had been put to auction, then everything would have gone at reserve price and there would have been more unsold blocks. Hence, the true value (price which the demand equals total supply) of 2100 MHz is much below the reserve price of Mar'15 auctions.**

D. **Further these high reserve prices has resulted in 2100 MHz spectrum remaining unutilized in service areas of Andhra Pradesh, Delhi and Mumbai and this definitely needs to be considered for price revision.** It is pertinent to mention here that out of the 17 LSAs where 2100 MHz spectrum was put up for auction in March 2015, the entire spectrum was sold in 14 LSAs, and 3 LSA s did not receive any bids.

In fact when auction was conducted in 2010, 2100 MHz was the only broadband spectrum and so the winning prices were very high. Subsequently global ecosystem has developed on 1800 MHz and so the value of 1800 MHz has increased over a period of time and consequently the value of 2100 MHz as the only source of wireless broadband spectrum has declined. The following are the reserve prices of 2100 band (2015 auction) and winning prices 1800 band (2014 auction) prices for Delhi and Mumbai

	<u>1800 (Winning Price Feb'14)</u>	<u>2100 (Reserve Price Mar'15)</u>
<b>Delhi</b>	<b>Rs 1820 cr</b>	<b>Rs 3315 cr</b>
<b>Mumbai</b>	<b>Rs 1360 cr</b>	<b>Rs 3245 cr</b>

**It is very clear from the above that the reserve price of 2100 was fixed at extremely high level, given the price of 1800 discovered in the same LSAs in the Feb'14 auction. Hence, given the technological evolution, in principle, the value of 2100 MHz cannot be higher than the value of 1800 MHz.**

- E. True price discovery is a function of demand and supply at the time of the auction. Hence, neither should the price revealed in March 2015 be taken as the value of spectrum for the forthcoming auction, nor is there a **need for any indexation of value of spectrum and the reserve price.**
- F. **It should be remembered that the last auction was an auction for survival in case of 900 MHz operators and was linked with continuity of operations and resultantly saw abnormal prices and bidding by the participants.** In last 900 MHz auctions, the winners were forced to bid for their current holding of 900 MHz for renewal of the licenses to ensure continuity of the business, which is very different for bidding for additional spectrum.
- G. **Also as mentioned earlier, 5 MHz contiguous blocks and other blocks should be auctioned as different products. Our earlier comments are in the context of value of contiguous blocks of 5 MHz. Value of other blocks will be much lower, given that these cannot be deployed for new technologies.**

*Q20. If the answer to Q.19 is negative, should the valuation for respective bands be estimated on the basis of various valuation approaches/methodologies adopted by the Authority (as given in Annexure 3.1) in its Recommendations issued since 2013 including those bands (in a LSA) for which no bids were received or spectrum was not offered for auction?*

**Idea Response:**

- A. In our view the true price discovery of the spectrum can happen only when the reserve price of spectrum is pegged at a reasonable level and sufficient spectrum is available. We have the following submissions that need consideration:
- **In 2010 the discovered value of 2100 MHz was very high compared to the reserve price as that time, this was the only broadband spectrum available that time and there was no visibility of any other access spectrum becoming available in near future. Now it is clear that 800, 900, 1800, 2100 and 2300 MHz spectrum can all be deployed for broadband wireless services and hence the high price of 2100 MHz band discovered in 2010 may not be relevant today.**
  - **In 2014 wherever there was sufficient supply of spectrum in 1800 MHz band (more than 2 blocks of contiguous 5 MHz spectrum), the winning price was equal to the reserve price, which implies that the reserve price was fixed at rather high levels and there was not much interest among**

the bidders to bid at those prices. The only exception were the metros of Delhi and Mumbai, but these had a mix of renewals and fresh spectrum auction and bidding for renewals cannot be taken as a basis of price discovery.

- **In 2015 the discovered value of 900 MHz was higher than the reserve price as the 900 MHz auction was for survival.** The rationale for this is that as far as 900 MHz spectrum is concerned in the last auction, the winners were forced to bid for their current holding of 900 MHz for renewal of the licenses to ensure continuity of the business, which is very different for bidding for additional spectrum.

**B. The following submissions are necessary for determining value of spectrum:**

- **For 2100 MHz spectrum, in March 2015 auction there was no demand in Andhra Pradesh, Delhi and Mumbai circles and in these circles spectrum value should be reduced. Also as the 1800 MHz is now becoming the preferred spectrum to offer broadband services, in these circles the value of 2100 MHz spectrum should be the lower of, the last auction discovered price of 1800 MHz or 2100 MHz.**
- **For 1800 MHz, the price discovered in the last spectrum auction (in 2015 or in 2014) should be taken as value of spectrum without any indexation. Also value of blocks other than 5 MHz contiguous block should be significantly lower, as these blocks cannot be used for the purpose of offering LTE services.**

**As explained in detail earlier, the winning price of 900 MHz band in 2014 and 2015 auctions did not represent the true value of spectrum as it was based on bids made by those operators who had no choice but to bid any price for ensuring continuity of operations. Hence, the price of 900 MHz discovered in 2014 and 2015 auctions cannot in any way be used as a factor in arriving at value of 1800 MHz spectrum.**

- **For 900 MHz, value of spectrum should be considered at lower of [50%] of last auction discovered price for 900 MHz or equal to 1800 MHz.** The rationale for this is that as far as 900 MHz spectrum is concerned in the last auction, the winners were forced to bid for their current holding of 900 MHz for renewal of the licenses to ensure continuity of the business, which is very different for bidding for additional spectrum where the true value of spectrum is discovered.

- For 800 MHz, value of spectrum should be considered at March 2015 auction discovered price.
- Lastly, only for the cases where no price discovery has taken place in the earlier spectrum auctions, there may be a need to do a valuation exercise be done (like Kerala and Rajasthan for 800 MHz)

*Q21. Should the value of 700 MHz spectrum be derived on the basis of the value of 1800 MHz spectrum using technical efficiency factor? If yes, what rate of efficiency factor should be used? Please support your views along with supporting documents/literature.*

&

*Q22. Should the valuation of 700 MHz spectrum be derived on the basis of other sub-GHz spectrum bands (i.e. 800 MHz/900 MHz)? If yes, what rate of efficiency factor should be used? Please support your views along with supporting documents/literature.*

&

*Q23. In the absence of financial or non-financial information on 700 MHz, no cost or revenue based valuation approach is possible. Therefore, please suggest any other valuation method/approach to value 700 MHz spectrum band along with detailed methodologies and related assumptions.*

**Idea Response:**

**As submitted earlier, we are not in favour of auctions for 700 MHz at this present point in time. However, should the Authority decide otherwise, it is to be noted that:**

- While the 700 MHz is more efficient in spectrum propagation characteristics than 1800 MHz spectrum, the ecosystem towards 700 MHz is still at its infancy stage. Hence, 700 MHz will remain largely un/under-utilized for next few years and accordingly value of 700 MHz should be not be higher than 1800 MHz. It is submitted that presently the addressable market for LTE on 700 MHz represented by LTE 700 devices is less than 0.3% of the total devices in our network.

- In case the Government chooses to auction immediately, despite the ecosystem constraints, and demand is high, the Government will be able to discover the true price in any case. However if the demand for 700 MHz remains low, the ecosystem issues would lead to holding costs for 4 to 5 years, and hence it would be ideal to keep the prices not higher than 1800 MHz price. .
- **Globally there is higher value for 1800 MHz compared to 700 MHz.** The last discovered 1800 MHz band price in recent Taiwan Auction witnessed higher value for 1800 MHz than for 700 MHz (exhibited below).

Total spectrum auctioned (in MHz)	Total auction Value (in TWD billion)	Money Value in TWD billion / per MHz
700 MHz band – 2*45 MHz	30.52	0.67
1800 MHz band – 2* 60 MHz	78.78	1.31

Source: [http://www.ncc.gov.tw/english/content.aspx?site\\_content\\_sn=370&is\\_history=0](http://www.ncc.gov.tw/english/content.aspx?site_content_sn=370&is_history=0)

- Further, there is a vast difference in the ecosystem of 700 MHz for LTE vs 800 MHz for LTE or 900 MHz for GSM / HSPA (3G) and hence there is no rationale of linking the price of 700 MHz to 800 MHz or 900 MHz, as explained below:
  - In terms of propagation characteristics, 700 MHz band may be similar to 800 MHz, however, unlike 800 MHz, there is a long way to go before the eco-system in 700 MHz band and hence presently 800 MHz prices cannot be considered.
  - In any case as explained earlier, the winning price of 900 MHz in the recent auctions was not representative of the true value of 900 MHz itself and hence there is no way it can be used as a factor for deriving the value of 700 MHz spectrum.

**Q24. Should the value of May 2010 auction determined prices be used as one possible valuation for 2300 MHz spectrum in the next round of auction? If yes, then how? And, if not, then why not?**

&

**Q25. Should the value of the 2300 MHz spectrum be derived on the basis of the value of any other spectrum band using the technical efficiency factor? If yes, please indicate the spectrum band and technical efficiency factor with 2300 MHz spectrum along with supporting documents.**

**Idea Response:**

It is important to note that the 2300 MHz spectrum acquired in the year 2010 has not been used for commercial purpose (except for smaller rollout in few cities) till now. i.e. even after over 5 years since the band was auctioned. There is a clear understanding that 2300 MHz on a standalone basis is not suitable for doing mass commercial rollout. Hence, in our opinion the value of the spectrum should be 50% of the winning price of 2010 auction, as the commercial deployment of network on 2300 MHz still remains a challenge. There is thus no requirement of applying any technical efficiency factor to arrive at 2300 MHz value.

**Q26. Should the valuation of the 2500 MHz spectrum be equal to the valuation arrived at for the 2300 MHz spectrum? If no, then why not? Please support your comments with supporting documents/literature.**

**Idea Response:**

The 2500MHz in FDD band (band-7) is used by many European country as a capacity band along with one sub-GHz band. China and some other operators like Sprint network, the same is deployed in TDD mode (band-41). Typically this has been done as additional band in LTE networks. The current focus is on multi-technology spectrum like 800/900/2100 etc. to allow for the maximum utilisation of the huge investments already done.

Given the few operators committing to band-41 (as highlighted by TRAI), the actual viability of the devices eco-systems and its penetration in India will take time to develop. The current devices penetration in our network is less than 0.3% in these non-conventional bands (other than band-3(1800)).

The large IBW 190 MHz products are not available with vendors. Typically most allocations in other countries are either contiguous or very close to each other. Thus there is a requirement of Eco-system to be build up by vendors to cater for eventuality of spectrum allocation in any of this 190 MHz system. Thus here are issues concerning scale etc., CAPEX investments for want of radios based on the spots allocated to each operator.

Therefore as stated in view of almost negligible device eco system and complex high IBW radio requirement, a larger consultation and deliberation is required to finalise the right use of the 2500 MHz spectrum band.

***Q27. Is there any other method/approach than discussed above that could be used for arriving at the valuation of 700/800/900/1800/2100/2300/2500 MHz spectrum bands or any international auction experience/ approach that could be used for valuation of any of these bands? Please support your suggestions with detailed methodology and related assumptions.***

**Idea Response:**

Idea Cellular does not have any such recommendation. Our submissions on approach to be followed has already been indicated in our responses above.

***Q28. As was adopted by the Authority in September 2013 and subsequent Recommendations and adopting the same basic principle of equal-probability of occurrence of each valuation, should the average valuation of the spectrum band be taken as the simple mean of the valuations obtained from the different approaches/methods attempted for that spectrum band? If no, please suggest with justification that which single approach under each spectrum band, should be adopted to value that spectrum band.***

**Idea Response:**

As mentioned earlier in our response to Q20, in our view only for those cases where there was no price discovery in the earlier spectrum auctions, should a valuation exercise be done by the Authority and the average valuation of the spectrum band be taken as the simple mean of the valuations obtained from the different approaches / methods attempted for that spectrum band (E.g., Kerala and Rajasthan for 800 MHz)

***Q29. 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?***



**Idea Response:**

- a. **The Authority has been of the consistent view that RP should not be fixed too close to the estimate of valuation, so as to encourage participation, enable competitive bidding and lead to price discovery. The TRAI has been consistent in its view and has used the 80% ratio repeatedly in Sep 2013, Feb 2014, Oct 2014 and Dec 2014 recommendations.**
- b. The TRAI is correct in pointing out that in the NIAs for auction in different bands issued by the GOI since 2014, on many occasions the RPs recommended by the TRAI have been modified by the Government. For example, in the Jan 2015 NIA for 1800 MHz and 800 MHz spectrum, the RPs for Metro and Category A service areas were set equal to 100% of the average valuation of respective spectrum band instead of the RP recommended by the Authority.
- c. As mentioned above in case of 2100 MHz in some cases there is no demand (3 Circles) and in some cases the spectrum is sold at the reserve price (5 circles), even when there is only one block available. Also in the case of 900 MHz, the price discovery was driven by renewal pressure.
- d. **We are of the opinion that reserve price should be kept at 50% of the value as determined as suggested above.** Keeping a high percentage as reserve price has resulted in unsold spectrum being left with the government and the unfair consequence of that price being used as market price (which is actually applicable only when demand equals full supply).The same can be seen from the Table 3.6 shared by the TRAI in its CP where the figures are as follows:

<b>Number of LSAs displaying typical behaviour in March 2015</b>				
	800	900	1800	2100
Demand=Supply	4	Nil	2	4
No Bid	2	Nil	1	3

**While the reserve price being too high has resulted in unsold spectrum even when only one block was available, fixing of a low reserve price has not prevented a high winning price from being discovered when the demand is high. Hence, it is essential that the Reserve Price is fixed not higher than 50% of the value of the spectrum, especially where the value of the spectrum itself has a large element of subjectivity.**

**Q30. Should the realized prices in the recent March 2015 auction for 800/900/1800/2100 MHz spectrum bands 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 (even if less than one year) between the auction held in March 2015 and the forthcoming auction? If yes, then at which rate the indexation should be done?**

**Idea Response:**

- A. The concept of indexation was contained in the 2010 NIA for 3G auction which inherently assumes that the value of spectrum only increases over time which is not the case. **Hence, DoT itself removed this condition from subsequent NIAs.** The realized prices in an auction cannot become the reserve price for the next auction. Further, as highlighted in our response to Q20, we have witnessed **that the value of same spectrum can also decline over a period of time.** The TRAI has correctly pointed out that it is not necessary that the results of a fresh estimation exercise will yield valuations that are significantly different from the TRAI’s Recommendations on valuation and RP of spectrum made between Oct 2014 and Jan 2015, since the variables and inputs used in different approaches for valuation of spectrum have not change substantially.
- e. **We are of the opinion that reserve price should be kept at 50% of the value as determined as suggested above.** Keeping a high percentage as reserve price has resulted in unsold spectrum being left with the government and the unfair consequence of that price being used as market price (which is actually applicable only when demand equals full supply).The same can be seen from the Table 3.6 shared by the TRAI in its CP where the figures are as follows:

<b>Number of LSAs displaying typical behaviour in March 2015</b>				
	800	900	1800	2100
Demand=Supply	4	Nil	2	4
No Bid	2	Nil	1	3

- B. We do not support any indexation for arriving at a fresh valuation. In fact the prices of telecom services have been declining over a period of time and hence any kind of indexation for spectrum which is used to provide these services is totally irrational. However, despite this if the Authority chooses to provide for any kind of indexation, then the basis of indexation should be an index which is a measure of inflation. Using interest rate for indexation of price is without logic in this context.

### **ADDITIONAL COMMENTS on Input on Power Output of a 3G/LTE Node B.**

BTS Transmit power guidelines for the mobile networks were introduced in 1995 when GSM was the most common network, since then technologies have evolved. However, transmit power regulation have not been reviewed and the same norms are being followed for all new technologies such as 3G and LTE. Current guidelines of RF power from DoT on transmit power (RF) from the BTS is 20W at the output of the BTS port. This is common guideline for all type of technologies deployed in the network like GSM, CDMA, WCDMA, and LTE (reference DoT letter number L-14035/08/2010-BWA, dated 15th Sep 2010).

- There are significant differences between GSM (narrowband technology) and 3G / LTE technologies (broadband technologies) which necessitates different treatment of RF Power related to these technologies:
  - Power in GSM is across 200 KHz channel vs. 3G/LTE is in wideband say 5 MHz, 10 MHz or 20 MHz
  - GSM has continuous power transmission irrespective of the traffic in the BTS, while 3G / LTE-FDD / LTE-TDD have discontinuous power transmission owing to following aspects
    - Pilot power, which is typically 10% of the total transmit power of Node-B in 3G network, is continuous and total power is based on the amount of voice & data traffic in the Node-B.
    - Power transmission only in fraction of time in case of LTE-TDD deployments
    - Continues power transmission in LTE-FDD networks are only transmitted on some RE (Resource Elements)
  - MIMO is mandatory in LTE and optional in 3G which is not applicable for 2G networks
- 3G and LTE since they are wideband technologies, they need higher transmit power for coverage & capacity. Global deployments in US, Europe, China and APAC markets for 3G & LTE are using 40W to 80W of transmit power in the BTS irrespective of bands (3G in 900 and 2100, LTE-FDD in 700, 800,1800 band, LTE-TDD in 2300, 2500 band) to take care of growth in mobile broadband traffic. Increase in power is a means to increase the capacity of the Node B in 3G/LTE and thus improve customer experience.
- Power density (RF power per MHz) in 3G/LTE is much lower than GSM even when Node B RF Power is 60W/80W. Both calculation method and field measurement results for a heavy loaded site have shown that the EIRP/EIRPth values of 60W/80W power of 3G sites are well within the

limits of EMF guidelines prescribed DoT. We have shared detailed measurements / calculations on this to DoT in the past for relaxing the present guidelines.

**In view of the above facts, TSPs should be allowed to configure transmit power in 3G/LTE Node B beyond 20W (up to 80W), while maintaining compliance to the EMF norms.**

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