

**TRAI's recommendations on 'Allocation and pricing of spectrum for 3G and broadband wireless access services'
dated September 27, 2006**

TRAI's recommendations	DoT's Stand	Remark
<p>2.21 To co-ordinate the availability of spectrum among various major users it is proposed that a National Frequency Management Board (NFMB) maybe constituted under the Chairmanship of MoC&IT with Chairman/TRAI, Secretary/DoT, Secretary/Defence, Secretary/Department of Space, Secretary/I&B, Secretary/DIT, Chairman of the Railway Board, and two academicians from the field of telecom, IT, spectrum policy, and related areas as its Members.</p>	-	No information received by TRAI
<p>3.8 3G can not be perceived as an automatic extension of 2G and would need to be viewed as a kind of stand alone service for specialized needs and its allocation criteria has to be specific separately.</p>	Accepted.	-
<p>3.21 The Government should conduct the trial to verify practical feasibility of coexistence of mixed band allocations, and in case the co-existence is found feasible and economically practicable, then it should work towards re-farming of the PCS1900 band, specifically 2 x 10 MHz to enable the future growth of 3G cellular services in India.</p>	Spectrum shall be auctioned for 3G services in 1900 MHz band (1900–1910 paired with 1980-1990 MHz) when it becomes available.	-
<p>3.22 Since spectrum is not currently available in the PCS 1900 band, it may not be possible at present to implement the mixed band plan.</p>		

<p>3.24 Currently, in three circles, viz. Gujarat, Rajasthan and West Bengal, the spectrum available in the 800 MHz band is less than 2 x 20 MHz. This is because non-telecom users are using part of the 800 MHz band. The Authority has requested to DoT for immediate resumption of the spectrum so that the additional spectrum is available for the growth of CDMA services. The resumption of unused spectrum should be implemented in a time bound manner in next 3 months.</p>	-	No information received by TRAI
<p>3.28 If the present growth and expansion of the CDMA operators is taken into consideration it is evident that some operators have more spectrum than required and not justified on the basis of subscriber base and future expansion. There is a need for rationalization in such cases. It will be possible to free some carriers, reallocate them to the fast growing operators, and thus open the possibility to separately earmark two to three carriers for 3G services in the 800 MHz band.</p>		
<p>3.29 The Government work with operators in the next three months to modify the existing 800 MHz band plan, adjusting guard bands to add one 1.25 MHz carrier.</p>		
<p>3.31 At least two carriers, i.e. 2 x 2.5 MHz, can still be dedicated for EV-DO services in the 800 MHz band even in Punjab and Rajasthan circles.</p>		
<p>3.34 Keeping the long-term requirements and possible growth of CDMA services in mind, the Authority recommends that the Government should look into vacating 2 x 5 MHz of spectrum in the 900 MHz band in order to re-farm GSM operations within the band, and then allocate an additional 2 x 5 MHz for CDMA operations in the 800 MHz band.</p>	-	No information received by TRAI

3.36	450 MHz band should also be identified for CDMA operators on a separate plank with rural roll out commitment. The terms of allocation have been made comparatively attractive to encourage the use of this band.	Spectrum shall be auctioned for 3G services in the 450 MHz band, when it becomes available.	-
4.6	It is essential that DoT has a time bound road map for making available additional and sufficient spectrum.	Accepted.	-
4.13	Given the current availability of 2 x 25 MHz of spectrum in the 2.1 GHz band, the minimum technological need, and the need to stimulate competition in the market, five operators should be accommodated in this band in the first lot.	Accepted.	-
4.19	UASL CDMA operators should be given an option of one carrier for EV-DO services in the 800 MHz band subject to conditions specified subsequently.	Spectrum shall be auctioned for 3G services in the 450 MHz band and 800 MHz band for EVDO services, when it becomes available.	-
4.22	DoT should allocate 2 x 5 MHz in the 450 MHz band to one of the existing UASL CDMA operators depending on market demand and based on the allocation process described subsequently.		
4.28	The priority for allocating scarce spectrum must first go to the existing licensees.	Any person (i) who holds a UAS/CMTS licence; or (ii) (a) who has previous experience of running 3G Telecom Services; and	-
4.29	Since the quantum of spectrum in the 800 MHz band is limited, the Authority recommends that this band be allocated to the existing UASL CDMA operators only.		

<p>4.32 Spectrum allocations in the 2.1 GHz band thus should be done to all eligible UASL and CMSP licensees using fair and equitable norms as explained subsequently, and should bear no relationship to their current spectrum allocations or subscriber base.</p>	<p>and</p> <p>(b) gives an undertaking to obtain Unified Access Services Licence (UASL) as per Department of Telecommunications guidelines dated 14.12.2005 before starting telecom operations can bid for 3G spectrum</p>	
<p>4.33 The Authority recommends that:</p> <p>(1) In the 450 MHz band, 2X5 MHz should be allocated to one of the UASL CDMA licensees;</p> <p>(2) In the 800 MHz band, 2X2.5MHz should be allocated among the existing UASL CDMA operators;</p> <p>(3) In the 2.1 GHz band, 2X25 MHz (5 Blocks of 2X5 MHz each) should be allocated amongst cellular mobile service provider and unified access service license holders.</p>	<p>Spectrum shall be auctioned for 3G services in the 450 MHz band, 2x1.25 MHz in 800 MHz band for EVDO services, and in 1900 MHz band (1900–1910 paired with 1980-1990 MHz) when it becomes available. The spectrum shall be auctioned in blocks of 2x5MHz in 2.1 GHz. The number of blocks may vary from 5-10, subject to availability and in exceptional cases of non-availability the number of blocks may be less than 5. Eligibility criteria is same as above.</p>	-
<p>4.35 The Authority recommends that the DoT follow an allocation process as follows:</p> <p>(1) The UASL CDMA operator will have the option to seek 2 x 1.25 MHz in the 800 MHz band at the price as explained subsequently. Additionally, it will have the option of taking</p>	-	No explicit information received from DoT.

<p>spectrum in either the 2.1 GHz or 450 MHz bands.</p> <p>(2) In case the UASL CDMA operator opts for the 450 MHz band, it will get 2 x 5 MHz through the process described subsequently.</p> <p>(3) In case it opts for the 2.1 GHz band, the UASL CDMA operator will have to bid along with the other operators. In case it is among the successful bidder, it will have an option of:</p> <ul style="list-style-type: none"> a. Either retaining 2 x 1.25 MHz in the 800 MHz and getting an additional 2 x 3.75 MHz in the 2.1 GHz band, b. Or giving up the option on 2 x 1.25 MHz in the 800 MHz band and getting 2 x 5 MHz in the 2.1 GHz band. 		
<p>4.36 In the case of Rajasthan, where there are three UASL CDMA operators and only two carriers on offer, the Authority recommends a single stage bidding process should be organized to determine which of these operators gets the carriers in 800 MHz, if all the three opt</p>	<p>Spectrum shall be auctioned for 3G services in 800 MHz band for EVDO services, when it becomes available.</p>	<p>-</p>

<p>for an EV-DO carrier at the prescribed fee. The reserve price in case of bidding or spectrum acquisition fee otherwise will be equal to the second highest pro-rated bid price in the 2.1 GHz auction.</p>		
<p>4.37 Similarly in the 450 MHz band, if more than one operator opts for 2 x 5 MHz, the Authority recommends that a single stage bidding process be conducted. The reserve price for 2 x 5 MHz in the 450 MHz band will be half of the reserve price set for 2.1 GHz band for that service area.</p>	<p>Spectrum shall be auctioned for 3G services in the 450 MHz band, when it becomes available.</p>	<p>-</p>
<p>4.43 The Government should charge a spectrum acquisition fee for the 2 x 5 MHz block in the 450 MHz band.</p>	<p>The reserve price for one block of spectrum in 450 MHz and 1900 MHz bands would be notified separately.</p>	<p>-</p>
<p>4.59 The spectrum auction for 2.1 GHz band should use a simultaneous ascending auction system.</p>	<p>Accepted.</p>	<p>-</p>
<p>4.60 If there are more operators interested in the 450 MHz or 800 MHz bands than the number of available blocks, then a one-stage bidding process should be organized to decide the winners.</p>	<p>Spectrum shall be auctioned for 3G services in the 450 MHz band, 2x1.25 MHz in 800 MHz band for EVDO services, and in 1900 MHz band (1900–1910 paired with 1980-1990 MHz) when it becomes available.</p>	

<p>4.74 The reserve price for spectrum auctions in the 2.1 GHz band for 2 x 5 MHz blocks of spectrum should be:</p> <table border="1"> <thead> <tr> <th>Circle</th> <th>Reserve price (Rs. Crore)</th> </tr> </thead> <tbody> <tr> <td>Mumbai, Delhi, Category A</td> <td>80.00</td> </tr> <tr> <td>Chennai, Kolkatta, Category B</td> <td>40.00</td> </tr> <tr> <td>Category C</td> <td>15.00</td> </tr> </tbody> </table>	Circle	Reserve price (Rs. Crore)	Mumbai, Delhi, Category A	80.00	Chennai, Kolkatta, Category B	40.00	Category C	15.00	<p>The reserve price for 2x5 MHz block of spectrum shall be as under:</p> <table border="1"> <thead> <tr> <th>Circle</th> <th>Reserve price (Rs. Crore)</th> </tr> </thead> <tbody> <tr> <td>Mumbai, Delhi, Category A</td> <td>160.00</td> </tr> <tr> <td>Chennai, Kolkatta, Category B</td> <td>80.00</td> </tr> <tr> <td>Category C</td> <td>30.00</td> </tr> </tbody> </table>	Circle	Reserve price (Rs. Crore)	Mumbai, Delhi, Category A	160.00	Chennai, Kolkatta, Category B	80.00	Category C	30.00	<p>On reference from DoT, the Authority vide its letter dated 12th July 2008 to DoT agreed with the reserve price proposed by DoT</p>
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<p>4.78 For the 800 MHz band 3G carriers, the Authority recommends that the second-highest winning bid in the 2.1 GHz auction should be pro-rated to a per-2 x 1.25 MHz price. This pro-rated price should be charged as a one-time spectrum acquisition fee to each of the UASL CDMA operators who opt to be allocated one carrier in the 800 MHz band. After paying the price, the CDMA operators should be immediately assigned the carrier.</p>	<p>The reserve price for auction of one block of 2x1.25 MHz spectrum in 800 MHz band shall be 25% of reserve price for 2x5 MHz in 2.1 GHz band.</p>	<p>-</p>																
<p>4.79 An additional allocation on one carrier in the 800 MHz band should not be linked to the subscriber base criteria for 2G operations. This is a stand alone allocation and should not influence the allocation of carriers for voice-centric 2G services as and when operators qualify for additional carriers.</p>	<p>Spectrum shall be auctioned for 3G services in 800 MHz band for EVDO services.</p>	<p>-</p>																

<p>4.82 The spectrum in the 450 MHz band be priced at half the reserve price of the 2.1 GHz band.</p>	<p>The reserve price for one block of spectrum in 450 MHz and 1900 MHz bands would be notified separately.</p>	
<p>4.91 The DoT should have a one year moratorium on incremental annual spectrum fees for 3G spectrum from the time of spectrum assignment. After this one year, the DoT should charge operators an additional annual spectrum charge of 1 per cent of the operator's total annual gross revenue (AGR).</p>	<ul style="list-style-type: none"> • No annual spectrum charge shall be payable for 3 G Telecom services in the first year from the date of allotment of spectrum. • The licensee shall pay annual spectrum charge of 1% on the incremental revenue due to 3G services after a period of one year. The method of calculation shall be notified separately. 	<p>TRAI in its recommendations on 'The reference on the spectrum charging for 3G services (DoT letter no. p-11014/02/2008-pp dated 24th november, 2008) dated 9th December, 2008 had recommended the following:</p> <ul style="list-style-type: none"> o The new revised slab rates applicable to an operator with 2G spectrum should be applicable to the 2G + 3G spectrum holder on their total AGR. o Stand alone 3G operator will pay 3% of AGR which corresponds to the lowest slab for 2G spectrum. o 3G spectrum to be allocated based on auction shall not be

		<p>counted for calculating the slab of the total spectrum holding by 2G licensee for levy of spectrum usage charges.</p> <ul style="list-style-type: none">o The spectrum charge shall be payable on total Adjusted Gross Revenue (AGR) of 2G and 3G services taken together.o There will be moratorium of one year on the payment of annual spectrum charges for the stand alone 3G operator only. However, Moratorium of one year will not be applicable to operators holding 2G +3G spectrum i.e. the existing licensees.
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<p>4.96 If operators do not achieve their roll out obligations, they should be given one year within which to fulfill their roll out obligations. Within this one year, the operators should be fined a spectrum hoarding cess of 2.5 per cent of their winning auction bid (i.e. their spectrum acquisition price) per quarter. If operators do not complete their roll out obligations even within this one year, their spectrum assignment should be cancelled and the spectrum allocated via an auction to a new operator.</p>	<p>Accepted.</p>	<p>-</p>																		
<p>4.100 Roll out obligations in the 2.1 GHz band, should be as follows:</p> <table border="1"> <thead> <tr> <th>Category of circle</th> <th>At the end of 3 years</th> <th>At the end of 5 years</th> </tr> </thead> <tbody> <tr> <td>Metros</td> <td>-</td> <td>90% of metro area</td> </tr> <tr> <td>A, B, and C</td> <td>30% of the DHQs or cities in the circle out of which at least 10% should be rural SDCAs</td> <td>50% of the DHQs or cities in the circle out of which 15% should be rural SDCAs</td> </tr> </tbody> </table>	Category of circle	At the end of 3 years	At the end of 5 years	Metros	-	90% of metro area	A, B, and C	30% of the DHQs or cities in the circle out of which at least 10% should be rural SDCAs	50% of the DHQs or cities in the circle out of which 15% should be rural SDCAs	<p>Partially Accepted.</p> <table border="1"> <thead> <tr> <th>Category of circle</th> <th>At the end of 3 years</th> <th>At the end of 5 years</th> </tr> </thead> <tbody> <tr> <td>Metros</td> <td>-</td> <td>90% of metro area</td> </tr> <tr> <td>A, B, and C</td> <td>-</td> <td>50% of the DHQs or cities in a service area out of which 15% of the DHQs should be rural SDCAs</td> </tr> </tbody> </table>	Category of circle	At the end of 3 years	At the end of 5 years	Metros	-	90% of metro area	A, B, and C	-	50% of the DHQs or cities in a service area out of which 15% of the DHQs should be rural SDCAs	<p>Roll out at the end of 3 years is removed. Rest is accepted.</p>
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<p>4.101 For the operators in the 450 MHz band, the roll out obligations should be as follows:</p> <table border="1"> <thead> <tr> <th>Category of circle</th> <th>At the end of 2 years</th> <th>At the end of 5 years</th> </tr> </thead> <tbody> <tr> <td>Metros</td> <td>-</td> <td>90% of metro area</td> </tr> <tr> <td>A, B, and C</td> <td>20% of the rural SDCAs</td> <td>50% of the rural SDCAs</td> </tr> </tbody> </table>	Category of circle	At the end of 2 years	At the end of 5 years	Metros	-	90% of metro area	A, B, and C	20% of the rural SDCAs	50% of the rural SDCAs	-	Not yet decided.
Category of circle	At the end of 2 years	At the end of 5 years									
Metros	-	90% of metro area									
A, B, and C	20% of the rural SDCAs	50% of the rural SDCAs									
<p>4.103 The UASL and CMSP licenses should be suitably amended to reflect the roll out obligations, spectrum bands allocated, fees, and other terms and conditions relevant to 3G service provision.</p>	-	-									
-	<p>If the period of existing UAS telecom licence of a successful bidder is expiring before this period of 20 years for spectrum allotment for 3G services, its existing UAS licence shall be extended in the 19th year of its validity to a date 20 years from the date of 3G spectrum allotment in such manner, as the Government deems fit.</p> <p>This extension shall be done in the 19th year of the UAS licence for the period required to make it co-terminus with the 3G spectrum allocation period by amending licence conditions if required.</p>	<p>The Authority in its recommendations on "Allocation and pricing for 2.3-2.4 GHz, 2.5-2.69 GHz & 3.3-3.6 GHz bands had recommended that "the licenses should be renewed / extended as per the laid down conditions in the respective licenses".</p>									

<p>Allocation price is based on each operator's final bid amount if it is not less than 75 per cent of the highest winning bid. If one of the final remaining bidders' bid is less than 75 per cent of the highest winning bid, then that bidder has an opportunity to, after the auction closes, come up to this level. If the bidder does not wish to do so, it can be waitlisted, and the higher of the previously waitlisted bidders is given a similar opportunity. This process continues until five bidders for blocks in the 2.1 GHz band are chosen</p>	<p>When the number of bidders left is equal to the number of blocks of spectrum being auctioned, in any service area, the action will end. All the bidders will have to match the bid of the highest bidder, H1. In case they do not match, then that block would be offered to the next highest bidder at the highest bid price, H1. If any block is left vacant, then the block would be re-auctioned. This would ensure that all successful bidders pay the same amount for the same 3G spectrum blocks.</p>	<p>Vide its letter dated 12th July 2008 the Authority opined that TRAI, in principle, agree with the DoT on the proposed auction process. However, the Authority suggested that DoT should maintain a waitlist of the operators, who are eliminated in the previous rounds. In case successful bidders (H2-H5) do not match the bid of the highest bidder (H1), and if any block is left vacant, then, instead of repeating the whole process, which may take time and effort, this H1 amount, be offered to remaining bidders as per the priority in the waitlist.</p>
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