

## **Tata Communications Response to TRAI CP on Spectrum Allocation and Pricing**

1. What should be the revised reserve price for the spectrum in 3.3.-3.6 GHz band? The various options available are as below:

- The reserve price of this spectrum remains as recommended earlier.
- The reserve price for the spectrum is made equal to 50% of the reserve price recommended for the 3G spectrum.
- The reserve price is made equal to the price recommended for the 3G spectrum

### **TC Response:**

**Reserve price is relevant when a particular band is expected to be auctioned.**

**If and when available spectrum is auctioned in 3.3-3.6 Ghz band, a reserve price can be determined at that time.**

2. What should be the eligibility conditions for bidding for spectrum in the bands of 2.3-2.4 GHz and 2.5-2.69 GHz?

### **TC Response:**

**All licensed UASLs, Category A and Category B ISPs should be eligible for bidding for the spectrum in the bands of 2.3-2.4 GHz and 2.5-2.69 GHz.**

**The services that can be deployed under this BWA spectrum should be clearly defined and be common across various categories of licenses.**

3. In the 2.3-2.4 GHz band, the maximum amount of spectrum which a licensee can bid for?

### **TC Response:**

**BWA technologies have a direct bearing on size of channels deployed; hence it is always advisable to have larger chunks of spectrum per operator resulting in operator being able to provide better and faster Broadband services and ensuring better service levels.**

Worldwide, BWA spectrum has typically been auctioned in chunks of 30MHz, 50 MHz, and sometimes even higher blocks. Spectrum allocation of 30MHz lends an operator to deploy 10MHz channel size products. It is also essential that the auction process ensures that spectrum is not “fragmented” into small spectrum blocks, which would greatly reduce the efficiency of running Broadband services.

**TATA Communications believes ideally 30 MHz per operator is required to offer good quality BWA services**

If however, only limited amount of spectrum is available in the 2.3-2.4 GHz and 2.5-2.69 GHz band, then in order to have more operators thereby improving quality of service and affordable price points for the customers, spectrum should be auctioned whereby one operator cannot bid for more than 20 Mhz. This shall allow for upto 4 operators to offer BWA services.

20 Mhz is also the threshold (minimum) spectrum that will allow operators to deploy standards based BWA technologies. It is an established fact that deployment of standards based technologies result in creating a large ecosystem and deriving global economies of scale for the operator, thereby resulting in lower end customer price.

Hence, 20 MHz in TDD mode or paired 10 MHz in FDD mode should be given per operator in the auction.

4. In the 2.3-2.4 GHz band, the size of the spectrum blocks for the bidding?

**TC Response:**

In the 2.3-2.4 GHz band, WiMAX is one of the predominant technologies that are deployed and WiMAX Forum Certification Profiles exist for 5, 8.75 MHz and 10 MHz channels only. Other IMT technologies also deploy a 5MHz and 10 MHz channel size configuration. Since only limited amount of spectrum in this band is available for auction, it is recommended that the minimum spectrum block for bidding should be 20MHz in TDD or paired 10 MHz for FDD. In order to ensure better utilization of spectrum by reducing wastage through multiple guard bands and better interference mitigation between operators, it is recommended that TDD operators be given contiguous block for the spectrum.

5. In view of limited availability of spectrum in this band and possible conflict between the technologies using FDD and TDD modes, how the spectrum in 2.6 GHz band be allocated?

**TC Response:**

**The spectrum should be allocated in a technology neutral manner and should permit the option of use by the Service Provider in the FDD or TDD mode. Global best practices would mean that each service provider be allotted spectrum in 20 MHz contiguous band in TDD mode or 2 x 10 MHz for use by the service provider in FDD (paired) in the 2.5-2.69 GHz band.**

**Allocation should ensure sufficient Guard band between Inter Operator TDD spectrum and between the Spectrum block for FDD and TDD for coexistence.**

**As BWA will play a pivotal role in increasing Broadband penetration in the country, it is recommended that the available spectrum be auctioned in a unpaired mode, since standards based products are readily available in the TDD mode, which shall help operators deploy the network faster, post the allocation of spectrum.**

6. In case the present available spectrum is allocated for BWA technologies using unpaired spectrum, then, will it be feasible in future, from technical and economic angle, to refarm the allocated spectrum in the 2.6 GHz band in line with the global practices?

**TC Response:**

**Proposed use of the unpaired spectrum in this band for TDD BWA applications is entirely in line with global standards and practices. ITU-R has developed necessary band plans for use of this band by various IMT technologies including OFDMA WMAN (WiMAX) and many countries in the world have already adopted the same, Hence there should be no need for any refarming of the allocated spectrum in order to accommodate paired spectrum allocations in future, if the need be.**

7. Unlike a number of other countries, a major portion of spectrum in the 2.6 GHz band is yet to be got vacated by WPC. What measures can be taken to accelerate the process of vacation so that the Indian telecom sector is not at a disadvantage in relation to other countries?

**TC Response:**

The 2.5 GHz band is globally developing as a preferred BWA service band and economies of scale will bring the equipment price down facilitating provision of low cost BWA services. Recognizing the potential of ubiquitous Broadband service in growth of GDP and enhancement in quality of life through societal applications including e-education, e-medicine, e-governance, entertainment as well as employment generation by way of high speed access to information and web-based communication, Government of India needs to accelerate the growth of Broadband services by allocating this band specifically for the purpose of broadband services. In this scenario, the use of 2.5 GHz spectrum is critical for BWA and Government should take urgent steps to clear this band and not allow any new satellite services in this band. It is suggested that WPC should offer alternate spectrum (based on the application) to the existing holders of spectrum in 2.3-2.4 and 2.5-2.69 to expedite existing spectrum holders vacating the above bands.

Availability of larger spectrum in this band shall enable a service provider to offer high-speed connectivity or broadband services with millions of users not only in Metro areas but also in rural and remote areas.

8. What should be their reserve price for the purpose of auction for the spectrum in 2.3-2.4 GHz and 2.5-2.69 GHz?

**TC Response:**

It is recommended that the reserve price of the BWA spectrum for 2.3-2.4 and 2.5-2.69 Ghz should be determined using global benchmarks for similar services and taking into account the market situation for BWA services in India.

9. Is there a need for putting a maximum limit on the cumulative holding of spectrum acquired in these bands by a licensee and what should be that limit?

**TC Response:**

There is no need for putting a maximum limit on the cumulative holding of spectrum acquired in these bands by a licensee, subject to our reply to Q3 above.