

Immediate

Government of India  
Ministry of Communication & IT  
Department of Telecommunications  
WPC Wing, Sanchar Bhawan,  
New Delhi-110001

No. P-11014/32/2010-PP (Pt. III)

Dated: 29<sup>th</sup> April, 2011

**Subject:- Views/ comments on Questionnaire for "Review of Spectrum Usages Charges" for the Captive Wireless Users including the Government Departments**

Dear Sir/ Madam,

As you aware that the Wireless Planning and Coordination Wing of Department of Telecom is authority for coordinating and assigning Radio Spectrum in the country for various wireless users. The wireless users are required to pay License Fee and Royalty (for spectrum) as per rates/ formulae in force from time to time. Such users include various service providers and others.

2. With a view to rationalize and make it more appropriate, the existing rates structure of License Fee and Royalty applicable to various users, largely other than Telecom Service Providers where revenue-sharing regime is not applicable, DOT has constituted a Committee which has floated a Questionnaire (Copy enclosed) inviting views, comments and suggestions from stake holders. The Questionnaire is also available on website [www.dot.gov.in](http://www.dot.gov.in) and [www.wpc.dot.gov.in](http://www.wpc.dot.gov.in)

3. We would like to have your valuable views, comments & suggestions on the matter through email [spectrum.charging@gmail.com](mailto:spectrum.charging@gmail.com) followed by supporting documents latest by **May 12<sup>th</sup>, 2011**.

  
(L. D. Meghawal)

Engineer and member convener  
Ph- 011 2337 2312

To,

All concerned stake holders.

## QUESTIONNAIRE

*The Wireless Planning & Coordination Wing (WPC Wing) of the Department of Telecommunications calculates the royalty charges payable by the users of radio spectrum for various captive services/ facilities like fixed, mobile, microwave, terrestrial and satellite broadcast services, satellite-based telecom networks, Inmarsat, GPS, etc.as per existing orders..*

*Keeping in view the large number of technical and economic developments in the field of radio communications that have taken place during the last two decades, it is desirable to review the current practices and formulae used so that the scarce spectrum resources are assigned most efficiently, objectively and transparently so as to result in the maximum good of society.*

*It is in this context your valuable comments are solicited on the following points:*

### **Part 1: GENERAL**

1. How would you define the term '*captive users*' vis-à-vis the assignment of radio spectrum by the WPC Wing of DOT?
2. Give your reasoned suggestions on *pricing* radio spectrum for captive use so as to ensure greater transparency, objectivity, and reasonableness.
3. Comment on the existing approach of collecting '*license fee*' for a radio license, and also periodic '*royalty*' for the use of the radio spectrum.
4. Should the royalty rates vary with respect to the *duration* of the radio license? Please give reasons for your stand.
5. Should the Department adopt a radio spectrum pricing structure that rigorously and dynamically takes account the demand/availability aspect? Justify your approach with reasons.

### **PART 2: GENERAL CAPTIVE USE**

6. Since around 1987 the royalty for most services using radio spectrum for single channel operations below ~1 GHz are being calculated after taking into consideration the distance between the farthest stations for each channel of 25 KHz bandwidth. The royalty as modified during 2003 in such cases equals M (a constant multiplier), which is Rs.1200, 2400, 4800, 9000, 15000 and Rs.20000 respectively for the distance slabs of up to 5 km, 25 km, 60 km, 120 km, 500 km, and above 500 km. In the light of various socio-economic and technological developments to date, give your reasoned views and suggestions on the following points:

- a. Should the basic unit channel-width continue to be kept at 25 KHz?
- b. Should the pricing of radio spectrum also rest on the same unit channel bandwidth?
- c. The classification of distance into six specific categories?
- d. The royalty (factor **M**) associated with different distance slabs?

- e. Do any other factor(s) need to be taken into account to determine the spectrum royalty charges?
- f. Periodicity and manner of revision of pricing formulae/ parameters/ methodology?

7. In the case of multi channel operation mostly above 1 GHz , for point-to-point and point-to-multi-point links, the royalty per channel equals  $M \times W$ , where  $W$  equals 30, 60, 120, and thereafter 120 *plus* 30 for each additional 7 MHz bandwidth for adjacent channel separations (Band Width) of 2 MHz, 7 MHz, 28 MHz, and more than 28 MHz respectively; and  $M$  equals Rs. 1200/-, Rs. 2400/-, Rs. 4800/-, Rs. 9000/-, Rs. 15000/- and Rs. 20000/- respectively for the distance slabs of upto 5 Kms, 25 Kms, 60 Kms, 120 Kms, 500 Kms and above 500 Kms. Give your reasoned views and suggestions on the following points, having regard to various technical and economic developments to date:

- a. Revision of existing bandwidth slots.
- b. Revision of the values of  $W$  for different bandwidth slots.
- c. The most appropriate distance-slabs ( $M$ ) for the M/W links.

### PART 3: CAPTIVE USE BY TELECOM SERVICE PROVIDERS

8. Comment on the fact that at present the WPC Wing collects royalty for satellite-based telecom links provided to ILD (International Long Distance) and NLD (National Long Distance) operators in different frequency bands, at the flat rate of Rs.35,000/- per MHz.(each for uplink and down link). Please also give your reasoned suggestions.

9. (i) The existing royalty charges for captive VSAT networks are: Rs.20,000/- per Hub, and Rs.5,000/- per remote VSAT terminal, irrespective of the actual spectrum bandwidth used. How do you think may these be rationalized? Please suggest the approach and formula that need to be adopted for pricing the spectrum used in such networks.

(ii) At present, royalty for commercial GPS is charged @ Rs.20,000/- for the main station and @ Rs.5,000/- for each additional station. For INMARSAT, the rate of royalty is Rs.20,000/- per station. How may these be rationalized? Please suggest the approach and formula that need to be adopted for pricing the spectrum used in such captive networks. Should the rates of royalty be uniform or undergo a progressive increase as the number of VSAT increases? Why?

10. The spectrum royalty charges for the wireless microwave links provided to Internet Service Providers (ISP) are calculated using the usual formula at present. What are your reasoned views and suggestions about this approach?

11. What do you think would be the best minimum (unit) bandwidth in khz for collecting royalty charges for *satellite-based* communication networks other than *broadcasting*? Please also suggest the pricing methodology/ formula therefor.

12. Do you think the basic spectrum pricing formula (Royalty =  $M \times C \times W$ ) in use at present needs to be changed? If yes, what alternative formula or methodology would you recommend, and how would that constitute an advance over the existing system? Please give detailed reasons in support of your response.

13. Radio spectrum in a particular frequency band may be assigned to a person on either an *exclusive* basis (i.e. no other party may use it in the same geographical area and during the time specified in the license), or on a *shared* basis (where the specified *spectrum band* may at the same time be used by more than one party within the same geographical area). How should the spectrum be priced in cases the second type? Please suggest an economically efficient, but practical, approach to determine the royalty to be taken from various shared users?

#### PART 4: BROADCASTERS AS 'CAPTIVE' USERS

14. The spectrum royalty for all *uplinks* for satellite broadcasting systems like DTH (Direct to Home) and Teleports is presently charged at the flat rate of Rs.35,000/- per MHz or part thereof. How should it be rationalized? Please justify your answer and the approach used to arrive at it.

15. Presently the royalty for terrestrial broadcasting networks like *FM Radio* and *Television* is computed using the formulae mentioned in items 6 and 7 above considering FM Broadcast Channel as 8 equivalent voice channels and for TV broadcast factor  $W=60$  for channel bandwidth of 8 MHz. Do you agree with this practice, or think that such spectrum ought to be valued differently? Please explain your stand and also offer reasoned suggestions to refine the pricing of such broadcasting frequencies.

16. At present the royalty for terrestrial broadcasting networks like *Medium Wave* and *Short Wave Radio* is calculated on the basis of the *transmission power* used, and varies (for 24-hour usage) from Rs. 9,000/- to Rs.20,000/- per annum. Do you consider this practice to be in tune with the objective of efficient use of the spectrum? If not, how should such radio spectrum be priced, and why?

17. What do you think would be the best minimum (unit) bandwidth in KHz for collecting royalty charges for satellite-based *broadcasting* networks? Please also suggest an appropriate pricing methodology/ formula for the purpose.

18. In the context of spectrum royalty, should the use of radio spectrum for satellite *uplinks* for localized ground-to-satellite transmission be treated differently from that for the widely dispersed *satellite-to-ground broadcasts*? Please explain with reasons.

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Government of India  
Ministry of Communication & IT  
Department of Telecommunications  
WPC Wing, Sanchar Bhawan,  
New Delhi-110001

No. P-11014/32/2010-PP

Dated: 8<sup>th</sup> April, 2011

**Subject:- Views/ comments on Questionnaire for “Review of Spectrum Usages Charges” for the Captive Wireless Users including the Government Departments**

Kindly find enclosed herewith the **Questionnaire** for views/ comments on the review of spectrum usages charges for various frequency bands. The comments may be forwarded to this Ministry latest by 20<sup>th</sup> April, 2011 positively on email [spectrum.charging@gmail.com](mailto:spectrum.charging@gmail.com) followed by supporting documents till 25<sup>th</sup> April, 2011 for further examination.

2. The date for open house discussion would be held 28<sup>th</sup> April, 2011.

  
(I. D. Meghwal)

Engineer and member convener  
Ph- 011 2337 2312

To,  
All concerned stake holders

# QUESTIONNAIRE

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Keeping in view the large number of technical and economic developments in the field of radio communications that have taken place during the last two decades, it is desirable to review the current practices and formulae used so that the scarce spectrum resources are assigned most efficiently, objectively and transparently so as to result in the maximum good of society.

It is in this context your valuable comments are solicited on the following points:

## **Part 1: GENERAL**

1. How would you define the term 'captive users' vis-à-vis the assignment of radio spectrum by the WPC Wing of DOT?
2. Give your reasoned suggestions on *pricing* radio spectrum for captive use so as to ensure greater transparency, objectivity, and reasonableness.
3. Comment on the existing approach of collecting 'license fee' for a radio license, and also periodic 'royalty' for the use of the radio spectrum.
4. Should the royalty rates vary with respect to the *duration* of the radio license? Please give reasons for your stand.
5. Should the Department adopt a radio spectrum pricing structure that rigorously and dynamically takes account the demand/availability aspect? Justify your approach with reasons.

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- e. Do any other factor(s) need to be taken into account to determine the spectrum royalty charges?
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