

**Consultation Paper No.: 01/2015**



**TELECOM REGULATORY AUTHORITY OF INDIA**



**Consultation Paper**

**on**

**Reserve Price for auction of FM Radio channels in New Cities**

**6<sup>th</sup> February, 2015**

**Mahanagar Doorsanchar Bhawan**

**Jawahar Lal Nehru Marg**

**New Delhi-110002**

Website: [www.trai.gov.in](http://www.trai.gov.in)

**Written comments on the Consultation Paper are invited from the stakeholders by 25<sup>th</sup> February 2015. The comments may be sent, preferably in electronic form, to Mr. Sunil Kumar Singhal, Advisor (B & CS), Telecom Regulatory Authority of India, on the e-mail: [sksinghal@traigov.in](mailto:sksinghal@traigov.in), [vk.agarwal@traigov.in](mailto:vk.agarwal@traigov.in) or [umesh@traigov.in](mailto:umesh@traigov.in). For any clarification/ information, Mr. Sunil Kumar Singhal, Advisor (B & CS) may be contacted at Tel. No.: +91-11-23221509, Fax: +91-11-23232476. Comments and counter-comments will be posted on TRAI's website [www.traigov.in](http://www.traigov.in).**

## Contents

Chapter I	Introduction	1
Chapter II	Estimation of Reserve Prices for auction of FM Radio channels in new cities as per Phase-III policy guidelines	5
Chapter III	Summary of Issues for Consultation	27
	List of Acronyms	28
<b>Annexure</b>		
Annexure I	MIB reference dated 16th December 2014	29
<b>List of Tables</b>		
Table 1	RP for some of the new cities based on the methodology specified in the existing Policy Guidelines of Phase-III FM Radio Broadcasting	9
Table 2	Reference price calculation	18
Table 3	Categorisation of States based on Per Capita GSDP	20
Table 4	Grouping of existing cities based on the population and per capita GSDP	21
Table 5	Valuation matrix derived based on per capita GSDP	22
Table 6	Valuation of FM Channels in new cities based on per capita GSDP	22

# **Chapter I**

## **Introduction**

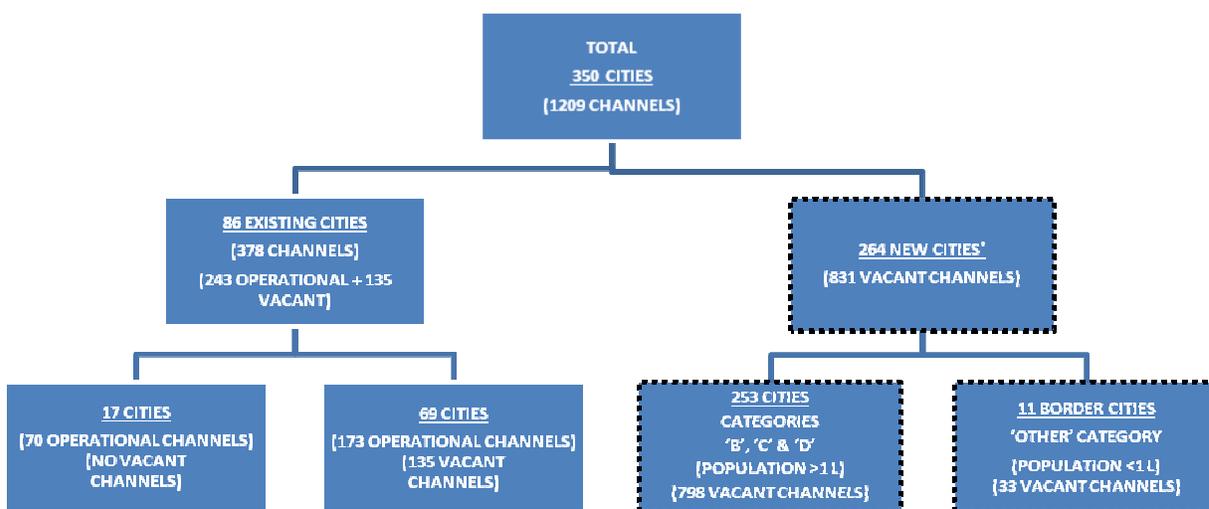
- 1.1 Frequency Modulation (FM) Radio broadcasting is a vibrant and effective medium that can be used to provide entertainment, information and education to the masses. Since 1999, FM Radio broadcasting in India has been opened up to participation of the private sector by the Ministry of Information and Broadcasting (MIB) in a phased manner. At present, 243 FM Channels are operational in 86 cities (21 private FM channels were set up during Phase-I and an additional 222 channels were set up during Phase-II). The Phase-I operators migrated to the Phase-II FM regime.
  
- 1.2 To expand the reach of FM Radio broadcasting in the country, the Government has embarked upon Phase III to enable setting up of private FM Radio channels in all cities with a population of more than 1 lakh. Further, 11 other cities having a population less than 1 lakh in the border areas of Jammu & Kashmir (J&K) and the North East (NE) region are also proposed to be included in the expansion. Policy Guidelines for Phase-III of FM Radio Broadcasting have been issued by the Government on 25<sup>th</sup> July 2011<sup>1</sup>.
  
- 1.3 The Non-refundable One Time Entry Fee (NOTEF) for FM Radio channels in all the cities coming up during Phase III is to be discovered through an ascending e-auction. The Phase-III Policy Guidelines provides the mechanism for migration of existing FM Radio operators from Phase-II to Phase-III regime.
  
- 1.4 As per the decision of the Empowered Group of Ministers (EGoM), MIB vide its letter dated 9<sup>th</sup> April 2013, sought recommendations of TRAI on the migration fee to be charged from existing Phase II operators on their migration to the Phase-III regime of FM Radio Broadcasting. In response, the

---

<sup>1</sup> [http://www.mib.nic.in/WriteReadData/documents/PolicyGuidelines\\_FMPhaseIII.pdf](http://www.mib.nic.in/WriteReadData/documents/PolicyGuidelines_FMPhaseIII.pdf)

Authority sent its Recommendations on 'Migration of FM Radio Broadcasters from Phase-II to Phase-III' on 20<sup>th</sup> February, 2014.

- 1.5 The methodology for determination of the reserve prices for auction of FM Radio channels was already finalised by the Government. In its recommendations of 20<sup>th</sup> February, 2014, the Authority recommended that the methodology for determining the reserve prices for fresh (new) cities (where no private FM Radio channels are operational) in Phase-III should be reconsidered as the current methodology might jeopardize the auction.



**Fig 1: Pan-India distribution of FM Radio Channels (Existing and New Cities)**

\*Total of 264 cities (227+37)(227 cities as per 2001 census and 37 as per 2011 census)

- 1.6 Thereafter, MIB decided to seek fresh recommendations of the Authority on reserve prices for new cities in Phase-III and also make the 2011 census data

applicable for identification and categorization of the new cities. Based on the 2011 census data, MIB has identified 37 additional cities where 112 private FM Radio channels are proposed to be put up for auction. This is in addition to the already identified 227 new cities earlier earmarked for FM Radio expansion as per the 2001 Census data. Further, based on the 2011 census data, MIB has also upgraded the category of 11 new cities that were already mentioned in the Phase-III policy guidelines dated 25<sup>th</sup> July, 2011. Thus, there are now, in 264 (227+37) new cities, a total of 831 FM Radio channels that are to be put up for auction. Figure 1 above is a complete pictorial representation of the pan-India distribution of existing and proposed new cities and the number of FM Radio channels therein for participation of private FM Radio operators.

- 1.7 MIB through its letter dated 16<sup>th</sup> December 2014, (**Annexure-I**) has sought TRAI's recommendations on Reserve Prices (RP) for FM Radio channels in 264 new cities. The 831 FM Radio channels in these cities are proposed to be auctioned through an ascending e-auction process. The list of cities, along with the corresponding category of each city, and the number of channels being put up for auction was annexed with MIB's reference. The present consultation is confined to estimation of the RP in 264 new cities only. (Dotted boxes in Fig 1 above )
- 1.8 The Authority recognises that the primary purpose for the auction of additional FM Radio channels is to give a boost to the FM Radio movement in the country so as to contribute to development of society, fulfill the entertainment and information needs of the citizens, and promote socio-economic activity. The revenues generated from the auction process are incidental to these larger societal objectives.
- 1.9 Accordingly, this Consultation Paper has been prepared to solicit comments and views of all stakeholders on the reserve prices for auction of FM Radio channels in 264 new cities in Phase-III. Chapter II discusses the issues

related to estimation of the reserve prices for auction of FM Radio channels in new cities. A summary of the issues for consultation is provided in Chapter III.

## **Chapter II**

### **Estimation of Reserve Prices for auction of FM Radio channels in new cities**

#### **FM Radio service**

- 2.1 The objective for expanding FM Radio broadcast service is to make available a variety of entertainment, information and educational content to citizens. This goal is sought to be achieved by covering underserved geographical areas of the country by setting up FM Radio Stations in new cities, and providing for additional channels in cities with existing FM Radio channels. The primary purpose of auctioning FM Radio channels is to boost the FM Radio movement and expand its outreach. The expectation is that FM Radio will contribute towards development of society, fulfill the entertainment and information needs of citizens, and promote socio-economic activity. The revenues generated from the auction process are incidental to the realisation of these larger societal objectives.
- 2.2 The permission granted to an FM Radio operator for running a channel in a particular area entitles him to allotment of one spot frequency from Wireless Planning & Coordination (WPC) wing in the range of 88 - 108 MHz for that area. Hence, the Entry Fee (i.e. Non-Refundable One Time Entry Fee - NOTEF), determined through the auction process, for grant of permission to operate an FM Radio channel permission also includes the charge for the spectrum (spot frequency) bundled with the permission. The grant of permission for an FM Radio channel without bundled spectrum would not serve any purpose as FM Radio services cannot be delivered without spectrum.
- 2.3 NOTEF is the capital investment for an FM Radio operator. Further, the minimum license fee (a recurring annual payment) is also linked to the NOTEF amount. Therefore, the capital and operational expenses of FM Radio operators are linked to the NOTEF. Accordingly, the RP, as well as the bid

prices for FM Radio channels in a city, largely depend upon the revenue generation potential of that particular city/coverage area. The primary source of revenue for FM Radio broadcaster are the commercial advertisements aired during the broadcast. Therefore, the revenue generation potential in a particular market depends on the duration and rates of commercial advertisements. These, in turn, depend on the scale of economic activity and listenership of FM Radio in that city/ coverage area. Since both these facets vary across different cities, the revenue generation potential of cities cannot be uniform.

### **Phase-III policy of FM Radio Broadcasting**

2.4 The salient features of the Phase-III policy for FM Radio broadcasting are:

- Permission for the channels shall be granted on the basis of a Non-Refundable One Time Entry Fee (NOTEF).
- NOTEF shall be arrived at through an ascending e-auction process, on similar lines as followed by Department of Telecommunications (DoT), Government of India in the auction of 3G and BWA spectrum in 2010.
- The reserve Price will be decided in the following manner:
  - For new channels in existing FM Phase-II cities, the highest bid price received for that city in Phase-II.
  - For fresh (new) cities, the highest bid price received during FM Phase-II for that category of cities in that region.
  - In case the benchmark from Phase-II for a particular region is not available, then the lowest of the highest bid received in other regions for that category of cities.
  - For new cities in border areas with a population less than one lakh the reserve price shall be Rs. 5 Lakh.
- The Validity of the license is 15 years from the date of operationalisation of the channel.
- Annual Licence Fee will be charged as follows:

- 4% of Gross Revenue (GR) of the FM radio channel for the financial year or 2.5% of NOTEF for the concerned city, whichever is higher.
- For the permission holders in the States of the North East, Jammu & Kashmir (J&K) and Island territories (i.e. Andaman and Nicobar islands and Lakshadweep) - 2% of Gross Revenue for each year or 1.25% of NOTEF for the concerned city, whichever is higher, for an initial period of three years from the date from which the annual license fee becomes payable and the permission period of 15 years begins.
- GR would be the gross inflow of cash, receivables or other consideration arising in the course of ordinary activities of the FM Radio Broadcasting enterprise from rendering of services and from the use by others of the enterprise resources yielding rent, interest, dividend, royalties, commissions etc.
- GR will be calculated, without deduction of taxes and agency commission, on the basis of billing rates, net of discounts to advertisers.
- Each applicant will be allowed to own more than one channel but not more than 40% of the total channels in a city subject to a minimum of three different operators in the city.
- No entity will be permitted to hold more than 15% of all channels allotted in the country excluding channels located in Jammu and Kashmir, the North Eastern States and Island territories.
- FDI limit of 26% permitted in a private FM radio broadcasting company.
- Networking of channels will be permissible within a private FM broadcaster's own network across the country subject to the condition that 20% of the total broadcast in a day is in the local language of the city and promotes local content.
- The permission holder will be permitted to carry the news bulletins of All India Radio in exactly same format (unaltered) on such terms and conditions as may be mutually agreed with Prasar Bharati.

- No other news and current affairs programs will be permitted under the Policy.
- The following categories will be treated as non-news and current affairs broadcast and will be permissible:
  - (a) Information pertaining to sporting events excluding live coverage. However, live commentaries of sporting events of a local nature may be permissible;
  - (b) Information pertaining to Traffic and Weather;
  - (c) Information pertaining to and coverage of cultural events and festivals.
  - (d) Topics pertaining to examinations, results, admissions, career counseling;
  - (e) Availability of employment opportunities;
  - (f) Public announcements pertaining to civic amenities like electricity, water supply, natural calamities, health alerts and other essential issues as provided by the local administration;
  - (g) Such other categories not permitted at present that may subsequently be specifically permitted by Ministry of Information and Broadcasting from time to time.
- The permission holder is required to follow the Programme and Advertisement Code as followed by All India Radio as amended from time- to-time or any other applicable code, which the Central Government may prescribe from time to time.

**Why a different methodology is required for determining Reserve Price (RP)**

2.5 A methodology is specified in the existing Policy Guidelines for Phase III of FM Radio to determine the RPs for new cities (where no private FM Radio channels are operational) in Phase-III. However, this yields inconsistent and/or irrational results. This is apparent from the reserve prices, depicted in Table-1 below for some of the new cities, derived based on the methodology specified in the existing Policy Guidelines.

**Table-1: RP for some of the new cities based on the methodology specified in the existing Policy Guidelines of Phase-III FM Radio Broadcasting**

S. No.	New City (Category)	Reserve price (reference city) (Rs. In Lakh)
1	Cuddapah (D)	31 ( Gangtok)
2	Neyveli (D)	31 ( Gangtok)
3	Ratlam (D)	171 ( Panaji)
4	Shahjahanpur (C)	1561 ( Chandigarh)

It is unreasonable to expect, even after a gap of almost 10 years, that the prices set for Chandigarh and Panaji are reasonable reserve prices for Shahjahanpur and Ratlam respectively. Similarly, the reserve prices of Cuddapah and Neyveli worked out above appear to be out of sync (far too low) with the revenue generation potential of these cities.

- 2.6 Hitherto, the methodology followed was to group cities based on two characteristics, namely, the categorization of the city by size of population and by the geographical region to which the city belongs. On size of population, cities are categorized as A+, A, B, C, and D. Based on geographical location, cities are categorized across North, East, South, and West Regions.
- 2.7 The implication of this two-way classification is that it yields a 5x4 matrix (5 for the categories of the cities and 4 for the Regions). Essentially, cities are classified into 20 groups (sub-sets) corresponding to the cells of the matrix. For each such group of new cities, an RP is determined based on this methodology.
- 2.8 For estimating the RP what is important is the revenue generation potential of a city. For this, the population of a city is indeed a major relevant variable. The revenue generation potential directly depends on size of the pool of potential listeners and nature of economic activity in that city/ region. In turn, the size of the pool of potential listeners depends on population density

and the extent of area covered by a particular FM Radio station. As per the FM Radio Phase-III Policy Guidelines, for each city category ('A+', 'A', 'B', 'C', 'D' and 'Others') based on population, the permitted minimum and maximum values for the Antenna Height as well as the Effective Radiated Power are prescribed. Therefore, the coverage area and, hence, the listenership figures for FM Radio Stations would depend upon the population of the city.

- 2.9 What is the problem in using geographical Region as a second relevant variable for grouping of new cities? It is certainly true that prices realized in the FM Radio Phase-II auction varied across geographical regions. However, the Region itself is merely a proxy variable for many other underlying variables. And, sometimes, it is not as good proxy. First, within a Region there may be large disparities, say, in terms of per capita income. For instance, though UP and Haryana fall in the Northern region, there is a vast difference in per capita incomes, which, in turn, determines the willingness to pay by advertisers as well as the demand for FM radio services. The per capita GSDP of Haryana is Rs. 1,20,500, which is more than three times the per capita GSDP of Uttar Pradesh (UP) which is Rs. 34,000. Second, the Region also masks the listenership figures for FM radio. These two can vary significantly across States even within a Region. Finally, the revenues earned by existing FM Radio operators also vary significantly across States within the same Region. In fact it is possible that cities in different geographical regions may have the same revenue generating potential and, therefore ought to be grouped together. Hence, using Region as a second characteristic for a two-way classification of cities is fraught with risks of errors. It is, therefore, necessary to look beyond Region at other variables which influence the revenue-earning potential of a FM Radio station.

### **Approach to estimation of the RP**

- 2.10 The objective of the current auction is to allocate FM Radio channels efficiently while ensuring that the broad policy objectives are met. It is important to reiterate that the revenues generated from the auction process

are only incidental to the larger societal objectives. It is essential that the estimated RP for a channel in a city enables price discovery. The RP refers to the minimum amount that the owner of an item will accept as the winning bid amount. RP prevents the auction from being won at a price lower than the minimum price the owner is ready to accept. The RP is clearly linked to the valuation of the item up for auction. It is important to note here that it is not the eventually realized price in the auction; it is the starting point for an ascending price auction. An RP set lower than the expected value of the object will enable price discovery and the final bid price is likely to be much higher than the RP. An optimally set RP ensures auction efficiency and also revenue maximization. Fixing a very high RP may discourage prospective bidders possibly leading to a situation where demand does not match supply i.e. some channels remain unsold. Efficiency of allocation would not be realized in the process. It would also defeat the larger societal objectives of the FM Radio expansion policy.

2.11 FM Radio broadcasting is a Free-to-Air (FTA) service and advertisements aired on the channel are the primary source of revenue. The 264 new cities, where FM Radio channels are to be auctioned in Phase-III, are largely Tier-3 cities. This auction is, therefore, different from the previous auctions in Phases- I & II which primarily covered Tier-1 and Tier-2 cities (i.e. four metros, State capitals and other major cities) where a large part of India's economic activity is concentrated. The availability of private FM Radio services in Tier-3 cities will enhance economic activity, generate employment and promote cultural activity that, in turn, will positively impact the overall growth and development of these areas. While there is direct revenue generation that will accrue to the Central Government from proceeds of this auction, FM Radio broadcasting will also enhance indirect revenue generation for the Central/ State Governments and Local bodies in the form of taxes, levies and other benefits because of the resultant increase in economic, social and cultural activity.

- 2.12 The market size for private FM Radio channels in these 264 cities and the latent potential for revenue generation have not yet been estimated. These markets would develop afresh and, hence, at this juncture, the fixing of RP for these cities would require an approach which is more suitable for nascent markets.
- 2.13 It would, therefore, be desirable that experienced FM Radio operators with prior expertise in the development of associated markets participate in the auction. And, their participation is likely. Existing FM Radio operators have already set up their infrastructure at a few locations; they can, therefore, optimize their operational costs by networking new stations with existing ones and attract National/ State level advertisers after the launch of services in these new cities.
- 2.14 In addition to established players, it is also essential that local niche players participate in the auction process. This is because they understand the dynamics of their local market and can appreciate the cultural and information needs of their own cities and regions. Such niche players will not only increase the availability of homegrown content but also generate local employment in the respective city/ region. Existing players can potentially realize the economies of scale. However, local level niche players have an in-depth understanding of regional audiences and can hire homegrown talent to produce and air well targeted cultural and traditional programmes that appeal to a larger audience in the city/coverage area. This has the advantage that production costs are likely to be lower. Moreover, revenue generation will be larger by providing a more indigenous platform that will attract the attention of local and regional advertising clients.
- 2.15 The entry of local niche players will also increase competition for already established FM Radio operators, both in the auction as well as afterwards. Hence, it is of vital importance that the RPs are optimally fixed to encourage the participation of a large number of bidders.

2.16 As per the Guidelines for FM Radio Phase-III, NOTEF shall be arrived at through an ascending e-auction process, on the lines followed by DoT in the auction of 3G and BWA spectrum in 2010. Optimally set RPs will induce participation by a large number of competitors in the auction while the inherent design of an ascending e-auction should enable discovery of the underlying market value (price) of FM Radio channels in each city.

### **Methodology for arriving at Reserve Prices of FM Radio channels in New Cities**

2.17 The RP is directly related to the valuation of the FM Radio channel. A two-stage process is proposed for determining the RP for each new city. In the first stage, determine the valuation of the FM Radio channel in each new city. In the next stage, calculate the RP for each new city from the valuation of the FM Radio channel.

2.18 The most recent market information on FM Radio channels are the prices discovered in the FM Radio Phase II auction. Hence, the valuation must in some way be linked to price information already available. However, it is also important to consider that while the period of permission in FM Radio Phase II was 10 years, the period of permission in Phase III is 15 years. Further, considerable time has elapsed since the FM Radio Phase II auctions i.e. these were conducted about 10 years ago in 2004-05. Many other economic as well as sector-specific developments have taken place since then. Over the decade, economic growth has slowed down due to various factors; nevertheless, economic growth has been steady and high by international standards. During the same period, the availability of FM Radio receivers in mobile handsets has considerably increased FM Radio listenership. The FM Radio Phase-III policy permits the networking of Radio stations and broadcasting of All India Radio (AIR) news bulletin. All these factors need to be taken into consideration while valuing an FM channel.

2.19 Broadly speaking, the proposed methodology, for valuation of FM Radio channel permission bundled with a spot frequency, is on the following lines. The FM Radio Phase II auction was a closed-bid auction. The rules of the auction did not stipulate that the highest bid had to be met by all prospective buyers i.e. channels in a single city could be sold at many different bid prices. The successful bids in a particular city varied from the highest quoted by any bidder to 25% of the highest. To use this available price information for valuing FM Radio channels in new cities, it is essential to have a reference price for an FM Radio channel for each existing city. Surely, this cannot be the highest or the lowest value of the bids received for that city. For migration of Phase-I operators from Phase-I to Phase-II in any city, the migration fee was set equal to the average of all successful bid prices received during the Phase-II auction in the corresponding city. Therefore, the reference price of an FM Radio channel in a city, for valuation of an FM Radio channel in new cities, could be the average of all successful bid prices received during the Phase-II auction for that city.

2.20 The revenue earning capabilities of a channel in a city are determined by characteristics (variables), such as those discussed above. These are population, per capita income, listenership of FM Radio and revenue generation potential in each State. Using three two-way classifications, it is possible to classify the FM Phase II cities (existing cities) in groups in terms of their characteristics. In these three two-way classifications, the first characteristic, population, can be common to all (for reasons discussed in Para 2.8). It is the second characteristic that varies. Once this is done, characteristics of new cities are measured and the new cities are grouped, as was done for the existing cities. Thereafter, price information derived from the group of existing cities is mapped against each new city classified in the corresponding group. This yields possible values for an FM channel in a particular city. For ease of understanding, the details of the steps involved in the valuation of FM channels are explained below.

Step-1 One dominant characteristic is the population in a city. This yields a classification in terms of category A+, A, B, C, D and 'Other' cities. However, since the FM Phase III auction for new cities deals only with category B, C, and D cities, these are the categories that are taken into consideration.

Step-2 There are three additional characteristics (variables) which determine the revenue earning potential of an FM Radio channel. These are: per capita income, Gross Revenues (GR) earned by operators in existing cities, and estimated listenership. The values of these variables are estimated on the basis of available data on a State-wise basis. Based on the numerical values obtained, States are classified into three categories. For instance, per capita GSDP is used as a measure of per capita income. Once the State-wise estimates of per capita GSDP are available, States can be indexed and classified into 3 categories in terms of the size of the per capita GSDP. A similar exercise is replicated for the other two variables, namely, GR earned and listenership figures.

Step-3 Taking population size as one characteristic and one of the other three variables as the second characteristic, existing cities can be classified. This two-way classification yields a 3x3 matrix in which each cell contains the group of existing cities. For instance, if the categories of States in terms of per capita GSDP are J, K, and L, then all, say, 'B' category cities fall into one of these three categories of States. That is all existing category 'B' cities can be further classified into groups in terms of the category of their respective States (based on per capita GSDP). Exactly, the same is true for existing category 'C' and 'D' cities.

Step-4 On similar lines, two other matrices can be derived by varying the second characteristic viz. using GR and listenership figures for categorizing States.

Step-5 Once the three matrices referred to above are available, the reference prices (average bid prices in a city as discussed in Para 2.19 above) for the existing cities can be mapped to each of the matrices. That is to say, a cell in the three matrices lists the existing cities belonging to that group. Channels were auctioned in these cities during Phase-II. The mapping links the cities to the reference prices of the cities in that group. Then, for each cell, an average of the reference prices of the cities falling in that cell is determined i.e. the total sum of the reference prices of all cities in the cell divided by the number of cities in the cell.

Step-6 The above steps yield three 3x3 matrices with averages of reference prices assigned to each cell. This effectively establishes a relationship between city characteristics and averages of reference prices for cities where auctions were held in Phase-II.

Step-7 The value so derived for each cell of the three matrices corresponds to the average of the reference prices (See step 5). And those, in turn, are linked to bid prices revealed in the Phase II auction. As discussed earlier in Para 2.18, for valuation of FM channel for new cities, certain additional factors need to be considered. Of these, two specific factors which are quantifiable - increase in permission period from 10 to 15 years and the effect of inflation – can be considered as follows. For taking care of the increase in the permission period from 10 to 15 years, the valuations derived above can be multiplied by a factor of 1.5. The effect of inflation on prices over a period of time (from 1<sup>st</sup> April 2005 up to 31<sup>st</sup> December 2014) can be derived by applying a factor based on the WPI, since the Authority has been following this approach to provide the inflationary increase in the tariff ceilings applicable to the broadcasting sector. The WPI factor for the period, from 1<sup>st</sup> April 2005 up to 31<sup>st</sup> December 2014, works out to 1.798<sup>2</sup>. So the values derived above, can be further multiplied by a factor of 1.798. The impact of other factors cannot be quantified at this stage. However, the

---

<sup>2</sup> Source: Office of the Economic Adviser website

impact of any other factors on valuation would be taken into account by the nature of the ascending e-auction process.

Step-8 Now, the new cities are classified in terms of their population size (B, C or D) and the other three State-level variables. For each new city, three numerical price values are obtained from the matrices arrived at in Step 6. For instance, suppose a new category C city falls in categories J, R and H against the three other State level variables, then, the prices from the relevant cell of the relevant matrix are mapped to the city i.e. the price values contained in the cells corresponding to C and J in terms of per capita GSDP, C and R in terms of listenership and C and H in terms of per capita GR are assigned to each of the new cities.

Step-9 The three distinct values assigned to each of the new cities are based on three different characteristics of these cities. To arrive at a valuation for FM Radio channels in each new city, before considering any statistical operation on these values, it is necessary to check the level of relationship among three sets of the State ranks worked out in Step-2. In statistics, correlation tests are used to measure a relationship between two or more variables. Spearman's Rank Correlation Coefficient<sup>3</sup> is a statistical measure of the strength of a monotonic relationship between paired data. If sets of the State ranks worked out in Step-2 are correlated with each other, then the average of the three values assigned to a new city can be taken as a valuation of FM Radio channels in that new city.

2.21 The above mentioned steps can be explained through the following illustration:

- i. Let us select a group of existing cities which belongs to city category D based on population and category J of States based on per capita GSDP. There are

---

<sup>3</sup> <http://www.rgs.org/NR/rdonlyres/4844E3AB-B36D-4B14-8A20-3A3C28FAC087/0/OASpearmanRankExcelGuidePDF.pdf>

three cities i.e. Hissar, Karnal and Shimla in this group. The details of the bids in the Phase-II and their averages for these cities are as follows:

**Table-2: Reference price calculation**

*(Values Rs. in Lakh)*

S. No	City	State	Bid 1	Bid 2	Bid 3	Bid 4	Average Bid Amount i.e. Reference price
1	Hissar	Haryana	61	50	27	27	41
2	Karnal	Haryana	90	71			81
3	Shimla	Himachal Pradesh	126	81	51		86
<b>Average of reference prices of three cities</b>							69

- ii. Therefore, the average of the reference prices for cities with (D, J) characteristics is  $X = \text{Rs. } 69$  lakh.
- iii. Apply the factor for increase in permission period from 10 to 15 years i.e.  $Y = 1.5X = 1.5 \times 69 = \text{Rs. } 104$  lakh
- iv. Apply the factor for inflation i.e.  $Z = 1.798Y = 1.798 \times 104 = \text{Rs. } 187$  lakh
- v. One of the new cities with (D, J) characteristics is Ambala in the State of Haryana.
- vi. Therefore, the estimated value of FM channels in Ambala based on the per capita GSDP method would be Rs. 187 lakh.
- vii. Similarly, the estimated value of FM channels in Ambala can be derived based on listenership and gross revenue earned methods.
- viii. The average of the three (3) values so arrived at from the three methods could be the valuation of FM Radio channel, to be used for calculating the RP.

2.22 For the purpose of calculating the RP from the valuation of access spectrum used for telecommunication services, based on past domestic as well as international experience, the Authority considered a multiplication factor of 0.8 viz. the RP is set equal to the valuation of access spectrum multiplied by 0.8. The same multiplication factor can be used for estimating the RP for FM Radio channels in new cities.

2.23 Based on the methodology discussed, the details of specific data used for valuation of FM Radio channels are discussed in subsequent paragraphs. For 11 'Other' category of new cities, no reference price data is available from Phase-II, so this methodology has been used for valuation of FM channels in 253 (i.e. 264-11) cities.

### **FM Radio channel valuation based on GSDP**

2.24 Most new cities under consideration are District Headquarters. The FM Radio coverage in these cities could extend to the entire area of the district and may even spread out over multiple adjoining districts. The Gross District Domestic Product (GDDP) of a particular district can be used as a proxy indicator of the level of economic activity in that particular district. It can therefore, be used as a relevant variable for estimation of the RPs. However, GDDP data for FY 2011-12 for all States and UTs is not available. Further, it is difficult to calculate the exact coverage area of a particular FM Radio station due to the possibility of transmission spillover into adjacent districts. The next closest proxy indicator for assessing the level of economic activity in a particular area could be the per-capita Gross State Domestic Product (GSDP) in that State/UT, for which required data is available.

2.25 For the purpose of categorization of the States/ UTs based on GSDP, the 7 sister States of the North-Eastern region have been grouped into one entity denoted as 'NE'. The States of Sikkim, West Bengal and UT of Andaman & Nicobar have been grouped together and denoted as 'WB'. Similarly Lakshadweep has been clubbed with Kerala and Daman has been clubbed with Gujarat.

2.26 City centric States/UTs, viz. Delhi, Chandigarh, Goa and Puducherry, have not been considered for categorization since there is no new city in these States/UTs slated for auction in Phase-III.

2.27 The population<sup>4</sup> figures as per census of 2011 and the available GSDP<sup>5</sup> figures for the States and UTs for FY 2011-12 have been utilized to calculate the per capita GSDP of each State. Based on the per capita GSDP, the States have been indexed and categorised into three groups. The details are given in the Table-3 below:

**Table-3: Categorisation of States based on Per Capita GSDP**

S.No.	State	Category	Per Capita GSDP in thousands (2011-12) (Rs.)
1	Haryana	J	120.5
2	Maharashtra	J	106.7
3	Gujarat <sup>§</sup>	J	101.2
4	Kerala <sup>@</sup>	J	94.4
5	Uttarakhand	J	93.4
6	Punjab	J	93.0
7	Himachal Pradesh	J	93.0
8	Tamil Nadu	J	92.2
9	Andhra Pradesh	K	77.5
10	Karnataka	K	75.4
11	Rajasthan	K	60.8
12	WB <sup>#</sup>	K	59.1
13	Chhattisgarh	K	54.6
14	Jammu & Kashmir	K	52.1
15	Odisha	K	51.4
16	NE*	L	45.3
17	Jharkhand	L	43.1
18	Madhya Pradesh	L	42.6
19	Uttar Pradesh	L	34.0
20	Bihar	L	23.7

\* NE includes States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura

# WB includes States West Bengal and Sikkim and UT of Andaman & Nicobar

§ Gujarat includes UT of Daman & Diu

@ Kerala includes UT of Lakshadweep

<sup>4</sup> <http://censusindia.gov.in/>

<sup>5</sup> <http://pib.nic.in/archieve/others/2013/dec/d2013121703.pdf>

2.28 Existing cities have been arranged into a 3x3 matrix corresponding to their category based on population and category of State based on per capita GSDP. The details are given in the Table-4 below:

**Table-4: Grouping of existing cities based on the population and per capita GSDP**

City category (based on population)  State category (based per capita GSDP)	B	C	D
<b>J</b>	Amritsar, Coimbatore, Kochi, Madurai, Rajkot, Vadodra,	Ahmednagar, Akola, Aurangabad, Dhule, Jalandhar, Jalgaon, Kannur, Kolhapur, Kozhikode, Nanded, Nasik, Patiala, Sangli, Sholapur, Thiruvananthapuram, Thrissur, Tirunelveli, Trichy, Tuticorin	Hissar, Karnal, Shimla
<b>K</b>	Vijayawada, Vishakhapatnam	Ajmer, Bhubaneshwar, Bilaspur, Bikaner, Gulbarga, Jammu, Jodhpur, Kota, Mysore, Mangalore, Rajahmundry, Raipur, Rourkela, Siliguri, Tirupati, Udaipur, Warrangal,	Gangtok
<b>L</b>	Agra, Asansol, Allahabad, Bhopal, Indore, Jabalpur, Jamshedpur, Patna, Varanasi	Aligarh, Bareilly, Gorakhpur, Guwahati, Gwalior, Jhansi, Muzaffarpur, Ranchi, Srinagar,	Agartala, Aizwal, Itanagar, Shillong

2.29 The categorization of new cities based on population is already available (from the reference received from MIB). Subsequently, based on these two variables (population and per capita GSDP), after following the step by step method outlined above in Para 2.20, a valuation matrix based on per capita GSDP has been developed. A summary of the values thus obtained is in Table – 5 below.

**Table 5: Valuation matrix derived based on per capita GSDP***(Values Rs. in Lakh)*

Category of States based on per capita GSDP	Category of cities based on population		
	B	C	D
J	1,311	445	187
K	1,437	278	48
L	628	92	38

2.30 The values thus derived are assigned to each new city classified in the corresponding groups. For example, values thus assigned for some of the new cities are depicted below in Table-6.

**Table 6: Valuation of FM Channels in new cities based on per capita GSDP**

S. No.	Name of City	State	Category as per Phase-III Policy	Group based on per capita GSDP	Valuation based on per capita GSDP (Rs. In Lakh) (b)
1	Ambala	Haryana	D	J	187
2	Dhanbad	Jharkhand	B	L	628
3	Latur	Maharashtra	C	J	445
4	Mahesana	Gujarat	D	J	187
5	Salem	Tamil Nadu	C	J	445

**FM Radio channel valuation based on listenership**

2.31 Data relating to potential listenership of FM Radio in new cities is not available readily. To assess this in each city, the indicator could be the density of FM Radio receivers in the coverage area of a particular FM Radio station. Broadly, FM Radio receivers used for listening to FM Radio programs can be classified into three different types (1) Standalone Radio receivers/transistors, (2) FM Radio receivers installed in passenger vehicles, and (3) FM Radio receivers integrated with Mobile handsets. Again, the required data for the total ownership figures for all these types of receivers is not available

at the district level. Hence, the closest proxy for estimating the level of FM Radio listenership in a particular area could be the density of FM Radio receivers within the State/ UT.

2.32 For assessing the estimated density of FM Radio receivers in each State, data from multiple sources can be used. The State-wise data on percentage of households possessing a radio/transistor can be obtained from the 2011 Census. Most mobile handsets currently available in the market have an in-built FM Radio Receiver. Hence, wireless teledensity data (as on 31<sup>st</sup> March 2012) available with TRAI can be used to estimate the number of mobile handset based FM Radio receivers. In addition, cars, jeeps, taxis, omnibuses and Light Motor Vehicles (passenger) are commonly found to be fitted with FM Radio receivers. Therefore, the figures for the total number of such vehicles registered with the respective State Transport Departments as on 31<sup>st</sup> March 2012, as available with the Ministry of Road Transport and Highways, Government of India, can be utilized to estimate the number of such FM Radio receivers. The data from diverse sources can be consolidated and utilized to assess the overall density of FM Radio receivers in a particular State. On the basis of estimated density figures, the States can be indexed and divided into three categories.

2.33 Thereafter, based on the two variables (population and density of FM Radio receivers), and following the process similar to that used for valuation of the FM Radio channels based on per capita GSDP earlier, the valuation of FM Radio channels in new cities based on the density of FM Radio receivers can be estimated.

#### **FM Radio channel valuation based on revenue generation potential**

2.34 Data pertaining to revenue generation potential in new cities is not readily available. However, it can be estimated for the purpose of ranking of States based on Per-Capita Revenue from existing cities, as in most States/ UTs, private FM Radio operators are already functional. Each FM Radio operator

reports the station-wise GR to MIB for calculation of the annual License Fee (LF). This varies from operator to operator within the same city as also, from one city to another. The sum of the GRs reported by all operators operating in a particular city indicates the market size for that particular city. The per-capita Revenue from existing cities for a State/UT can be estimated by dividing the sum of GRs reported all for all existing cities in that particular State/UT by the population of that State. It can then be utilized to rank the States and used as a possible proxy for the revenue generation potential.

- 2.35 The GR data of existing FM Radio operators is readily available. Based on the per-capita GR data, the States can be indexed and divided into three categories.
- 2.36 Thereafter, based on the two variables (population and per-capita GR), and following the process similar to that used for valuation of the FM Radio channels based on per capita GSDP earlier, the valuation of FM Radio channels in new cities based on the revenue generation potential can be estimated.

### **Valuation of FM channels in new cities**

- 2.37 The 3 different methods discussed above, would provide three separate valuations for FM Radio channels corresponding to each new city. As discussed earlier in Step-9 of Para 2.20, before taking average of these three values to arrive at a valuation of FM Radio channels in new cities, it is necessary to test the level of relationship between the three sets of data generated by indexing of the States based on per-capita GSDP, per-capita GR and density of FM Radio receivers using Spearman's Rank Correlation Coefficient<sup>6</sup> method. The guide for calculation of the coefficient and interpreting the result is available at the link mentioned below. They are significantly correlated. Therefore, the average of the three values

---

<sup>6</sup> <http://www.rgs.org/NR/rdonlyres/4844E3AB-B36D-4B14-8A20-3A3C28FAC087/0/OASpearmanRankExcelGuidePDF.pdf>

corresponding to any new city can be the estimated valuation of FM Radio channels in that city.

### **Estimation of Reserve Price for 253 new Cities**

- 2.38 As discussed in Para 2.22, for FM channels in 253 new cities, the RPs can be fixed at 80% of the derived valuations. It would be the starting point for an ascending price auction. It will enable price discovery.

#### **Issue for consultation**

- Q1. Do you agree with the proposed approach/ methodology for determination of the valuations of FM Radio channels in 253 new cities in Phase-III? You are welcome to suggest an alternative approach/ methodology with justifications.**
- Q2. Do you agree with the proposal that the RP for FM Radio channels in a new city can be set equal to 0.8 times of the valuation of FM Radio channels in that city? If not, suggest an alternative proposal with justification.**

### **Estimation of Reserve Price for Border (i.e. 'Others' Category) Cities**

- 2.39 For 11 new cities, classified in the 'Others' category, no reference price is available from Phase-II as no city was available in this category in that Phase. These cities have population figures of less than one lakh and are located in the border areas of Jammu and Kashmir (J&K) and the North-Eastern (NE) States. The Cabinet approved the RP for each of these 11 cities as Rs. 5 Lakhs. These cities are of strategic importance. The availability of FM Radio broadcasting service in these far-flung areas can also be used for Emergency Warning Services (EWS) with the specific approval and guidance of the local district administration. When the RP (i.e. Rs. 5 Lakhs per city) set for these cities in Phase-III policy is compared with the proposed RPs for

'D' category cities of NE and J&K, it appears to be reasonable to encourage the participation of a large number of prospective bidders. The inherent design of an ascending e-auction process would anyway ensure that the true market value of the FM Radio channels in each city is discovered during the process of auction. So the RP for each of these 11 new cities may be Rs. 5 lakhs.

**Issue for consultation**

- Q3. Do you agree with the proposed reserve price of Rs. 5 lakhs per city, for FM Radio channels in 11 border cities in Phase-III? If not, suggest an alternative proposal with justification.**

**Any other issue**

- Q4. Stakeholders may also provide their comments/ suggestions on any other issue that may be relevant to the present consultation.**

## **Chapter III**

### **Summary of issues for Consultation**

**Please elaborate your response with justification.**

- Q1. Do you agree with the proposed approach/ methodology for determination of the valuations of FM Radio channels in 253 new cities in Phase-III? You are welcome to suggest an alternative approach/ methodology with justifications.**
- Q2. Do you agree with the proposal that the RP for FM Radio channels in a new city can be set equal to 0.8 times of the valuation of FM Radio channels in that city? If not, suggest an alternative proposal with justification.**
- Q3. Do you agree with the proposed reserve price of Rs. 5 lakhs per city, for FM Radio channels in 11 border cities in Phase-III? If not, suggest an alternative proposal with justification.**
- Q4. Stakeholders may also provide their comments/ suggestions on any other issue that may be relevant to the present consultation.**

## List of Acronyms

<b>Abbreviation</b>	<b>Description</b>
3G	3 <sup>rd</sup> Generation
AIR	All India Radio
BWA	Broadband Wireless Access
DoT	Department of Telecommunication
FDI	Foreign Direct Investment
FM	Frequency Modulation
GOPA	Grant of Permission Agreement
GR	Gross Revenue
GSDP	Gross State Domestic Product
MIB	Ministry of Information and Broadcasting
NOTEF	Non-refundable One Time Entry Fee
OTEF	One Time Entry Fee
RP	Reserve Price
TRAI	Telecom Regulatory Authority of India
UT	Union Territory

**MIB reference dated 16th December 2014**

जेतेन्द्र शंकर माथुर, आई.ए.एस.  
JITENDRA SHANKAR MATHUR, IAS  
अपर सचिव  
ADDL. SECRETARY  
T. No. : 23387558  
FAX : 23387617



भारत सरकार  
सूचना एवं प्रसारण मंत्रालय  
शास्त्री भवन, नई दिल्ली-110001  
GOVERNMENT OF INDIA  
MINISTRY OF  
INFORMATION & BROADCASTING  
SHASTRI BHAWAN, NEW DELHI - 110001

D.O.No.N-38014/10/2014-FM/1003

Dated 16<sup>th</sup> December, 2014.

Dear Sir,

Please refer to your D.O. No.23-3/2014-B&CS dated 20.11.2014 on FM Radio Phase-III Auctions.

2. TRAI vide their recommendations dated 20.02.2014 and subsequent clarification dated 5<sup>th</sup> September, 2014 had recommended that the methodology for determining the reserve price of fresh cities in Phase-III should be reconsidered as the current methodology might jeopardize the auction. The 2011 census data on population is to be applicable on the fresh FM Radio Phase-III cities. As per the recommendations of the AS&FA, MIB's Committee report dated 31.10.2014, Ministry is agreeable to include 37 fresh cities on the basis of the 2011 census data as it will lead to achieving the objective of FM radio broadcast services in uncovered geographical areas. So the total number of fresh cities becomes 227+37=264 cities.

3. As regards the existing 86 cities where 243 numbers of channels are operational, the amount of migration fee to be charged from these operators for migration from Phase-II to Phase-III has been already recommended by TRAI and has been accepted by the Government. As per Cabinet decision dated 7<sup>th</sup> July, 2011, 19 cities out of 86 cities have no vacant channels available for auction. In the remaining 67 cities, the reserve price for the 132 vacant channels has been approved by the Cabinet vide its decision 7<sup>th</sup> July, 2011. It is presumed that TRAI has nothing to add on reserve price, as approved by Cabinet on 7.7.2011, of vacant channels available in 67 existing cities.

..2/p..

..2/p...

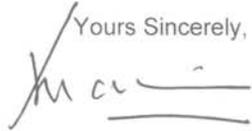
4. In respect of the TRAI recommendations regarding reduction of minimum channel spacing within a license service area to 400 Khz it is intimated that the IMC has accepted this recommendation in principle and it has been decided to declare this in the NIA document for Phase-III auction. This is in line with proposal of TRAI vide its letter dated 5<sup>th</sup> September, 2014.

5. Therefore, the authority is requested to kindly furnish their recommendations on reserve price for 264 (227+37) fresh cities, as per the Phase-III policy under Section 11(1) (a) of TRAI Act. The list of cities, category of city, along with number of channels, city-wise, is annexed.

6. Ministry of Information and Broadcasting is accordingly in the process of seeking Cabinet approval, inter-alia, for ascending e-auctions in the existing cities of Phase-II based on the reserve price formula approved by the Cabinet in 2011 and migration of existing Phase-II licenses to FM Phase-III on payment of migration fee as per migration formula recommended by TRAI in its recommendations dated 20.2.2014.

*With Regards,*

Encl: as above.

Yours Sincerely,  
  
(Jitendra Shankar Mathur)

Shri Sudhir Gupta,  
Secretary,  
Telecom Regulatory Authority of India,  
Mahanagar Door Sanchar Bhawan,  
Jawaharlal Nehru Marg, (old Minto Road),  
New Delhi-110002

**Table-I :**  
(New Cities as per FM Phase-III Policy dated 25.07.2011)

S No	Name of City	State	Region	Channels available for phase -III
a	b	c	d	
<b>Category "B"</b>				
1	Dhanbad	Jharkhand	E	4
2	Ludhiana	Punjab	N	4
3	Moradabad	Uttar Pradesh	N	4
<b>Category "C"</b>				
4	Alappuzha (Alleppey)	Kerala	S	4
5	Alwar	Rajasthan	N	4
6	Baharampur	West Bengal	E	4
7	Amravati	Maharashtra	W	4
8	Barddhaman	West Bengal	E	4
9	Belgaum	Karnataka	S	4
10	Bellary	Karnataka	S	4
11	Bhagalpur	Bihar	E	4
12	Bhavnagar	Gujarat	W	4
13	Bhilwara	Rajasthan	N	4
14	Bijapur	Karnataka	S	4
15	Brahmapur	Orissa	E	4
16	Dehradun	Uttarakhand	N	4
17	Devengeri	Karnataka	S	4
18	English Bazar (Maldah)	West Bengal	E	4
19	Erode	Tamil Nadu	S	4
20	Gaya	Bihar	E	4
21	Hubli-Dharwad	Karnataka	S	4
22	Imphal	Manipur	E	4
23	Jamnagar	Gujarat	W	4
24	Kakinada	Andhra Pradesh	S	4
25	Kurnool	Andhra Pradesh	S	4
26	Latur	Maharashtra	W	4
27	Malegaon	Maharashtra	W	4
28	Muzaffarnagar	Uttar Pradesh	N	4
29	Nellore	Andhra Pradesh	S	4
30	Nizamabad	Telangana	S	4
31	Purnia	Bihar	E	4
32	Sagar	Madhya Pradesh	W	4
33	Saharanpur	Uttar Pradesh	N	4
34	Salem	Tamil Nadu	S	4
35	Shahjahanpur	Uttar Pradesh	N	4
36	Shimoga	Karnataka	S	4

- 1 -

37	Ujjain	Madhya Pradesh	W	4
38	Vellore	Tamil nadu	S	4
S No	Name of City	State	Region	Channels available for phase -III
a		b	c	d
<b>Category "D"</b>				
39	Abohar	Punjab	N	3
40	Achalpur	Maharashtra	W	3
41	Adilabad	Telangana	S	3
42	Adoni	Andhra Pradesh	S	3
43	Alipurduar	West Bengal	E	3
44	Alwal	Telangana	S	3
45	Ambala	Haryana	N	3
46	Anantpur	Andhra Pradesh	S	3
47	Arrah	Bihar	E	3
48	Azamgarh	Uttar Pradesh	N	3
49	Bahraich	Uttar Pradesh	N	3
50	Baleshwar	Orissa	E	3
51	Ballia	Uttar Pradesh	N	3
52	Balurghat	West Bengal	E	3
53	Bands	Uttar Pradesh	N	3
54	Bangaon	West Bengal	E	3
55	Bankura	West Bengal	E	3
56	Baripada	Orissa	E	3
57	Barshi	Maharashtra	W	3
58	Basti	Uttar Pradesh	N	3
59	Beawar	Rajasthan	N	3
60	Begusarai	Bihar	E	3
61	Bettiah	Bihar	E	3
62	Bhadurgarh	Haryana	N	3
63	Bharatpur	Rajasthan	N	3
64	Bharuch	Gujarat	W	3
65	Bhatinda	Punjab	N	3
66	Bheemavaram	Andhra Pradesh	S	3
67	Bhiwani	Haryana	N	3
68	Bidar	Karnataka	S	3
69	Bihar Shareef	Bihar	E	3
70	Bokaro Steel City	Jharkhand	E	3
71	Botad	Gujarat	W	3
72	Badaun	Uttar Pradesh	N	3

73	Burhanapur	Madhya Pradesh	W	3
74	Chapra	Bihar	E	3
75	Chhattarpur	Madhya Pradesh	W	3
76	Chhindwara	Madhya Pradesh	W	3
77	Chikmagalur	Karnataka	S	3
78	Chirala	Andhra Pradesh	S	3
79	Chitradurga	Karnataka	S	3
80	Chittoor	Andhra Pradesh	S	3
81	Churu	Rajasthan	N	3
82	Coonoor	Tamil Nadu	S	3
83	Cuddapah	Andhra Pradesh	S	3
84	Daman*	Daman & Diu	W	3
85	Damoh	Madhya Pradesh	W	3
86	Darbhanga	Bihar	E	3
87	Darjiling	West Bengal	E	3
88	Deoghar	Jharkhand	E	3
89	Deoria	Uttar Pradesh	N	3
90	Dharamavaram	Andhra Pradesh	S	3
91	Dibrugarh	Assam	E	3
92	Dimapur	Nagaland	E	3
93	Dingdigul	Tamil Nadu	S	3
94	Dohad	Gujarat	W	3
95	Durg-Bhillainagar	Chhatisgarh	W	3
96	Eluru	Andhra Pradesh	S	3
97	Etah	Uttar Pradesh	N	3
98	Etawah	Uttar Pradesh	N	3
99	Faizabad/Ayodhya	Uttar Pradesh	N	3
100	Farrukhabad cum Fatehgarh	Uttar Pradesh	N	3
101	Fatehpur	Uttar Pradesh	N	3
102	Gadag Betigeri	Karnataka	S	3
103	Ganganagar	Rajasthan	N	3
104	Ghazipur	Uttar Pradesh	N	3
105	Giridih	Jharkhand	E	3
106	Godhra	Gujarat	W	3
107	Gonda	Uttar Pradesh	N	3
108	Gondiya	Maharashtra	W	3

109	Guna	Madhya Pradesh	W	3
110	Guntakal	Andhra Pradesh	S	3
111	Haldwani-cum Kathgodam	Uttarakhand	N	3
112	Hanumangarh	Rajasthan	N	3
113	Hardoi	Uttar Pradesh	N	3
114	Hardwar	Uttarakhand	N	3
115	Hassan	Karnataka	S	3
116	Hazaribag	Jharkhand	E	3
117	Hindupur	Andhra Pradesh	S	3
118	Hoshiarpur	Punjab	N	3
119	Hospet	Karnataka	S	3
120	Itarsi	Madhya Pradesh	W	3
121	Jagdalpur	Chhatisgarh	W	3
122	Jaunpur	Uttar Pradesh	N	3
123	Jetpur Navagadh	Gujarat	W	3
124	Jhunjhunun	Rajasthan	N	3
125	Jind	Haryana	N	3
126	Jorhat	Assam	E	3
127	Junagadh	Gujarat	W	3
128	Kaithal	Haryana	N	3
129	Kanhangad (Kasargod)	Kerala	S	3
130	Karaikkudi	Tamil Nadu	S	3
131	Karimnagar	Telangana	S	3
132	Karur	Tamil Nadu	S	3
133	Kavarati	Lakshadweep	S	3
134	Khammam	Telangana	S	3
135	Khandwa	Madhya Pradesh	W	3
136	Kharagpur	West Bengal	E	3
137	Khargone	Madhya Pradesh	W	3
138	Kohima	Nagaland	E	3
139	Kolar	Karnataka	S	3
140	Korba	Chhatisgarh	W	3
141	Kothagudem	Telangana	S	3
142	Krishnanagar	West Bengal	E	3
143	Lakhimpur	Uttar Pradesh	N	3
144	Lalitpur	Uttar Pradesh	N	3

145	Machillpatnam	Andhra Pradesh	S	3
146	Madanapalle	Andhra Pradesh	S	3
147	Mahbubnagar	Telangana	S	3
148	Mahesana	Gujarat	W	3
149	Mainpuri	Uttar Pradesh	N	3
150	Mancherial	Telangana	S	3
151	Mandsaur	Madhya Pradesh	W	3
152	Mathura	Uttar Pradesh	N	3
153	Maunath Bhajan (Distt. Mau)	Uttar Pradesh	N	3
154	Mirzapur cum Vindhyachal	Uttar Pradesh	N	3
155	Moga	Punjab	N	3
156	Motihari	Bihar	E	3
157	Munger	Bihar	E	3
158	Murwara (Katni)	Madhya Pradesh	W	3
159	Nagaon (Nowgang)	Assam	E	3
160	Nagarcoil/Kanyakumari	Tamil Nadu	S	3
161	Nalgonda	Telangana	S	3
162	Nandyal	Andhra Pradesh	S	3
163	Neemuch	Madhya Pradesh	W	3
164	Neyveli	Tamil Nadu	S	3
165	Ongole	Andhra Pradesh	S	3
166	Orai	Uttar Pradesh	N	3
167	Palakkad	Kerala	S	3
168	Palanpur	Gujarat	W	3
169	Pali	Rajasthan	N	3
170	Panipat	Haryana	N	3
171	Patan	Gujarat	W	3
172	Pathankot	Punjab	N	3
173	Porbandar	Gujarat	W	3
174	Portblair	Andman & Nikobar	E	3
175	Proddatur	Andhra Pradesh	S	3
176	Pudukkottai	Tamil Nadu	S	3
177	Puri	Orissa	E	3
178	Puruliya	West Bengal	E	3
179	Rae Bareilly	Uttar Pradesh	N	3

180	Raichur	Karnataka	S	3
181	Rajapalayam	Tamil Nadu	S	3
182	Rajgarh	Chhatisgarh	W	3
183	Ramagundam	Telangana	S	3
184	Raoganj	West Bengal	E	3
185	Ratlam	Madhya Pradesh	W	3
186	Rewa	Madhya Pradesh	W	3
187	Rewari	Haryana	N	3
188	Rohtak	Haryana	N	3
189	Saharsa	Bihar	E	3
190	Sambalpur	Orissa	E	3
191	Sasaram	Bihar	E	3
192	Satna	Madhya Pradesh	W	3
193	Sawai Madhopur	Rajasthan	N	3
194	Shivpuri	Madhya Pradesh	W	3
195	Sikar	Rajasthan	N	3
196	Silchar	Assam	E	3
197	Singrauli	Madhya Pradesh	W	3
198	Sirsa	Haryana	N	3
199	Sitapur	Uttar Pradesh	N	3
200	Siwan	Bihar	E	3
201	Sultanpur	Uttar Pradesh	N	3
202	Surendranagar Dudhrej	Gujarat	W	3
203	Thanesar	Haryana	N	3
204	Thanjavur	Tamil Nadu	S	3
205	Tinsukia	Assam	E	3
206	Tiruvannamalai	Tamil Nadu	S	3
207	Tonk	Rajasthan	N	3
208	Tumkur	Karnataka	S	3
209	Udupi	Karnataka	S	3
210	Vaniyambadi	Tamil Nadu	S	3
211	Veraval	Gujarat	W	3
212	Vidisha	Madhya Pradesh	W	3
213	Vizianagaram	Andhra Pradesh	S	3
214	Wadhwan (Surendernagar)	Gujarat	W	3
215	Wardha	Maharashtra	W	3
216	Yavatmal	Maharashtra	W	3

S No	Name of City	State	Region	Channels available for phase -III
a		b	c	d
<b>Cities in Border Areas of J &amp; K and NE states</b>				
1	Kargil	J & K	N	3
2	Leh	J & K	N	3
3	Katua	J & K	N	3
4	Poonch	J & K	N	3
5	Bhaderwah	J & K	N	3
6	Dubhari	Assam	E	3
7	Haflong	Assam	E	3
8	Jowai	Meghalaya	E	3
9	Lung-iei	Mizoram	E	3
10	Mokukchung	Nagaland	E	3
11	Belonia	Tripura	E	3
		<b>Sub total</b>		33
227	<b>TOTAL CHANNELS IN 227 NEW CITIES</b>			719

7

**Table-II**  
New Additional Cities identified based on census 2011 figure

S No	Name of City	State	Region	Channels available for phase - III
	a	b	c	d
<b>Category "C"</b>				
1	Chandrapur	Maharashtra	W	4
<b>Category "D"</b>				
2	Akbarpur	Uttar Pradesh	N	3
3	Ambikapur	Chhatisgarh	W	3
4	Amreli	Gujarat	W	3
5	Anantnag	J&K	N	3
6	Aurangabad	Bihar	N	3
7	Bagaha	Bihar	N	3
8	Bagalkot	Karnataka	S	3
9	Banswara	Rajasthan	N	3
10	Barnala	Punjab	N	3
11	Betul	Madhya Pradesh	W	3
12	Bhadrak	Orissa	E	3
13	Bhuj	Gujarat	W	3
14	Chilakaluripet	Andhra Pradesh	S	3
15	Chittaurgarh	Rajasthan	N	3
16	Dhulian	West Bengal	E	3
17	Dhulpur	Madhya Pradesh	W	3
18	Ferozpur	Punjab	N	3
19	Gandhidham	Gujarat	W	3
20	Hindaun	Rajasthan	N	3
21	Kishanganj	Bihar	E	3
22	Makrana	Rajasthan	N	3
23	Medini Nagar(Daltonganj)	Jharkhand	E	3
24	Muktsar	Punjab	N	3

25	Nagaur	Rajasthan	N	3
26	Nandurbar	Maharashtra	W	3
27	Narasaraopet	Andhra Pradesh	S	3
28	Osmanabad	Maharashtra	W	3
29	Seoni	Madhya Pradesh	W	3
30	Shikohabad	Uttar Pradesh	N	3
31	Sitamarhi	Bihar	E	3
32	Srikakulam	Andhra Pradesh	S	3
33	Sujangarh	Rajasthan	N	3
34	Suryapet	Andhra Pradesh	S	3
35	Tadpatri	Andhra Pradesh	S	3
36	Tezpur	Assam	E	3
37	Udgir	Maharashtra	W	3
TOTAL CHANNELS IN 37 ADDITIONAL CITIES AS PER 2011 CENSUS				112

- 9 -