Telecom Regulatory Authority of India

सत्यमेव जयते

Recommendations

on

Formulating a Digital Radio Broadcast Policy for private broadcasters

3rd October 2025

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Content

Annexures

Chapter I

Introduction

1.1 Radio is one of the most popular and affordable means for mass communication, largely owing to its wide coverage, terminal portability, low set up costs and affordability. On account of its versatility, Radio broadcasting is considered one of the popular mediums to provide entertainment, information and education.

A. FM Radio Broadcasting in India

1.2 Until the year 2000, AIR was the sole radio broadcaster transmitting programs in Amplitude Modulation (AM) and Frequency Modulation (FM) bands.

1.3 With the changing market dynamics, in the year 2000, the Government, allowed private players to enter into FM radio broadcasting service. Introduction of private FM radio broadcasting was done in a phased manner. In Phase-I, 108 FM radio channels in 40 cities were auctioned by the Government. 21 FM radio channels became operational by the end of Phase-I.

1.4 In 2005, Phase-II of FM Radio auction a total of 337 channels were auctioned across 91 cities having population equal to or more than 3 lakhs, resulting in 222 operational channels by end of the phase. The 21 FM radio channels of Phase-I also migrated to Phase-II. Therefore, at the end of Phase-II, a total of 243 FM radio channels were operational in 86 cities.

1.5 The 'Policy guidelines for expansion of FM radio broadcasting services through private agencies (Phase-III)' was issued on 25th July 2011 (hereinafter referred to as 'Private FM Phase-III policy') wherein, 966 FM radio channels are to be made available in 333

cities. In the first batch of Phase-III, 135 private FM radio channels in 69 existing cities were put to auction in 2015. Out of these, 96 FM radio channels in 55 cities have been successfully auctioned. In the second batch of Phase-III, 266 private FM radio channels in 92 cities were put to auction in 2016. Out of these, 66 FM radio channels in 48 cities were successfully auctioned. As on 30th June 2025, a total of 388 private FM radio channels were operational in 113 cities.

1.6 In the third batch of Phase-III, 730 channels in 234 new cities were put to auction in July 2025. Out of these, 63 FM radio channels in 43 cities have been successfully auctioned.

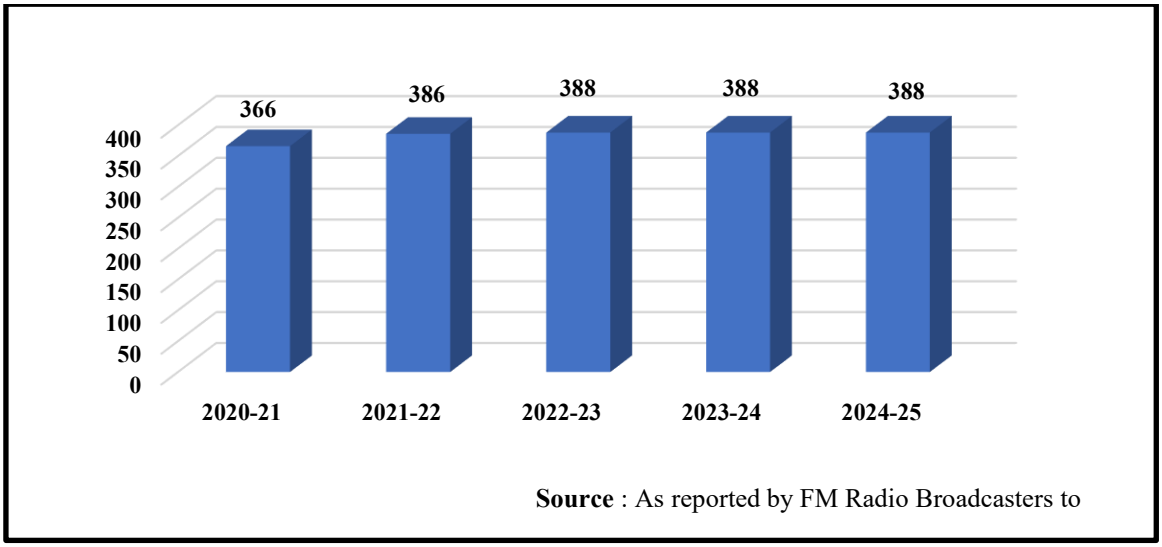
B. Statistical Insights on Radio broadcasting in India

1.7 In India, presently the terrestrial radio broadcasting services are available in Medium Wave (MW) and Short Wave (SW) bands (Amplitude Modulation (AM) mode); and in VHF Band-II (Frequency Modulation (FM) mode).

1.8 The public broadcaster, All India Radio (AIR)[1], has 591 stations with 754 transmitters that cover almost 90% of the country by area and 98% of the country's population. Apart from the radio stations operated by the AIR, there are 388 private FM radio stations operating in 113 cities, managed by 32 private FM radio broadcasters as on 30th June 2025. The trend of number of operational FM radio stations in India during the last four years is illustrated in Figure 1.1.

[1] https://prasarbharati.gov.in/wp-content/uploads/2025/03/19-LIST-OF-EXISTING-STATIONS-AND-TRANSMITTERS-310524.pdf data accessed on 22nd September 2025

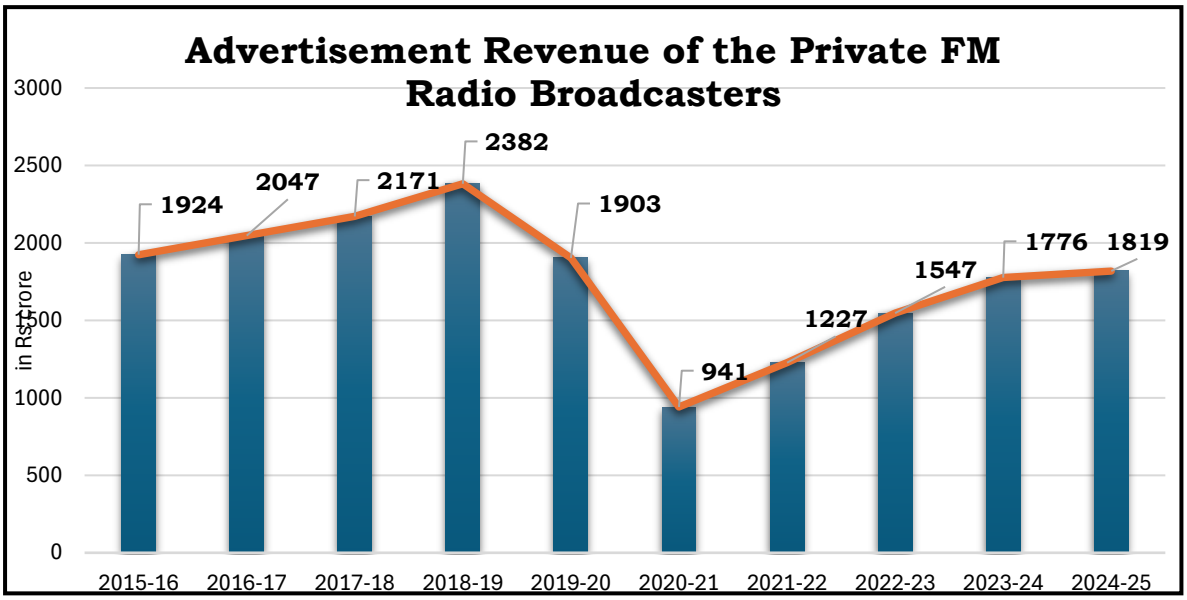
Figure 1.1: Number of operational FM radio stations



Source : As reported by FM Radio Broadcasters to

1.9 Further, as reported to TRAI, the trends in revenue generation from advertisement by the FM Radio broadcasters from 2012-2013 to 2024-2025 is illustrated in Figure 1.2.

Figure 1.2: Advertisement Revenue of FM Radio Broadcasters (Rs. in Crore)



Digital Radio Broadcasting

1.10 Presently, radio signals are largely transmitted in analog mode in the country. Analog terrestrial radio broadcasting, when compared with digital mode is inefficient in terms of power and spectrum requirements and suffers from operational restrictions due to inter-carrier separation requirements to avoid interference, etc.

1.11 With the advancement in technologies, multiple digital radio technologies have been adopted by a number of countries in order to offer more choice to listeners. Digital Radio broadcasting provides a number of advantages over analog radio broadcasting. The biggest advantage of digital radio is that it is possible to broadcast three to four channels on a single frequency carrier while ensuring quality of audio for all the channels, whereas analog mode broadcasts only one channel on a frequency carrier.

1.12 An industry report[2] released in April 2022 provides various benefits of digital radio to different stakeholders across the ecosystem, which is summarised below:

- In the digital radio broadcasting technology, multiple audio channels as well as a data channel are possible within the same frequency, which can provide more options to listeners;
- Digital technology provides better listening experience compared to analog transmission – across both audio quality and user interface;
- Digital radio transmitters use significantly less power as compared to analog radio transmitters;

[2] Source: https://icea.org.in/wp-content/uploads/2024/11/7.-Digital-Broadcast-Radio-in-India.pdf

- The digital system can provide listenership data, which can help build trust and grow revenues through sale of advertisement inventory to segmented audiences;
- Listenership data is likely to facilitate media planning for advertisers;
- Optimum use of scarce spectrum in the middle and long term; and
- Digital radio infrastructure can be used for emergency warnings and traffic information.

C. Initiatives in India on Digital Radio Broadcasting

1.13 AIR has initiated digitization of its analog MW and SW radio broadcast network. In first phase, AIR has replaced its existing 38 analog transmitters with digital transmitters[3]. However, any initiative in digitization of FM radio by public service broadcaster as well as private FM radio broadcasters is still awaited. In a competitive environment, digital radio broadcasting may provide new opportunities to radio broadcasters as well as a host of value-added-services to the listeners.

1.14 In order to develop an eco-system, which can facilitate deployment of digital radio broadcasting, the Telecom Regulatory Authority of India (TRAI) had *suo-motu* furnished its recommendations on "Issues related to Digital Radio Broadcasting in India" to the Government on 1st February 2018. The salient features of the recommendations were:

(i) Government should notify the policy framework for digital radio broadcasting in India in time bound manner with clear roadmap for rollout of digital radio broadcasting services.

[3] https://prasarbharati.gov.in/wp-content/uploads/2025/03/19-LIST-OF-EXISTING-STATIONS-AND-TRANSMITTERS-310524.pdf accessed on 22nd September 2025

(ii) Private sector should be permitted to provide digital radio broadcasting services within the existing frequency band of 88 –108 MHz used for FM radio broadcasting.

(iii) Frequency and geographical area coverage planning for digital radio broadcasting using the vacant 600 KHz spectrum in VHF-II (88 –108 MHz) should be completed by BECIL, AIR, and WPC together in phased manner.

(iv) The broadcasters should be allowed to make use of any available digital technology, recognized by ITU, within the allocated/liberalized spectrum for providing digital radio broadcasting services subject to adaptation, if any, recommended by MIB/TRAI from time to time.

(v) Existing analog FM Radio channels should be allowed to remain operational for the remaining period of their Phase-III permissions.

(vi) The auction of remaining channels of Phase-III should be done by delinking them from technology. Broadcasters should be permitted to use any technology (analog or digital or both) for radio broadcasting on the frequency allocated to them through auction in future.

(vii) For initial three years after declaration of digital radio broadcasting policy, the Government should grant fiscal incentives in the form of lower tax rates to manufacturers of digital radio receivers.

1.15 Based on the above recommendations of TRAI, MIB constituted a frequency planning committee. The committee has identified a total of 109 new channels to facilitate smooth roll out of digital radio broadcasting in 13 cities belonging to A+ and A categories. The committee has planned these channels in a technology

neutral manner such that all these channels can be operated in either of the two technologies, namely, HD Radio and DRM. The committee has also examined the possibility of co-location of these new channels with the existing Common Transmission Infrastructure (CTI) setups and noted technical constraints as given in the reference.

D. MIB Reference dated 23rd April 2024

1.16 Based on the report of the frequency planning committee, MIB in its reference dated 23rd April 2024 (**Annexure I**) sought recommendations of TRAI under Section 11(1)(a) on formulating a digital radio broadcast policy for private broadcasters. MIB has mentioned that in order to cater to technology shift, some existing licensing regulations under FM Phase-III policy may require a relook. MIB has also highlighted certain issues that may be considered, while formulating recommendations for digital radio broadcast policy. Relevant extracts of the reference dated 23rd April 2024 is reproduced below:

"As you are aware, under the Private FM Phase-III policy, 388 Private FM channels are operational in 113 cities in the country. Out of this, 162 channels operationalized based on two auctions conducted in 2015 and 2016, while remaining channels migrated from FM Phase-II to FM Phase-III policy. The permission periods of these FM Phase-III channels will begin expiring from 1 April, 2030 onwards.

2. TRAI on 01.02.2018 regarding the Issues related to Digital Radio Broadcasting has inter-alia recommended the following:

a) Introduction of Digital Radio Broadcasting services through a Digital Policy framework with a roadmap for its rollout within existing FM frequency band of 88-108 MHz.

b) Auctions for digital services in phases starting with A+ and A category cities.

c) Existing FM broadcasters be given an offer to liberalize their spectrum to provide simulcast broadcast services.

d) Allow broadcasters to use any ITU recognized digital technology.

3. In this context, it is informed that an MIB constituted frequency planning committee has identified new channels to facilitate smooth roll out of digital radio broadcasting under Phase-I in 13 cities belonging to A+ and A categories with maximum number of permissible channels in each city annexed as Annexure-I. In line with the TRAI recommendations mentioned in paragraph 2 above, the committee has recommended a digital technology neutral approach, which will allow competitive market forces for advancement of digital radio broadcasting. It has ensured that all new channels proposed can use any of the ITU recommended standard for digital technology applicable within the VHF-II (FM) frequency band of 88-108 MHz for either simulcast or pure digital transmission.

4. The committee also examined the matter of co-location of these new channels with the existing C.T.I. setups. Due to technical constraints, these new channels cannot be accommodated within the existing C.T.I. setups. Therefore, a new C.T.I. setup is required for all such new channels in a given city. As far as the existing broadcasters in these cities is concerned, they may avail the facilities for simulcast / pure digital operations by modifying their existing C.T.I setups itself, with the condition that separate transmission of digital components are made, subject to feasibility, as defined by the respective standards. Alternatively, transmission facility for combined transmission (analogue & digital components) at

existing CTI location need to be established with additional infrastructure, subject to feasibility, or establishment of a new CTI. The technical parameters of analogue / digital components for simulcast operations of these simulcast / pure digital channels are at Annexure-II.

5. There are certain issues from both the broadcasters as well as the listener's perspective, which need to be addressed in order to effect a smooth rollout of digital radio broadcasting in the country. These are highlighted as below:

a) What should be the optimum number of such channels for auction in each city?

b) What would be the methodology for examination and creation of new C.T.I. setups required for such new channels including its upkeep, given the fact that existing C.T.I. setups and towers do not have vacant space and apertures, respectively, for accommodating additional new channels in these 13 cities?

c) What would be the methodology for examination and modifications to existing CTI setups or creation of new C.T.I setups required for transmission of digital components/simulcast operation by existing broadcasters including its upkeep given the fact that existing C.T.I. setups, including towers, cannot support addition of digital components without modifications?

d) Potential problems arising due to different broadcasters in a given city deciding to adopt different ITU recommended standard of technology. Probable solutions, which would minimize the hardships for development of associated ecosystem.

e) There are certain issues which the FM radio industry body AROI have been raising for consideration such as permitting

private FM broadcasters to simulcast their live terrestrial channels on internet with no additional cost to broadcasters.

f) Besides, to cater to the technology shift, some existing licensing regulations under FM Phase-III policy which may require a relook are indicated in Annexure-III.

6. Since broadcasting has been notified to be a Telecommunication Service under Section 2 (1) (k) of TRAI Act recommendations of TRAI are sought as per provisions of Section 11(1) (a) on formulating a digital radio broadcast policy for private operators. Suggestions and issues highlighted in paragraphs 3, 4 and 5 above may also be considered while formulating recommendations for digital radio broadcasting.

7. As Government is keen to bring the digital radio policy, I would request you to kindly have the recommendations of the Authority expedited on priority."

E. TRAI's Consultation Paper

1.17 Accordingly, the Authority issued a Consultation Paper (CP) on 'Issues relating to formulation of digital radio broadcast policy for private FM Radio broadcasters' on 30th September 2024. Written comments on the CP were invited from stakeholders by 28th October 2024 and counter-comments by 11th November 2024. All the comments received were posted on TRAI's website. Subsequently, an Open House Discussion (OHD) was held on 8th January 2025.

F. The Present Recommendations

1.18 After carefully examining and analysing various issues emanating from the written submissions of the stakeholders, the Open House Discussion and internal analysis, the Authority has

finalised its recommendations. Chapter 2 provides various available digital radio broadcasting technologies and international scenarios on deployment of these digital technologies. Chapter 3 discusses various issues related to digital radio broadcast policy for private radio broadcasters and draws various recommendations. A summary of the recommendations is provided in Chapter 4.

Chapter II

Digital radio broadcasting technologies and International Scenario

2.1 A number of digital radio broadcasting technologies have been developed around the world. The evolution and development of digital radio broadcasting technologies have been influenced by various factors viz. existing transmission technologies, suitability of infrastructure for easy migration, and suitability of the technology for various popular applications. Digital radio standards differ in terms of audio formats in addition to the modulation and transmission techniques used. Countries around the world have adopted digital radio standards after conducting trials and examining suitability of the technology for various applications and ease of implementation/ migration.

Standards for Digital Radio Broadcasting

2.2 Following digital terrestrial radio broadcasting standards have been recognized by the International Telecommunication Union (ITU)[4] and are briefly discussed below:

(i) Digital System A (DAB/DAB+)
(ii) Digital System C (HD Radio)
(iii) Digital System F (ISDB-TSB)
(iv) Digital System G (DRM)
(v) Digital System H (CDR)
(vi) Digital System I (RAVIS)

[4] Recommendation ITU-R BS.1114-12(01/2022)

(i) Digital System A (DAB/DAB+):

2.3 Digital System A, also known as the Eureka 147 Digital Audio Broadcasting (DAB) system, was developed for both satellite and terrestrial broadcasting applications in order to allow a common low-cost receiver to be used. During 1980s, DAB was introduced as a research project in Europe and was gradually adopted by the different standardization bodies such as ITU and ETSI. The first country to broadcast a range of radio station through DAB was United Kingdom (UK). DAB uses a wide-bandwidth broadcast technology. It operates in VHF Band III (174-240 MHz). DAB has country specific modes of transmission, operating in varied bands according to the requirements. In 1995, public DAB services were first launched in Norway and UK. Over the years, the DAB services were expanded to Austria, Germany, Denmark, Switzerland, Malta and Netherlands. Driven through wide variety of programming, not offered in FM radio, countries such as England, Scotland, Wales, Northern Ireland gained substantial listenership by the year 2005.

2.4 In February 2007, DAB+ standard was introduced as an upgraded version of DAB. With the advent of DAB+, the transmission costs per programme have reduced and capacity has also enhanced. In 2009, Australia launched DAB+ services.

2.5 DAB/DAB+ standard is used across Asia Pacific, Europe, Arab nations and South Africa. In Hong Kong, five DAB channels were launched in 2012. Norway is the first country which has completed the digital switchover and has shut down the analog FM in December 2017.

(ii) Digital System C (HD Radio)

2.6 Digital System C, also known as the In Band On Channel (IBOC), was designed to provide vehicular, portable, mobile phone and fixed reception using terrestrial transmitters. A digital signal is embedded on frequency immediately above and below a standard analog signal, and the audio and data are transmitted through the AM and FM radio stations, hence providing to listeners, the same program, with either HD (less noisy digital radio) or standard analog radio broadcast (a standard sound quality). HD Radio offers simulcast of analog and digital signals in the existing FM band. This system feature allows transition from analog to digital broadcasting for existing FM broadcasters. The system offers performance in multipath environments resulting in greater reliability than is offered by existing analog FM operations. Digital System C offers enhanced audio quality comparable to that obtained from consumer digital recorded media. Moreover, the system incorporates flexibility for broadcasters to offer new data-casting services in addition to the enhanced audio programming. In addition, the system allows for allocation of bits between audio and data-casting capacity to maximize the data-casting capabilities.

2.7 In 2002, United States designated HD Radio, as a digital radio broadcasting system approved by the Federal Communications Commission (FCC). It is a trademarked system developed by a consortium of private companies, named iBiquity Digital Corporation and has been implemented for digital radio broadcasting on VHF Band II. The HD Radio technology and trademarks were subsequently acquired by Xperi Holding Corporation in 2016. In North American countries, HD radio technology is commonly used by automotive OEM (Original Equipment Manufacturer). In addition, HD Radio technology has

been deployed in Canada, Mexico and Philippines. In India, AIR has conducted trials of HD Radio technology.

(iii) Digital System F (ISDB-TSB)

2.8 Digital System F, also known as Integrated Services Digital Broadcasting for Terrestrial Sound Broadcasting (ISDB-TSB) system, is a standard for digital radio broadcasting developed in Japan to deliver sound and data broadcasting for multimedia broadcasting using terrestrial networks. The system uses OFDM modulation, two-dimensional frequency-time interleaving and concatenated error correction codes. The OFDM modulation used in the system is called band segmented transmission (BST)-OFDM. ISDB-TSB can be operated either as a single transmission with a bandwidth of around 0.5 MHz or 1.5 MHz or as fragment of a full channel. In ISDB-T transmission in channel bandwidth of either 6, 7 or 8 MHz[5] can be used.

(iv) Digital System G (DRM)

2.9 Digital System G, also known as the Digital Radio Mondiale (DRM) system, has been developed for terrestrial broadcasting applications in all the frequency bands allocated worldwide for analog sound broadcasting. DRM standard for digital terrestrial radio broadcasting is specially designed for switchover to digital radio broadcasting from the current analog radio broadcasting. It operates across all the radio frequency bands i.e. AM (SW and MW) and the FM (VHF) bands.

2.10 DRM allows broadcasting of single or small numbers of audio services together with bit rates ranging from 37 kbps to 186 kbps,

[5] https://www.itu.int/en/ITU-D/Technology/Documents/Broadcasting/TrendsinBroadcasting.pdf

allowing four services simultaneously. This allows DRM to operate parallel to analog transmission.

2.11 Several European countries have experimented with DRM. In Indonesia, trials of DRM technology were conducted in 2015 and 2016 by Indonesian public broadcaster RRI and DRM Consortium for AM bands. Brazil has also conducted trials of DRM technology for SW and MW radio broadcasting.

2.12 In India, AIR has initiated digitization of its analog MW and SW radio broadcast network. In first phase, AIR has replaced its existing 38 analog transmitters with digital transmitters[6].

2.13 DRM trials have been conducted in Germany, UK, India, the Vatican, Norway, Sri Lanka, Brazil and France (in bands I, II and III) and Sweden.[7]

(v) Digital System H (CDR)

2.14 Digital System H, also known as the Convergent Digital Radio (CDR) system, has been developed to provide vehicular, portable and fixed reception using terrestrial transmitters similar to HD Radio and DRM. CDR is a digital radio solution operating in China in the VHF/FM band. The system started operational testing in 2013 and subsequently started national rollout through China National Radio and other networks. CDR incorporates the Converged Mobile Multimedia Broadcast (CMMB) protocols used in China's digital mobile services. During simulcast stage, Digital System H can make use of the

[6] https://prasarbharati.gov.in/wp-content/uploads/2025/03/19-LIST-OF-EXISTING-STATIONS-AND-TRANSMITTERS-310524.pdf
[7] https://www.drm.org/wp-content/uploads/2016/06/DRM-The-Digital-Future-of-FM-2014-06-24.pdf

unoccupied spectrum in FM channel providing additional digital radio services in multipath environments.

(vi) Digital System I (RAVIS)

2.15 Digital System I, also known as the RAVIS (Real-time Audio-Visual Information System), based on Russian patents, has been developed for terrestrial broadcasting applications in VHF Band I and Band II. The system is designed as a digital-only system. It offers audio quality comparable to that obtained from consumer digital recorded media or better. In addition, Digital System I also offers video service and various data services, including images and electronic programme guides, and the capability of dynamically rearranging the various services contained in the multiplex. However, the implementation status for digital radio system I is not available.

2.16 The summary of the ITU standards for digital radio broadcasting is illustrated in Table 2.1.

Table 2.1: ITU Standards for Digital Radio Broadcasting

S. No.	ITU Designation	System Name	Frequency Band of Operation
1	Digital System A	Eureka 147 Digital Audio Broadcasting (DAB)/DAB+	VHF Band III UHF 1.5 GHz Range
2	Digital System C	In-band On Channel (IBOC)/HD Radio	MF VHF Band II

S. No.	ITU Designation	System Name	Frequency Band of Operation
3	Digital System F	Integrated Services Digital Broadcasting for Terrestrial Sound Broadcasting (ISDB-TSB)	VHF Band II VHF Band III UHF 2.6 GHz Range
4	Digital System G	Digital Radio Mondiale (DRM)	MF HF VHF Band I VHF Band II VHF Band III
5	Digital System H	Convergent Digital Radio (CDR)	VHF Band II
6	Digital System I	Real-time Audio-Visual Information System (RAVIS)	VHF Band I VHF Band II

2.17 As per an industry report[8], there are four key digital radio technologies adopted globally, which include:

(i) Digital Radio Mondiale (DRM) - for AM across India, Germany and South Africa;

(ii) Digital Audio Broadcasting (DAB/DAB+) - across UK and European countries;

(iii) HD Radio (HDR) (a trademarked term for an in-band on-channel (IBOC) digital radio broadcast technology) - for AM and FM across United States of America, Canada, Mexico, Panama and Philippines; and

(iv) Convergent Digital Radio (CDR) - in the China Region.

[8] https://icea.org.in/blog/wp-content/uploads/2022/08/ICEA-Digital-Radio-Report_Final.pdf

International Scenario on Digital Radio Broadcasting

Australia:

2.18 In addition to operational DAB stations in Australia, stakeholders have also tested DRM in medium wave and FM between 2019-2022. The demonstrations were made using a variety of desktop and professional receivers as well as car infotainment systems and Android devices.

Canada:

2.19 Initially DAB was used for digital radio broadcasting in Canada. The Canadian Radio-television and Telecommunications Commission (CRTC) stopped renewing licenses for DAB post 2012, after which several Canadian FM stations deployed HD Radio. Currently, 34+ Canadian FM stations in 14 markets are broadcasting in HD Radio catering to more than 50% of the population. Almost 3.3 million cars in Canada are equipped with HD Radio receivers, representing about 13% of vehicles on the road. More than 33% of new vehicles sold in Canada include an HD Radio receiver.

China:

2.20 There are 560 CDR stations operational in China[9]. Three Government organisations, NRTA, MIIT and SAMR officially published a joint document in September 2023, providing guidelines to the Chinese automotive industry to support DRM in AM band and encourage provincial transmission stations to broadcast domestic DRM services[10].

[9] https://icea.org.in/wp-content/uploads/2024/11/7.-Digital-Broadcast-Radio-in-India.pdf
[10] https://www.drm.org/drm-in-the-world/other-countries/

2.21 China has installed seven DRM shortwave transmitters for domestic coverage (aimed for the large populous region of eastern China primarily, but also for the rest of the country). They can also be used for overseas transmissions (SW services) by China Radio International (CRI).

Indonesia:

2.22 The policy for radio digitisation has been issued by the Ministry of Communication and Informatics in August 2023. Indonesia has announced the adoption of DRM for both AM & FM broadcasting i.e. AM broadcasting in medium wave (526.5 – 1606.5 kHz) and FM broadcasting in VHF Band II (87.0 – 108 MHz) and VHF Band III (174 – 202 MHz). The rest of Band III is allocated to DAB+ technology for broadcasting of Digital Radio[11].

2.23 After successful DRM tests/demonstrations carried out by the public broadcaster, Radio Republik Indonesia (RRI), in both the AM and FM bands over the last few years, RRI have installed five DRM FM transmitters in strategic locations. The transmitters are capable of broadcasting emergency alerts by using DRM's Emergency Warning Functionality (EWF), integrated in the national disaster warning infrastructure. Transmissions started in 2020.

2.24 This follows the DRM tests/demonstrations carried out by the public broadcaster, Radio Republik Indonesia (RRI), in both the AM and FM bands over the last few years and which are now ITU reference documents[12].

2.25 Five DRM transmitters are operational across several Indonesian islands at Painan, Pelabuhan Ratu, Labuan Banten, Cilacap,

[11] https://www.drm.org/drm-in-the-world/other-countries/
[12] https://www.itu.int/pub/R-REP-BS.2384-2-2021

Labuan Bajo and 3 additional transmitters are under installation[13].

Mexico:

2.26 In 2011, the Mexican communications regulator (CoFeTel) adopted HD Radio as a voluntary standard for the transmission of digital radio nationwide. Currently, there are 119 FM stations in Mexico carrying 192 program services on HD Radio. In Mexico, digital stations cover 41% of the population, reaching approximately 51 million people, with more than 22 brands and 115 models that offer HD Radio receivers in new vehicles[14].

South Africa:

2.27 The South Africa (SA) Government has recommended officially both DRM and DAB+ as solutions for the radio digitisation of the country. Digital Sound Broadcasting (DSB) Services Regulations were issued by the South African Regulator (ICASA) in April 2021[15].

Switzerland:

2.28 Digital radio on DAB+ in Switzerland reaches over 99% of the population (outdoor 99%, indoor over 96%). 99% of the roads are covered, including highway tunnels. In 2020, under 600,000 DAB+ radios (including car radios) were sold.

2.29 The Swiss public broadcaster, SRG SSR ceased FM broadcasting on 31st December 2024. In announcing this plan in June 2024, it noted that –

[13] https://www.drm.org/indonesia-rolls-out-the-drm-standard/#:~:text=Indonesia%20is%20now%20entering%20the,efficient%2C%20and%20inclusive%20digital%20broadcasting.
[14] https://icea.org.in/wp-content/uploads/2024/11/7.-Digital-Broadcast-Radio-in-India.pdf
[15] https://www.icasa.org.za/uploads/files/digitalsound-broadcasting-services-regulations-2021.pdf

"Around ten years ago, the Federal Office of Communications (OFCOM), private radio stations and the SRG began working closely together to plan the transition from FM to DAB+. The predictions made at the time - that DAB+ would become the new radio standard - have been borne out: the proportion of people who listen to radio exclusively via FM has now stagnated at less than 10%".

2.30 For private radio stations, depending on the radio station, individual FM transmitters in a broadcasting area will be switched off in stages from 1 January 2025 (fade-out process) or in their entirety at the end of 2026.

Chapter III

Issues related to Digital Radio Broadcast Policy for Private Radio Broadcasters

A. Technology to be used for Digital Radio Broadcasting

3.1 The existing FM radio broadcasting in India is done using an analog broadcasting technology. As on 30th June 2025, there are 388 operational private FM Radio channels in 113 cities operated by 32 private FM Radio broadcasters.

3.2 Digital radio broadcasting offers numerous advantages over analog systems, including improved audio quality, enhanced functionality and greater efficiency. Data transmitted in digital transmissions are less susceptible to interference and distortion than analog signals. Furthermore, digital radio technologies offer increased spectrum efficiency, allowing broadcasters to transmit more channels and services within the same bandwidth, thus addressing the issue of limited bandwidth.

3.3 TRAI in its Recommendations on 'Issues related to Digital Radio Broadcasting in India' issued on 1st February 2018[16] *inter alia* recommended the following to facilitate the adoption of digital radio broadcasting:

> *"There is a definite need to facilitate digital radio broadcasting in India to effectively utilize spectrum in VHF-II band for Radio broadcasting, to provide diverse content and other value-added services to radio listeners.*

[16] https://www.trai.gov.in/sites/default/files/2024-09/Recommendation_Digital_Radio_01022018.pdf

The Government should notify the policy framework for Digital Radio Broadcasting in India in time bound manner with a clear roadmap for rollout of digital radio broadcasting services. It will encourage all stakeholders to work collectively for developing the ecosystem for digital radio broadcasting.'

A managed introduction approach should be adopted for rolling out digital radio broadcasting services in India.

Private sector should be permitted to provide digital radio broadcasting services within the existing frequency band of 88 - 108 MHz used for FM radio broadcasting.

The frequency and geographical area coverage planning for digital radio broadcasting for vacant 600 KHz spectrum between two allocated FM frequencies in VHF-II band should be completed by BECIL, AIR, and WPC together within three months for category A+ (4 Metro cities), and category A cities (8 cities) in first phase.

Auction should be carried out in phases – starting with cities of category 'A+' and 'A' and subsequently in cities of other categories.

The broadcasters should be allowed to make use of any available digital technology, allocated/liberalized recognized by ITU, within the spectrum for providing digital radio broadcasting services subject to adaptation, if any, recommended by MIB/TRAI from time to time."

3.4 MIB vide its reference dated 23rd April 2024 mentioned that the Ministry constituted a frequency planning committee and has identified new radio channels for launching digital radio broadcasting for Phase-I in 13 major cities, allowing the use of any ITU-approved digital technology standard within the VHF

II band (88–108 MHz) for either simulcast or pure digital transmission, following TRAI's 2018 recommendation for a technology-neutral approach. However, due to technical limitations, these new digital channels cannot be accommodated within the existing CTI setups, so new CTI setups will be required for all such new channels in a given city. Existing broadcasters may upgrade their current CTI setups for simulcast or digital-only operations such that new separate transmission of digital components is made, subject to feasibility, as defined in respective technology standards. Alternatively, transmission facility for combined transmission of analog and digital components at existing CTI locations may be established with additional infrastructure, subject to feasibility, or establishment of a new CTI.

3.5 As discussed in the previous chapter, the digital terrestrial radio broadcasting standards recognized by ITU comprises:

(i) Digital System A (DAB/DAB+)
(ii) Digital System C (HD Radio)
(iii) Digital System F (ISDB-TSB)
(iv) Digital System G (DRM)
(v) Digital System H (CDR)
(vi) Digital System I (RAVIS)

3.6 It may be noted that in VHF-II band (88 – 108 MHz), HD Radio, ISDB-TSB, DRM+, CDR and RAVIS technologies can be used for digital radio broadcasting. Whereas in VHF-III band (174-230 MHz), DAB/DAB+, ISDB-TSB and DRM+ technologies can be used for digital radio broadcasting.

3.7 MIB in its reference dated 23rd April 2024 has provided the technical parameters of analog and digital components for

digital radio broadcasting, which relate to DRM and HD Radio technologies only.

3.8 The MIB reference has detailed the list of channels identified in A+ and A category cities and given technical parameters of analog/digital components for digital radio broadcasting for HD radio and DRM+ technologies, which can be deployed in VHF-II band. Accordingly, the consultation paper delved on these two technologies and their respective technical features.

3.9 In deploying digital radio broadcasting, the key challenge is about selecting the appropriate technology for use. Additionally, it is important to assess whether a single digital radio technology should be adopted nationwide or multiple technologies should be allowed.

3.10 With this background, TRAI in its Consultation Paper dated 30th September 2024 raised the following questions to solicit comments from the stakeholders:

Q1. Do you agree that single digital radio technology adoption is preferable for entire country? If not, support your reply with justification.

Q2. In case a single digital radio broadcast technology is to be adopted for the entire country, which technology should be adopted for digital radio broadcasting? Please give your suggestions with detailed justification.

Q3. In case multiple digital broadcasting technologies are to be adopted, please specify whether it should be left to the market forces to decide the appropriate technologies and what could be the potential problems due to adoption of multiple technologies? Please suggest probable solutions to the problems, with detailed justification.

3.11 As questions 1 and 3 are related, these two questions have been considered together.

Comments of stakeholders

3.12 In response to Q1, almost all the stakeholders are of the view that single digital radio technology should be adopted for the entire country. A summary of the stakeholders' submissions in favour of single standard for digital radio is as under:

(i) Cost savings, greater efficiency, improved user experience and faster nationwide implementation.

(ii) Facilitates a smooth transition from analog to digital, improves receiver availability.

(iii) Reduces costs and ensures greater accessibility of digital receivers.

(iv) Boosts market confidence by allowing manufacturers to invest and achieve economies of scale.

(v) Benefits listeners, broadcasters and the local industry.

Comments of stakeholders

3.13 In response to Q3, majority of the stakeholders opined that adopting multiple technologies could lead to fragmentation and inefficiencies, increased costs complexity and it also might lead to compatibility issues across regions and devices, manufacturing processes complications and increased costs for both manufacturers and consumers.

3.14 A couple of stakeholders have suggested that adoption of multiple technologies is technologically and commercially viable and is in the consumer's interests.

Analysis

3.15 The Authority, upon reviewing stakeholder feedback, appreciates that there are significant advantages in selecting a single technology. Also if the decision to choose among multiple digital radio technologies is left to the market forces, it can result in lot of uncertainty. There are fair chances that different broadcasters adopt different technologies depending on their individual cost dynamics leading to several significant disadvantages at ecosystem level, particularly in the realms of interoperability, cost, and market cohesion.

3.16 One major concern is the lack of interoperability of receivers. Adoption of multiple digital radio technologies would compel consumers to use different types of receivers for each technology or such receiver, which supports multiple technologies. If various broadcasters deploy distinct digital standards, listeners with a receiver tailored to one technology would be unable to receive broadcasts using another technology. Further, if two cities adopt different digital radio technologies, a receiver purchased in one city may be incompatible in the other city. A car travelling from one city to another city broadcasting digital radio in different technology will be radio dark in one city. Listeners would need a hybrid receiver having compatibility with multiple technologies or multiple receivers for each technology, which is an inconvenient and economically inefficient solution. This fragmentation not only confuses users but also burdens manufacturers, who must produce more complex and costlier hybrid devices that support multiple standards. With multiple technologies, receiver manufacturers will have uncertainty as to which broadcaster will use which technology in various

cities, which will adversely affect development of receiver ecosystem.

3.17 Moreover, this scenario leads to increased costs for both broadcasters and consumers. Broadcasters may have to deploy and maintain multiple transmission systems to provide comprehensive listenership coverage, which is financially inefficient. For consumers, multi-standard receivers are typically not prevalent but in case they are designed they are likely to be expensive. These financial barriers can significantly slow the adoption of digital radio technologies, undermining the benefits they are intended to provide.

3.18 Another serious issue is market fragmentation, where the presence of competing technologies divides the market into smaller, less sustainable segments. This limits economies of scale, which in turn, keeps prices high and stifles innovation.

3.19 This issue becomes more pronounced while considering the broader economic and social context. The FM radio sector is already experiencing a sluggish growth in revenue, which is evident from the advertisement revenue of private FM Radio broadcasters over last few years, as shown is figure 1.2.

3.20 The sluggish growth in advertisement revenues for radio broadcasters in India over recent years can be attributed to evolving audience preferences and increased competition from music streaming platforms easily accessible via internet.

3.21 To mitigate the challenges mentioned above, adopting a single digital radio technology would bring multiple benefits:

- Enhanced interoperability across geographies
- Certainty to receiver manufacturers

- Simplicity and certainty to buyers of consumer devices (receivers)
- Encouragement for manufacturers to invest in a single technology, integrate digital radio in car infotainment systems and mobile handsets
- Such focused investments are expected to drive affordability through large volume production and enhance the accessibility and uptake of digital radio services nationwide

3.22 Hence, a single standard would provide certainty to all stakeholders – manufacturers of devices e.g. mobiles, car infotainment systems, and standalone receivers, buyers of these devices as well as broadcasters.

3.23 Moreover, it would be cost-efficient for broadcasters, who would otherwise need to procure different digital transmitters. Also, there is a limitation on CTIs as highlighted in the MIB reference. Multiple digital radio technologies within the same ecosystem would require separate CTIs for each standard, which may result in greater complexity and higher integration and deployment costs. Documents from international standardization organizations (ITU, ETSI)[17] indicate the factors that need to be considered for CTI setup for Digital Radio Technologies include frequency raster, combining methods, coupler requirements, power ratios, amplifier linearity, modulation error ratio, spectrum masks, antenna configuration, time delay of signal which differ by the technology standard used. Location of setup, antenna placements is highly dependent on these factors, Thus,

17 https://www.etsi.org/deliver/etsi_es/201900_201999/201980/04.03.01_60/es_201980v040301p.pdf https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-BS.2503-2022-PDF-E.pdf https://drm.org/wp-content/uploads/2024/03/DRM-Handbook-v5.1.pdf

different technology standards will require separate CTI chains, even if modifications to existing chains are considered, they have to be modified differently pertaining to the technology standard.

3.24 Conversely, a single standard for digital radio technology would eliminate the need for separate technology based CTIs and enhance cost effectiveness and promote greater efficiency across the ecosystem.

3.25 In its recommendations on 'Issues related to Digital Radio Broadcasting in India' issued on 1st February 2018, the Authority with respect to single standard in digital radio, noted the following:

'3. 44 On careful examination of the issue, the Authority is of the view that in order to facilitate development of digital radio broadcasting in orderly manner, adoption of any one technology could be beneficial. However, the Government mandating a particular technology standard may not be advisable. This can be decided by market forces. Accordingly, adhering to its technology neutral policy, the Authority do not wish to mandate any specific technology for rollout of digital radio broadcasting services and leave it to the market forces to use technology of their choice for rolling out digital radio broadcasting services. It is expected that FM radio broadcasters will [play] *a mature role in deciding most suitable technology considering the interest of listeners and keeping in view the compatibility with available channel frequency …'*

3.26 Hence, the Authority had suggested for a technology neutral approach, leaving the choice of technology on the radio

broadcasters. However, it is noted that even after lapse of more than seven years since TRAI's recommendation dated 1st February 2018; there is no progress on the issue and so far, no single technology has emerged as a consensus based choice among the FM Radio broadcasters. Further, in the present consultation, all stakeholders have unanimously advocated for a single technology, but views differ on which specific technology should be selected. However, there is broad agreement that a single technology should be adopted.

3.27 Also, the Authority noted that various countries adopted multiple standards only in trial phase, but no country has officially adopted multiple standards for a single Frequency Band except Indonesia[18]. As a matter of fact, in ITU Region-1, DAB+ is being used in VHF Band III; in ITU Region-2, HD Radio is being used in VHF Band II; while in ITU Region-3, DAB+ in VHF Band III & DRM in VHF Band II are being used (refer Table 3.1 below). China and Russia have adopted CDR and RAVIS technology respectively in the VHF bands I & II within the respective countries.

[18] Indonesia has adopted two standards DRM and DAB in VHF band III by splitting the frequency band in two parts and allocating each part with single standard (Source JDIH Ministry of Communication and Communication - Regulation of the Minister of Communication and Information Number 5 of 2023)

Table 3.1: Global trends in adoption of Digital Radio Technology

Technology	Country	ITU Region	Frequency Band (VHF)	Year of adoption
DAB/DAB+	Norway	Region 1	VHF Band III	1995
	UK	Region 1	VHF Band III (174-230 MHz)	1995
	Germany	Region 1	VHF Band III	1997
	Switzerland	Region 1	VHF Band III	1999
	Denmark	Region 1	VHF Band III	2002
	Australia	Region 3	VHF Band III	2009
	Czech Republic	Region 1	VHF Band III	2011
	Italy	Region 1	VHF Band III	2012
	Netherlands	Region 1	VHF Band III	2013
	France	Region 1	VHF Band III	2014
	Belgium	Region 1	VHF Band III	2015
	South Africa	Region 1	VHF Band III	2021
ISDB-TSB	Japan	Region 3	VHF Band III	2003
HD Radio	US	Region 2	VHF Band II (88-108 MHz)	2002
	Canada	Region 2	VHF Band II	2006
	Philippines	Region 3	VHF Band II	2007-2017

Technology	Country	ITU Region	Frequency Band (VHF)	Year of adoption
DRM	South Africa	Region 1	VHF Band II	2021
	Indonesia	Region 3	VHF Band II	2023
	Nepal	Region 3	VHF Band II	2022
	Pakistan	Region 3	VHF Band II	2020

3.28 From the above table it is noted that no country has adopted more than one technology in VHF Band II. The frequency planning Committee of MIB has done planning considering technology neutral approach, such that all the new and existing channels can be operated in either of the technologies- DRM and HD Radio. However, if only one technology is selected, the frequency planning can be reconsidered, which may enable to plan more number of channels for either of the technology selected. Making available all radio services in one technology, a consumer possessing radio receiver of that technology will be able to receive services of all the stations. Based on the above deliberations, the Authority is of the view that adopting a single digital radio standard would bring clarity and certainty to all stakeholders viz., policy makers, broadcasters, device manufacturers and consumers. Adoption of a single standard will enable formulation of a simple, clear and well-structured policy that will help broadcasters to plan and rollout services in a time bound manner in collaboration with receiver manufacturers. From a consumer perspective, the benefits of a single standard for digital radio would ensure affordability, cross-region compatibility and enhanced user experience.

3.29 In light of the above, the Authority is of the view that adopting a single digital radio technology for the country may lead to cost savings, greater efficiency, faster nationwide implementation, and improved user experience. It simplifies the ecosystem for all stakeholders involved—broadcasters, equipment manufacturers and consumers alike.

3.30 Accordingly**, the Authority recommends adoption of a single digital radio technology standard in India for introduction of digital radio broadcasting in VHF Band II**.

Comments of stakeholders

3.31 In response to Q2, Stakeholders have provided divergent views. Some stakeholders are in favour of using HD Radio technology whereas some stakeholders are in favour of using DRM technology. A few stakeholders have not favoured any technology.

3.32 A summary of stakeholders' comments favouring DRM technology is as follows:

(i) It requires only 100 KHz compared to HD Radio's 400 KHz for digital transmission and offers superior audio quality as well as supports multiple audio services and data.

(ii) As DRM is open source, there is no requirement of royalty fee and it is well suited for AM (MW, SW) and FM bands.

(iii) Reduces operational costs and promotes domestic manufacturing.

(iv) This technology boasts features like wide deployment, spectrum efficiency and compatibility with various

broadcasting scenarios, smooth transition from analog to digital radio.

(v) Capable of providing wide coverage, which is suitable for India's vast territory and its ability to support multiple languages.

(vi) It is an energy-efficient system, possess features like built-in emergency warning function and allows compatibility with existing equipment.

(vii) DRM is a reliable technology that can support India's long term broadcasting needs and many cars in India already have inbuilt DRM receiver systems.

(viii) It uses the advanced "xHE-AAC" audio codec, which ensures high-quality sound even at low bitrates.

3.33 A summary of stakeholders' comments favouring HD Radio technology is as follows:

(i) It has superior audio quality, robust reception, and ability to simulcast analog and digital signals during the transition.

(ii) It is compatible across devices like cars, Bluetooth speakers and mobile devices.

(iii) It can support faster development of device ecosystem due to their mature System on Chip (SoC) and solutions available in the world, lower costs due to global availability of HD radio device solutions and will create large mature export markets for the Indian manufacturers.

(iv) HD Radio uses existing FM frequency bands, making it easy to adopt with disrupting current FM usage and offers additional features like multiple audio channels and data such as station logos and song info.

(v) It enables hybrid digital and analog broadcasts from a single facility as well as it allows broadcasters to maintain existing equipment, reduce costs, and offer digital services while ensuring quality through iBiquity's receiver certification.

(vi) It has features like multicast channels, data broadcasting and enhanced emergency alerts and common in vehicles.

3.34 Stakeholders, who have not suggested any specific technology, mentioned the following:

(i) Leaving decision to the Government since both technologies have their pros and cons.

(ii) Technology should be factored on the cost per unit and reach.

(iii) The chosen technology should take simulcast capability, enhanced audio quality, additional channels, data services into account.

(iv) The chosen technology should be open standard with easy access fitting in existing spectrum allocation in India and be compatible with established receiver infrastructure. The technology should offer easy upgrade path for transmission equipment with no disturbance to ongoing analog FM signals and CTIs.

Analysis

3.35 The Authority has noted the comments of the stakeholders. The Consultation Paper dated 30th September 2024 provides a detailed comparison between HD Radio and DRM. Both DRM and HD Radio are ITU recognised systems with their own merits. Further, pilot testing has been conducted for both DRM

and HD Radio by Prasar Bharati in India. However, the outcome report of pilot testing by Prasar Bharati is not available in public domain.

3.36 As per available information, Prasar Bharati has 35 Medium Wave transmitters and 3 Short Wave transmitters of DRM technology in AM band. Additionally, it is estimated that around 6 million cars are equipped with a DRM digital radio receiver for AM band. In discussion with the stakeholders, it emerged that these receivers can be upgraded to FM band for digital radio.

3.37 In its recommendations dated 1st February 2018, while recommending provision of Digital radio broadcasting services for private sector in the existing frequency band of 88 – 108 MHz, the Authority didn't recommend any specific technology standard for roll out of digital radio Broadcasting services and it was left to market forces to use technology of their choice for rolling out digital radio broadcasting services.

3.38 Thus, the recommendations dated 1st February 2018 favoured a technology neutral approach, however, even after a lapse of more than 7 years, there is no progress in the implementation of digital radio broadcasting in the VHF-II band. The delay may be due to the uncertainty prevailing in the market regarding the selection of technology for digital radio broadcasting.

3.39 It appears that the earlier technology-neutral stance, while intended to promote flexibility, did not provide a definitive policy direction for the introduction of digital radio broadcasting in India. In the current consultation process, stakeholders have unanimously advocated for the adoption of a single digital radio technology. Continuing to leave the choice entirely to market forces may prolong uncertainty for

broadcasters, receiver manufacturers and listeners. This could delay investment decisions by stakeholders and slow down the development of an affordable digital radio ecosystem.

3.40 A clear policy directive on technology selection is therefore critical to enable structured implementation, industry alignment and accelerated adoption. Hence, it is imperative to identify and adopt a specific digital radio technology. A clear upfront decision on the technology standard will provide certainty to stakeholders, streamline infrastructure planning, and catalyse investment across the value chain—from transmission networks to receiver manufacturing.

3.41 Such a decision will serve as a foundational step in the faster adoption and rollout of digital radio broadcasting services in India, supporting coordinated efforts across Government, industry, and consumers. Hence, there is a clear case to identify a particular technology upfront for implementation of digital radio broadcasting services in India.

3.42 A generic comparison of the two technologies has been carried out and the same is illustrated in Table 3.2 below:

Table 3.2: Comparison of DRM and HD radio technologies in VHF II band[19]

Parameter	HD Radio	DRM
Standard	Proprietary	Open
Spectrum (Bandwidth) Occupancy	HD Radio uses 400 kHz (both for simulcast and pure digital).	DRM works efficiently in 100 kHz bandwidth for pure digital broadcast. For

[19] Recommendation ITU-R BS.1114-12 (01/2022) - Systems for terrestrial digital sound broadcasting to vehicular, portable and fixed receivers in the frequency range 30-3000 MHz.
EY- ICEA Report - Digital broadcast radio in India Perspectives on the opportunity and requirements for a successful Implementation April 2022

Parameter	HD Radio	DRM
		simulcast separate bandwidth of 200 KHz is required for analog component.
Mode of operation under consideration for deployment in VHF Band II[20] **(as mentioned in Annexure II of MIB reference dated 23.04.2024)**	**MP -11** Extended Hybrid Mode **Modulation -** QPSK Intrinsically transmitted in simulcast mode, capable to convert to pure digital mode by incorporating secondary digital blocks as a replacement of analog block but transmitted at a lower power level. **Occupied BW** – 400 kHz (simulcast/ pure digital) **Simulcast mode** Analog block – 1 x 200 kHz Digital blocks – 2 x 100 kHz (mandatorily placed on either side of the analog block, approximately 8.5 dB below the total power in the analog signal. In the exemplary composition of two equal power sidebands, the power level of each sideband is approximately 11.5 dB below the total power in the analog signal)	**DRM Mode E** **Modulation –** 4 QAM **Code Rate – 1/3** Intrinsically transmitted in pure digital mode. Capable of transmitting in simulcast mode by maintaining appropriate carrier frequency distance (Δf) and the power level difference (ΔP) of the Analog and the Digital signals. Can also be placed anywhere in the entire band beyond required Δf. **Occupied BW** – 100 kHz (digital). 200 kHz + 100 kHz (simulcast) **Simulcast mode** Analog block – 1 x 200 kHz Digital block – 1 x 100 kHz (can be placed on either side of the analog block or anywhere in the 88-108 MHz band maintaining appropriate carrier frequency distance (Δf) and the power level difference (ΔP))

[20] as per ITU R Recommendation BS. 1114-12

Parameter	HD Radio	DRM
	Bit rate MP -11 mode-147.5 kbps (usable content bit rate is 144 kbps) **Services/block** 2x200 kHz – 3 + 1(PIDS) (3 digital stereo audio out of which one is replicated with analog audio) A maximum of two multicast channels (SPS) can be broadcast in addition to the main program service (MPS). The MPS channel is often referred to as the HD-1 channel and the SPS/multicast channels are known as the HD-2, HD-3, or HD-4 channels (depending on MP Mode selected, maximum of 2 SPS can be deployed).	**Bit rate** DRM Mode E – 4QAM; R=1/3=0.33-49.7kbps **Services/block** 100 kHz – 3 Stereo audio + 1 data (including Journaline). In case of simulcast, one channel to carry programme label of analog channel. Operation with nx100 kHz (digital) is defined by transmitter characteristics and is not a part of system specifications.
Frequency range for Digital radio - VHF I, VHF II, VHF III	HD Radio can work in VHF band - II only.	DRM works in all VHF bands i.e. VHF band - I, VHF band - II and VHF band - III.
Analog Digital simulcast	• Analog and digital simulcast is an inherent feature. • Simulcast is the main operation mode adopted by countries using HD Radio to manage their digital transition.	• It is primarily pure digital technology. • It is possible to broadcast DRM in simulcast mode. • DRM's AFS (Alternate Frequency Signaling) feature allows the receiver to switch between analog and DRM services independent of their

Parameter	HD Radio	DRM
		actual transmission frequency – even across multiple broadcast bands.
Reception modes	The system is intended for vehicular, portable and fixed reception.	The system is intended for vehicular, portable and fixed reception.
CTI modifications /enhancements required in existing infrastructure	• For existing broadcasters complete overhaul of existing CTI (analog transmission) system will be required if digital components are not transmitted separately. In case separate transmission chains for analog and digital components are to be set up, restrictions apply for parameters such as: i. Latitude/Longitude – Transmissions to be located within a 3" difference. ii. EHAAT – Difference in EHAAT to be retained within the range of 70-100% iii. Antenna radiation Pattern – to be similar. Alternatively, a new CTI (for combined analog & digital components), located at any place within the city need to be engineered for all existing broadcasters. However, as an interim measure, existing broadcasters outside the CTI may operate with	• There are no colocation restrictions for the new CTI for digital components. Existing broadcasters can continue using existing transmission chain for analog components and set up a new transmission chain (CTI) for digital component with the restriction that one of the audio programs for digital component remains common within a delay of ≤ 950 ms and that all digital transmissions are co-located at new CTI. However, as an interim measure, transmissions of digital components at different locations may be made with defined parameters (to be decided on case-to-case basis). • For new broadcasters, they have option to setup CTI at any location within the city with the condition that transmission of all

Parameter	HD Radio	DRM
	defined parameters of analog/ digital components (to be decided on case-to-case basis). • For new broadcasters, they can be co-located with existing broadcasters at the new CTI setup engineered for existing broadcasters. In case it is so decided, CTI for new broadcasters can be set up with provisions to accommodate existing broadcasters at a later date.	analog and digital components is co-located. Alternatively, digital components of new broadcasters can be co-located with the CTI for digital components of existing broadcasters (restriction for time delay applies)
Single frequency network (SFN)	HD Radio supports SFN.	DRM supports SFN in all frequency bands.
Usability in cars	HD Radio can be used in cars.	DRM can be used in cars.
Usability in congested cities with tall buildings	Blockages could be possible if the path contains barriers. Suitable network coverage planning is needed for mitigation.	Blockages could be possible if the path contains barriers. Suitable network coverage planning is required for mitigation.
Signal loss	When HD Radio tuner loses the station's digital signal, it will automatically switch over to the analog signal broadcast at the same frequency.	When DRM loses the station's digital signal, it will automatically switch over to the analog signal broadcast using AFS feature irrespective of frequency.
Ability to use inside home/office	HDR can be used inside homes and offices.	DRM can be used inside homes and offices.
Emergency alerts	Yes	Yes
Receiver low-cost manufacturing	Allows for single-chip implementation compatible with low-cost portable	Allows for single-chip implementation compatible with low-cost

Parameter	HD Radio	DRM
	receivers and mobile devices.	portable receivers and mobile devices.
Global coverage	• HD Radio is used primarily by FM radio stations in the United States, Canada, and Mexico, with a few implementations outside North America. • Ecosystem is well developed in North America with more than 2500 functional HD Radio stations.	• 5 DRM transmitters working in VHF II band in Indonesia • DRM in AM bands has been adopted by Prasar Bharati, India. In China also DRM in AM bands has been adopted. • For VHF(FM) bands, South Africa, Indonesia, and Pakistan have officially adopted DRM. • Ecosystem is developing.
Current status in India	• Field testing for HD Radio in VHF II band has been conducted at Delhi and Jaipur. • No Radio station functional	• Field testing for DRM in VHF II band has been conducted at Delhi and Jaipur. • Currently, Prasar Bharati has deployed 38 transmitters of DRM technology in AM bands. • Around 6 million cars are equipped with a DRM digital radio receiver for AM band

3.43 While the above comparisons outline the key characteristics of DRM and HD Radio technologies, it does not establish a basis for selecting one technology over the other by the Authority. It is appropriate if the selection of technology between DRM and HD Radio is done by involving the industry, that is, radio broadcasters, who have to make investments and radio receiver manufacturers, who have to evaluate market for producing receivers.

3.44 In the light of above deliberations, the Authority is of the view that most appropriate Digital Radio technology from DRM and HD Radio may be selected by the Government for deployment in India. The technology selection among the two technologies suitable in VHF Band-II for deployment in India i.e. either DRM or HD Radio may be done in consultation with the industry, including Radio broadcasters and Radio receiver manufacturers, who are the main stakeholders in the radio broadcasting ecosystem.

3.45 Following options may be considered for selection of the digital radio technology standard. These include:

- **Industry Consultation**: Constituting a committee comprising representatives from the Government, radio broadcasters and radio receiver manufacturers to select the appropriate technology.

- **Selection of technology as part of bidding process**: The auction may be conducted in two stages. In the first stage, the bidders may be asked to submit their choice of technology between HD Radio and DRM along with the Earnest Money Deposit and the documents in support of their eligibility. The choice of technology opted by majority of eligible bidders may be selected. For selection of technology, all the eligible bids received for all the cities should be considered to arrive at the majority preference for technology. For this purpose, if a bidder has participated in multiple cities, each eligible bid should be counted. The outcome of the exercise will be to arrive at one country-wide technology based on the majority preference. The technology so selected should be counter offered to the eligible bidders who have preferred the other technology.

The bidders preferring/consenting to the selected technology may be allowed to participate in the auction. Those bidders who had quoted other technology which has not been selected and do not accept the counteroffer of the selected technology should not be allowed to participate in the second stage and their EMD may be refunded.

MIB may evaluate and adopt either of the above or any other suitable methodology for selection of technology prior to the financial bidding in the auction.

The Authority is of the view that the frequency planning for each of the technology may be done before auction which should be made public.

3.46 Accordingly, **the Authority recommends that:**

a) **The Government should select a suitable Digital Radio Technology for deployment in India.**

b) **Frequency planning for each of the technology may be done by MIB before auction which should be made public.**

c) **The Government should conclude the selection of technology before initiating financial bidding in the auction of spectrum for digital radio broadcasting.**

d) **MIB may select the suitable technology either by holding consultations with main stakeholders, that is, the radio broadcasters and the radio receiver manufacturers or by incorporating selection of technology in the spectrum auction process or any other method considered suitable by the MIB.**

B. Roadmap for implementation of digital radio broadcasting

3.47 Existing radio broadcasters may be offered the option to migrate to digital radio broadcasting. To provide digital radio broadcasting services in simulcast mode, these broadcasters will need to upgrade their infrastructure. In order to ensure a timebound migration to digital radio broadcasting, a schedule may need to be defined for various activities, including offering the migration option to existing broadcasters, setting a cutoff date for exercising the option, deployment of digital broadcasting technology, and commencement of digital radio broadcast operations.

3.48 In the CP, stakeholders were asked about the approach for migration of existing FM radio broadcasters to digital radio broadcasting.

Q4. What should be the approach for migration of existing FM radio broadcasters to digital radio broadcasting?

Comments of stakeholders

3.49 In response, one of the stakeholders suggested a three-step approach:

(i) Phased transition: By starting with regulatory groundwork, infrastructure upgrade and pilot testing, followed by issuing digital broadcasting licenses.

(ii) Simulcast period: By allowing a transition phase with both analog and digital signal to ensure consumer adoption and minimize disruption.

(iii) Monitor and evaluate: By adjusting the process based on adoption rates, then phasing out FM broadcasts as digital adoption reaches critical mass.

3.50 Few other stakeholders opined that a simulcast approach, especially in smaller cities, alongside retaining analog FM in lower-income areas could be followed, pilot projects in major cities should be conducted to assess viability and clear policy guidelines are needed for additional digital channels and licensing.

3.51 One stakeholder proposed forming a joint workgroup with all relevant stakeholders: public, commercial, and community broadcasters, regulators, receiver manufacturers, and the automotive industry to develop a detailed migration strategy.

3.52 A couple of stakeholders suggested a phased approach with Government support and opined that broadcasters should be allowed to simulcast analog and digital signals during the transition and a date for analog switch-off should be clear.

3.53 One stakeholder opined that the migration process should involve a separate digital transmission chain, leaving existing analog FM setups untouched and no spectrum fees should be levied during the introductory phase and clear policies should guide the receiver industry, mandating digital reception in cars, phones, and other devices.

3.54 Some stakeholders suggested for issuing long-term digital broadcasting licenses to both existing and new broadcaster to establish a sustainable transition pace.

3.55 Some stakeholders opined for encouraging digital receiver adoption and collaborating with industry stakeholders.

3.56 A stakeholder suggested that the migration from FM to digital radio should be industry-driven within a commercially viable timeframe, supported by Government initiatives.

Analysis

Mode of Broadcasting

3.57 The Authority recognizes that the business model of radio broadcasters is primarily driven by advertising revenues, which is closely linked to listener reach of their channels. While migrating to digital radio broadcasting, limited availability of digital receivers may constrain audience size during the initial phase of migration, thereby impacting revenues. To mitigate this risk and ensure financial sustainability, it is essential that analog FM transmissions continue alongside the introduction of digital radio services. Accordingly, existing and new broadcasters should be permitted to operate in simulcast mode, transmitting both analog and digital signals concurrently. This approach will help preserve listener engagement, protect revenue streams, and provide a stable environment for broadcasters to gradually build digital capabilities while the digital receiver ecosystem matures.

3.58 Moreover, simulcast provides valuable time to address technical challenges, create awareness of digital radio and its benefits, promote programs on digital radio, and build the necessary infrastructure for widespread digital adoption. It allows for a phased migration, where broadcasters can invest incrementally, and regulators can monitor digital uptake before deciding on the appropriate timeline for switching off FM transmissions. Internationally, it is observed that countries have continued to broadcast in both analog and digital modes.

Norway is the only country which has completed the digital switchover and has shut down the analog FM in December 2017.

3.59 Given the sluggish revenue trends of existing FM radio broadcasters and the growing competition from music streaming platforms, a full and immediate transition to digital radio broadcasting may not be commercially viable for many broadcasters. The widespread availability of affordable digital radio receivers is expected to take time, which is likely to further dampen incentives for early migration. Moreover, digital radio deployment entails significant upfront capital investment with long gestation periods for returns. The perceived financial risks may deter broadcasters to make new investments in digital radio broadcasting.

3.60 Thus, simulcast provides a pragmatic bridge allowing broadcasters to build digital capabilities while maintaining service continuity and giving consumers time to adopt new receiver technologies at their own pace. To start with, existing as well as new radio broadcasters may be enabled to implement simulcast to protect their revenue streams, as most listeners currently use analog receivers. This dual broadcasting approach allows listeners to continue accessing their favourite stations on traditional FM radios, while gradually transitioning to digital radio platforms.

3.61 Frequency planning committee in its report and MIB in its reference have mentioned provision for simulcast or pure digital transmission by new entrants. Given the lack of a robust receiver ecosystem, the Authority believes it is more practical to initiate digital radio broadcasting with simulcast mode only, rather than offering pure digital broadcasting to new entrants at this stage and hence option of pure digital

broadcasting may be considered at a later stage when the digital radio ecosystem stabilises.

Auction of spectrum for new channels

3.62 The Authority in its recommendations on Issues related to Digital Radio Broadcasting in India dated 1st February 2018 recommended the following roadmap for migration to digital radio broadcasting**:**

a. *Private sector should be permitted to provide digital radio broadcasting services within the existing frequency band of 88 –108 MHz used for FM radio broadcasting.*

b. *The frequency and geographical area coverage planning for digital radio broadcasting for vacant 600 KHz spectrum between two allocated FM frequencies in VHF-II band should be completed by BECIL, AIR, and WPC together within three months for category A+ (4 Metro cities), and category A cities (8 cities) in first phase.*

c. *The frequency and geographical area coverage planning for digital radio broadcasting services in VHF-II band for rest of the country should be completed by BECIL, AIR, and WPC together in second phase.*

d. *Frequency and geographical area coverage planning for digital radio broadcasting services using VHF-III (174-230 MHz) band of spectrum should also be carried out by BECIL, AIR, and WPC together in third phase, after this spectrum get vacated.*

e. *WPC should notify the channel plan for each type of digital radio broadcasting technology.*

f. 200 KHz bandwidth spectrum between two allocated FM frequencies in VHF-II band should be auctioned for providing digital Radio broadcasting services in category A+ (4 Metro cities), and category A cities (8 cities) immediately after notification of the policy for digital radio broadcasting and notification of channel plan by WPC.

g. Auction should be carried out in phases – starting with cities of category 'A+' and 'A' and subsequently in cities of other categories.

h. Immediately after the successful auction of spectrum for digital radio broadcasting, an offer should be made to the existing FM Radio broadcasters to get their existing frequency bandwidth of ± 100 KHz, already allocated to them through auction in Phase-III of FM Radio, liberalized and provide digital radio broadcasting services in simulcast mode with analog FM Radio services.

i. For liberalizing of existing spectrum, already allocated to the FM radio broadcasters in Phase-III of FM Radio, they will have to pay an amount equal to the difference of auction determined price of equivalent spectrum for digital radio broadcasting in a city and amount paid for allocation of FM radio frequency.

j. *In case market determined price of 200 KHz for digital radio broadcasting is less than or equal to the price paid by FM radio broadcasters than FM radio broadcasters will not be required to pay any additional amount and he will be permitted to provide digital radio broadcasting services also for the remaining period of permission.*

3.63 MIB in its reference dated 23rd April 2024 has mentioned that in line with TRAI's recommendations, MIB constituted committee has identified new channels for digital radio broadcasting in 4 category 'A+' cities and 9 category 'A' cities. MIB has also sought reserve prices for auction of digital channels in these cities.

3.64 Once TRAI makes its recommendations, MIB may notify the Digital Radio Broadcast Policy as a first step which would include the process for technology selection, frequency auction plan, roll out requirements and other licensing/authorisation conditions. And thereafter, MIB may conduct the auction in these 13 cities for allocation of spectrum for new channels.

3.65 HD Radio requires 200 KHz for analog transmission and an additional 200 KHz for digital transmission, while DRM needs 200 KHz for analog transmission and 100 KHz for digital transmission. Regardless of the technology, each setup allows for 1 analog channel, 3 digital channels, and 1 data channel. In HD Radio, the additional 200 KHz must be placed in blocks of 100 KHz adjacent to each side of the existing analog frequency. Whereas in DRM, 100 KHz digital block can be placed anywhere within the FM band and doesn't need to be adjacent to the analog frequency. The whole set of frequencies whether 300 KHz for DRM or 400 KHz for HD Radio, required for simulcast, may be bundled with spot frequencies (centre of analog frequency) in the process of auction of spectrum for digital radio broadcasting. Here, 'spot frequency' refers to the central frequency used for analog FM broadcasting.

3.66 Accordingly, new entrants will require spectrum for simulcast (analog + digital channels) to be acquired through auction. The Auction Determined Price (ADP) arrived at will be for both

analog and digital channels (1 Analog, 3 Digital and one data channel) of the spectrum, i.e., 200 KHz for analog broadcasting and additional spectrum for digital broadcasting based on the technology selected. As per frequency planning carried out by the committee, placement of DRM blocks can be done anywhere between existing channels such that contiguous blocks of 100 KHz may be allocated to more than one broadcaster. All these broadcasters can install a single digital DRM transmitter with a separate transmission system anywhere in the city. In case of HD Radio technology, the HD blocks have to be adjacent to the existing analog blocks and each broadcaster has to deploy his own transmission system for both analog and digital transmission.

Spectrum assignment and migration of existing broadcasters

3.67 After auction of spectrum for new channels, existing radio broadcasters should also be given an option to migrate to digital radio broadcasting. However, the Authority is conscious that the migration by existing broadcasters should be on voluntary basis. Existing broadcasters should have an option to either continue with analog operations till the expiry of their existing permission or migrate to simulcast in authorisation regime. The Authority has also noted that the existing operational channels have already completed a period of 3 to 10 years out of the total permission of 15 years. It may take another 2-3 years to migrate existing FM channels to simulcast. By that time most of the existing channels would have completed 5-13 years out of their total 15 years of existing permission. In this regard, the Authority in its recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the

Telecommunications Act, 2023' issued on 21st February 2025 has recommended that existing permission holders for FM Radio broadcasting may migrate to new authorisation regime and get authorisation for Radio broadcasting afresh for further 15 years.

3.68 Here it pertinent to note that the spectrum of 600 KHz between two existing radio channels is otherwise idle as of now and there is no revenue from this spectrum. Migration of existing analog broadcasters to simulcast will be advantageous to utilise this idle spectrum for digital radio broadcasting. This will not only provide new programming options to listeners but will also add to the revenue of the Government.

3.69 Existing broadcasters have already obtained spectrum of 200 KHz through auction for analog channels. In case they opt to migrate to simulcast, additional spectrum for digital broadcasting needs to be acquired by them. This will enable existing radio broadcasters to add 3 digital and 1 data channel in addition to the existing analog channel.

3.70 In this regard, the existing broadcasters during consultation have asked for relaxed conditions for allowing them to migrate to digital radio broadcasting. The concession sought include extending period of license, additional spectrum at no cost or very reasonable rates, as they are already facing financial stress due to sluggish revenue growth, high payouts for license fee and common transmission infrastructure, competition from streaming services. Further, they also perceive an imminent risk in migrating to digital radio broadcasting given the fact that digital radio receiver ecosystem will take time to develop.

3.71 The Authority is of the view that while existing radio broadcasters can voluntarily migrate to authorisation regime, their frequency spectrum assignment for analog broadcast will be valid for the remaining period of license. These broadcasters need to be incentivised to migrate to digital radio broadcasting by offering a voluntary migration to new license/authorisation with full term. Further the existing broadcasters should be required to accept migration to simulcast within a defined timeframe. Without a clear deadline, broadcasters may postpone their decision until the digital receiver ecosystem is fully developed, potentially delaying the broader adoption of digital radio services. A six-month window following the conclusion of the auction process is considered reasonable for existing broadcasters to make an informed decision. During this period, they will gain clarity on the seriousness of efforts of the new assignees in terms of planning of LTI and CTI and the agency for execution of these infrastructure—factors that will help existing players assess the viability of migration.

3.72 The ADP for new channels subsequent to auction can be considered as the basis for migration fee, as was done during migration from Phase II to Phase III of FM radio. Hence, for migrating to simulcast mode in digital broadcasting, the existing broadcasters may be asked to pay an amount equal to the ADP (for new frequencies) for the same city minus proportionate NOTEF already paid for the remaining period of the existing permission for that city. In case no bids are received for new frequencies in a particular city, then ADP can be taken by averaging the ADPs available for similar category of cities. For example, in case no bids are received for new frequencies in a category A+ city, then the average of ADPs of remaining 3 category A+ cities will be considered as ADP for that city. While extending the average ADP to other cities in the

A+ and A categories where no bid is received, it would be prudent to exercise this option only when at least two cities in that category have received successful bids.

3.73 Since assignment of the additional spectrum to existing broadcasters during this migration is at auction determined price, it also aligns with the provisions of the Telecommunications Act, 2023.

3.74 Therefore, **the Authority recommends that:**

a) Simulcast mode should be permitted for migration of existing analog FM Radio broadcasters or commencing services by new broadcasters.

b) The frequency assignment for new frequencies should be auctioned in accordance with Section 4(4) of the Telecommunication Act, 2023.

c) Immediately after the successful assignment of new frequencies through auction for digital radio broadcasting, an offer should be made to the existing FM Radio broadcasters to migrate to simulcast mode.

d) Existing radio broadcasters in a city should be allowed to voluntarily migrate to simulcast mode of Digital radio broadcasting. A time limit of 6 months from the date of conclusion of auction process should be given to existing broadcasters to exercise the option to migrate to simulcast mode.

e) Existing analog FM Radio channels who do not migrate to digital radio broadcasting should be allowed to remain operational till the expiry of their Phase-III permissions.

f) For migration to simulcast mode, existing FM radio broadcasters will be required to pay an amount equal to the difference of auction determined price for digital radio broadcasting in a city and the proportionate amount of NOTEF for the remaining period of the existing permission. In case the difference of auction determined price for digital radio broadcasting in a city and the proportionate amount of NOTEF for the remaining period of the existing permission is less than zero, the existing FM radio broadcaster will not get any refund for migration.

g) In case no bids are received for new frequencies in a city, then ADP for that city for the purpose of migration of existing broadcasters should be taken as an average of the ADPs for similar category of cities. While extending the average ADP to other cities in the category where no bid is received, this option should be exercised only when at least two cities in that category have received successful bids.

3.75 Stakeholders were also asked about the timeframe for various activities related to the migration of existing FM radio broadcasters to digital radio broadcasting.

Q5. What should be the timeframe for various activities related to the migration of existing FM radio broadcasters to digital radio broadcasting?

Comments of stakeholders

3.76 In response, one stakeholder opined that full migration of existing broadcasters to digital services should be targeted for

2028 alongside the licensing of new digital broadcasters in 2026, launch of digital services by the first-time broadcasters by 2028 and there should be no phase-out of current analog FM radio transmissions during the process.

3.77 One of the technology providers/standard developers suggested that 5-7 years' time may be given to switch off analog FM services in India.

3.78 Another stakeholder suggested a period of 5-7 years, first two years being the focus on infrastructure and pilot projects in major cities and the next three to five years being the focus to expand coverage to smaller cities and rural areas.

3.79 One stakeholder listed out a migration plan in three phases: Pilot testing (1 year) to refine the technology based on real-world feedback; Initial Rollout (2-3 years) in Tier-1 areas, where both analog and digital services are offered; Nationwide Rollout (3-5 years) expanding coverage to Tier-2 and Tier-3 markets.

3.80 One stakeholder suggested 3-5 years window for full migration.

Analysis

3.81 As mentioned in the MIB reference dated 23rd April 2024, the Government is keen to bring the digital radio policy on priority. The policy is likely to set the framework for the country's transition from analog to digital radio broadcasting. The policy should detail the choice of technology for India, available frequencies in each city for that technology, auction process as per law, migration requirements for existing broadcasters, CTI/infrastructure sharing requirements and allowances for each city and location, roll out obligations and other

licensing/authorization conditions. Following this, auctions for digital radio frequencies in 'A+' and 'A' category cities should be aimed to be completed within a year. These auctions will allow service providers to acquire the necessary licenses/authorisations to operate digital radio services in the most prominent urban markets, and further seek SACFA clearance, get frequency assignment and get necessary permissions for importing and acquiring the required equipment.

3.82 Subsequently, existing FM broadcasters are expected to commence digital radio broadcasting services within next one year thereafter, broadcasting simultaneously on both analog FM and digital radio to ensure a smooth transition for listeners. Further, the policy decision to shut down analog FM can be taken only after assessing the proliferation and success of digital radio. It will be premature to consider the issue at this stage.

3.83 Accordingly, **the Authority recommends that:**

a) Radio broadcasters should commence simulcast operations within two years of conclusion of auction process by new broadcasters or acceptance of option for migration by existing broadcasters.

b) The sunset date for the analog broadcasting should be decided after evaluating the progress of digital radio broadcasting at a later date.

3.84 In addition, stakeholders were also asked to suggest measures that should be taken to encourage existing FM radio broadcasters to adopt digital radio broadcasting.

Q6. Please suggest measures that should be taken to encourage existing FM radio broadcasters to adopt digital radio broadcasting.

Comments of stakeholders

3.85 One stakeholder suggested that a five-year extension of license period (analog plus digital) would be ideal and suggested providing subsidy for establishing digital common transmission infrastructure.

3.86 Some stakeholders suggested for giving financial incentives like subsidies, tax breaks; flexible licensing/regulatory measures like permitting simulcast and assigning dedicated spectrum; other support initiatives like affordable receivers, public awareness campaigns and industry collaboration.

3.87 One stakeholder suggested for allocating 100 kHz frequency band to each existing licensee free of charge for five years, with the condition that they start digital broadcasts within a year.

3.88 Another stakeholder suggested for providing financial incentives like tax breaks, subsidies and low interest loans to ease the transition, especially for smaller broadcasters; and proposed that training programs, technical support, and simplified regulatory frameworks would be essential.

3.89 One stakeholder suggested for offering digital broadcasting slots to both existing and new FM broadcasters and allowing the use of existing transmitters to minimize costs. It also suggested for financial incentives like nominal license fees and waving Government payments for the first five years. It also proposed offering rewards to early adopters to help drive the transition to digital radio.

3.90 Another set of stakeholders suggested for offering financial incentives to broadcasters for upgrading their infrastructure and transitioning to digital broadcasting. They also proposed conducting public awareness campaigns to educate listeners about the benefits of digital radio, such as improved audio quality and additional features.

3.91 One of the stakeholders opined that affordable digital receivers must be made widely available through open standard technology and nationwide coverage.

Analysis

3.92 At present the period of permission for FM radio is 15 years. Phase-III of FM radio commenced in 2015, when 231 FM radio channels operational in Phase-II migrated to Phase-III. Subsequent to batch-I and batch -II auction conducted in 2015 and 2016, 157 channels became operational during 2016-2022. The existing operational channels have already completed a period of 3 to 10 years out of the total permission of 15 years. It may take another 2-3 years to migrate existing FM channels to digital radio. By that time most of the existing channels would have completed 5-13 years out of their total 15 years of existing permission period. In such a scenario, some existing broadcasters may not be inclined to adopt digital radio as it may not be possible to recover the expenditure incurred by them for upgradation of existing network for digital radio broadcasting. Further, development of ecosystem for digital radio receivers may also take some time. Therefore, some measures would be required to promote existing as well as new broadcasters for commencing digital radio broadcasting. Such incentives for existing broadcasters can be provided in the form of an offer for voluntary migration to new license/authorisation

with full term. The other incentives can come in form of – a) introducing a new category of authorisation viz. Radio Broadcasting Infrastructure Provider, b) enabling leasing of digital channel capacity, c) offering multiple payment options for ADP.

Radio Broadcasting Infrastructure Provider

3.93 Under the current policy framework, radio broadcasters are required to establish the entire transmission infrastructure, from studio setup to transmitter deployment for operationalizing a radio channel. This approach entails significant capital expenditure (CAPEX) and operational expenditure (OPEX), which can be financially burdensome, and a significant logistic constraint, particularly for a new entrant. Presently, the infrastructure in the form of Common Transmission Infrastructure (CTI) and Land & Tower Infrastructure (LTI) is usually provided by either entities like Prasar Bharati, BECIL, or broadcasters have to form consortium in a city. The telecom sector has entities who provide infrastructure to service providers. Likewise, there could be entities willing to invest in creation of broadcasting infrastructure but not in providing the broadcasting service. There is therefore, scope for having private sector third party infrastructure providers as alternative to the public sector Prasar Bharati or BECIL. This makes a case to introduce a new category of service provider, viz., Radio Broadcasting Infrastructure Provider (RBIP) who can be authorised to provide passive and active infrastructure for radio broadcasting vis. LTI and CTI, which may be shared by them to radio broadcasters on commercial terms. This entity would be akin to the Digital Communication Infrastructure Provider

in the telecom sector or Teleport Operators in television broadcasting.

3.94 While the rollout of digital radio need not be linked to a priori creation of RBIP authorisation, there is merit in general in allowing third party entities who specialise in providing common transmission infrastructure which can be availed by radio broadcasters. This will be voluntary, on market determined commercial terms.

3.95 The RBIP would be responsible for building and maintaining passive (e.g., towers, buildings) and active (e.g., transmitters, antennas) infrastructure, which could then be commercially leased to radio broadcasters. The introduction of RBIPs would enable broadcasters, to access transmission infrastructure without incurring the full burden of capital investment and will also provide an alternative to Prasar Bharati and BECIL for this purpose. This would promote cost efficiency, encourage market participation, and accelerate the rollout of digital radio services across the country.

3.96 If the Government agrees with the Authority's recommendations for RBIP authorisation, it may send a reference to TRAI for recommending terms and conditions of such an authorisation. However, it may be noted that the introduction of new RBIP authorisation is not a pre-requisite for considering and implementing Digital radio broadcasting services in the country.

3.97 In view of above, **the Authority recommends that:**

a) Government should introduce a new authorisation for 'Radio Broadcasting Infrastructure Provider' for provision of active and passive digital infrastructure which can be leased to radio broadcasters. However,

the introduction of new RBIP authorisation should not be a pre-requisite for considering and implementing Digital radio broadcasting services.

b) In case the Government decides to introduce license/authorisation for Radio Broadcasting Infrastructure Provider, a reference may be made to TRAI for recommending terms and conditions for such a license/authorisation.

C. Affordability of Digital Radio Receivers

3.98 Terrestrial Radio broadcasting is a free-to-air service. Therefore, the business model requires the Radio broadcasters to rely on advertising revenues only, which is directly related to a channel's listenership. The success of digital broadcasting will depend on the availability of affordable receivers, which will enable large-scale adoption and listenership maximisation. Without such receivers, broadcasters may have little incentive to adopt digital Radio broadcasting, which could deter investments by stakeholders. Ensuring affordable receivers is crucial for the growth of digital radio and the return on investment for broadcasters.

3.99 Accordingly, in the consultation paper, comments were sought from stakeholders on the measures that should be taken to facilitate the availability of affordable digital radio receivers.

Q7. What measures should be taken to facilitate the availability of affordable digital radio receivers?

Comments of stakeholders

3.100 In response, some stakeholders responded by emphasizing the need for a well-defined policy framework that offers facilities and incentives to receiver manufacturers under the Make in India initiative. They also proposed that cost subsidies be considered to support citizens in transitioning to digital receivers.

3.101 Some stakeholders proposed implementing a nationwide rollout of digital radio services, alongside a formal Government policy announcing the digital transition. This, they suggested, would drive significant demand for digital receivers and encourage their use in remote education, particularly in regions lacking internet connectivity.

3.102 One stakeholder suggested mandating integration of digital radio in smartphones. They also suggested targeted subsidy programs for low-income consumers to ensure affordability and bridge the digital divide.

3.103 Some stakeholders suggested that car manufacturers should be mandated to include digital radio receivers in automobiles by a set target date. They further submitted that during the initial analog-to-digital transition, broadcasters and manufacturers should receive incentives to encourage adoption and lower production cost.

3.104 Some stakeholders suggested offering subsidies for products like Bluetooth speakers that incorporate digital radio solutions. They further suggested enforcing standardization and certification to protect domestic designs from external competition. They are of the view that collaboration with chipset manufacturers can reduce the costs through economies of scale.

3.105 Some stakeholders suggested Government incentives, tax breaks or subsidies for local manufacturers of digital radio enabled devices.

3.106 One stakeholder suggested zero import tariffs, local manufacturing support and incentives for marketing.

Analysis

3.107 Terrestrial radio broadcasting is free-to-air service. A consumer can simply procure radio receiver equipment and tune into various radio channels available in that region. The business model of radio broadcasting service is based on advertisement revenue, and the rates of the advertisements are generally linked with the listenership of a particular channel. In the absence of good quality digital radio receivers that are affordable and widely available, there will be limited audience leaving no incentives for broadcasters to broadcast in digital format, which in turn may also discourage investments by receiver manufacturers. Therefore, to ensure viability of digital radio broadcasters, adequate availability of digital radio receivers at affordable price is an important factor, irrespective of the technology adopted for digital broadcasting.

3.108 FM radio receivers presently in use can be broadly classified into following categories –

(1) Standalone FM Radio receivers;
(2) FM Radio receivers integrated in infotainment systems installed in vehicles;
(3) FM Radio receivers integrated with Mobile phones; and
(4) FM Radio receivers integrated with music systems (including Bluetooth speakers).

3.109 In case of migration to digital broadcasting, availability of digital receivers in the above form would determine the listenership, essential for viability of digital broadcasting.

3.110 Initially, FM radio channels were accessed through standalone radio receivers. However, technological advancements led to the integration of FM radio functionality into mobile phones and infotainment systems installed in vehicles, significantly reducing the reliance on standalone devices. This integration played a key role in broadening the reach of FM radio and contributed to the overall growth of the industry segment.

3.111 Stakeholders have pointed out that with the advent of 4G and 5G mobile devices, some manufacturers are now disabling FM tuner functionality in mobile phones, even when FM chipsets are embedded in the devices. In certain cases, mobile phone manufacturers have started removing FM chipsets from their phone models.

3.112 Recognising the value of integrating a radio receiver into mobile phones, especially for economically disadvantaged individuals, the Ministry of Electronics and Information Technology (MeitY) released an advisory to ICEA and MAIT on 28th April 2023. The advisory emphasizes the importance of ensuring that mobile phones equipped with built-in FM radio receiver functions or features are not disabled or deactivated. The advisory urges that these functions or features remain enabled and activated in the mobile phones, promoting widespread access to radio content. An excerpt from the advisory is provided below:

> *"2. The FM broadcast is a robust and reliable communication system. FM stations serve as important communication links between the local authorities and people in times of natural disasters*

(i.e., in catastrophic situations). As per International Telecommunication Union (ITU) - "In times of emergencies and disaster, Radio broadcasting is one of the most powerful and effective ways of delivering early warnings and alerting the public to save lives". Further, there is need for speedy, timely, and reliable communication via FM enabled mobile phones (apart from regular standalone Radio sets and car receivers) during disasters as this can save precious lives, livelihood and also prepares us better to deal with the disasters. The availability of vast network of FM transmitters and FM radio in the country played a key role in India's fight against the COVID-19 pandemic.

3. In view of the above, it should be ensured that wherever the mobile phone is equipped with an inbuilt FM Radio receiver function or feature, that function or feature is not disabled or deactivated but is kept enabled/activated in the mobile phone. Further, it is advised that if the FM Radio receiver function or feature is not available in the mobile phones, it may be included."

3.113 In order to ensure effective implementation of the advisory issued by MeitY, the Authority in its recommendations on "Issues related to FM Radio Broadcasting" dated 5th September 2023 recommended that:

"2.75 (i) Functions or features pertaining to FM radio should remain enabled and activated on all mobile handsets having the necessary hardware. Built-in FM radio receiver in mobile handset must not be subjected to any form of disablement or deactivation.

(ii) A Standing Committee, headed by a senior officer of Joint Secretary or above level, to oversee and monitor the compliance of enabling the FM Radio in Mobile Handsets (as per (i) above) by mobile phone manufacturers (or importers) may be established by MeitY. The committee should include key stakeholders such as MIB, AROI, MAIT, and ICEA.

(iii) An online grievance redressal portal should be provided for submitting information or complaints of case of any non-compliance as regards enablement of FM radio functionality in such mobile handsets that have the necessary functionality for FM receivers."

3.114 While making the above recommendations the Authority noted the following:

"2.67 By incorporating a radio receiver into mobile handsets, individuals who are financially underprivileged can access radio programming without the need to invest in an additional device. This accessibility is particularly crucial as radio offers a wide range of content, including news, entertainment, educational programs, and agricultural or health-related information. It serves as a valuable source of knowledge and empowerment for those who may not have access to other forms of media. Furthermore, by enabling free radio reception without the requirement for costly data plans from Telecom Service Providers, individuals at the lowest socio-economic strata can enjoy infotainment and entertainment.

2.68 The seamless accessibility to radio content can be enabling in number of circumstances including local information and alerts. By ensuring that every mobile

handset is equipped with a built-in radio receiver, the most economically disadvantaged individuals can be empowered to enjoy the advantages of radio without any financial burden. This not only promotes inclusivity but also recognizes the transformative potential that radio holds in uplifting communities and enhancing their well-being."

3.115 Further, another popular mode of listening to FM Radio is in passenger vehicles, as most of these vehicles have inbuilt FM Radio receivers. The Authority is of the view that there is a need to ensure availability of digital Radio receivers in cars. In this regard, the Authority has noted that the European Union in Annex XI to the European Electronic Communications Code (EECC)[21] dated 11th December 2018 has mandated that:

"Any car radio receiver integrated in a new vehicle of category M which is made available on the market for sale or rent in the Union from 21 December 2020 shall comprise a receiver capable of receiving and reproducing at least radio services provided via digital terrestrial radio broadcasting. ……"

3.116 The Authority agrees with the stakeholders that for successful adoption of digital Radio broadcasting, availability of affordable digital receivers is of utmost importance; as business viability of radio broadcasters is dependent on advertising revenue that is directly linked with the number of listeners. The Authority is of the view that for facilitating availability of digital Radio receivers in mobile phones and passenger vehicles the Government may consider issuing an advisory similar to the one issued by MeitY for availability of FM radio receivers.

[21] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L1972

3.117 Additionally, the Authority in its recommendations[22] on 'Inputs for formulation of National Broadcasting Policy-2024' dated 20th June 2024 emphasized for cost-effective development and adoption of indigenous receivers for digital radio broadcasting. The Authority mentioned the following in the said recommendations:

'2.86 Similarly, to develop the ecosystem for digital radio in India, it is essential to create a roadmap that benefits both radio broadcasters and consumers. The vision of 'Digital India' can be realized through a digital radio system that serves as the backbone infrastructure for cost-effective development and adoption of indigenous digital radio systems including the receivers.

2.87 A mature product ecosystem involves collaboration among companies providing low-cost integrated circuit (IC) solutions, as well as those experienced in hardware and software development of components like digital radio receivers. Additionally, manufacturers would need standardized test equipment to support mass production. Broad partnerships across semiconductor industries and original design manufacturers (ODMs) are essential to manufacture indigenous digital radio systems at affordable costs during the adoption phase."

3.118 Accordingly, the Authority *inter alia* recommended the following under the goal 'Promoting manufacturing and adoption of new technologies including indigenous broadcasting technologies and equipment':

'2.92 c. Incentivizing indigenous development and adoption of digital radio systems including receivers.'

[22] https://www.trai.gov.in/sites/default/files/2024-09/Recommendations_20062024.pdf

3.119 In this regard, to oversee and monitor the development and proliferation of digital radio receivers and market dynamics, MIB should constitute a high-level steering committee comprising of senior representatives from the MIB, Ministry of Electronics and Information Technology (MeitY), radio broadcasters, device manufacturers, and the technology provider. This committee may enable a guiding and monitoring mechanism, which will also make recommendations for policy adjustments, if uptake is slower or faster than anticipated, and ensure that affordable digital receivers are developed and made available to consumers. Such an institutional mechanism is likely to provide assurance to investors and accelerate development of digital radio industry.

3.120 Based on the above deliberations, **the Authority recommends that:**

a) The Government should issue an advisory regarding availability of digital radio receivers in mobile phones and car infotainment systems, similar to the advisory issued by the Ministry of Electronics and Information Technology (MeitY) for availability of FM Radio receivers in mobile phones.

b) To oversee and monitor the development and proliferation of digital radio receivers and market dynamics, MIB should constitute a high-level steering committee comprising of senior representatives from the MIB, Ministry of Electronics and Information Technology (MeitY), radio broadcasters, device manufacturers, and the technology provider.

D. Simulcast of live channel on Internet

3.121 The MIB reference highlighted several issues concerning the rollout of digital radio broadcasting in the country. One key issue being:

> *'There are certain issues which the FM radio industry body AROI have been raising for consideration such as permitting private FM broadcasters to simulcast their live terrestrial channels on Internet with no additional costs to broadcasters.'*

3.122 As per 'Private FM Phase-III policy', there is no explicit provision regarding streaming of FM radio channels on the Internet. Therefore, in this regard, the Authority asked following question for soliciting comments of the stakeholders:

> *'Q8. Should private radio broadcasters be permitted to simulcast their live terrestrial channels on Internet? If yes, what should be the terms and conditions for such simulcast? Please provide your comments with detailed justification.'*

Comments of stakeholders

3.123 In response to Q8, most of the stakeholders favoured simulcast of live terrestrial radio channels on Internet. They opined that this approach would reduce costs, promote market entry for smaller stations, simplify licensing, enable global reach and encourage creative freedom for broadcasters.

3.124 On the contrary, some of the stakeholders not in favour of simulcast of live terrestrial radio channels on Internet have

opined that simulcast[23] requires a separate license for copyright works, as it also reaches a different set of online audience other than those in traditional terrestrial radio broadcasts covering a city. They also mentioned that no statutory licensing for internet broadcasting exists, citing Section 31-D of the Copyright Act. They further argued that it may result in unauthorized national level broadcasts and piracy. They suggested that broadcasters should obtain separate licenses from copyright holders for simulcast.

Analysis

3.125 From the comments above, it emerges that most of the stakeholders have suggested to allow streaming of live radio channel within the scope of radio services. However, it may be noted that there is no provision for FM radio broadcasters to stream their radio channels in 'Private FM Phase-III policy'.

3.126 It may be recalled that the Authority in its recommendations on the 'Framework for Service Authorisations for Provision of Broadcasting Services under the Telecommunications Act, 2023' issued on 21st February 2025 has recommended a harmonised and simplified terms and conditions governing all broadcasting services, including 'Terrestrial Radio Service'. In this regard it is pertinent to mention that currently licenses/permissions/ registrations for various broadcasting services are issued by MIB as per the extant guidelines which are provided in Section 4 of the Indian Telegraph Act, 1885. These broadcasting services include FM radio services in addition to uplinking/downlinking of television channel (including Teleport), SNG/DSNG, DTH, HITS, IPTV and Community Radio Station (CRS).

[23] simulcast here implies simultaneous broadcast on terrestrial and internet mediums

3.127 The Government has notified the Telecommunications Act, 2023 in the Gazette of India, which repeals the Indian Telegraph Act, 1885. However, the appointed date for various sections of the Telecommunications Act, 2023 is yet to be notified. Section 3(1)(a) of the Telecommunications Act, 2023 mandates authorisation for those intending to provide telecommunication services, subject to the terms and conditions, including fees or charges, as may be prescribed.

3.128 MIB, vide its letter dated 25th July 2024, had sought recommendations of TRAI on the terms and conditions, including fees or charges; for authorisation to provide broadcasting services, aligning it to the Telecommunications Act, 2023 and harmonizing the terms and conditions across various service providers. TRAI sent its Recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' on 21st February 2025.

3.129 In the said recommendations, two sets of terms and conditions have been recommended which are to be notified as Rules under the Telecommunications Act, 2023:

i. The first set of terms and conditions, namely, 'The Broadcasting (Grant of Service Authorisations) Rules' provides for grant of service authorisations and contain the eligibility conditions, application process, associated fees and terms and conditions to be adhered to by an applicant entity for obtaining service authorisations.

ii. The second set of terms and conditions, namely, 'The Broadcasting (Television Channel Broadcasting, Television Channel Distribution, and Radio Broadcasting) Services

Rules' are structured in two parts. Part-I encompasses 'Common Terms and Conditions' that apply universally across all broadcasting services, while Part-II delineates 'Specific Terms and Conditions' for various services.

3.130 In the above, it may be noted that the consultation paper for Digital Radio Broadcasting Policy was issued before the consultation paper on Authorization framework. However, considering the urgency, the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 were issued before that of Digital radio broadcasting policy. Since, the recommendations for Authorisation framework covered authorisations for all broadcasting services, including terrestrial radio (including both FM radio and digital radio services), stakeholders' responses to some questions related to policy issues for digital radio as received in response to consultation paper on Digital Radio broadcasting policy were also considered while framing the recommendations. Hence, recommendations in response to question nos. 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24 in this recommendations on Digital Radio Broadcasting Policy were also considered in the Authorisation framework recommendations.

3.131 In recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025, the terms and conditions for 'Terrestrial Radio Service' have been made technology agnostic, wherein a single service authorisation for 'Terrestrial Radio Services' shall enable an entity to provide either FM Radio or Digital Radio services.

3.132 The issue for allowing streaming was also raised during the consultation process of authorisation framework for broadcasting service. This issue was examined and deliberated in detail by the Authority in its recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' issued on 21st February 2025. The excerpt of the said analysis is provided as under:

"2.155 …In this regard, it is important to note that music streaming apps are gaining momentum and have become popular. Unlike television ecosystem, where broadcaster and distributor are generally distinct entities with or without intermediaries in the distribution chain, broadcasting and distribution are generally not distinct entities in radio ecosystem. Streaming radio broadcasting over internet is largely use of a different medium for distribution (akin to IPTV). Now as authorisation and acquisition of spectrum rights for radio broadcasting are proposed to be delinked, there is a case for including the medium of streaming over internet within the scope of radio broadcasting.

2.156 Hence, radio service operators have a strong case to allow internet streaming of their radio channels.…

….

2.158 Based on the inputs from stakeholders, the Authority is of the view that owing to delinking of obtaining authorisation and assignment of spectrum, streaming may be permitted for terrestrial radio service. The radio broadcasting sector has experienced a significant decline in revenues in recent years. Hence permitting the radio broadcasters to stream the same content (as broadcasted

on the radio channel) will open a new revenue stream for them, thereby providing a chance for revival and sustenance of the radio industry in the long run. Streaming can also provide radio services in 'radio dark' areas. This includes remote regions yet to be covered by radio broadcasting, as well as areas with intermittent coverage like on highways. However, the service providers opting to stream their radio broadcast services shall be subject to all applicable laws including Copyright Act, 1957. Any mandate regarding commercial agreements between content creators and broadcasters over different mediums is beyond the scope of authorisation framework being dealt in these recommendations.

2.159 Moreover, radio offers a rich repository of local content. Allowing the authorised entity to stream the same radio program as is being broadcast, shall promote dissemination of local content to a broader and diverse audience extending beyond the city, thereby enhancing the reach of local content globally. The inclusion of streaming of radio channel shall establish an intangible connection of the Indian populace located geographically across the globe with their native place, which has been inaccessible to them till date owing to the territorial restriction of radio broadcasting."

3.133 However, the service providers opting to stream their radio broadcast services shall be subject to all applicable laws including Copyright Act, 1957. Any mandate regarding commercial agreements between content creators and broadcasters over different mediums is beyond the scope of authorisation framework being dealt in these recommendations.

3.134 Accordingly, the Authority recommended the Scope of service for the authorised entities of 'Terrestrial Radio Services' as:

"To set up, commission and manage a radio station for broadcasting programmes of a radio channel and streaming the same concurrently without user control.

Here 'without user control' means: Features like download, playback, replay etc. should not be available to the user while streaming."

3.135 Therefore, based on stakeholders' comments and the Authority's own analysis, the Authority reaffirms its position to permit the concurrent online streaming of the same programmes broadcast terrestrially on a radio channel, provided users do not have control over the stream.

3.136 In view of above, **the Authority recommends that private terrestrial radio broadcasters should be allowed to stream their live terrestrial channels concurrently, without user control. The radio broadcasters opting to stream their live terrestrial channels concurrently shall be subject to Copyright Act, 1957.**

Here 'without user control' shall mean features like download, playback, replay etc. are not available to the user while streaming.

E. Eligibility Criteria including net worth for provision of digital radio broadcasting services

3.137 The 'Private FM Phase-III policy' have been designed to govern the establishment and operation of FM radio stations by private entities. 'Private FM Phase-III policy' *inter alia* comprises of comprehensive terms and conditions such as

eligibility criteria, financial competence, period of permission, annual fee, Performance Bank Guarantee (PBG), Earnest Money Deposit (EMD), technical parameters, program content, penalty provisions, etc. for private FM broadcasters.

3.138 The eligibility conditions describe the requirements to be met by an entity intending to provision a particular service. The net worth of an entity is an important parameter for gauging its financial standing. Accordingly, eligibility conditions and minimum net worth criterion are needed to be prescribed for eligible entities so as to restrain the non-serious players from entering into the business.

3.139 In order to provision FM broadcasting service, Clause 2 and Clause 2.3 of 'Private FM Phase-III policy' provide detailed eligibility criteria and net worth requirement respectively by an applicant entity intending to provide FM radio broadcasting services.

3.140 In its Consultation Paper dated 30th September 2024, the Authority raised the following questions seeking stakeholders' comments on whether the eligibility criteria and minimum net worth requirement prescribed under 'Private FM Phase-III policy' can be extended to digital radio broadcasting, or if there is a need to review these criteria in the context of formulating policy for digital radio broadcasting:

Q9. (i) Should the provisions relating to eligibility criteria prescribed in FM Phase-III Policy guidelines be adopted for Digital Radio Broadcast Policy?

(ii) If yes, is there any need to add or remove any criteria?

(iii) If not, please suggest the plausible eligibility criteria for granting authorisation for digital radio broadcasting.'

Q10. Should the financial eligibility criteria provided in existing policy guidelines be adopted for digital radio broadcasting policy? If not, what should be the financial eligibility criteria for different categories of cities for digital radio broadcasting? Provide your suggestions with detailed justification.

Comments of Stakeholders

3.141 Most of the stakeholders submitted that the eligibility criteria contained in 'Private FM Phase-III policy' may be continued till 2030. Some stakeholders also suggested that the policy should be more flexible to accommodate smaller players, innovative content models and technological advancements.

3.142 Some other stakeholders suggested that a lower entry barrier should be kept for digital radio as compared to analog radio to provide impetus for facilitating its initial rollout in the country.

3.143 Some stakeholders proposed a slightly reduced minimum net worth for different category of cities, as per the following:

i. Rs. 50 lakh for D category cities (same currently)
ii. Rs. 75 lakh for C category cities (as against Rs 1 crore currently)
iii. Rs. 1.5 crore for B category cities (as against Rs 2 crore currently)
iv. Rs. 2.5 crore for A-category cities (as against Rs 3 crore currently)

3.144 Some stakeholders have further suggested that a sliding scale for entry and annual fees could encourage adoption—starting with lower fees for early adopters, which would gradually

increase in line with the growth of digital radio listenership and revenues.

Analysis

3.145 The Authority has examined the comments received from the stakeholders and observed that while most of the stakeholders are in favour of retaining the existing eligibility criteria, there is also a viewpoint advocating for a more inclusive policy that accommodates smaller players, diverse content models and rapid technological transitions.

Eligibility Conditions in the Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025

3.146 To obtain the service authorisation for 'Terrestrial Radio Service', an applicant entity shall be required to fulfil the stipulated eligibility conditions for grant of service authorisation including fulfilling the minimum net worth along with the payment of applicable fees and charges. Further, the following in respect of eligibility conditions is reproduced from para 2.198 of the said recommendations:

*"6. **Eligibility Conditions:** The eligibility conditions describe the requirements to be met by an entity intending to obtain a service authorisation. These eligibility conditions have been adopted mutatis mutandis from the respective extant policy guidelines of broadcasting services, except for the change in minimum net worth requirement for DTH Service, HITS Service and Terrestrial Radio Service. The eligibility conditions have been carefully harmonised keeping in view that neither it acts*

as an entry barrier to the new entrants nor it hampers the existing licensee/permission holders from continuing their service once they intend to migrate to the authorisation framework. The eligibility conditions shall also be applicable to the entities who will apply for renewal of their authorisation."

3.147 Accordingly, TRAI has provided detailed eligibility conditions for 'Terrestrial Radio Service' in the first set of terms and conditions (provided in Annexure-II of the said recommendations). In the eligibility conditions, the scope of the allowed entities has been broadened, allowing Limited Liability Partnerships (LLPs) in addition to Indian Companies as eligible entities to obtain authorisation for 'Terrestrial Radio Services', similar to television broadcasting services. Additionally, the minimum net worth requirement has also been lowered to reduce entry barriers.

Minimum Net worth requirement

3.148 Clause 2.3 of the FM Phase-III policy guidelines provide the following provisions regarding assessment of financial competence of an eligible company:

*"**2.3 <u>Financial Competence:</u>***

2.3.1 The financial eligibility of each applicant company shall be assessed on the basis of the following criteria:

***Minimum Net Worth required as per City Category in each region**:*

D category Cities and cities with population upto 1 lakh:	*Rs. 50 Lakhs.*
C category Cities:	*Rs. 1 Crore.*
B category Cities:	*Rs. 2 Crore.*

A category Cities: *Rs. 3 Crore.*

A+ category Cities: *Rs. 3 Crore.*

All categories of Cities in all regions: *Rs. 10 Crore.*

Illustration: For two or more C category cities in the same region, Net Worth of Rs. 1 crore is required. If the two C category cities are in two different regions, Net Worth of Rs. 2 crore is required.

[1]: Net worth requirement for two or more B category cities in one region will suffice the net worth requirement for a combination of two or more B category or lower category cities (ie, cities in C, D and J&K/ Ladakh/NE (border) categories) also in the same region. Similarly, for other categories.

2.3.2 ***Region*** *shall mean North or East or South or West region, comprising states/UT s as under:*

North Region: *J&K, Punjab, Himachal Pradesh, Haryana, Rajasthan, Delhi, Uttar Pradesh, Uttarakhand & Chandigarh.*

East Region: *Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tripura, West Bengal, Andaman & Nicobar Islands.*

South Region: *Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Puducherry, Lakshadweep*

West Region: *Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Maharashtra, Daman & Diu, Dadar and Nagar Haveli."*

3.149 The Authority in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 provided the following analysis on minimum net worth requirement for 'Terrestrial Radio Service':

*"*3.253 *As per the discussions regarding removing any entry barrier, the Authority is also of the view that the*

financial obligation in terms of minimum net worth requirement to obtain a service authorisation should not act as an entry barrier. Therefore, the net worth requirement should be kept at a minimum, facilitating entry of new applicants to obtain service authorisation for terrestrial radio broadcasting. However, a balanced minimum net worth requirement needs to be prescribed such that only serious players enter the market, while at the same time it is not very high for the new applicants.

3.254 *The Authority is also of the opinion that existing city-specific net worth requirements prescribed for the entities intending to participate in the process of frequency assignment through auction as per existing guidelines should continue. This will ensure that only the entities meeting the minimum net worth criteria for a particular city are eligible to participate in the process of frequency assignment through auction for that city. The net worth requirements for A, B, C, D and cities with population upto 1 lakh is currently prescribed in existing 'Policy Guidelines on Expansion of FM Radio Broadcasting Services through Private Agencies (Phase-III) - 2011', the same should be made part of NIA/IM or any other guidelines/instructions for spectrum auction. As such, these requirements are not being included in the terms and conditions being recommended.*

3.255 *In the line of the above discussion, the Authority is of the view that minimum net worth requirement to obtain the 'Grant of Service Authorisation for Terrestrial Radio Service' should be set at Rs. 30 lakh, which is even lesser than the net worth required to participate in e-auction of category 'D and cities with population upto 1 lakh'. The*

minimum net worth requirement for grant of service authorisation has been prescribed to reduce the entry barriers.

3.256 *Further, as discussed in Chapter II, the service area for Terrestrial Radio Service should be Pan-India. This will enable an entity to participate in process of frequency assignment in any city across India. However, each entity would only be able to operate in the specific city(ies) where it has been assigned frequency."*

3.150 In view of the above discussion, the Authority recommended that the minimum net worth for grant of service authorisation for 'Terrestrial Radio Service' should be prescribed as Rs. 30 lakh.

Terms and Conditions for grant of service authorisation:

Eligibility Conditions

3.151 The extract of the eligibility conditions applicable for 'Terrestrial Radio Service' as recommended by the Authority in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 is reproduced as under:

*"**List of eligibility conditions***

(1) The applicant entity shall be an Indian Company or a Limited Liability Partnership (LLP):

Provided that no Ministry/Department of the Central Government and State/UT Governments and entities related to them shall be allowed to obtain service authorisation.

(2) The applicant entity shall fulfil all the terms and conditions laid down in the Foreign Direct Investment (FDI) policy of the Government of India, as notified by the Department of Promotion of Industry and Internal Trade (DPIIT) from time to time, as applicable.

For this purpose, the applicant entity shall intimate the Central Government regarding FDI position at the time of application as well as whenever any change in the FDI in the company takes place, within 30 days of effect of such change. Every change in the FDI pattern has to confirm to the FDI policy of the Government of India, including wherever required, prior approval of the Central Government.

(3) The applicant company/LLP shall make full disclosure of Shareholders Agreements/Capital Contribution, at the time of application, as applicable.

(4) The applicant entity shall have a minimum Net worth of an amount specified in the Table 3.3, as applicable, at the time of application:

Provided that Net worth of only the applicant entity shall be considered to determine the eligibility and the Net worth of holding companies or subsidiaries or group companies or interconnected undertakings shall not be taken into account;

Provided further that the amount of Entry Fee paid shall not be taken as a tangible asset either in full or in part for the purposes of calculation of Net worth;

Provided also that the applicant entity shall submit Net worth Certificate as per the proforma given in ***Schedule-I***[24] *duly*

[24] Placed at Annexure II

certified by the Statutory Auditor/Chartered Accountant and supported by certified accounts;

Provided also that the stipulated minimum Net worth shall be required to be maintained throughout the validity of authorisation.

Table 3.3: Net worth requirements for Grant of Service Authorisations

Applicant Entity	***Net worth (in Rs.)***
Terrestrial Radio Service	*30 Lakh*

(5) The applicant entity shall always have an Indian management control with majority representatives on the Board/Partnership, as well as key managerial personnel, Editorial staff, the Chief Executive/Head of channel, known by any designation of the company being resident Indian citizens:

Provided that the applicant entity shall intimate the names, address and details of a person, not being resident of India, who are in the Board of Directors/Partners or proposed to be included in the Board of Directors/Partners.

(6) The entity as well as the Directors on the Board/Partners, Managing Director, Chief Executive Officer (CEO), Chief Financial Officer (CFO), Key Managerial Personnel, known by any designation of the company or partner of a partnership firm shall be required to be security cleared from the Ministry of Home Affairs (MHA).

(7) The applicant entity shall disclose the name, address and details of every foreigner/NRI to be employed/engaged in the company/LLP either as a consultant or by any other designation for more than 60 days in a year, or, as a regular employee.

(8) The applicant entity shall intimate the Central Government regarding the details of directorship, key executives at the time of application as well as on occurrence of any change in the directorship, key executives, within 15 days of effect of such change, under the condition that in the event that security clearance is denied by MHA, such person shall be removed forthwith from the post of director or the designated partner, as the case may be, by the Authorised Entity.

(9) At the time of application, the applicant entity shall not have been disqualified from holding such permission/authorisation in the past.

(10) Where a company/LLP is required to remit foreign exchange under Reserve Bank of India (RBI) Instructions to a foreign entity for transaction relatable to authorisation under these Rules, it may seek permission of the Central Government. Every such application shall be processed by the Central Government in accordance with the extant instructions of RBI.

…

(16) ***Additional Eligibility Conditions specific to Terrestrial Radio Service***

(a) The applicant entity shall neither be controlled by nor associated with any person or body or organisation, either directly or indirectly, and having interest in the following:

(i) A Trust, Society or Non-Profit Organisation;

(ii) A Religious body, wherein, a religious body, refers to a body whose objectives are wholly or mainly of religious nature or a body, which is controlled by a religious body or an associate of the religious body;

(iii) A Political body, wherein, a political body, refers to a body whose objectives are wholly or mainly of political nature, or a body affiliated to a political body, or a body corporate, which is an associate of a body corporate controlled, held by, operating in association or controlling a body of political nature as referred above; and

(iv) An Advertising agency, which shall mean an individual or a body corporate who carries on business as an advertising agent (whether alone or in partnership) or has control over any body corporate which carries on business as an advertising agent and any reference to an advertising agency includes a reference to an individual who-

(aa) Is a director or officer of any body corporate which carries on such a business, or

(ab) is employed by any person who carries on such a business:

Provided that the applicant entity shall not be eligible if either it is having same management or is a holding company or a subsidiary company of any company or has more than one interconnected undertakings, either operating the same service in the same city or an applicant for the same service in the same city:

Provided further that more than one Inter-Connected Undertakings either operating the same service in the same city or an applicant for the same service in the same city shall not be eligible;

Provided also that the applicant entity is not controlled by a person convicted of an offence involving moral turpitude or money

laundering/drug trafficking, terrorist activities or declared as insolvent or applied for being declared insolvent.

(b) Authorisation shall be granted only in cases where equity held by the largest Indian shareholder is at least 51% of the total equity, excluding the equity held by Scheduled Banks and Public Financial Institutions as defined in Section 2(77) of Companies Act 2013. The term largest Indian shareholder, used in this clause, shall include any or a combination of the following:

(i) In the case of an individual shareholder,

(aa) The individual shareholder.

(ab) A relative of the shareholder within the meaning of Section 2(77) of Companies Act 2013.

(ac) A company/group of companies in which the individual shareholder/Hindu Undivided Family (HUF) to which he belongs has management and controlling interest.

(ii) In the case of an Indian company,

(aa) The Indian company

(ab) A group of Indian companies under the same management and ownership control.

(c) For this clause, "Indian company" shall be a company, which must have a resident Indian or a relative as defined under Section 2(77) of Companies Act 2013/Hindu Undivided Family (HUF), either singly or in combination holding at least 51% of the shares:

Provided that in case of a combination of all or any of the entities mentioned above, each of the parties shall have entered into a legally binding agreement to act as a

single unit in managing the matters of the applicant company;

Provided further that the 'largest Indian shareholder' exercises management control over the entity.

(d) The Authorised Entity may, with prior approval of the Central Government, be allowed to change the composition of the 'largest Indian shareholder' subject to the condition that the shareholding of the 'largest Indian shareholder' does not reduce below 51% till a period of three years from the date on which all the channels allotted to the company holding permission stand operationalised.

(e) Any restructuring of the company/reorganization of entity holding the authorisation for terrestrial radio service between different holding companies/ subsidiaries/ interconnected undertakings/ companies with same management shall be done only with prior approval of the Central Government. The Central Government may consider granting such a permission only after all the channels allotted to any of the entity holding such authorisation stand operationalised undergoing restructuring. The entity so formed, shall have to conform to the prescribed eligibility criteria and shall also be subject to the fulfilment of the following conditions:-

(i) The new company shall sign a fresh agreement with Government on identical terms and conditions (except for transferability of shares as provided herein) for the remaining period of licence of the original company.

(ii) No new tax regime will be designed to provide any incentive to encourage creation of subsidiaries,

merger/demerger, amalgamation of Terrestrial Radio Broadcasting entities.

(iii) Any tax implication arising out of such mergers/demergers or amalgamation shall be governed by the provisions of the Income Tax Act, 1961 as applicable from time to time.

(iv) The processes/action taken by the Authorised Entity including for formation of new companies/subsidiaries/mergers/ amalgamations and/or disinvestment of undertakings, or part thereof, of existing companies etc., need to be compliant with the Companies Act, 2013. The applicant shall not dilute such requirement through its Articles of Association or any Agreement.

…"

3.152 The Authority in its recommendations on reserve price for auction of FM radio channels dated 23rd September 2025 has recommended a minimum net worth of Rs. 30 Lakh for category E cities, which shall be applicable in respect of auction for frequency assignment.

3.153 The Authority is of the view that with the repeal of the Indian Telegraph Act, 1885 by the Telecommunications Act, 2023, under which FM radio broadcasting permissions are presently granted by the Central Government the eligibility criteria and other relevant terms outlined in the recommendations on the authorisation framework for broadcasting services be adopted while formulating the digital radio policy.

3.154 The Authority examined the need for review of the various eligibility requirements specified in the Private FM Phase III policy and noted that during the exercise on recommendations

on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, all the requirements were harmonised and there is no reason to again review the same at this stage.

3.155 In view of above, **the Authority recommends that:**

a) The eligibility conditions (including the minimum net worth criteria) for digital radio broadcasting service authorisation should be same as that for grant of service authorisation for 'Terrestrial Radio Service', as recommended in its recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' issued on 21st February 2025.

b) The city category wise minimum net worth requirement for participation in the auction of spectrum should be as follows:

City category	**Minimum net worth *per City Category in each region (in Rs.)***
A+	**3 crore**
A	**3 crore**
B	**2 crore**
C	**1 crore**
D category Cities and cities with population upto 1 lakh	**50 Lakh**
E	**30 Lakh**
All categories of Cities in all regions	**10 crore**

Illustration: For two or more C category cities in the same region, Net Worth of Rs. 1 crore is required. If the two C category cities are in two different regions, Net Worth of Rs. 2 crore is required.

[1]: Net worth requirement for two or more B category cities in one region will suffice the net worth requirement for a combination of two or more B category or lower category cities (ie, cities in C, D and J&K/ Ladakh/NE (border) categories) also in the same region. Similarly, for other categories.

Region shall mean North or East or South or West region, comprising states/UT s as under:

North Region: J&K, Punjab, Himachal Pradesh, Haryana, Rajasthan, Delhi, Uttar Pradesh, Uttarakhand & Chandigarh.

East Region: Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tripura, West Bengal, Andaman & Nicobar Islands.

South Region: Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu, and Puducherry, Lakshadweep

West Region: Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Maharashtra, Daman & Diu, Dadar and Nagar Haveli.

F. Validity Period for digital radio broadcasting

3.156 The permission to private FM radio broadcasters is granted for a period of 15 years, as per 'Private FM Phase-III policy'. Further, it is explicitly mentioned that there shall be no extension of the permission. Clause 3 of the said policy guidelines states that:

*'The Permission shall be valid for a period of **fifteen (15) years** from the effective date as defined below. There shall be **no extension** and the Permission, unless cancelled or revoked earlier, shall automatically lapse and expire at the end of the aforesaid fifteen years' period and the Permission Holder shall thereafter have no rights whatsoever to continue to operate the Channel after the date of expiry of the Permission. Government at the appropriate time shall determine procedure for issue of fresh permissions.'*

3.157 For recommending the validity period for digital radio broadcasting, the Authority has raised the following question with respect to validity period to seek the comments of the stakeholders:

Q11. Should the provisions regarding the period of permission as per existing Policy Guidelines be adopted for the Digital Radio Broadcast Policy? If not, what should be the validity of the period of permission for Digital Radio Broadcasting? Provide your suggestions with detailed justification.

Comments of stakeholders

3.158 For the validity period of digital radio broadcasters, some of the stakeholders opined that it should be kept same as that for the

FM radio broadcasters (i.e., 15 years). They further suggested to ensure a balanced approach, allowing sufficient time to the entities intending to provide digital radio services for establishing their services and recouping their investments.

3.159 Some other stakeholders opined that the permission initially could be till 2030 and can further be extended by 5 years till 2035 across all broadcasters in the country.

3.160 Another set of stakeholders suggested that a short-term license of 5 years with lower entry barriers could be introduced for broadcasters offering special content like education or sports. They also opined that this license would allow an extension if certain criteria is met within a specified timeline, offering more flexible business models for niche broadcasters.

Analysis

3.161 At present MIB conducts auctions for operating FM radio channel in specified cities. Post auction, MIB grants permission to the successful bidder for operating FM radio channel for a period of 15 years. Thereafter, successful bidders pay auction determined price and seek allocation of spectrum from WPC Wing of DoT.

3.162 The Authority has examined the comments of the stakeholders submitting that the validity period for digital radio broadcasting should be prescribed as 15 years. Notably, during the consultation process of authorisation framework for broadcasting services also, the stakeholders of radio broadcasting services have similarly commented asking for validity period of 15 years for the authorised entities of 'Terrestrial Radio Service'. In addition to the validity period,

stakeholders also requested to prescribe a renewal period, since 'Private FM Phase-III policy' provides no extension to the FM radio broadcasters.

3.163 Considering the comments of the stakeholders, the Authority in its analysis at para 3.27 of the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 had noted the submission of the stakeholders and had taken the view that the provision for renewal should be incorporated for 'Terrestrial Radio Service' (which also covers digital radio broadcasting) for continuity of service in line with other broadcasting services. It had accordingly been recommended that the validity period for renewal be set at 10 years. A renewal fee of ₹10,000 equivalent to the processing fee for new applicants has also been recommended, maintaining parity with other broadcasting services.

3.164 Accordingly, in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, the following was recommended in the terms and conditions for authorised entities of 'Terrestrial Radio Service':

i. Validity period: 15 years
ii. Renewal of authorisation: 10 years
iii. Renewal fee: Rs. 10,000

However, this authorisation will be separate from spectrum assignment.

3.165 Regarding the renewal of the authorisation, the Authority is of the view that the spectrum to the successful bidders (radio broadcasters) is provided for a period of 15 years. Hence, it

would be appropriate to align the period of renewal to the duration of spectrum allocation (i.e., 15 years). This will ensure business certainty to the broadcasters.

3.166 In view of the above, **the Authority recommends that the period of authorisation for Terrestrial Radio Service (covering digital radio broadcasting) should be as under:**

a) Validity Period: to remain as 15 years, as prescribed under 'Private FM Phase-III policy'.

b) Renewal of authorisation: 15 years, with a Renewal Fee: Rs. 10,000. However, spectrum for extended period will be required to be acquired separately after following due process.

G. Earnest Money Deposit (EMD) & Performance Bank Guarantee (PBG)

3.167 In order to ensure that only serious bidders participate in the auction, prospective bidders are required to deposit an amount, termed as EMD, equal to certain percentage of the reserve price of a radio channel. Clause 4.4 of 'Private FM Phase-III policy' have the following provisions regarding EMD:

'Prospective bidders for a channel shall be required to deposit Earnest Money, along with the application for pre-qualification, in the form of a Bank Guarantee from a Scheduled Bank (as per the format specified by the Ministry) which shall be 25% of the reserve price of that city per channel.'

3.168 Further, as per Clause 4.12 of 'Private FM Phase-III policy', before signing the Grant of Permission Agreement (GOPA), a

FM radio broadcaster has to furnish a PBG, on the format specified by the Ministry for an amount equal to the annual fee for complying with all the terms and conditions contained in GOPA including the timely payment of annual fee.

3.169 Regarding the applicability of the extant provisions of EMD and PBG, the Authority raised the following questions to seek comments of the stakeholders:

Q12. Should the provisions regarding the Earnest Money Deposit provided in existing policy guidelines be adopted for the Digital Radio Broadcast policy? If not, what should be the Earnest Money Deposit for digital radio broadcasting services?'

'Q14. Should the provisions regarding the Performance Bank Guarantee provided in existing policy guidelines be adopted for the Digital Radio Broadcasting services? If not, what should be the amount of Performance Bank Guarantee for digital radio broadcasting services?

Comments of stakeholders

3.170 In response to Q12, some stakeholders opined that EMD should be kept same as per 'Private FM Phase-III policy'. Whereas some other stakeholders commented that a lower entry barrier for digital radio should be there in place to stimulate the market.

3.171 A few stakeholders proposed quantum for EMD such as 10% for D-category, 15% for C-category, 20% for B-category and 25% for A-category cities. While another group of stakeholders advocated that a hybrid EMD model for digital radio, featuring tiered amounts, performance-based refunds and alternative security mechanisms.

3.172 In response to Q14, the stakeholders had diverse opinions. Some of the stakeholders submitted that the amount of PBG may be left to TRAI's discretion. While some others proposed to adopt the PBG provisions from existing broadcasting or telecom guidelines with modifications to fit the digital radio context. Some of the stakeholders commented that the same provisions could be applied to the new entrants.

a. Few stakeholders are of the view that lower fee to be provided for early adopters in recognition of their commitment to digital radio. While some other stakeholders commented that bank guarantee should be reduced to the quarterly payable license fees.

Analysis

3.173 TRAI in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 recommended delinking of service authorisation from frequency assignment for 'Terrestrial Radio Service' (which also covers digital radio broadcasting). The Authority inter alia recommended the following:

'The authorisation for Terrestrial Radio Service should be delinked from frequency assignment.'

'An entity shall have an option of either obtaining the service authorisation prior to participating in the process of frequency assignment or apply for the service authorisation within stipulated timeframe after being a successful bidder.'

'The terms and conditions of frequency assignment shall be laid down by the Central Government in the form of Notice

Inviting Application/Information Memorandum or any other guidelines/instructions from time to time.'

'The Notice Inviting Application/Information Memorandum or any other guidelines/instructions shall contain terms and conditions for assignment of frequency including but not limited to the process of frequency assignment, city wise minimum net worth requirement, Earnest Money Deposit, Reserve Price, Payment Methodology, Roll out and other obligations, Blacklisting and Forfeitures etc. and any other relevant aspects (erstwhile part of Process of granting permission and Grant of Permission Agreement (GOPA) of the extant Policy guidelines of Phase-III FM Radio).'

3.174 Since it has been recommended to unbundle the service authorisation from spectrum assignment for 'Terrestrial Radio Service' (which also covers digital radio broadcasting), the Authority is of the view that EMD in the form of Bank Guarantee to be furnished shall be specified by the Central Government as the conditions of frequency assignment in the NIA/IM or any other guidelines/instructions.

3.175 Further, in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, the recommended roll out obligations for 'Terrestrial Radio Service' (which also covers digital radio broadcasting) in as follows:

'Roll Out Obligations shall be linked with assignment of frequency spectrum and the conditions specified in the NIA/IM for auction of spectrum or any other

guidelines/instructions issued by Central Government from time to time shall be applicable.'

3.176 It may be noted that 'Private FM Phase-III policy' stipulates details of minimum net worth requirement, Earnest Money Deposit, Reserve Price, Payment Methodology, Blacklisting and Forfeitures etc.

3.177 Clause 4.4 of 'Private FM Phase-III policy' has following provisions regarding EMD:

'Prospective bidders for a channel shall be required to deposit Earnest Money, along with the application for pre-qualification, in the form of a Bank Guarantee from a Scheduled Bank (as per the format specified by the Ministry) which shall be 25% of the reserve price of that city per channel.'

3.178 As mentioned above, the provisions related to the quantum of the EMD has already been provided in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, which has been adopted from the 'Private FM Phase-III policy'. The Authority has examined the extant policy of 25% for EMD and noted that higher EMD will discourage participation and low amount will not be able to secure against participation of non-serious bidders. EMD @ 25% of Reserve price is working well. Hence, the provision of 25% is considered as a reasonable amount and there is no requirement to change the same at this stage.

3.179 Further, as per Clause 4.12 of the FM Phase III policy guidelines, before signing the Grant of Permission Agreement

(GOPA), a FM radio broadcaster is required to furnish a PBG, on the format specified by the Ministry for an amount equal to the annual fee for complying with all the terms and conditions contained in GOPA including the timely payment of due annual fee. It is pertinent to mention here that in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, there is no requirement of signing the GOPA; however, it was recommended that the authorised entity/applicant entity, upon being the successful bidder would be required to furnish the BG for an amount equal to the annual fee, during the process of assignment of frequency.

3.180 In respect of PBG, the Authority in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 mentioned that '*Bank Guarantee is not applicable for grant of service authorisation for Terrestrial Radio Service. However, the Bank Guarantee and the Entry Fee shall be governed by the conditions of frequency assignment*'.

3.181 Accordingly, the Authority is of the view that the provisions and quantum prescribed for Earnest Money Deposit, BG, Blacklisting and Forfeitures etc., as provided in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, which have been adopted from 'Private FM Phase-III policy' are appropriate and there is no requirement to review the same at this stage.

3.182 In view of the above, **the Authority recommends that:**

a) **The Notice Inviting Application/Information Memorandum or any other guidelines/instructions should contain terms and conditions for assignment of frequency including but not limited to the process of frequency assignment, Earnest Money Deposit, Reserve Price, Roll out and other obligations, Blacklisting and Forfeitures etc. and any other relevant aspects.**

b) **Earnest Money Deposit for frequency assignment in a city should be 25% of the reserve price of that city.**

c) **A bank guarantee for an amount equal to the annual fee should be levied from successful bidders for ensuring compliance with all the terms and conditions of authorisation including timely payment of due annual fee.**

H. Processing Fee

3.183 Clause 2.3 of the 'Private FM Phase-III policy' provide the following provisions regarding application processing fee:

'The applicant shall pay a non-refundable application processing fee of Rs. 25,000/- payable to Pay and Accounts, Ministry of Information and Broadcasting, New Delhi, through a demand draft.'

3.184 Regarding application processing fee, the Authority raised the following question to seek comments of the stakeholders:

Q13. What should be the amount of application processing fee for Digital Radio Broadcast services? Please provide your suggestions with justification.

Comments of stakeholders

3.185 In response, stakeholders submitted varied comments. Some stakeholders opined that processing fee should be based on factors like technology used, infrastructure, and whether the broadcaster is established or new. While some other stakeholders submitted that the extant processing fee of Rs. 25,000 to be prescribed for digital radio.

3.186 Some stakeholders suggested that processing fee should be minimal to cover the cost of processing only. It has been submitted that processing fee should be kept low so that broadcasters are motivated to adopt digital radio broadcasting.

3.187 A few stakeholders proposed a differential processing fee based on city categories such as:

i. Rs. 5000 for D-category cities to support local broadcasters
ii. Rs. 7000 for C-category cities to attract moderate market players
iii. continuation of the existing processing fee for B-category cities
iv. slightly higher fee for A-category cities to ensure participation by serious applicants

Analysis

3.188 As per 'Private FM Phase-III policy', for participating in the auction process for radio channels an entity has to submit an application to MIB in the prescribed format along with requisite

documents. MIB processes the application for checking eligibility criteria, financial competence etc. For this purpose, an application processing fee of Rs. 25,000 has been prescribed in 'Private FM Phase-III policy'.

3.189 TRAI in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 has harmonised the processing fee at Rs. 10,000 among all the broadcasting services for obtaining grant of service authorisation. Therefore, Rs. 10,000 as application processing fee has also been recommended for the entities of 'Terrestrial Radio Service' (which also covers digital radio broadcasting).

3.190 The Authority has noted that as per Private FM Phase-III policy', an application processing fee of Rs. 25,000 was required to be paid along with application for participating in the auction process. As per existing Phase III policy guidelines, permission is bundled with frequency assignment. Therefore, application processing fee of Rs. 25,000 is for both grant of authorisation and frequency assignment. In the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, it has been recommended to unbundle the service authorisation from frequency assignment. Accordingly, the Authority is of the view that the application processing fee of Rs. 10000 is reasonable for grant of authorisation. However, there should be separate processing fee for frequency assignment which should be Rs. 5,000.

3.191 Accordingly, **the Authority recommends that**:

a) Processing fee for the grant of authorisation for digital radio broadcasting should be Rs. 10,000.

b) Application processing fee for frequency assignment for digital radio broadcasting should be Rs. 5,000.

I. Requirement to adhere to time schedule

3.192 To ensure the timely roll out of the radio broadcasting services, the policy guidelines should include a clear timeline outlining the steps and deadlines for setting up a radio channel. Therefore, in the CP, stakeholders were asked if the provisions regarding the time schedule for signing of authorisation and operationalisation of radio channel as prescribed in 'Private FM Phase-III policy' should be adopted for Digital Radio Broadcasting services.

'Q15. Should the provisions regarding the time schedule for signing of authorisation and operationalisation of radio channel as prescribed in existing policy guidelines be adopted for Digital Radio Broadcasting services? If not, please suggest with justification the changes required in the time schedule for signing of authorisation and operationalisation for channels for Digital Radio Broadcasting services.'

Comments of stakeholders

3.193 In response, some stakeholders opined that the timeline should allow sufficient time for broadcasters to transition and set up their digital infrastructure effectively. They further added that any adjustments necessary to align with

technological advancements and industry practices should be left to TRAI's discretion.

3.194 One stakeholder suggested that broadcasters must be mandated to operationalise the digital service within one year of the permission.

3.195 A few stakeholders opined that the same policy could be implemented for digital radio as well.

3.196 One stakeholder proposed that broadcasters who have received authorisation for the use of spectrum should have a reasonable time to deliver their service. And if the assigned spectrum doesn't get used within that reasonable period, it should be repealed.

Analysis

3.197 As per 'Private FM Phase-III policy', detailed timelines have been prescribed for various activities, which is reproduced below in Table 3.3. The maximum period allowed for operationalisation of FM channel is 24 months. Here operationalisation implies commercial launch of services which include broadcasting of one analog FM channel.

Table 3.3: **Time schedules for various activities as per 'Private FM Phase-III policy'**

S. No.	Activity	Period of completion from issue of LOI				
		For cities where vacant channel of Ph-II or additional channel in city of Ph-II, where CTI	For cities where P.B. LTI is available	For cities where suitable LTI other than P.B. is available	For cities where no suitable LTI is readily available	Remarks

		had been created				
1.	Signing of agreement and making payment to LTI provider	60 days	90 days	120 days	150 days	
2.	Appointment of mutually agreed CTI creator, signing of agreement and making payment	90 days	90 days(x) (120 days) (+)	90 days(x) (120 days) (+)	90 days(x) (120 days) (+)	(x) & (+) Please refer to N.B. below
3.	Signing of GOPA with M/o I & B	6 months	6 months	9 months	10 months	
4.	Creation of CTI	12 months	12 months	18 months	24 months	
5.	Operationalisation of FM Channel	12 months	18 months	18 months	24 months	
(x) **N.B.** In case the LOI holders of a city do not mutually agree upon appointment of a CTI integrator, enter into agreement and make payment of their share of CTI to the integrator within a period of 90 days of issue of LOI, then BECIL will automatically be mandated to be their CTI integrator and periods as indicated vide (+) will be applicable for entering into agreement with BECIL and making necessary payments of the share of each LOI holder for creation of CTI to BECIL.						

3.198 The Authority is of the view that requirement of implementation of digital radio broadcasting infrastructure will depend on the technology selected for deployment and will vary from city to city. The CTI requirements will depend on choice of technology, the existing transmission set up used by existing broadcasters, number of existing broadcasters who decide to migrate, and the number of new channels auctioned. However, the broad timelines for each activity shall be similar to those mentioned in table 3.3 above such that the channel becomes operational within a period of 24 months from the date of completion of auction process. In case of digital radio,

operationalisation of services would mean commercial launch of 1 Analog, 3 Digital channels and 1 data channel.

3.199 Accordingly, **the Authority recommends the following timelines for each activity for operationalisation of a digital radio channel:**

S.No.	Activity	Timelines of activities from completion of Auction process			
		For cities where Prasar Bharati LTI is available	For cities where suitable LTI other than Prasar Bharati is available	For cities where no suitable LTI is readily available	Remarks
1.	Signing of agreement and making payment to LTI provider	90 days	120 days	150 days	
2.	Appointment of mutually agreed CTI creator, signing of agreement and making payment	90 days(x) (120 days) (+)	90 days(x) (120 days) (+)	90 days(x) (120 days) (+)	(x) & (+) Please refer to N.B. below
3.	Creation of CTI	12 months	18 months	24 months	
4.	Operationalisation of digital radio channel	18 months	18 months	24 months	
(x) N.B. In case the Authorised entities of a city do not mutually agree upon appointment of a CTI integrator, enter into agreement and make payment of their share of CTI to the integrator within a period of 90 days of completion of auction process, then BECIL will automatically be					

mandated to be their CTI integrator and periods as indicated vide (+) will be applicable for entering into agreement with BECIL and making necessary payments of the share of each Authorised entities for creation of CTI to BECIL.

J. Annual Fee

3.200 As per 'Private FM Phase-III policy', the permission holder needs to pay an Annual Fee to the Government, calculated as 4% of Gross Revenue (GR) or 2.5% of Non-Refundable One Time Entry Fee (NOTEF) for the concerned city, whichever is higher.

3.201 However, the permission holders in the States of North East (i.e. Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim and Tripura,) and Jammu & Kashmir (J&K) and island territories (i.e., Andaman and Nicobar islands and Lakshadweep) are required to pay an Annual Fee @ 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. This special provision is designed to account for the unique terrain and socio-economic conditions in these states and UTs.

3.202 Clause 6.2 of 'Private FM Phase-III policy' defines 'Gross Revenue' as:

> *'Gross Revenue for this purpose 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. Gross Revenue shall, therefore, be*

calculated, without deduction of taxes and agency commission, on the basis of billing rates, net of discounts to advertisers. Barter advertising contracts shall also be included in the gross revenues on the basis of relevant billing rates. In the case of a permission holder providing or receiving goods and services from other companies that are owned or controlled by the owners of the permission holder, all such transactions shall be valued at normal commercial rates and included in the profit and loss account of the permission holder to calculate its gross revenue.'

3.203 TRAI in its Recommendations on 'Issues related to FM Radio Broadcasting' issued on 5th September 2023[25] discussed that linking annual fee to NOTEF has resulted in significantly higher license/annual fees in some cities. Moreover, the definition of GR prescribed in 'Private FM Phase-III policy' included taxes. Therefore, the Authority *inter alia*, recommended the revision of the license fee as under:

'The Authority recommends that the annual license fee of a FM radio channel should be de-linked from Non-Refundable One Time Entry Fee (NOTEF). The license fee should be calculated as 4% of the Gross Revenue (GR) of the FM radio channel during the respective financial year. GST should be excluded from Gross Revenue (GR).'

3.204 Considering the recommendations, MIB vide its Order dated 10th September 2024[26], amended the 'Private FM Phase-III policy', providing the following amendments for Annual Fee:

[25] https://www.trai.gov.in/sites/default/files/2024-09/Recommendation_05092023.pdf

[26] https://mib.gov.in/sites/default/files/2024-12/fmpolicy_consolidated_1.pdf

'6.1(aa). Notwithstanding the provision in Clause 6.1 (a) and subject to provision contained in 6.1 (ba); the Permission holder in uncovered new cities under Batch-III FM Phase-III auction shall be liable to pay an Annual Fee to the Government of India every year charged @ 4% of Gross Revenue of its FM radio channel for the financial year for the concerned city excluding Goods and Service Tax. Other Clauses of these policy guidelines in so far, they relate to the permission holder in uncovered new cities under Batch III FM Phase Ill, shall be read accordingly.

6.1(ba). The Permission holder in the uncovered new cities in the States of North of East i.e., Manipur, Meghalaya, Mizoram, Nagaland and Tripura; Union Territories Jammu & Kashmir; and island territories (i.e, Andaman and Nicobar islands and Lakshadweep)under Batch-III FM Phase-III auction will be required to pay an Annual Fee to the Government of India charged @ 2% of Gross Revenue excluding Goods and Service tax for each year 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. Other Clauses of these policy guidelines for such permission holders shall be read accordingly.'

3.205 MIB has accepted the above recommendations for FM radio channels in uncovered new cities to be auctioned under Batch III of FM Phase-III and notified the amendments in 'Private FM Phase-III policy' on 10th September 2024. However, these amendments have not been made applicable to the existing operational FM radio channels. In order to encourage migration of existing radio channels to migrate to digital radio broadcasting, the provision of levying annual license fee only

on GR may need to be extended to existing operational FM radio channels who migrate to digital radio broadcasting.

3.206 In this background, the Authority raised the following questions to seek comments from the stakeholders:

Q16. What should be the provisions relating to annual fee including payment methodology be adopted for digital radio broadcasting services? Provide your suggestions with detailed justification.

Q17. Should there be a minimum amount of annual fee for digital radio broadcasting services? What should be the criteria for deciding such minimum annual fee? Provide your suggestions with detailed justification.

Q18. Do you agree that the amended provisions of calculating annual fee as 4% of GR only and de-linking it from Non-Refundable One Time Entry Fee (NOTEF), be made applicable to existing operational FM radio channels, who migrate to digital radio broadcasting?

Q19. What should be the definition of Gross Revenue (GR) to be adopted for digital radio broadcasting services? Provide your suggestions with detailed justification.

Comments of stakeholders

3.207 In response to Q16, stakeholders have different views. Some stakeholders opined that a fee of 4% of net revenues excluding GST may be applied. While some other stakeholders commented that no additional annual fee for the digital service

should be applied for a few years (say 5 years) till the development and roll-out of digital reception infrastructure. Another set of stakeholders proposed that a minimal fee with an increasing sliding scale as the listener base and commercial revenues increase. One of the FM radio broadcasters opined that no separate fee should be charged for digital radio until the full transition from analog to digital is complete.

3.208 In response to Q17, some stakeholders opined that there should be no minimum annual fee.

3.209 In response to Q18, most of the stakeholders agreed with the given proposition of delinking calculation of Annual Fee from NOTEF.

3.210 In response Q19, a stakeholder suggested that GR should exclude GST collected on behalf of the Government and actually paid to the Government. Other stakeholders have opined that Gross Revenue should mean net revenue billed by radio operations, excluding GST. One of the stakeholders proposed that GR should include advertisement revenue, excluding taxes, discounts, and commissions.

Analysis

3.211 As discussed above, the Authority has already recommended in its recommendations on 'Issues related to FM Radio Broadcasting' issued on 5th September 2023 for delinking of annual license fee of a FM radio channel from NOTEF. Therefore, the issue of minimum annual fee and criteria for deciding such minimum annual fee is not applicable in the present scenario. It was further recommended that GST should be excluded from GR, while arriving at the calculation of the annual license fee.

3.212 Accepting the same, MIB released an amendment dated 10th September 2024, wherein the annual fee has been delinked from the NOTEF. In the uncovered 234 new cities under Batch-III FM Phase-III auction, the permission holder needs to pay an Annual Fee of 4% of GR (excluding GST). Permission holders in uncovered new cities in Northeast states, Jammu & Kashmir and island territories shall pay an Annual Fee of 2% of GR (excluding GST) for 3 years. However, these amendments have not been made applicable to the existing operational FM radio channels.

3.213 Further, after the enactment of the Telecommunications Act, 2023, the permission shall be replaced by the authorisation and accordingly, the Annual Fee shall be termed as the Authorisation Fee for radio services. The Authority, in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 mentioned for the authorised entities of 'Terrestrial Radio Service' (which also covers digital radio broadcasting):

'Now, since streaming of the radio channel has also been recommended to be added in the scope of Terrestrial Radio Service, accordingly the revenue generated from streaming shall also be included, while computing the Gross Revenue (GR). Accordingly, the quantum of annual Authorisation Fee shall be 4% of AGR for all the cities except Northeast states, Jammu & Kashmir and island territories, wherein annual Authorisation Fee shall be 2% of AGR for initial three years. The format of Statement of Revenue and Authorisation Fee for the authorised entity of Terrestrial Radio Services is prescribed in ***Schedule-II of Annexure-III****. The submission of the Statement of Revenue and Authorisation Fee to the*

Central Government shall be made end-to-end online with facility to upload all the related documents in digital mode via single window system.'

3.214 Thus, GR for a broadcaster will include revenue from all the channels- analog, digital and data channels. In case one of the channels is leased as part of infrastructure sharing, then the rental revenue accruing from such sharing would be part of GR. Regarding the minimum amount of annual license fee to be levied from new digital radio broadcasters, it may be possible that new radio broadcasters do not generate revenue from digital channels during initial period after commencing broadcasting. However, the revenues from analog channels will be similar to existing broadcasters. In such a scenario, the broadcasters may be prescribed to pay an annual fee of 4% of GR of all the radio channels, including analog, digital and data channels.

3.215 In this regard, the Authority in its recommendations on License Fee and Policy Matters of DTH Services dated 21st August 2023, recommended the following:

"2.58 the DTH operators should calculate Applicable Gross Revenue (ApGR) for arriving at the revenue calculations for license fee. ApGR should be equal to the total Gross Revenue (GR) of the licensee as reduced by the following items:

i. Revenue from activities under a license/ permission issued by Department of Telecommunications;

ii. Reimbursement, if any, from the Government; and

iii. List of other income to be excluded from GR to arrive at ApGR:

a. Income from Dividend;

b. Income from Interest;

c. Income from sale of fixed assets and securities;

d. Gains from Foreign Exchange rates fluctuations;

e. Income from property rent;

f. Insurance claims;

g. Bad Debts recovered;

h. Excess Provisions written back."

3.216 The above recommendations for DTH services have also been included in the in the 'Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025.

3.217 In view of the above, the following can be summarized as the annual fee for the entities intending to provide digital radio broadcasting:

a) The definition of GR may be adopted from 'Private FM Phase-III policy'. However, revenue from streaming of a radio channel is also to be included in the definition of GR, if permitted and streaming is being provided by the radio broadcaster.

b) Applicable Gross Revenue (ApGR) should be equal to the total Gross Revenue (GR) of the licensee as reduced by the revenue items not directly related to radio broadcasting services, which inter-alia, shall include, but not be limited, to the below:

   i. Revenue from activities under a license/ permission issued by Department of Telecommunications;

   ii. Reimbursement, if any, from the Government; and

   iii. Other Income:

      a. Income from Dividend;

b. Income from Interest;
c. Income from sale of fixed assets and securities;
d. Gains from Foreign Exchange rates fluctuations;
e. Income from property rent;
f. Insurance claims;
g. Written-off bad debts recovered;
h. Excess Provisions written back.

c) Adjusted Gross Revenue (AGR) shall be arrived at after deducting any GST paid (if GST is included as component of GR/ ApGR)

d) Accordingly, Annual/Authorisation Fee shall be:
a. 4% of AGR for all the cities
b. For city Category 'E' and 'Others' (in Northeast states, Jammu & Kashmir and island territories) – 2% of AGR for initial period of 3 years, thereafter same as above.

3.218 Accordingly, **the Authority recommends that**

a. Gross Revenue for terrestrial radio broadcasting would be the gross inflow of cash, receivables or other consideration arising in the course of ordinary activities of the Radio Broadcasting enterprise from rendering of services and from the use by others of the enterprise resources yielding rent, interest, dividend, royalties, commissions etc. Gross Revenue shall, therefore, be calculated, without deduction of taxes and agency commission, on the basis of billing rates, net of discounts to advertisers. Barter advertising contracts shall also be included in the gross revenues on the basis of relevant billing rates. In the case of a permission holder providing or receiving goods and services from other companies

that are owned or controlled by the owners of the permission holder, all such transactions shall be valued at normal commercial rates and included in the profit and loss account of the permission holder to calculate its gross revenue.

b. Revenue from streaming of a radio channel is also to be included in the definition of GR, if permitted and streaming is being provided by the radio broadcaster

c. Applicable Gross Revenue (ApGR) should be equal to the total Gross Revenue (GR) of the licensee as reduced by the revenue items not directly related to radio broadcasting services, which inter-alia, shall include, but not be limited, to the below:

i. Revenue from activities under a license/ permission issued by Department of Telecommunications;

ii. Reimbursement, if any, from the Government; and

iii. Other Income:

a. Income from Dividend;

b. Income from Interest;

c. Income from sale of fixed assets and securities;

d. Gains from Foreign Exchange rates fluctuations;

e. Income from property rent;

f. Insurance claims;

g. Written-off bad debts recovered;

h. Excess Provisions written back.

d. Adjusted Gross Revenue (AGR) shall be arrived at after deducting any GST paid (if GST is included as component of GR/ ApGR)

e. The annual authorisation / license fee for digital radio broadcasting should be calculated as 4% of the Adjusted Gross Revenue (AGR) of the radio channel during the respective financial year. For cities of 'Others' category (in border and hilly areas of NE, J&K, Ladakh & Island Territory) and 'E' Category, annual/authorisation fee of 2% of Adjusted Gross Revenue (AGR) should apply for the initial three years, after which annual/authorisation fee at 4% of AGR should be made applicable.

K. Restriction on multiple permissions in a city

3.219 Clause 7 of 'Private FM Phase-III policy' stipulate following restrictions on the ownership of multiple channels in a city by a radio broadcaster:

> *"**7. Restrictions on Multiple permissions in a city and other conditions**:*
> *7.1 Every applicant shall be allowed to run not more than 40% of the total channels in a city subject to a minimum of three different operators in the city. However, in case the 40% figure is a decimal, it will be rounded off to the nearest whole number."*
>
> *Note(1): The channels allotted to the following categories of companies would be reckoned together for the purpose of calculating the total channels allocated to an entity*
>
> *(a) Subsidiary company of any applicant/allottee;*
> *(b) Holding company of any applicant/allottee:*
> *(c) Companies with the Same Management as that of applicant/ allottee*

(d) More than one Inter-Connected Undertaking with regard to the applicant/ allottee."

Note (2) In respect of existing license/ permission/ LOI holders, the license(s)/ permission(s)/ LOI(s) already held by them shall also be taken into consideration for calculating the 40% limit."

3.220 Accordingly, in the CP, stakeholders were asked whether the provisions regarding the restrictions on multiple permissions in a city should be adopted for Digital Radio Broadcasting services.

'Q20. Should the provisions regarding the restrictions on multiple permissions in a city be adopted for Digital Radio Broadcasting services? Please provide your suggestions with detailed justification.'

3.221 In case of digital broadcasting, multiple channels are available on single frequency. Accordingly, stakeholders were also asked to give their comments as to whether frequency should be considered, or multiple channels operated on single frequency should be considered for the purpose of putting restriction on multiple channels in a city.

Q21. Should the frequency be considered, or multiple channels operated on single frequency be considered for the purpose of putting restriction on multiple channels in a city? Please provide your suggestions with detailed justification.

Comments of stakeholders

3.222 In response, some stakeholders suggested that provisions regarding restriction on multiple permissions in a city should be adopted for Digital Radio broadcasting services ensuring a

minimum of three different broadcasters. They opined that this would help prevent market saturation and promote healthy competition among broadcasters.

3.223 One stakeholder suggested that limit on both number of frequencies and number of channels need to be within the 40 percent rule per city.

3.224 One stakeholder opined that restrictions should focus on channel ownership, not on frequency ownership, because multiplexing allows several channels to share the same frequency.

3.225 Some stakeholders were not in favour of adoption of those provisions regarding restriction on multiple permissions in a city for digital radio broadcasting services. According to them, in order to offer a larger number of channels and to stimulate the uptake of receiver sales, certain measures, which would limit media companies to expand their programme portfolio, could be relaxed.

Analysis

3.226 The FM Phase III policy stipulate restrictions on ownership of multiple channels in a city by radio broadcasters to 40% of the total channels subject to a minimum of 3 broadcasters in a city. In line with the said policy, the Authority is of the view that in order to prevent market dominance of any Radio broadcaster, it is necessary to ensure presence of at least 3 Radio broadcasters in a city.

3.227 In this regard, the Authority, in its recommendations on Framework for Service Authorisations for provision of

Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 recommended the following:

"The Authorised Entity shall be allowed to run not more than 40% of the total channels in a city subject to a minimum of three different operators in the city. However, in case the 40% figure is a decimal, it will be rounded off to the nearest whole number.

Note (1): The channels allotted to the following categories of the companies would be reckoned together for the purpose of calculating the total channels allotted to an entity:

(a) Subsidiary company of any applicant/allottee;
(b) Holding company of any applicant/allottee;
(c) Companies with the Same Management as that of applicant/allottee;
(d) More than one Inter-Connected Undertaking with regard to the applicant/allottee.

Note (2): In respect of existing license/permission/LoI holders, the license(s)/permission(s)/LoI(s) already held by them shall also be taken into consideration for calculating the 40% limit."

3.228 In the case of digital radio broadcasting, a broadcaster providing simulcast services can offer programs on one analog channel, three digital channels, and one data channel, effectively delivering five distinct services under a single license or authorisation. This license corresponds to what is traditionally known as a spot frequency in analog FM broadcasting. Extending this concept to digital radio, a successful licensee essentially acquires one spot frequency that allows operation of these five programming services. For

regulatory purposes, this approach means that whether the digital channels are allocated adjacent to the analog frequency—as in HD Radio—or separate from it—as in DRM—the entire suite of channels falls under one spot frequency.

3.229 After careful consideration of stakeholder inputs, it seems appropriate that while considering market dominance or restrictions on multiple channel ownership in a city, the focus should be on the number of spot frequencies held by each broadcaster rather than the number of individual channels operated. Restricting spot frequencies rather than individual channels ensures that a minimum of three independent broadcasters can coexist in the market, fostering healthy competition. To illustrate this, in a hypothetical situation in a Category A city with six private broadcasters where one broadcaster migrates to digital and no new broadcasters acquire digital licenses, there would be 9 channels in total. If market share is measured on per-channel basis, one digital broadcaster would hold roughly 4 out of 9, i.e. 44 % of market share; while if measured by spot frequencies, this translates to about 1 out of 6, i.e., 16.67%. If multiple channels ownership is restricted to 40%, the interested analog radio broadcasters will not be allowed to migrate. A policy that restricts ownership based solely on channel count in such scenarios would artificially limit competition and fail to reflect the technological reality that multiple channels can coexist on a single spot frequency.

3.230 In view of these considerations, the Authority is of the view that the restrictions on multiple channel ownership for digital radio broadcasters be based on the number of spot frequencies held, in alignment with the principles set forth in the "Framework for Service Authorisations for Provision of Broadcasting

Services under the Telecommunications Act, 2023" dated 21st February 2025.

3.231 In summary, the recommended regulatory stance is to manage market dominance and multiple ownership primarily through limits on spot frequencies held per city, rather than the number of channels operated. This will enable coexistence of a minimum of three broadcasters per city, encourage diversity in programming, and prevent market concentration, while allowing broadcasters to leverage the full capacity of digital transmission technology to maximize their service offerings under each assigned frequency.

3.232 HD Radio requires 200 KHz for analog transmission and an additional 200 KHz for digital transmission, while DRM needs 200 KHz for analog transmission and 100 KHz for digital transmission. Regardless of the technology, each setup allows for 1 analog channel, 3 digital channels, and 1 data channel. In HD Radio, the additional 200 KHz must be placed in blocks of 100 KHz adjacent to each side of the existing analog frequency. Whereas DRM's 100 KHz digital block can be placed anywhere within the FM band and doesn't need to be adjacent to the analog frequency. The whole set of frequencies whether 300 KHz for DRM or 400 KHz for HD Radio, required for simulcast, may be bundled with spot frequencies (centre of analog frequency) in the process of auction of spectrum for digital radio broadcasting. Here, 'spot frequency' refers to the central frequency used for analog FM broadcasting.

3.233 Therefore, **the Authority recommends that an Authorised Entity should not be allowed to own more than 40% of the total spot frequencies in a city subject to a minimum of three different broadcasters in the city. However, in case**

the 40% figure is a decimal, it will be rounded off to the nearest whole number.

Spot Frequency in HD Radio refers to the central analog FM frequency (200 KHz) around which HD Radio places its digital components. HD Radio requires an additional 200 KHz (two 100 KHz blocks) placed adjacent to either side of the analog frequency, forming a 400 KHz simulcast block.

Spot Frequency in DRM refers to the central analog FM frequency (200 KHz). However, the 100 KHz digital block can be placed anywhere within the FM band (88–108 MHz), not necessarily adjacent to the analog frequency. The total spectrum required for simulcast is 300 KHz, but the digital component is flexibly positioned.

Note (1): The spot frequencies permitted to the following categories of the companies would be reckoned together for the purpose of calculating the total spot frequencies permitted to an entity:

a. Subsidiary company of any applicant/allottee;
b. Holding company of any applicant/allottee;
c. Companies with the Same Management as that of applicant/allottee;
d. More than one Inter-Connected Undertaking with regard to the applicant/allottee.

Note (2): In respect of existing license/permission/LoI holders, the spot frequencies already held by them should also be taken into consideration for calculating the 40% limit.

Note (3): In respect of simulcast, the above restrictions should apply subject to the condition that each broadcaster may be allowed to broadcast as many channels as possible within the assigned spot frequency, which the technology permits.

L. Optimum number of channels for auction

3.234 MIB, in its reference, stated that the frequency planning committee it constituted has identified new channels to support the smooth roll out of digital radio broadcasting under Phase-I in 13 cities classified under A+ and A categories, along with the maximum number of permissible new channels in each city. MIB has requested TRAI's recommendations on the maximum number of channels that can be auctioned in each city of category A+ and A.

3.235 Accordingly, in the CP, stakeholders were asked if they agree if the maximum number of channels that have been identified by MIB in category A+ and A cities as given in MIB's reference should be put up for auction for digital radio broadcasting. In case of disagreement, stakeholders were asked to suggest the criteria for deciding the maximum number of channels in each of the cities mentioned in MIB's reference.

Q22. Do you agree that the maximum number of channels that has been identified by MIB in category A+ and A cities as given in Table 3 should be put up for auction for digital radio broadcasting? If not, please give your suggestions with detailed justification and criteria for deciding the maximum number of channels in each of the cities mentioned in Table 3 above.

Comments of stakeholders

3.236 In response, one stakeholder was of the opinion that TRAI is best positioned to evaluate the dynamic market conditions, technological advancements to determine the optimal number of channels for auction in each city.

3.237 Some stakeholders suggested that a digital radio allotment planning process should access demand and determine the appropriate number of services and frequency allotment.

3.238 One stakeholder is of the opinion that initially, digital radio could be adopted in A+, A cities by existing broadcasters. In case any frequencies remain unused, they could be auctioned to new players.

3.239 One stakeholder mentioned that adding more channels would intensify competition for advertising revenue, driving rates lower and further harming financial viability.

Analysis

3.240 In this regard, 'Private FM Phase-III policy' provides for 9 channels in category 'A+' cities and 6 channels in category 'A' cities, except for Bangalore and Hyderabad where 8 channels are provided. In case of category 'B' and 'C' cities, 4 channels are provided; and for category 'D' and 'Others' cities, 3 channels are provided. In view of the demand from the industry for making available a greater number of channels, MIB in August 2011 requested TRAI to consider the issue of minimum channel spacing of 800 KHz within a license service area in the FM radio sector. On examination of the issue through a consultation process, the Authority recommended that the frequencies for FM Radio channels, within a license service

area, may be released with a minimum spacing of 400 KHz instead of 800 KHz. Though Broadcast Engineering Consultants India Limited (BECIL), All India Radio, Doordarshan and Wireless Planning and Coordination (WPC) wing of Department of Telecommunication, had conducted field trials for broadcasting of FM radio channels with a minimum spacing of 400 KHz, but the same could not be implemented. Now digital Radio broadcasting technologies make it possible to provide multiple radio channels on a single frequency, which would fulfil the demand of additional channels and also lead to efficient utilization of the radio spectrum.

3.241 The Authority is of the view that introduction of digital radio broadcasting would allow the radio broadcasters to offer a variety of channels which will provide diverse content to the listeners and hence may enhance demand of Radio broadcasting. Further, all the cities of category 'A+' and 'A' have a larger and diverse population that create demand for more channels with different genres e.g. music, news, talk, folklore and in different languages. The MIB constituted committee has identified maximum number of spot frequencies (termed as channels by the Committee) technically feasible in each city which range from 4 to 14 spot frequencies in various cities.

3.242 With regard to non-availability of the device ecosystem, the Authority in its recommendations on the Frequency Spectrum in 37-37.5 GHz, 37.5-40 GHz, and 42.5-43.5 GHz bands Identified for IMT dated 4th February 2025 has recommended the following:

"2.27 (c) Owing to the non-availability of the device ecosystem in 42.5-43.5 GHz frequency range, it will be prudent that the frequency range 42.5-43.5 GHz is not put to auction in the forthcoming spectrum auction…"

3.243 Also in case of Digital radio broadcasting, the digital receiver ecosystem is developing and will take time. The Authority has also noted that in the 2025 auctions only 63 channels out of 730 channels were auctioned successfully. In such a situation, we are planning to include new digital channels in addition to existing channels. In case all the operational channels in existing cities migrate and all the new channels are bid for, it will lead to number of channels available in each city (at maximum capacity) as shown in table below:

Table 3.4: Total number of channels available in 13 cities in case all existing broadcasters migrate to digital radio, and all new frequencies become operational with simulcast

City	Category	No. of existing operational channels	No. of channels in case all existing broadcasters migrate to simulcast X	No. of new frequencies identified by MIB	No. of channels in case all new frequencies made available for auction Y	Total no. of channels available Z = X+Y
Chennai	A+	7	28	11	44	72
Delhi	A+	9	36	4	16	52
Kolkata	A+	7	28	8	32	60
Mumbai	A+	9	36	4	16	52
Ahmedabad	A	6	24	10	40	64
Bengaluru	A	8	32	8	32	64
Hyderabad	A	8	32	7	28	60

Jaipur	A	6	24	14	56	80
Kanpur	A	6	24	5	20	44
Lucknow	A	6	24	7	28	52
Nagpur	A	6	24	14	56	80
Pune	A	6	24	5	20	44
Surat	A	6	24	12	48	72

Note: Here channel mean analog and digital channel and does not include data channel.

3.244 Thus, with implementation of digital radio broadcasting in simulcast mode, there will be a large number of channels which would become available for operationalisation at one go. As noted earlier, the general ecosystem for digital radio including receiver ecosystem in the country is at a nascent stage. As evident from the table above that if all the new channels are put to auction and all existing broadcasters migrate to simulcast, the number of channels available in a city will increase from 7-9 to 52-72 in category A+ cities and from 6-8 to 44-80 in category A cities. Such a large expansion of service in a scenario, where consumer device ecosystem is non-existent is not likely to be tenable. The present exercise is for establishing a new technology in the country wherein multiple stakeholders are involved. This is akin to a pilot project, hence it would be prudent to limit the addition of new spot frequencies at this stage, more so as existing broadcasters will also be eligible to add digital channels.

3.245 In case only one new spot frequency is auctioned, it will limit the evaluation of performance to one broadcaster only. Further, if a new CTI is to be established, the cost for the broadcaster will become high in absence of availability of other broadcasters for sharing. Hence, it will be prudent to limit the

auction to two new spot frequencies (channels as mentioned in MIB reference) (enabling 1 Analog + 3 Digital + 1 Data channel/Service) per city for digital radio broadcasting at this stage so that the two new competing broadcasters enter in each city to give adequate experience on the rolling out of new technology. This will be in addition to permitting voluntary migration to existing FM Radio broadcasters. Once, services are rolled out by initial assignees and the ecosystem of digital radio develops, the value of spectrum for digital broadcasting may be realised in subsequent phase of auction.

3.246 Accordingly, **the Authority recommends that two new spot frequencies for digital radio broadcasting in each city out of total spot frequencies identified by MIB in category A+ and A cities should be auctioned at this stage. Auction of remaining frequencies in these cities to be considered after reviewing outcome of this round and the progress of development and proliferation of receiver device ecosystem.**

M. Programme Content/Genre

3.247 Clause 12 of 'Private FM Phase-III policy' provides provisions regarding the programme content broadcasted on the radio channels.

3.248 Further, TRAI in its recommendations[27] on 'Issues related to FM Radio Broadcasting' issued on 5th September 2023 *inter alia* recommended the following:

'Private FM Radio Operators should be allowed to broadcast news and current affairs programs, limited to 10 minutes in each clock hour.'

[27] https://www.trai.gov.in/sites/default/files/2024-09/Recommendation_05092023.pdf

'The program code of conduct as applicable to All India Radio for news content may also be applied to Private FM Radio channels.'

The recommendations are presently under consideration of the Government.

3.249 Accordingly, the Authority raised the following questions to seek comments from the stakeholders:

Q23. Should the provisions regarding the Programme Content provided in the existing policy guidelines be adopted for Digital Radio Broadcasting?'

Q24. Should digital radio broadcasters be allowed to broadcast self-curated news and current affairs programs as recommended by TRAI in its recommendations dated 5th September 2023? If yes, what should be the duration of such programs. Please give your suggestions with detailed justifications.

Comments of stakeholders

3.250 In response to Q23, most of the stakeholders have favored for adopting the provisions of programme content from 'Private FM Phase-III policy'. Whereas some other stakeholders suggested that a balanced approach, allowing up to 20% of the daily broadcast time for news content, would help ensure programming diversity.

3.251 In response to Q24, most of the stakeholders have favored allowing digital radio broadcasters to air news and current

affairs programs as per TRAI recommendations. However, they added that the duration of such programs should be based on market demand and audience preferences.

3.252 Some stakeholders opined that private broadcasters should be allowed to carry news and current affairs content not only in audio but also in text format. They further suggested that if the Government has reservations regarding self-curated news and current affairs content by private broadcasters, then they should at least be permitted to carry such content in textual form across multiple languages.

3.253 Few stakeholders suggested that the optimal approach may involve limiting news to brief segments every hour (3-10 minutes) during regular programming, with extended bulletins reserved for specific slots like morning shows.

Analysis

3.254 The Authority has noted the comments of the stakeholders. The Authority has provided detailed terms and conditions on programme content as well as for news and current affairs for 'Terrestrial Radio Service' (which also covers digital radio broadcasting) in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025.

3.255 During the consultation process of the authorisation framework, the stakeholders in their comments submitted to define 'Public Interest Announcements'. The Authority considered the comments of stakeholders and is of the view

that 'Public Interest Announcements' should be specified for radio also in line with that of the public service broadcasting obligation for television channels and the duration of broadcast mandated may be reduced from one hour to 30 minutes.

3.256 Accordingly, in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 recommended terms and conditions on programme content for 'Terrestrial Radio Service' (which also covers digital radio broadcasting) are as under:

*"**Programme Content***

(1) The Authorised Entity shall follow the Programme and Advertising Code which the Central Government may notify from time to time.

(2) The Authorised Entity shall undertake public service broadcasting for maximum period of 30 minutes per day as may be required by the Central Government/concerned State Government. Suitable or proportional time slots interspersed during the day shall be earmarked for this purpose. In case the total demand of Central Government and the State Government exceeds 30 minutes per day, the concerned State Government shall be eligible for the broadcasting period remaining after meeting the demand of the Central Government. Public service broadcasting shall contain themes of national importance and of social relevance, including the following:

(a) Education and spread of literacy;
(b) Agriculture and rural development;
(c) Health and Family welfare;
(d) Science and Technology;

(e) Welfare of Women;

(f) Welfare of the Weaker Sections of the Society;

(g) Protection of Environment and of Cultural Heritage; and

(h) National Integration

(3) The Authorised Entity shall ensure that at least fifty percent (50%) of the programmes broadcast by it are produced in India.

(4) In case of multiple radio channels permitted to an entity/ related entity(ies) in a city, the attempt shall be to distinguish programming on each channel based on era of music, language of music, genre of music etc. to the extent possible to ensure diversity of programming to the listeners."

3.257 In respect of news and current affairs programmes, the Authority has included its earlier recommendations for allowing radio broadcasters to broadcast news and current affairs limited to 10 minutes in each clock hour. Further, based on comments received during the consultation process of authorisation framework, broadcast of live coverage of sports has also been included in the terms and conditions of Terrestrial Radio Service' (which also covers digital radio broadcasting).

3.258 Accordingly, in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 the recommended terms and conditions on news and current affairs programmes for 'Terrestrial Radio Service' (which also covers digital radio broadcasting) are as follows:

*"**News and Current Affairs Programs***

(1) The Authorised Entity shall be allowed to broadcast news and current affairs programs, limited to 10 minutes in each clock hour.

(2) The Authorised Entity shall also 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.

(3) The broadcast pertaining to the following categories shall be treated as non-news and current affairs and shall therefore be permissible:

(a) Information pertaining to sporting events including broadcast of Live coverage;
(b) Information pertaining to Traffic and Weather;
(c) Information pertaining to and coverage of cultural events, festivals;
(d) Coverage of topics pertaining to examinations, results, admissions, career counselling;
(e) Availability of employment opportunities;
(f) Public announcements pertaining to civic amenities like electricity, water supply, natural calamities, health alerts etc. as provided by the local administration;
(g) Such other categories not authorised at present, that may subsequently be specifically authorised by the Central Government from time to time."

3.259 In view of the above, **the Authority recommends that the terms and conditions recommended for 'Programme Content' and 'News and Current Affairs' for the authorisation of 'Terrestrial Radio Service' in the**

recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' issued on 21st February 2025 should be adopted for digital radio broadcasting.

N. Genres of programmes that a broadcaster can provide on multiple channels

3.260 'Private FM Phase-III policy' allow a radio broadcaster with multiple channels in a city to air distinct programs on each channel, based on factors such as the era of music, language of music, genre of music, etc., to ensure diversity of programming for the listener. However, very limited Radio broadcasters have multiple channels in a city.

3.261 In the CP, stakeholders were also asked if there is a need to prescribe the guidelines for genres of programmes that a broadcaster can provide on multiple channels available on a single frequency allocated to it for digital radio broadcastings. In case they favour it, they were asked about the genres of channels permitted in digital broadcasting with detailed justifications.

Q25. Is there a need to prescribe the guidelines for genres of programmes that a broadcaster can provide on multiple channels available on a single frequency allocated to it for digital radio broadcasting? If yes, what should be the genres of channels permitted in digital broadcasting? Please give your suggestions with detailed justifications.

Comments of stakeholders

3.262 In response, one stakeholder has suggested that broadcasters should have the flexibility to determine their own programming genres for multiple channels on a single digital frequency.

3.263 One stakeholder suggested that it should be market driven within the content requirements for common decency.

3.264 Another stakeholder has suggested wide range of program genres, such as music, talk shows, news and information, sports, comedy shows, drama and radio plays, educational programs, cultural programs.

3.265 An individual stakeholder was of the opinion that diverse and engaging genres such as family and children's programming, radio dramas, newly created music, educational content, and other varied formats similar to those offered by AIR could be considered.

3.266 One stakeholder suggested that an over-supply on certain genres on the account of under-represented but also desired content should be regulated on a first-come first-served basis.

Analysis

3.267 In analog radio broadcasting, the technology limits each frequency to carry only one channel at a time. This restriction reduces the variety of content made available to listeners, as it depends on the number of available frequencies. Consequently, listeners typically have fewer choices and less flexibility in their radio experience, with each frequency assigned to a single broadcast stream.

3.268 In contrast, digital radio broadcasting represents a major improvement in the use of frequencies. Through the use of digital encoding techniques, radio broadcasters can broadcast multiple channels at the same time over a single (spot) frequency. This will enable a broadcaster to deliver a wider range of programming without the need for more frequencies. In this context, a radio broadcaster might offer content from various genres, such as Music, Talk shows, News and Current Affairs.

3.269 In this regard, the Authority, in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 recommended the following:

> *"In case of multiple radio channels permitted to an entity/related entity(ies) in a city, the attempt shall be to distinguish programming on each channel based on era of music, language of music, genre of music etc. to the extent possible to ensure diversity of programming to the listeners."*

3.270 The Authority is of the view that in order to drive innovation and ensure diversity of programming the genres of channels in case of digital Radio broadcasting should be left to the market forces. It may enable Radio broadcasters to provide programs based on the varying demand of the listeners.

3.271 Accordingly, **the Authority recommends that in case of multiple radio channels available on one spot frequency to an entity/related entity(ies) in a city, the attempt should be to distinguish programming on each channel based on era of music, language of music, genre of music etc. to the**

extent possible to ensure diversity of programming to the listeners. However, the choice of genres should be left to the market forces.

O. Provisions related to Penalties

3.272 To ensure adherence to the terms and conditions of the policy guidelines by radio broadcasters, penal provisions need to be prescribed. 'Private FM Phase-III policy' contains following penal provisions:

i. Clause 14 covering provisions regarding penalty for non-operationalisation of radio channel within stipulated timelines.
ii. Clause 24 covering provisions regarding penalties for contravention to the Programme and Advertising Codes.

3.273 In the Consultation Paper, the Authority raised the following question to seek stakeholders' comments:

'Q26. Should the provisions regarding penalties prescribed in extant guidelines be adopted for digital radio broadcasting? If not, what are your suggestions for modifications? Please give your suggestions with detailed justification for each.'

Comments of stakeholders

3.274 In response to Q26, most of the stakeholders favoured for adopting the penal provisions as provided in 'Private FM Phase-III policy' for penalties.

3.275 A few stakeholders suggested the following:

a) for advertisement-related violations, such as misleading or deceptive advertisements, penalties could be imposed under the Consumer Protection Act, 2019.
b) For violations related to programme content, penalties could be enforced in accordance with the applicable provisions of the Programme Code.
c) In cases involving non-operationalisation of a channel within the prescribed timeline, penalties could include financial fines or debarment.

Analysis

3.276 'Private FM Phase-III policy' prescribe the following:

'12.1 The permission holder shall follow the same 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.'

3.277 Regarding violation of the conditions of Programme and Advertising Codes, provision 24.1 of 'Private FM Phase-III policy' for private broadcasters is reproduced below:

"24.1 In case there is any violation of conditions cited in 11.1, 11.2 and 12.1, Government may suo motto or on basis of complaints take cognisance and place the matter before the ***Inter-ministerial Committees on Programme and Advertising Codes***[28] *for recommending appropriate*

[28] Sub-rule (ii) of rule 19 of the Cable Television Networks (Amendment) Rules, 2021 empowers the Central Government to establish an Inter-Departmental Committee (IDC) for hearing grievances or complaints. The Rules provide inter-alia that in order to ensure observance and adherence to Programme Code and Advertising Code by the broadcaster and to address the grievance or complaint, there shall be a three-level structure (complaint redressal structure).

penalties. On the recommendation of the Committee a decision to impose penalties shall be taken. However, before the imposition of a penalty the Permission Holder shall be given an opportunity to represent its case. The Ministry shall however be at liberty to specify any other mechanism to take action for such violations."

3.278 In view of above, it is observed that the private FM radio broadcasters are required to adhere to the Programme Code and Advertising Code as laid down by Prasar Bharati for All India Radio.

3.279 In this regard, the Authority in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, is of the view that it would be more prudent that a standard Programme Code and Advertisement Code for Radio services is laid down by the Central Government and All India Radio and other radio broadcasters mandatorily comply with the same. Accordingly, the Central Government should also prescribe Programme Code and Advertisement Code for radio broadcasting, akin to the Programme Code and Advertisement Code prescribed under Cable Television Network (Rules), 1994 for television broadcasting. The Programme Code and Advertisement Code so prescribed shall be made applicable to all radio broadcasters including All India Radio. Accordingly, the Authority recommended the following:

The first two levels being the broadcaster and the self-regulatory body of which the broadcaster is a member of. The IDC has been constituted through MIB Order 14th July 2021, detailing the periodicity of meeting, complaints to be addressed and recommendations to be made to the Central Government. The Committee shall also deal with violations of the Programme Code and Advertising Code on all other platforms as DTH and private FM radio channels.

[Source: https://mib.gov.in/sites/default/files/2024-05/order-of-constitutusion-of-idc.pdf]

"The Central Government should notify separate Programme Code and Advertisement Code for Radio Broadcasting Services. The said Programme Code and Advertisement Code should also be made applicable to All India Radio. The violation of Programme Code and Advertisement Code should be governed as per provisions in these Codes.'

'The authorised entity of the Broadcasting (Television Channel Broadcasting, Television Channel Distribution, and Radio Broadcasting) Services shall also adhere to any other Orders/Directions/Advisories/Instructions issued by the Central Government from time to time."

3.280 'Private FM Phase-III policy' contain the following penal provisions for non-operationalisation of services:

"14.1 Each permission holder shall operationalize the channel and ensure completion of the activities preceding thereto within the time limits prescribed in para 5 and para 18[29], failing which the permission will be revoked, and permission holder shall be debarred from allotment of another channel in the same city for a period of five years from the date of such revocation. The frequency so released may be allotted to the next highest bidder from the waiting list if available and valid or through subsequent bidding. The permission holder shall be liable to pay one year's annual fee. The government shall be well within its right to recover the same from the Performance Bank Guarantee already submitted. No claim will be admissible against the Non-refundable OTEF paid to the Government.

[29] Timelines as reproduced in the Table 3.4 of these recommendations

14.2 The Ministry of Information & Broadcasting may also revoke the permission if the channel is closed down either continuously or intermittently for more than 180 days in any continuous period of 365 days for whatever reason."

3.281 Since the terms and conditions related to assignment of frequency as recommended in the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 to be in the form of NIA/IM, the terms and conditions on penalty for non-operationalisation of service(s) for 'Terrestrial Radio Service' (which also covers digital radio broadcasting) is provided as under:

"Penalty for Non-Operationalisation of Service(s)

(1) The Authorised Entity shall operationalize the channel and ensure completion of the activities preceding thereto within the time limits as prescribed in the conditions of frequency assignment in NIA/IM or any other guidelines/instructions issued by the Central Government.

(2) The Central Government may also revoke/withdraw the authorisation, if the channel is closed down, either continuously or intermittently, for more than 180 days within any continuous period of 365 days, for any reason."

3.282 It is essential that the operationalization of radio channels are done in a time bound manner, to ensure timely roll out of services and availability quality digital signals to the listeners. Accordingly, the Authority is of the view to prescribe penal

provisions in case channels are not operationalized in a defined time period.

3.283 In view of above, **the Authority recommends that:**

a) **The Central Government should notify separate Programme Code and Advertisement Code for Terrestrial Radio Services. The violation of Programme Code and Advertisement Code should be governed as per provisions in these Codes.**

b) **The Authorised Entity shall operationalize its services and ensure completion of the activities preceding thereto within the time limits of 24 months from the date of completion of auction process, failing which the frequency assignment will be withdrawn, and the entity shall be debarred from allotment of another spot frequency in the same city for a period of five years from the date of such withdrawal.**

c) **The Central Government may also revoke/withdraw the authorisation, if the channel is closed down, either continuously or intermittently, for more than 180 days within any continuous period of 365 days, for any reason.**

P. Common Transmission Infrastructure

3.284 Almost all the channels in 13 cities of category A+ and A were successfully auctioned and became operational during Phase-II of FM Radio broadcasting. Phase-II policy guidelines have the following provisions regarding common transmission infrastructure:

"16. Co-location:

16.1 It has been made mandatory for all Phase-II operators to co-locate transmission facilities in all the 90 cities, on terms and conditions to be prescribed separately. In 81 cities, the facilities would be co-located on existing AIR/DD towers, while in remaining 9 cities, new towers shall be got constructed by the Ministry, through Broadcast Engineering Consultants India Limited (BECIL), for the purpose…"

3.285 'Private FM Phase-III policy' mandates private radio broadcasters in a city to co-locate their transmission facilities either with infrastructure of Prasar Bharati or among themselves by creating a common transmission infrastructure (CTI). 'Private FM Phase-III policy' have following provisions regarding co-location:

'18. Co-location:

18.1 It will be mandatory for all Phase-III operators to co-locate transmission facilities in all the cities, irrespective of the fact as to whether the infrastructure of Prasar Bharati is available or not.

18.2 In cities where it is a vacant channel of Phase-II or an additional channel is proposed and CTI has been created by BECIL, Co-location at the site already chosen and utilization of CTI already created by BECIL will be mandatory.

18.3 In other cities where Prasar Bharati Infrastructure is available, co-location shall be on such existing facilities of Prasar Bharati on terms and conditions to be prescribed separately, on the existing PB towers. The successful bidders will have a choice to form a consortium and set up required CTI for that city. They will mutually decide infrastructure sharing

methodology, commercial revenue sharing mode, service level agreement and methodology for upkeep of such infrastructure.

18.4 If suitable infrastructure of Prasar Bharati is not available, successful bidders will have a choice to form a consortium and set up required land & tower infrastructure (LTI) and (CTI) for co-location of all transmitters identified for that city. They will mutually decide infrastructure sharing methodology, commercial revenue sharing mode, service level agreement and methodology for upkeep of such infrastructure.

…….'

3.286 As prescribed in Phase-II and Phase-III guidelines, CTI is already in place in category 'A+' and 'A' cities. In most cities all the FM broadcasters are operating from single CTI. In some cities multiple CTIs are present. However, this infrastructure may not be sufficient to support the additional requirements for new channels in these cities. Existing FM radio broadcasters may consider adopting simulcast of analog and digital services. In such scenarios, the current radio broadcasters will need to modify or upgrade their transmission infrastructure.

3.287 Regarding CTI, MIB in its reference has mentioned the following:

'The committee also examined the matter of co-location of these new channels with the existing C.T.I. setups. Due to technical constraints, these new channels cannot be accommodated within the existing C.T.I. setups. Therefore, a new C.T.I. setup is required for all such new channels in a given city. As far as the existing broadcasters in these cities is concerned, they may avail the facilities for simulcast/pure digital operations by modifying their existing C.T.I. setups

itself, with the condition that separate transmission of digital components are made, subject to feasibility, as defined by the respective standards. Alternatively, transmission facility for combined transmission (analogue and digital components) at the existing CTI location need to be established with additional infrastructure, subject to feasibility, or establishment of a new CTI.…'

3.288 Accordingly, in the CP, stakeholders were asked about the methodology for examination and creation of new CTI setups required for new channels including their upkeep, given the fact that existing CTI setups and towers may not have vacant space and apertures, respectively, for accommodating additional new channels in category A+ and A cities.

3.289 Stakeholders were also asked about the methodology for examination and modifications to existing CTI setups or creation of new CTI setups required for transmission of digital components/simulcast operation by existing broadcasters including its upkeep given the fact that existing CTI setups, including towers, may not support the addition of digital components without modifications.

Q27. What should be the methodology for examination and creation of new Common Transmission Infrastructure (CTI) setups required for new channels including their upkeep, given that existing CTI setups and towers may not have vacant space and apertures, respectively, for accommodating additional new channels in category A+ and A cities?'

Q28. What should be the methodology for examination and modifications to existing CTI setups or creation of new CTI setups required for transmission of digital components/ simulcast operation by existing broadcasters including its

upkeep given that existing CTI setups, including towers, may not support the addition of digital components without modifications?'

Comments of stakeholders

3.290 In response, one stakeholder has suggested that since this subject is under exclusive jurisdiction of AIR and BECIL, they may be asked to give in the methodology paper for the same along with costs. The stakeholder also suggested that exclusive jurisdiction of Prasar Bharati could be removed, and broadcasters could be allowed to set up transmission infrastructure independently.

3.291 One stakeholder is of the opinion that a separate broadcast chain will be needed alongside the existing CTI setup.

3.292 One stakeholder has suggested that OFDM signals used in HD Radio and DRM have peak power considerations, so the infrastructure must be evaluated for voltage breakdown, phase distortion, impedance match, noise, and spurious emissions.

3.293 Another stakeholder has opined that FM broadcasters should have the freedom to select their own system integrators for creating and maintaining CTI at CTI sites, rather than relying on MIB appointed integrator, BECIL.

3.294 One stakeholder has mentioned that this should be driven by financial viability. CTI could be set up by network operators or by Broadcaster Joint Venture companies.

Analysis

3.295 The Authority has noted that the key factors that govern the methodology for examination and creation of CTI for new channels are as follows:

a) Digital standard selected for transmission.
b) Classification of channels, whether dependent on existing FM CTI (category 'D') or independent (category 'I') as defined in the report of the committee by MIB.
c) Requirement of separate transmission of analog and digital components depending on the feasibility of infrastructure that is to be created at selected location in a given city.
d) Number of broadcasters operating at any selected location, and provision for future expansion.

3.296 The Authority has also noted that the key factors that govern the methodology for examination and modifications in existing CTI setups or creation of new CTI in case existing broadcasters opt for digital broadcasting, are as follows:

a) Digital standard selected for transmission.
b) Number of existing broadcasters opting for simulcast. It may be possible that all the existing FM Radio broadcasters in a given city may not opt for digital broadcasting at all.
c) Modification required in the existing CTI, if feasible.
d) Requirement of separate transmission of analog and digital components depending on the feasibility of existing infrastructure in a given city.
e) Provision for future expansion.

3.297 Technical documents[30] from international standardisation organisations (ITU, ETSI) indicate significant factors to be considered for CTI setup for Digital Radio Technologies include frequency raster, combining methods, coupler requirements,

[30] https://www.itu.int/dms_pubrec/itu-r/rec/bs/R-REC-BS.1660-9-202212-I!!PDF-E.pdf https://www.etsi.org/deliver/etsi_es/201900_201999/201980/04.03.01_60/es_201980v040301p.pdf https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-BS.2503-2022-PDF-E.pdf https://drm.org/wp-content/uploads/2024/03/DRM-Handbook-v5.1.pdf

power ratios, amplifier linearity, modulation error ratio, spectrum masks, antenna configuration, time delay of signal which differ by the technology standard used. Further location of setup, antenna placements is highly dependent on these factors. Different technology standards will require separate CTI chains, even if modifications to existing chains are considered, they have to be modified differently pertaining to the technology standard.

3.298 Considering the above factors, the Authority is of the view that the methodology for examination and creation of new CTIs as well as modification of existing CTIs, is quite varied and complex, as such, no unique solution can be provided. The system engineering for creating/modification of CTIs has to account for all the above factors and also requirements for power supply and programme feeding arrangements. Accordingly, the Authority is of the view that the task of formulating the methodology for examination and creation of new CTIs as well as modification of existing CTIs should be carried out by the concerned stakeholders themselves within a predefined timeline of three months or assigned to BECIL.

3.299 The Authority has also considered the comments of stakeholders regarding doing away with mandatory co-location with Government infrastructure. Earlier, during the consultation process on the Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023, the Authority made a note of similar comments, wherein stakeholders submitted that co-location with Government infrastructure should not be made mandatory.

3.300 The Authority in its recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025, noted that mandatory co-location for terrestrial radio service should be removed. The authorised entities should be allowed to share infrastructure, on a voluntary basis, with the entities of telecom and broadcasting services, infrastructure providers and any other service providers as per technical and commercial feasibility. Accordingly, the terms and conditions on co-location need to be removed. Whereas terms and conditions enabling infrastructure sharing on a voluntary basis may be provisioned.

3.301 In view of the above, the Authority in its 'Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025, recommended the following:

> *"…mandatory colocation of transmission infrastructure should be removed, and the authorised entities of Terrestrial Radio Service should be allowed to share infrastructure, on voluntary basis with the entities of broadcasting services, telecom services, infrastructure providers etc. as per technical and commercial feasibility."*

3.302 In case CTI is to be located within Prasar Bharati's premise, then for timely creation of CTI and roll out of services, it is essential that all facilitations should be done by Prasar Bharati in an expeditious manner.

3.303 In its recommendation on '*Reserve Price for Auction of FM Radio Channels*' issued on 23rd September 2025, the Authority has noted the stakeholder comments regarding high rental payments to Prasar Bharati for sharing of infrastructure. With

reference to industry concerns regarding the high rental charges levied by Prasar Bharati for access to land and tower infrastructure (LTI) and common transmission infrastructure (CTI), in instances where Prasar Bharati's infrastructure is to be shared, the Authority has taken a considered view that rental charges should be rationalized to support both incumbent and new entrants in the sector. Accordingly, the government may consider giving LTI and CTI infrastructure of Prasar Bharti at concessional rent while taking full recovery of operational expenses. Such an approach would significantly reduce the financial burden on FM broadcasters and promote a more equitable and sustainable framework for infrastructure access. The Authority has accordingly recommended that Prasar Bharati should share its land and tower infrastructure (LTI) as well as common transmission infrastructure (CTI) with private broadcasters at concessional rental rates while taking full recovery of operational expenses.

3.304 The issue of mandatory co-location already dealt in Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025. Similar concerns have been raised by stakeholders in response to the present consultation paper. Hence, the Authority reiterates its recommendations already given on the issue of mandatory co-location of infrastructure.

3.305 Accordingly, **the Authority recommends that:**

a) The task of formulating the methodology for examination and creation of new CTIs as well as modification of existing CTIs should be carried out by the concerned stakeholders themselves within a

predefined timeline of three months or assigned to BECIL.

b) Prasar Bharati should share its land and tower infrastructure (LTI) as well as common transmission infrastructure (CTI) with private broadcasters at concessional rental rates while taking full recovery of operational expenses.

c) The condition for mandatory co-location of transmission infrastructure should be removed, and the authorised entities of Terrestrial Radio Service should be allowed to share infrastructure, on voluntary basis with the entities of broadcasting services, telecom services, infrastructure providers etc. as per technical and commercial feasibility.

Q. Financial Accounting Reporting by Broadcasters

3.306 Radio broadcasters are required to pay annual fee as a percentage of their gross revenue to the Government. For the purpose of calculating GR, statement of financial accounts needs to be reported by radio broadcasters to the Government, as per format provided in 'Private FM Phase-III policy'.

3.307 Similarly, for financial accounting reporting by digital radio broadcasters, the Authority raised the following question to seek comments of the stakeholders:

Q29. Are there any changes required in the format prescribed for reporting of Financial Accounting by radio broadcasters for the Digital Radio Broadcast Policy? If yes, please suggest changes with justification.

Comments of stakeholders

3.308 In response, some stakeholders suggested that financial reporting should be streamlined to an entity level, rather than requiring independent reporting for each station. Whereas a few of the stakeholders favoured the format prescribed in 'Private FM Phase-III policy'. Some other stakeholders proposed that income to be accounted separately in case a broadcaster becomes a signal distributor of another broadcaster.

Analysis

3.309 The Authority in its 'Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025 recommended the following format for accounting reporting for 'Terrestrial Radio Service' (which also covers digital radio broadcasting):

STATEMENT OF GROSS REVENUE, ADJUSTED GROSS REVENUE FOR

TERRESTRIAL RADIO SERVICE

Statement of Revenue and Authorisation Fee of M/s_____ (Name of

the Authorised Entity) for the quarter _____ of the financial year_____

S.No	*Income Heads*	*Tariff rate/ rate card*	*Discounts*		*Agency Commission*	*Taxes*	*Net as per P & L account*
			Trade	*Others*			
		(Amount Rupees in Lacs)					
		A	*B*	*C*	*D*	*E*	*F*
1	*Advertisement*						

2	*Streaming*					
3	*Promotional Events*					
	3.1 Musical Star Events					
	3.2 Sponsored Programmes					
4	*Marketing Rights*					
5	*Commission*					
6	*Royalties*					
7	*Sale of recorded cassettes, CDs, etc*					
8	*Rent-Premises*					
9	*Rent-Equipment*					
10	*Interest/Dividend*					
11	*Related Party Transactions*					
	11.1 Goods Sold					
	11.2 Services rendered					
	11.3 Production					
	11.4 Marketing					
	11.5					
	11.6					

***Note**:*

1. *The income heads are only indicative and illustrative, and the Auditor may include all the relevant heads of the Terrestrial Radio Service authorisation.*
2. *The income from the Related Parties shall tally with the Related Parties schedule as per accounting standards no 18. Additional columns may be introduced, if required.*
3. *Column F is the total revenue as per profit and loss account.*
4. *Gross Revenue for this purpose would be the gross inflow of cash, receivables or other consideration arising in the course of ordinary activities of the Terrestrial Radio Service entity from rendering of services and from the use by others of the entity resources yielding rent, interest, dividend, royalties, commissions etc. Gross Revenue shall, therefore, be calculated, without deduction of taxes and agency*

commission, on the basis of billing rates, net of discounts to advertisers. Barter advertising contracts shall also be included in the gross revenues on the basis of relevant billing rates. In the case of an Authorised Entity providing or receiving goods and services from other entities that are owned or controlled by the owners of the Authorised Entity, all such transactions shall be valued at normal commercial rates and included in the profit and loss account of the Authorised Entity to calculate its gross revenue.

5. *Gross Revenue (GR): [A = B + C + D + E + F].*
6. *Gross Revenue for annual fee = [A –(B+C)]*
7. *Adjusted Gross Revenue (AGR): [AGR = GR – E)*
8. *Annual Authorisation Fee = 4% of AGR.*

3.310 In this regard, the Authority in its recommendations on License Fee and Policy Matters of DTH Services dated 21st August 2023, recommended following:

"2.58 the DTH operators should calculate Applicable Gross Revenue (ApGR) for arriving at the revenue calculations for license fee. ApGR should be equal to the total Gross Revenue (GR) of the licensee as reduced by the following items:

i. Revenue from activities under a license/ permission issued by Department of Telecommunications;

ii. Reimbursement, if any, from the Government; and

iii. List of other income to be excluded from GR to arrive at ApGR:

a. Income from Dividend;
b. Income from Interest;
c. Income from sale of fixed assets and securities;
d. Gains from Foreign Exchange rates fluctuations;
e. Income from property rent; f. Insurance claims;
g. Bad Debts recovered;

h. Excess Provisions written back."

3.311 The above recommendations for DTH services have also been included in the in the 'Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025.

3.312 Accordingly, **the Authority recommends the following format for Statement of Gross Revenue, Adjusted Gross Revenue for Terrestrial Radio Broadcasting Service:**

STATEMENT OF GROSS REVENUE, APPLICABLE GROSS REVENUE, ADJUSTED GROSS REVENUE FOR TERRESTRIAL RADIO SERVICE

***Statement of Revenue and Authorisation Fee* of M/s_____ (Name of the Authorised Entity) for the quarter _____ of the financial year_____**

S.No	Income Heads	Total Revenue (in case of service items, as per applicable tariffs)	Discounts		Agency Commission	Taxes	Net as per P & L account
			Trade	Others			
		(Amount Rupees in Lacs)					
		A	B	C	D	E	F
1	Advertisement						
2	Streaming						
3	Promotional Events						
	3.1 Musical Star Events						
	3.2 Sponsored Programmes						
4	Marketing Rights						

5	**Commission**					
6	**Royalties**					
7	**Sale of recorded cassettes, CDs, etc**					
8	**Rent-Premises**					
9	**Rent-Equipment**					
10	**Interest/Dividend**					
11	**Related Party Transactions**					
	11.1 Goods Sold					
	11.2 Services rendered					
	11.3 Production					
	11.4 Marketing					
	11.5 Miscellaneous					
12.	**Miscellaneous/ Other Revenue**					
	(a) Income from Dividend					
	(b) Income from Interest					
	(c) Income from sale of fixed assets and securities					
	(d) Gains from foreign Exchange rates fluctuations					
	(e) Income from property rent					
	(f) Insurance Claims					
	(g) Written Off Bad Debts recovered					
	(h) Excess Provisions written back					

13.	**Any Government Reimbursements**					
14	**Revenue from services provided under a DoT License**					
15	**Any other non-service revenue**					
16	**Total Taxes**	**Sum Total of taxes at Column E (reported under revenue items above)**				
17	**Gross Revenue (Sum 1 to 16)**	**Sum Total of Column A**				
Excluded Revenue Items:						
18	**Miscellaneous/ Other Revenue**					
	(a) Income from Dividend					
	(b) Income from Interest					
	(c) Income from sale of fixed assets and securities					
	(d) Gains from foreign Exchange rates fluctuations					
	(e) Income from property rent					
	(f) Insurance Claims					
	(g) Written Off Bad Debts recovered					
	(h) Excess provisions written back					
19	**Any Government Reimbursements**					
20	**Revenue from services provided**					

	under a DoT License					
21	**Any other non-service revenue**					
22	**Total Excluded Revenue**	**Sum Total of Items 18-21**				
23	**Applicable Gross revenue (17-22)**					
24	**Deductions:**					
(a)	**GST/Taxes (if reported under revenue items)**					
25	**Adjusted Gross revenue (23-24)**					

Note:

1. **Gross Revenue: [A = B + C + D + E + F].**
2. **Gross Revenue for the purpose of Authorisation Fee (GR) = [A – (B+C)]**
3. **Item 16 (Total Taxes) shall be sum total of column E (taxes reported under each revenue item)**
4. **Applicable Gross Revenue:**
   ApGR = GR – Excluded Revenue Items
5. **Adjusted Gross Revenue (AGR):**
   AGR = ApGR – GST/ Taxes
   (if GST/Taxes have been reported under GR)
6. **Accordingly, Annual/Authorisation Fee shall be:**
   a) **4% of AGR for the cities of category 'A+', 'A', 'B', 'C' and 'D'**
   b) **For cities of 'Others' category (in border and hilly areas of NE, J&K, Ladakh & Island Territory) and 'E' Category – 2% of AGR for initial period of 3 years, thereafter same as above**
7. **The income heads are only indicative and illustrative, and the Auditor may include all the relevant heads of the Terrestrial Radio Service authorisation.**

8. **The income from the Related Parties shall tally with the Related Parties schedule as per accounting standards no 18. Additional columns may be introduced, if required.**
9. **Column F is the total revenue as per profit and loss account.**
10. **Gross Revenue for this purpose would be the gross inflow of cash, receivables or other consideration arising in the course of ordinary activities of the Terrestrial Radio Service entity from rendering of services and from the use by others of the entity resources yielding rent, interest, dividend, royalties, commissions etc. Gross Revenue shall, therefore, be calculated, without deduction of taxes and agency commission, on the basis of billing rates, net of discounts to advertisers. Barter advertising contracts shall also be included in the gross revenues on the basis of relevant billing rates. In the case of an Authorised Entity providing or receiving goods and services from other entities that are owned or controlled by the owners of the Authorised Entity, all such transactions shall be valued at normal commercial rates and included in the profit and loss account of the Authorised Entity to calculate its gross revenue**.

R. Review of any other provision

3.313 In the CP, stakeholders were asked if there are any other provision of 'Private FM Phase-III policy' that may require review for their adoption in digital radio broadcast policy.

Q30. Whether any other provision of the existing policy guidelines that may require review for their adoption in Digital Radio Broadcast Policy? If yes, please provide your comments with reasons thereof for amendments (including any addition(s)) required in the existing policy guidelines for FM Radio, that the stakeholder considers necessary. The stakeholders may provide their comments in the format

specified in Table 3.6 explicitly indicating the existing clause, suggested amendment and the reason/ full justification for the amendment in the existing policy guidelines for FM Radio for inclusion in Digital Radio Broadcast Policy.

Table 3.6: Format for stakeholders' response on amendments required in Policy guidelines for expansion of FM Radio Broadcasting services through private agencies (Phase III) for inclusion in Digital Radio Broadcast Policy

S. No.	*Clause No. of Existing Policy Guidelines for FM Radio*	*Provisions of the existing clause(2)*	*Amendment/ new provision(s) suggested by the stakeholder (3)*	*Reasons/ full justification for the proposed amendment (4)*

Comments of stakeholders

3.314 In response, an association suggested changes in provisions related to Annual License Fee and GR.

Analysis

3.315 The authority noted that the changes in provisions related to Annual License Fee and GR is already addressed as separate issue. Since, no other issue has been pointed out by any stakeholder. The Authority in its Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act,

2023' dated 21st February 2025, has recommended detailed terms and conditions for terrestrial radio broadcasting which include digital radio broadcasting. All the other provisions, not covered elsewhere in the present recommendations may be adopted from Recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' dated 21st February 2025.

3.316 It may be noted that the consultation paper for Digital Radio Broadcasting Policy was issued before the consultation paper on Authorization framework. However, considering the urgency, the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 were issued before the recommendations on Digital radio broadcasting policy. Some issues related to Digital Radio Broadcasting Policy have been revisited and recommendations have been given afresh to provide an impetus for smooth and faster rollout of digital radio broadcasting. These issues include option for payment of bid/migration amount, introduction of ApGR etc. The current recommendations made in the Digital Radio Broadcast policy should be considered in addition to recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025. Wherever the current recommendations make any changes to the recommendations made on 21st February 2025, the current recommendations may be taken as definitive. The recommendations of 21st February 2025 may be taken as amended accordingly.

3.317 **The current recommendations on Digital Radio Broadcast policy should be considered in modification to the**

recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 in respect of recommendations relating to:

a) **Renewal period of service authorisation for Terrestrial Radio Service**
b) **Provisions related to Licence Fee (GR, ApGR, AGR)**
c) **Payment options for bid amount for new frequencies and migration amount for existing broadcasters**
d) **Application Processing fee for frequency assignment**
e) **Format for Statement of Gross Revenue, Adjusted Gross Revenue for Terrestrial Radio Broadcasting Service**

While considering the recommendations dated 21st February 2025, the Government should apply these modifications to the original recommendations dated 21st February 2025.

S. Methodology for estimation of Reserve price for Digital radio channels

3.318 For a successful introduction of digital radio, new entrants may prefer to adopt simulcast, as the receiver ecosystem necessary for receiving digital signals will take time to develop. The frequency planning committee in its report and MIB in its reference have also mentioned provision for pure digital and simulcast by new entrants. This requirement necessitates the allocation of spectrum to new entrants required for simulcast of analog and digital components. Therefore, reserve price for the total spectrum required for simulcast as well as for pure

digital (possible in case of DRM technology) need to be determined.

3.319 The methodology for determining reserve prices of FM Radio channels used in TRAI's recommendations dated 10th April 2020 and as discussed in the consultation paper is primarily for the spectrum of 200 KHz required for analog FM radio broadcasting.

3.320 Recently in its recommendations on Reserve Prices for auction of FM Radio channels dated 23rd September 2025, the Authority has recommended the reserve prices for auction of FM radio channels in cities of Bilaspur, Rourkela and Rudrapur using the methodology as discussed in the respective consultation paper with certain modifications. The Authority, after considering the comments of stakeholders, has noted that no alternative methodology has been suggested by the stakeholders. Accordingly, the Authority has decided to use the same methodology for determining the reserve price for analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category A+ and A.

3.321 Based on the approach as adopted for determination of reserve prices for cities of Bilaspur, Rourkela and Rudrapur in the Recommendations on Reserve Prices for auction of FM Radio channels dated 23rd September 2025, the methodology for determination of the reserve price for analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A is described below along with reasoning.

A. Methodology for determining valuation and reserve prices for analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A

3.322 In its recommendations on 'Reserve Price for auction of FM radio channels in New Cities' dated 24th March 2015, the Authority was of the view that for the purpose of valuation of FM Radio channels in new cities in Phase-III, it was necessary to identify variables which are likely to have an impact on revenue generation. Accordingly, the Authority for determining the valuation of FM Radio channels used a broad-based approach consisting of three different variables along with population. The Authority had noted that advertisement is the primary source of revenue generation for Radio channels, hence factors such as purchasing power of a citizen, total FM radio listenership and past revenue earning data were considered to be relevant variables for valuation of radio channels.

3.323 Therefore, together with population, three other relevant state level variables were identified, for grouping of cities with similar revenue generation potential namely, Per capita income, Listenership of FM Radio and Per capita Gross Revenue (GR) earned by existing FM Radio broadcasters.

3.324 As per FM Phase-III policy guidelines of MIB dated 25.07.2011, cities have been grouped in following six categories based on their population:

Table 3.5: Category of cities on the basis of population

S. No.	Category of Cities	Population
1	A+	Metro cities
2	A	> 20 lakhs
3	B	> 10 lakhs up to 20 lakhs

4	C	> 3 lakhs up to 10 lakhs
5	D	> 1 lakh up to 3 lakhs
6	Others	Less than 1 lakh in border and hilly areas of NE, J&K, Ladakh & Island Territory

3.325 In 2015, the Authority applied a two-stage process for estimating reserve prices for FM Radio channels in new cities. The first stage involved determining the valuation of FM Radio channels in each new city, and in the second stage, the reserve price for each city was calculated by multiplying the valuation of FM Radio channel by a factor same as used for telecommunication services, which was based on past domestic as well as international experience and worked well till then in telecom sector.

3.326 Ideally, an optimal approach would have been to estimate the variables such as per capita Gross Domestic Product (GDP) and per capita Gross Revenue (GR) on a district level basis. However, since updated city or district level official data for key variables such as district-wise Gross Domestic Product and district population was not available, these variables could not be estimated at the district level. Therefore, the Authority relied on state/UT-level data to estimate the required parameters. The state/UT level parameters were used as a proxy to reflect the revenue potential and economic activity of a city.

3.327 Mathematically, the above model was expressed as:

V = f (per capita GSDP, per capita GR, Listenership of FM Radio; population)

where,

V represents the valuation of the FM radio channel

f denotes a function of the stated parameters

3.328 During the recommendations on Reserve Price for auction of FM Radio Channels dated 10th April 2020, the Authority explored various options for valuing FM Radio channels to introduce city specific factor in the calculation. Due to the limited availability of any reliable macroeconomic parameter on the city level which can capture the media-market potential of a particular city independent of state or regional bias, the three state-level variables (GSDP, GR and listenership) were used to arrive at preliminary value. The Authority observed that the state/union territory level variables, considered in its recommendations of 2015 continued to be relevant in valuation of FM Radio channels in 2020 exercise also.

3.329 Further, in order to bring city-specific effect, the Authority decided that Market Intensity Index (MII)[31] can be used for the purpose. MII is an index to measure market potential of a particular district on the basis of four variables namely, means or ability to purchase of an average consumer, consumption pattern of individuals, degree of penetration of media, and infrastructures to support market activities. Considering the components and approach of estimating MII, it was considered that the same is a better representative of city-specific potential for business and using the same to adjust the values determined based on state-specific parameters will make the values a better representative of the actual potential value of FM radio channel in a city.

3.330 The present Consultation Paper on "Formulating a Digital Radio broadcast Policy for private radio Broadcasters" dated

[31] R.K. Swamy Hansa's Guide to Market Planning: 2017 Fourth Edition

30th September 2024 described the methodology used in the 2020 recommendations and sought comments from stakeholders on whether the same methodology should be adopted for determining reserve prices of digital Radio channels.

3.331 Accordingly, in the consultation paper the following issues were raised for seeking comments from the stakeholders:

Q31. Do you agree that the methodology used in TRAI's recommendations dated 10th April 2020 for determining reserve prices of FM Radio channels should be used for determining reserve prices of digital Radio channels?
a. If yes, please provide a detailed justification for your views.
b. If no, please suggest an alternative approach/ methodology with details and justifications.'

Q32. Do you agree that due to non-availability of updated radio listenership estimates data and Market Intensity Index, whether the same data, as used in 2020 recommendation, can be used in the present exercise as well? In case the answer is no, which alternative data/methodology can be used for the same purpose?

Comments of stakeholders

3.332 One stakeholder mentioned that using the same methodology as with zero listenership, no reserve price for digital radio would be feasible. They added that existing broadcasters in top 13 A+ and A cities should be allowed a trial digital simulcast. They also opined that after 2030-2035, a combined auction could determine market rates and establish a reserve price for simulcast broadcasting.

3.333 Some stakeholders suggested that the question of reserve price for digital channels may be deferred for a few years till the digital receiver infrastructure gets developed in the country.

3.334 One stakeholder was not in favour of using the same data as part of the present exercise as the data is over 4 years old.

3.335 Another stakeholder suggested that the 2019 IRS listenership survey should be taken for listenership estimates.

Analysis

3.336 In its earlier Recommendations on Reserve Prices for Auction of FM Radio Channels in New Cities dated 24.03.2015. the Authority adopted a valuation methodology that factored in key indicators such as per capita Gross State Domestic Product (GSDP), FM radio listenership, per capita Gross Revenue (GR), and population. These variables were selected to capture both demand and supply-side aspects of FM radio services and to reflect the overall market potential of a city. Subsequently, in the Recommendations on Reserve Price for Auction of FM Radio Channels of 2020, the Authority broadly followed a similar methodology along with consideration of an additional parameter, namely, Market Intensity Index (MII)to account for city-specific market characteristics.

3.337 The Authority is of the opinion that the valuation methodology adopted in 2020 is a relevant approach even in the present exercise since the selected variables reflect both the capacity and willingness of the population to use radio services, as well as the revenue generation by service providers, thus balancing demand and supply-side factors. The objective of arriving at a

reasonable reserve price is better served when valuation is based on both the demand and supply side factors.

3.338 However, in addition to the above three variables, the Authority in the present exercise also notes that city-specific Auction Determined Prices (ADPs) of 2015-2016 auctions are available for 12 cities. However, no such data is available for Kolkata, where no auction took place after 2005. In the various past access spectrum valuation exercises, the Authority noted that the price discovered through the auction process is regarded as one of the important indicators of the market's valuation of spectrum and accordingly past auction determined prices has been considered for valuation of spectrum. In view of the above, the Authority is of the view that past ADPs should also be used in the present exercise for valuation of radio channels.

3.339 Accordingly, for the purpose of valuation and determination of valuation and reserve prices for analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A, the Authority has decided to adopt a broad-based valuation framework, considering all the variables considered in 2020 valuation exercise, such as population of the city along with three state-level variables, namely, per capita Gross State Domestic Product, per capita Gross Revenue and FM radio listenership. Additionally, a Market Intensity Index (MII) is applied to valuation arrived using each of these variables to capture city-specific market characteristics. Further, in the present exercise, valuation has also been derived using a fourth variable, namely, the auction-determined price (ADP) from the auctions held in 2015–16. In order to take into consideration, the fourth variable i.e. ADP, which is city specific, the first three variables are required to be made city specific by applying MII individually and

thereafter taking average of all four variables for valuation purpose.

3.340 The Authority has noted that in the batch 3 auction of FM Radio Phase conducted by MIB in July 2025, no city belongs to category 'A+' and 'A'. Therefore, the ADPs from the auctions held in July 2025 are not applicable for this valuation exercise.

3.341 MIB had accepted the TRAI recommendations on "Reserve Price for Auction of FM Radio Channels" dated 10.04.2020 and conducted the auctions for allotting 730 channels in 234 new cities on 9th and 10th July 2025. The Authority has also noted that out of 730 channels in 234 new cities, only 63 channels in 43 cities have been successfully auctioned[32]. Authority while deciding to use the same methodology for valuation, examined the possible reasons for poor response to July 2025 auctions and considered various factors impacting financial performance of the private FM radio broadcasters that could have deterred the prospective bidders from participating in the auction process. The issues regarding poor response to July 2025 auctions and recommended measures have been discussed in detail in the recent recommendations on "Reserve Price of FM Radio Channels" dated 23rd September 2025.

3.342 The Authority has considered various factors and made amends in its methodology for arriving at Reserve Price as compared to the one used in its Recommendations on "Reserve Price for Auction of FM Radio Channels" dated 10.04.2020, wherein the Authority had applied a multiplication factor of 0.8 to the valuation for estimating the reserve prices of FM radio channels across cities. However, in the present valuation exercise, the Authority has recommended that the reserve price

[32] https://mib.gov.in/sites/default/files/2025-08/final_result-1.pdf

should be set at 70% of the valuation. This calibrated reduction in the reserve price is expected to ease the financial burden on radio broadcasters, particularly in view of the stagnation in revenue growth of the FM radio sector over the last decade and the increasing competitive pressure from substitute platforms such as online music streaming and other digital media services. By reducing the financial burden, this approach is likely to encourage wider participation in the auctions and facilitate the proliferation of digital radio.

3.343 In addition to above, to ease the entry barrier and reduce financial burden on successful bidders, the Authority has also considered possible options for payment of successful bid amount similar to the spectrum auction done by Department of Telecommunications, which has been dealt with earlier in this chapter.

3.344 The detailed methodology used for the valuation of analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A in the present exercise is explained in the steps below:

Step-I

- **Population:** The first step of the valuation exercise involves grouping of cities based on a dominant characteristic (variable) that is, the population of a city. This yields a classification in terms of category A+, A, B, C, D and Others cities, as per criteria specified in Phase-III Policy guidelines[33] of MIB, based on population data of 2011 Census.

[33] As per Ministry of Information and Broadcasting based on population data of 2011 Census

Step-II

- The next step involves categorization based on three additional characteristics (variables) - per capita GSDP, per capita Gross Revenues, and FM radio listenership. The values of these variables are based on available data on a State/UT basis.

- The valuation of analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A has to be done for a particular city or district. Ideally, an optimal approach would have been to estimate the variables such as per capita Gross Domestic Product (GDP) and per capita Gross Revenue (GR) on a district level basis. The Authority has reviewed the information/data available with the Directorates of Economics and Statistics of various State Governments and observed that updated Gross District Domestic Product (GDDP) data is not uniformly available. In several cases, GDDP data is either missing for certain districts or available for different years across districts, thereby lacking consistency and comparability. Accordingly, since updated city or district level official data for key variables such as district-wise Gross Domestic Product and district population is not available, these variables cannot be estimated at the district level. Therefore, consistent with the methodology adopted in the Recommendations of 2015 and 2020, the Authority in the present exercise has also relied on state/UT level data to estimate the required parameters. Accordingly, all three variables, namely per capita Gross Domestic Product, FM radio listenership, and per capita Gross Revenue, have been estimated using state/UT level data.

- **Per capita GSDP**: In the absence of city/district-level data, the closest parameter for measuring the per capita income in a particular city/region could be the Gross State Domestic Product (GSDP). Therefore, per capita GSDP of a state/UT is

taken as a proxy indicator for assessing the level of economic activity and, hence, the revenue generation potential in that state. In the present exercise GSDP data[34] for 2023-24 is used.

- **Per capita Gross Revenue**: The per capita GR of a state/UT is estimated by taking into consideration the sum of Gross Revenues reported to MIB by FM broadcasters for all the cities where FM Radio stations are operational in a state/UT and dividing it by the population of that state/UT. Gross Revenue (GR) data[35] of existing FM Radio broadcasters for 2023-24 is used.

  It is important to note that the number of cities with operational FM Radio channels varies across states, some states have a higher number of cities with FM radio operations, while others have fewer. This variation can result in differences in the total Gross Revenue reported by different states, as those with more operational cities may generally generate higher total revenues. To address this disparity, the revenue potential of a state is assessed on a per capita basis. This approach is considered more appropriate and equitable, as while the absolute Gross Revenue of such states may be higher due to a greater number of operational cities, calculating revenue on a per capita basis helps to normalize this effect. The revenue performance is assessed relative to the population size, thereby enabling a fairer comparison across states regardless of the number of operational FM radio channels across the cities.

  In view of the above discussion, the per capita GR and per capita GSDP have been adopted as key variables in determining the

[34] Data available on website of Ministry of Statistics and Programme Implementation (MoSPI) http://www.mospi.gov.in/
[35] Provided by Ministry of Information and Broadcasting

valuation of FM radio channels as was done in 2015 and 2020 exercises.

- **FM Radio listenership**: A few stakeholders have suggested for use of updated FM Radio listenership data and use of digital and social media platforms in IRS survey instead of traditional newspapers.

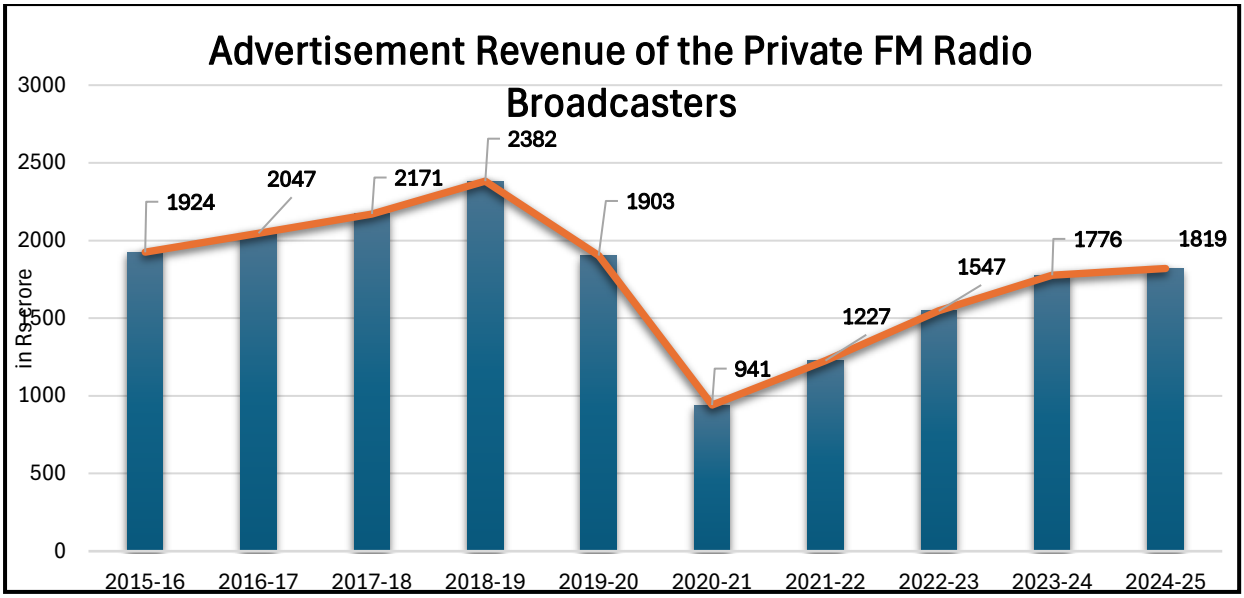
  In this regard, the Authority noted that contrary to the apprehension, the Indian Readership Survey (IRS) is a comprehensive media consumption study[36] that collects data on multiple media, including print (newspapers and magazines), radio, television, digital media, and cinema. Further, the Authority noted that the radio listenership estimates provided by the IRS of Media Research Users Council India for Q3 2019, weighted by the population of each state/UT, were used in the 2020 exercise. The updated radio listenership data[37] of IRS is not available beyond Q3 2019. However, the Authority analysed the total advertisement revenue of private FM Radio broadcasters over the last six financial years. The same is shown in the table below:

Table-3.6: Advertisement Revenue of the private FM Radio broadcasters[38]

(Rs in Crore)

Financial Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Advertisement revenue (in Rs. Crore)	1924	2047	2171	2382	1903	941	1227	1547	1776	1819

[36] https://indianmediastudies.com/indian-readership-survey/
[37] IRS data published by Media Research Users Council India
[38] The data is based on information submitted by the private FM Radio broadcasters to TRAI



- The Authority has reviewed the total advertisement revenue of FM Radio broadcasters for the period spanning financial years 2015-16 to 2024-25. The data indicates a consistent increase in revenue of Rs 1,924 crore in FY 2015-16 to a peak of Rs 2,382 crore in FY 2018-19.

- Further, a decline in total advertisement revenue to Rs 1,903 crore was observed in FY 2019-20, which further decreased to Rs 941 crore in the subsequent financial year. This notable decline may be partially attributed to the impact of the COVID-19 pandemic. Subsequently, revenue has shown a gradual recovery, reaching Rs 1,819 crore in FY 2024-25, which is close to the figures reported in FY 2019-20.

- In light of the comparable revenue figures between FY 2019-20 and FY 2024-25, the Authority is of the view that using the 2019 Indian Readership Survey (IRS) data from the Media Research Users Council India (MRUC) as a proxy for current radio listenership is a justifiable approach for the present valuation exercise. Therefore, the Authority has decided to continue using

the listenership estimates provided by the Indian Readership Survey (IRS) of 2019, for the present exercise as well.

Step-III

- The values of the variables in Step II, namely per capita GSDP, per capita Gross Revenue, and FM Radio listenership are calculated using data at the state/UT level. In line with the methodology followed in 2015 and 2020 recommendations, the mean value is then derived for each of the said three variables.

- The value of each of the three variables, namely per capita Gross State Domestic Product, FM Radio listenership, and per capita Gross Revenue, for a particular state is compared with the average value of the respective variable computed across all States/UTs. This exercise is carried out separately for each of the three variables. Based on the comparative analysis, the States /UTs are classified into three categories for each variable.

Step-IV

- States/UTs with more than 25% of the mean value of the concerned variable are placed in the first group. States/UTs with less than 25% but more than -25% of the mean value of the concerned variables are placed in the second group. States/UTs with less than -25% of the mean value of the concerned variables, are placed in the third group. Following the step, three groups of states were obtained under each of the categories i.e. per capita GSDP, per capita GR and FM radio listenership.

- On the basis of the State/UT-wise estimates of per capita GSDP, States/UTs were categorized and divided into three groups J, K, and L (**Annexure-IV**). A similar exercise was replicated for the other two variables, namely, per capita GR earned and radio listenership. This yielded three groups, F, G, and H (**Annexure-**

V), based on the per capita GR and another three groups, Q, R, and S (**Annexure-VI**), based on FM radio listenership.

- This is summarized in the table below:

Table 3.7: Grouping of States

	GSDP per capita	**GR per capita**	**FM Radio Listenership**
States/UTs with more than 25% of mean value of the concerned variable	Group J	Group F	Group Q
States/UTs with less than 25% but more than -25% of the mean value of the concerned variables	Group K	Group G	Group R
States/UTs with less than -25% of the mean value of the concerned variables	Group L	Group H	Group S

- Using the above classification, the 13 cities of category A+ and A are classified as follows:

Table 3.8: Classification of Cities of category of A+ and A

		Basis of Classification			
City	**State**	**Population based category**	**per capita GSDP**	**per capita GR**	**FM radio Listenership**
Chennai	Tamil Nadu	A+	K	G	Q
Delhi	Delhi	A+	J	F	S
Kolkata	West Bengal	A+	1	H	Q
Mumbai	Maharashtra	A+	K	G	Q
Ahmedabad	Gujarat	A	K	H	Q
Bengaluru	Karnataka	A	J	H	Q
Hyderabad	Telangana	A	J	G	R
Jaipur	Rajasthan	A	L	H	Q
Kanpur	Uttar Pradesh	A	L	H	Q
Lucknow	Uttar Pradesh	A	L	H	Q
Nagpur	Maharashtra	A	K	G	Q
Pune	Maharashtra	A	K	G	Q
Surat	Gujarat	A	K	H	Q

Step-V: Estimation of Reference Prices

- The Authority has been consistently using the concept of reference prices for valuation of an FM Radio channel. Reference prices are the average of all successful bids in each existing city in a particular auction.

- In 2020 valuation exercise, the Authority considered the following for estimating the reference prices:
    - The auction prices of Phase-II auction conducted in 2005.
    - The auction prices of Phase-III auction conducted in two batches in 2015 and 2016.

- In the present valuation exercise, the auction prices of the Phase-II auction conducted in 2005 have not been considered due to the significant time gap. With almost 20 years having passed, the Authority is of the view that the auction prices from that period may not reflect the current market value of FM radio channels.

- As stated earlier, in the auction of the third Batch of FM Radio Phase III channels recently concluded in July 2025, no city belonged to category 'A+' and 'A'. Therefore, in the present valuation exercise, the Authority has considered the auction prices of Phase-III auctions conducted in batch I, and II in 2015 and 2016.

- Further, in the present exercise, the Authority examined whether the auction prices of 2015–16 should be adjusted for the time gap or inflation, using metrics such as the Marginal Cost of Lending Rate (MCLR) or the relative revenue of 2015–16 with respect to the present revenue. As can be seen from Table 3.8 above, although the FM radio sector is showing signs of recovery, it remains in a post-pandemic revival phase, with revenues still slightly below pre-COVID levels. It is worth

mentioning that the total revenue of the industry is approximately similar for the three financial years viz. 2015-16, 2019-20 and 2024-25. Despite increase in the number of channels from 2015 till now, the total advertisement revenue has remained same. Accordingly, the Authority is of the view that there is no justification for indexing the auction prices of 2015–16, either by MCLR or based on relative revenue trends. This assessment is considered reasonable in view of the prevailing state of the FM radio industry and the evolving market dynamics.

- In addition, the sector is facing increased competition from digital audio platforms. This is potentially shifting listener preferences—particularly among urban and younger demographics away from traditional FM Radio towards more flexible, subscription-based digital audio services. The resulting substitutability effect is expected to have an impact on FM radio listenership. The Authority is of the view that post-pandemic, though there is a steady increase in the revenue, it is slow, indicating that while private FM radio is regaining its share, it may be losing ground to streaming and other advertising mediums. In the light of these revenue trends, demand-side challenges and technological shifts, maintaining the 2015–16 auction prices without inflation adjustment aligns with the current market realities and supports a balanced, pragmatic approach.

- In the present context, for the purpose of valuing for analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A, it is essential to determine appropriate reference prices. These reference prices are derived from the last available market-based data, specifically the actual successful bids received during the Phase-III auctions conducted in 2015-16. Since 13 cities fall under

category of A+ and A, successful bid prices from the 2015–16 auctions for cities in the respective categories (i.e. Category A+ and A) have been considered for determining the reference prices. In city of Kolkata, no auction took place in 2015-16. The auction determined prices in Kolkata are available from the auction conducted in 2005. The highest successful bid received in 2005 in Kolkata was Rs. 6.1 crore and average of all successful bid received in 2005 was Rs. 4.71 crore. In Chennai, the average of all successful bid received in 2005 was Rs. 8.11 crore whereas the average of all successful bid received in 2015-16 was Rs 53.39 crore. The ratio of these two values comes out to be 6.58. In this regard, it has been noted that the revenue of Kolkata is comparable with the city of Chennai (refer table 3.9) wherein auction took place in 2005 and 2015-16 as well.

Table 3.9: Details of Gross Revenue of private FM Radio broadcasters (Rs. in Crore) (As obtained from MIB)

Period	2010-11	2011-12	2012-13	2013-14	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Delhi	220.93	226.76	238.89	305.28	395.40	420.66	416.89	415.75	360.01	150.39	224.11	266.68	200.73
Mumbai	158.63	175.93	173.24	202.78	336.37	342.26	357.61	347.84	278.30	125.47	149.49	180.47	177.10
Kolkata	66.95	66.11	73.05	80.72	118.23	122.96	131.62	129.48	101.07	61.35	63.27	79.10	76.41
Chennai	70.94	75.47	94.84	108.94	133.41	135.06	141.78	159.89	141.84	68.14	81.75	98.82	106.33

Accordingly, to estimate the highest bid price and average bid prices of Kolkata in 2016, highest bid price (Rs. 6.11 crore) and average of all successful bid received in 2005 (Rs. 4.71 crore) have been multiplied by the factor of 6.58 which come out to be Rs. 40.21 crore as highest bid price and Rs. 31 crore as average of all successful bid received in 2016. Accordingly, Rs. 31 crore has been used as the reference price for Kolkata. (**Annexure-VII**). This approach is same as that used in the

recommendations of 2020 while arriving at the reserve price for Kolkata.

- For the present exercise, the Authority has considered data from the 2015–16 auctions and the valuation is based on the average auction prices within each category. It may be noted that in 2020 valuation exercise, certain outliers were identified and removed by excluding cities whose auction price exceeded twice the average price within their category, defined by population and either per capita GSDP, per capita GR, or radio listenership. Consistent with the approach adopted in 2020, the Authority has identified and excluded such outliers in the current valuation exercise as well. The Authority is of the view that the removal of such values reduces upward bias in the dataset and stabilises the mean, thereby making it a more reliable and representative indicator. Also, the Authority has observed that due to limited number of reference cities in some categories defined by population and either per capita GSDP, per capita GR, or radio listenership, only one data point (average successful bids) is available. For example, in case of Delhi, the reference price is the past ADP of Delhi across all the three categories as ADP of other cities in the category is not available from 2015-16 auction. Similar scenario is observed for Kolkata in two categories based on GSDP and GR, and for Hyderabad in one category of listenership. The Authority is of the view that in all these cases the models based on per capita GDSP, per capita GR or Radio listenership. Accordingly, the Authority finds that in the present valuation exercise determination of the following reference prices are not relevant and should be excluded from the valuation exercise:
    a) For Delhi, determination of reference prices for all three categories based on per capita GSDP, per capita GR, and radio listenership

b) For Kolkata, determination of reference prices for two categories based on per capita GSDP and per capita GR
c) For Hyderabad, determination of reference prices for one category based on radio listenership.

- Furthermore, the Authority observes that the objective of the auction of digital radio channels is not confined solely to revenue realization but encompasses a broader objective of advancing public interest. Radio broadcasting functions not only as a medium of entertainment for the masses but also fulfils critical socio-economic objectives by disseminating information, fostering public awareness, promoting education, facilitating community participation, and serving as an important means of communication for disseminating timely alerts and guidance during disasters and emergencies. Hence, in the process of valuation, the focus cannot solely be kept on earning revenues but also take in to account larger societal interests.

- Considering population size as one characteristic and one of the other three variables as the second characteristic, existing cities are classified into a matrix in which each cell contains a group of existing cities. Accordingly, all the cities, which belong to a particular category based on population and a particular group based on per capita GSDP, are classified in the (1,1) cell of Matrix-I. Considering this, the existing cities of categories A+ and A are classified into each cell of Matrix-I **(Annexure VIII)**. On similar lines, two other matrices, namely Matrix-II **(Annexure IX)** based on the per capita GR and Matrix-III **(Annexure X)** based on listenership of FM radio are derived.

- The above steps yield three matrices i.e. Matrix-I, Matrix-II and Matrix-III with averages of indexed reference prices assigned to each cell. This effectively establishes a relationship between city characteristics and reference price based on per capita GSDP.

Step-VI: Mapping of reference prices

- The reference prices for the 13 cities of category of A+ and A have been determined by mapping them to the successful bids received in the 2015–16 auction for cities belonging to similar categories. These include:

    - reference prices for the 13 cities of category of A+ and A based on Gross State Domestic Product (GSDP) per capita **(Annexure- XI);**

City	State	Reference cell
Chennai	Tamil Nadu	(A+, K)
Delhi	Delhi	-
Kolkata	West Bengal	-
Mumbai	Maharashtra	(A+, K)
Ahmedabad	Gujarat	(A, K)
Bengaluru	Karnataka	(A, J)
Hyderabad	Telangana	(A, J)
Jaipur	Rajasthan	(A, L)
Kanpur	Uttar Pradesh	(A, L)
Lucknow	Uttar Pradesh	(A, L)
Nagpur	Maharashtra	(A, K)
Pune	Maharashtra	(A, K)
Surat	Gujarat	(A, K)

    - reference prices for the 13 cities of category of A+ and A based on Gross Revenue (GR) per capita **(Annexure-XII);**

City	State	Reference cell
Chennai	Tamil Nadu	(A+, G)
Delhi	Delhi	-
Kolkata	West Bengal	-
Mumbai	Maharashtra	(A+, G)
Ahmedabad	Gujarat	(A, H)
Bengaluru	Karnataka	(A, H)
Hyderabad	Telangana	(A, G)
Jaipur	Rajasthan	(A, H)
Kanpur	Uttar Pradesh	(A, H)
Lucknow	Uttar Pradesh	(A, H)
Nagpur	Maharashtra	(A, G)
Pune	Maharashtra	(A, G)
Surat	Gujarat	(A, H)

- reference prices for the 13 cities of category of A+ and A based on Radio Listenership (**Annexure- XIII**).

City	State	Reference cell
Chennai	Tamil Nadu	(A+, Q)
Delhi	Delhi	-
Kolkata	West Bengal	(A+, Q)
Mumbai	Maharashtra	(A+, Q)
Ahmedabad	Gujarat	(A, Q)
Bengaluru	Karnataka	(A, Q)
Hyderabad	Telangana	-
Jaipur	Rajasthan	(A, Q)
Kanpur	Uttar Pradesh	(A, Q)
Lucknow	Uttar Pradesh	(A, Q)
Nagpur	Maharashtra	(A, Q)
Pune	Maharashtra	(A, Q)
Surat	Gujarat	(A, Q)

Step-VII: Valuation based on 4 variables

(i) Valuation based on three state level variables viz. per capita GSDP, per capita Gross Revenue, and FM radio listenership

- In this step the valuation of analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A is derived based on population along with each of the three state level variables viz. per capita GSDP, per capita Gross Revenues, and FM radio listenership. As mentioned above, the valuation is to be determined in a specific city, however since these variables are available only at the state level, the valuation derived from each variable is adjusted using the Market Intensity Index (MII) to account for city-specific market characteristics.

- During 2020 recommendation exercise, to arrive at final valuation for FM Radio channels in each city, the Average Value of FM radio channel in a city was modified by multiplying it with the city factor as reflected in Market Intensity Index (MII). To this effect, the Authority noted that R.K. Swamy Hansa's Guide to Market Planning: 2017 Fourth Edition contained estimates of Market Intensity Index (MII) at district level.

- MII is an index to measure market potential of particular district on the basis of four variables namely, means or ability to purchase of an average consumer, consumption pattern of individuals, degree of penetration of media, and infrastructures to support market activities. Considering the components and approach of estimating MII in the book, it was considered that the same is a better representative of city-specific potential for business and using the same to adjust the values determined on the basis of state-specific parameters would make the values a better representative of the actual potential value of a radio station in a city. Accordingly, to arrive at a final valuation for FM Radio channels in each city, the Average Value of a city was modified by multiplying it with the city factor as reflected in MII.

- However, The Authority has observed that the Market Intensity Index (MII) has not been updated beyond the year 2017. In this context, the Authority also explored the possibility of obtaining a comparable index from various academic and professional institutions; however, no such index was found to be available. This issue was also posed in the consultation paper, but no alternative was suggested by any of the stakeholders.

- It is pertinent to mention that the current valuation methodology adopted for radio channels is primarily based on the relative values of key parameters rather than their absolute figures. Further, the MII assigns a score to each district based on a comprehensive set of variables. However, this score is not assigned on an absolute scale but is determined relative to the average score of a district, which is taken as the base value of 100. Accordingly, while the absolute market intensity in a given district may have changed over time, it is reasonable to assume that the relative market intensity across districts is still largely relevant.

- In light of the above, the Authority is of the view that it is reasonable to adopt the Market Intensity Index (MII) of 2017 to account for city-specific factors in the present valuation exercise. It is worth mentioning that in the valuation exercise carried out in 2020, the average valuation derived from the individual valuations based on three variables—namely, per capita Gross State Domestic Product (GSDP), per capita Gross Revenue, and FM radio listenership—was adjusted using the Market Intensity Index (MII) to account for city-specific factors.

- However, as stated above, in the present exercise, valuation has also been derived using a fourth variable, i.e., the auction-determined price from the 2015–16 auction. Since the auction-determined price is inherently city-specific, it does not require

any further adjustment with MII. Accordingly, adjusting the average valuations derived from all four variables with MII adjustment is not feasible in this scenario. Therefore, each of the individual valuations derived from the three variables—per capita GSDP, per capita Gross Revenue, and FM radio listenership—has been separately adjusted using the MII. This is elaborated in the succeeding paragraphs.

- As stated above the valuation derived for 13 cities of category of A+ and A based on population and per capita GSDP is adjusted using MII.

Table 3.10: MII adjusted Valuation based on per capita GSDP

(Rs in crore)

City	V_{GSDP}	MII	MII adjusted V_{GSDP}
	(i)	(ii)	(i)*(ii)
Chennai	88.1	2.06	181.54
Delhi	-	-	-
Kolkata	-	-	-
Mumbai	88.1	2.51	221.46
Ahmedabad	24.02	1.73	41.63
Bengaluru	64.31	2.13	137.17
Hyderabad	64.31	1.89	121.25
Jaipur	16.79	1.30	21.80
Kanpur	16.79	1.23	20.65
Lucknow	16.79	1.40	23.45
Nagpur	24.02	1.54	36.93
Pune	24.02	1.69	40.67
Surat	24.02	1.48	35.52

- The valuation of 13 cities of category of A+ and A based on population and per capita GR adjusted using MII is also tabulated below.

Table 3.11: MII adjusted Valuation based on per capita GR

(Rs in crore)

City	V_{GR}	MII	MII adjusted V_{GR}
	(i)	(ii)	(i)*(ii)
Chennai	88.1	2.06	181.54
Delhi	-	-	-
Kolkata	-	-	-
Mumbai	88.1	2.51	221.46
Ahmedabad	19.33	1.73	33.50
Bengaluru	19.33	2.13	41.23
Hyderabad	23.05	1.89	43.46
Jaipur	19.33	1.30	25.10
Kanpur	19.33	1.23	23.77
Lucknow	19.33	1.40	27.00
Nagpur	23.05	1.54	35.44
Pune	23.05	1.69	39.03
Surat	19.33	1.48	28.58

The valuation of 13 cities of category of A+ and A based on population and radio listenership adjusted using MII is also tabulated below.

Table 3.12: MII adjusted Valuation based on radio listenership

(Rs in crore)

City	V_{RL}	MII	MII adjusted V_{RL}
	(i)	(ii)	(i)*(ii)
Chennai	69.07	2.06	142.33
Delhi	-	-	-
Kolkata	69.07	1.62	112.09
Mumbai	69.07	2.51	173.62
Ahmedabad	20.92	1.73	36.25
Bengaluru	20.92	2.13	44.62
Hyderabad	-	-	-
Jaipur	20.92	1.30	27.17
Kanpur	20.92	1.23	25.73
Lucknow	20.92	1.40	29.22
Nagpur	20.92	1.54	32.16
Pune	20.92	1.69	35.42
Surat	20.92	1.48	30.93

(ii) Valuation based on city specific past auction determined prices

- As discussed above, in the present exercise along with the above three variables, the valuation of analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A is also calculated based on the past auction determined prices. City-specific Auction Determined Prices (ADPs) (Highest successful bids) from the 2015-2016 auctions are available for 12 cities. ADP of Rs 6.1 crore for Kolkata is available for 2005 as no auction conducted in 2015-16. As discussed earlier, to estimate the ADP for Kolkata for 2015-16, the ADP of 2005 has been multiplied with a factor of 6.58 which comes out to be Rs 40.21 crore.

- It is pertinent to note that almost ten years have elapsed since the last auction, which may suggest a need to index the auction prices to account for the time gap or inflation. However, as deliberated earlier, while the FM radio sector is showing signs of recovery, it continues to remain in a post-pandemic revival phase, with revenues still marginally below pre-COVID levels. It is also noteworthy that the total revenue of the industry is approximately at the same level as it was during the financial year 2015–16. Despite an increase in the number of operational channels since 2015, the overall advertisement revenue has remained largely unchanged.

- In light of the above, the Authority is of the view that there is no justification for indexing the 2015–16 auction prices. Accordingly, the auction prices discovered in the 2015-2016 auctions, without indexation shall be considered for valuation of a city, as given in the following table:

Table 3.13: Valuation based on past Auction Determined Prices (Highest Successful bids)

(Rs in crore)

City	Valuation equal to Auction Determined Prices (2015-16)
	(i)
Chennai	53.39
Delhi	169.17
Kolkata	40.21
Mumbai	122.81
Ahmedabad	42.69
Bengaluru	109.25
Hyderabad	23.43
Jaipur	28.35
Kanpur	8.01
Lucknow	14.01
Nagpur	7.76
Pune	42.04
Surat	3.60

Step-VIII: Average Valuation

- In Step VII above, four separate valuation figures were derived for each city. These were based on the following:

  (i) population and per capita Gross State Domestic Product (V_{GSDP}),

  (ii) population and per capita Gross Revenue (V_{GR}),

  (iii) population and FM radio listenership (V_{RL}) and

  (iv) Auction determined price (Highest successful bids) of 2015-16

  The final valuation for analog component of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A is calculated by taking the simple arithmetic mean of these four valuation figures. The average valuation for each city is presented in the table below.

Table 3.14: Valuation (Average) of FM radio channels

(Rs in crore)

City	Parameters				Final Valuation (Average of i, ii, iii, iv)
	MII adjusted V_{GSDP}	MII adjusted V_{GR}	MII adjusted V_{RL}	ADP 2015-16	
	i	ii	iii	iv	
Chennai	181.54	181.54	142.33	53.39	139.70
Delhi	-	-	-	169.17	169.17
Kolkata	-	-	112.09	40.21	76.15
Mumbai	221.46	221.46	173.62	122.81	184.84
Ahmedabad	41.63	33.50	36.25	42.69	38.52
Bengaluru	137.17	41.23	44.62	109.25	83.07
Hyderabad	121.25	43.46	-	23.43	62.71
Jaipur	21.80	25.10	27.17	28.35	25.61
Kanpur	20.65	23.77	25.73	8.01	19.54
Lucknow	23.45	27.00	29.22	14.01	23.42
Nagpur	36.93	35.44	32.16	7.76	28.07
Pune	40.67	39.03	35.42	42.04	39.29
Surat	35.52	28.58	30.93	3.60	24.66

3.345 Table 3.14 above provides valuation of analog channels. For simulcast by radio broadcasters in 13 cities of category of A+ and A, they will need to acquire additional bandwidth for digital channels, based on the technology selected and frequency planning.

3.346 The Authority is of the view that to arrive at a fair valuation of the whole spectrum required for simulcast of analog and digital radio channels various factors needs to be considered. While deciding the approach for determining the valuation for spectrum required for simulcast by new entrants, the Authority has noted that the growth of revenue of the FM radio sector is sluggish. Further, terrestrial radio is facing competition from the streaming platforms and also due to

behavioural shifts of audiences. In addition, listenership of new simulcast channels including digital radio in a city will be from the same pool of city population who is listening to analog FM at present. In the first few years of roll out of digital radio services when the receiver device ecosystem is developing the total listening hour inventory is not expected to increase significantly beyond the existing analog radio listening hours, and the few digital radio listening hours may largely be from migration from analog radio listenership. Subsequently, the total listening hours are expected to increase once adequate digital receivers are available with more number of digital channels providing more listening options and as these gain popularity. However, the total listening hours cannot be expected to grow in proportion to increase in number of channels. The listenership depends upon the total number of digital receivers available and the time that a listener may prefer to listen to radio. The total ownership of radio receivers is not expected to grow in proportion to addition to digital radio channels. Though diversity of programmes due to addition of channels and improved quality of listening experience of digital radio is expected to increase, total listening hours even with the available number of radio receivers will not increase proportionately. Thus, a careful balance needs to be exercised while estimating additional value that the spot frequency will acquire due to addition of digital channel over a pure analogue broadcast.

3.347 In the absence of established theory to estimate additional value derived for the spot frequency by transiting from analog to simulcast mode, the best course seems to be applying a multiplier factor over the estimated value of analog channel. It is also worth mentioning that, in case of analog radio broadcasting, there is a technical requirement of separation

between two spot frequencies to avoid interference. At present, it is typically 600 KHz. This bandwidth of 600 KHz is not usable in case of pure analog transmission and therefore does not derive any value. This frequency spectrum which is presently idle when used for introduction of digital radio broadcasting, not only enables additional radio channels for broadcast service to public but also enables Government to leverage idle spectrum for revenue realization which was otherwise not available.

3.348 Recognizing the distinct service requirements of digital radio broadcasting as compared to analog services, it is also important to adopt a valuation approach for spectrum that appropriately reflects the longer development and revenue realization timeline particularly in this phase of introducing a new technology in 13 category 'A' and 'A+' cities, which is akin to a pilot project.

3.349 As detailed in next section, analysis done by the Authority indicates that about five years may be required for the rolling out of services and initial development of digital receiver ecosystem, followed by a further five years during which broadcasters may work to achieve breakeven on their costs. Consequently, meaningful business opportunities and returns on investment for broadcasters are realistically expected to arise only in the final five years of the authorisation period. This indicates that roughly 2/3rd of the authorisation period may be exhausted before digital radio reaches full commercial viability in this pilot phase.

3.350 Reflecting this timeline, it is clear that the value that a single digital channel even if it fully replaces an analog channel, can only realise 1/3rd of the value of an analog channel in this gestation period of development of receiver ecosystem. This

estimation recognizes that the commercial earning window for digital radio channels is proportionately shorter relative to analog channels in the pilot phase.

3.351 Regarding value from data channel, the Authority has noted that the data channel is likely to be used mainly for program information, early emergency warning and broadcast messages during disaster etc. The small revenue stream, if any, that may accrue from such services can reasonably be ignored in estimation as compared to analog and digital channels in this phase and therefore value of only three digital channels has been considered besides the analog channel in the valuation at this stage.

3.352 Simulcast operations with one spot frequency provides for one analog channel alongside three digital channels and one data channel. While, the value of analog channel should be considered at full valuation, one could argue that each of the three digital channels can be valued at one-third of the analog valuation to produce a cumulative valuation multiplier of 2 (=1 + 1/3 × 3) times the analog channel reserve price. However, such simplistic addition would be fallacious and may be over valuation, given that total listening hours will not increase in direct proportion to addition of digital channels. Part of the listenership will be migration from analog channel and part will be new addition.

3.353 When digital radio services are introduced, each existing analog FM channel will be supplemented by three additional digital channels and a data channel. This increases the total number of available audio channels from one analog to four (one analog plus three digital). While this change effectively quadruples channel capacity, it is unlikely that both the

number of listeners and devices will also increase by same multiple. With increase in availability of programming genres or number of channels, it is likely that some new radio receivers will be added either as infotainment in vehicles or personal devices or mobile handsets or standalone devices. An increase in listenership hours per device can also be reasonably expected with addition of digital channels due to wider choice of program. However, the overall growth in listenership is not expected to be in same proportion to the increase in number of channels. Given that listenership and device growth will not match the increase in channel numbers; the available time that can be spent on radio listenership has limited elasticity; and the fact that there is no established theory or data available to make assumptions for increase in revenues due to addition of digital broadcasting in simulcast vis a vis analog FM radio; it is reasonable to assume that the total revenue from simulcast digital FM radio will increase the revenue obtainable from only analog channel or by around 50%, or the total revenue will be 1.5 times the current revenue from analog only operations.

3.354 Therefore, the Authority is of the view that the valuation of spectrum in simulcast digital radio broadcasting be set at 1.5 times the valuation of an analog channel. This balanced approach also acknowledges the long gestation and limited revenue timeframe for digital radio broadcasting in this pilot phase, while providing a rational basis for spectrum pricing in the evolving digital radio landscape.

3.355 These recommendations aim to strike a fair balance between fostering investment in digital radio infrastructure and safeguarding the financial sustainability of broadcasters operating under simulcast conditions.

3.356 Accordingly, the Authority considers it reasonable to apply the factor of 1.5 for the valuation of spectrum for analog channels to arrive at the valuation for spectrum required for simulcast by new entrants in 13 cities of category of A+ and A. The valuation so arrived is given in table 3.15 below:

Table 3.15: Valuation for spectrum required for simulcast by new radio broadcasters in 13 cities of category of A+ and A

(Rs. in crore)

City	Category	Valuation of spectrum for analog component (X)	Valuation of Spectrum for Simulcast Y= 1.5 * X
Chennai	A+	139.70	209.55
Delhi	A+	169.17	253.76
Kolkata	A+	76.15	114.22
Mumbai	A+	184.84	277.25
Ahmedabad	A	38.52	57.78
Bengaluru	A	83.07	124.60
Hyderabad	A	62.71	94.07
Jaipur	A	25.61	38.41
Kanpur	A	19.54	29.31
Lucknow	A	23.42	35.13
Nagpur	A	28.07	42.11
Pune	A	39.29	58.94
Surat	A	24.66	36.99

Estimation of Reserve price of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A

3.357 With regard to the estimation of Reserve Price of Radio Channels, the following question was raised in the CP: -

Q33. Do you agree that a multiplication factor of 0.7 be used for estimating the reserve price from average valuation of FM Radio channels or otherwise? Please provide your suggestions with detailed justification.

Comments of stakeholders

3.358 In response, some stakeholders suggested the multiplication factor to be 0.25.

3.359 One stakeholder opined that new auctions for simulcast should follow TRAI's reserve prices. They added that frequencies left after existing broadcasters' choices could be auctioned to new players at 0.3 times the analog reserve price.

Analysis

3.360 The Authority vide its Recommendations on Reserve Price for Auction of FM Radio channels 2020 recommended that Reserve price (RP) for FM radio channels in a city, except the cities situated in NE, J&K and Andaman and Nicobar, should be set equal to 0.8 times the valuation of FM radio channels in that city.

3.361 In various access spectrum valuation exercises till 2020, for the purpose of determining the reserve price for access spectrum, the Authority had adopted a multiplication factor of 0.8, i.e., the reserve price was set at 80% of the valuation of

the access spectrum. This approach was taken as the basis for recommending reserve prices for FM radio channels.

3.362 Even in 2015 recommendations, the Authority recommended that RP of FM radio channel should be set equal to 80% of the valuation. The reserve prices recommended were not considered by MIB and set the reserve prices on the basis of FM Phase III policy guidelines.

3.363 Further, the Authority gave its recommendations on 'Reserve Price for auction of FM Radio channels' on 10.04.2020. In the 2020 exercise, a multiplication factor of 0.8 was applied for estimating the reserve prices of FM radio channels across cities. MIB has accepted these recommendations and conducted the auctions for allotting 730 channels in 234 new cities on 9th and 10th July 2025. Bids received for only 63 channels in 43 cities.

3.364 For the purpose of reserve price fixation, the Authority abides by the principle that the reserve price should be set at an optimal level to ensure effective competition and price discovery. A high reserve price may discourage participation and the competitiveness of the auction. Low participation leads to low sales and revenue. On the other hand, too low a reserve price hampers the realisation of the true value of the underlying asset by incentivizing collusive behaviour among participants. Moreover, it may also incentivize entry of non-serious bidders.

3.365 A balanced intermediate reserve price satisfies the basic objectives of reserve price setting viz., ensuring realization of the underlying value of the asset being auctioned and deterring collusive behaviour among bidders. In order to ensure competitive bidding and price discovery, the reserve price

should not be too close to the expected/predicted valuation of the object put up for auction.

3.366 In the present context, the Authority aims to determine the reserve price at a level that not only reflects the value of the radio channel but also incentivizes participation from bidders and fosters competition in the auction process. Enhanced uptake of radio channels by bidders is essential for the proliferation of FM radio services and for ensuring their widespread reach, particularly in underserved areas.

3.367 In this regard, the Authority takes note that vide its recommendations on 'Auction of Spectrum in frequency bands identified for IMT/5G' of 2022 the Authority had recommended that reserve price should be set at 70% of the average valuation. The Authority was of the view that it would ensure healthy competition, leading to the discovery of the true market price. The Authority *inter alia* noted that:

(i) The reserve price is not the final auction price;

(ii) Brown and Morgan[39] found from results of field experiments of auctions of collectible coins that positive reserve prices set at the level of 70% of the purchase price of the coins lead to higher revenues and lower number of bidders relative to zero reserve prices

(iii) Malisuwan et al[40] noted that the ratio of reserve price to auction price "…possibly varies greatly across the historical database -from less than 0.1 to 1", and that in many cases, regulators determine to multiply estimates of spectrum value by 70%-80% to derive the reserve prices.

[39] Brown, Jennifer and John Morgan (2009), How much is a Dollar Worth? Tipping versus equilibrium co-existence on competing online auction sites, The Journal of Political Economy
[40] Malisuwan, Settapong, et al (2016), Mobile Spectrum Value and Reserve Price by using Benchmarking Approaches, International Journal of Scientific Engineering and Technology, 5:1 (pp. 81-4)

(iv) The Authority also noted that Plum Consulting, as part of the ITU team advising the National Broadcasting and Telecommunications Commission (Thailand) ahead of the 2015 auctions in the 900 MHz and 1800 MHz bands, had recommended reserve prices at approximately 70% of the estimated value.[41]

3.368 In view of the above, the Authority in IMT/5G recommendations of 2022 considered that a reserve price set at 70% of the average valuation of spectrum band would go a long way in helping discover the market clearing price of the access spectrum. Based on the reserve prices recommended by TRAI for IMT/5G spectrum, DoT conducted the auction in 2022 and 2024.

3.369 In order to arrive at a reserve price that strikes the right balance between reflecting the value of the radio channel and incentivizes participation from bidders, it may be beneficial to analyse the market trends of the FM radio sector. These are discussed in the succeeding paragraphs.

3.370 The widespread availability of high-speed internet through 4G and 5G networks has significantly improved access to digital content, allowing users to stream music, songs, podcasts and even app based radio channels streaming on a variety of devices. The increasing use of smartphones and the integration of Bluetooth-enabled systems in cars have further enabled convenient, on-the-go access to online audio platforms. In many new vehicles, traditional FM radio systems are being replaced or supplemented by Android/iOS-based infotainment systems, which support digital streaming apps. As a result,

[41] Chan, Yi Shen and Sarongrat Wongsaroj (2016), Valuing Spectrum in Thailand: what can we learn?, Plum Insight, available at plumconsulting.co.uk.

users can listen to content of their choice, as per their individual preferences and convenience.

3.371 This shift is expected to lead to a rise in subscriptions to audio streaming platforms, particularly among the younger demographic and urban audiences, who often prefer on-demand content over scheduled FM radio broadcasting. Digital streaming allows users to skip, search, and curate their own playlists, making it a more flexible and personalized option.

3.372 The growing popularity and ease of access to online and app-based audio services have introduced a potential substitutability effect, which is likely to impact the traditional FM radio listenership and consequently the revenue of the FM radio sector. These developments must be taken into consideration while determining reserve prices for the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A, as they directly influence the competitive landscape and the long-term value proposition of radio.

3.373 With respect to revenue, it has been tabulated and stated above that, the total advertisement revenue of the FM radio industry stood at ₹1903 crore in the financial year 2019–20. This revenue declined significantly to ₹941 crore in the following year which may be attributed to COVID-19 pandemic. Thereafter, the industry witnessed a gradual recovery, with revenue increasing to ₹1819 crore in the financial year 2024–25. Although the industry is currently experiencing year-on-year positive revenue growth, the present revenue figure, while nearing the 2019–20 level, still remains marginally lower. This may indicate that the FM radio sector is in a post-pandemic

recovery phase. These revenue trends are important considerations while determining the reserve price.

3.374 In light of the aforementioned market dynamics marked by increased competition from streaming audio platforms, the Authority is of the view that setting a high reserve price may disincentivize participation and uptake of radio channels, consequently adversely impacting the overall objective of proliferation of radio service.

3.375 Considering the above factors, including international studies, inputs from consultancy firms, technological advancements, and prevailing revenue trends, the Authority is of the considered view that setting the reserve price at 70 % of the valuation, would be appropriate. This approach is expected to foster healthy competition during the auction process, facilitate price discovery, encourage wider participation from interested bidders and eventually will help in achieving the Government's objective of proliferation of FM services.

3.376 In this context, it is relevant to note that in the 2015–16 auctions of FM radio channels, all available frequencies in 12 cities were sold. In Kolkata, all the channels were sold in 2005 itself. However, as discussed earlier its estimated ADP for 2015 is Rs. 40.21 crore. Therefore, the market determined prices of 2015-16 auction in 13 cities of category A+ and A must be factored in while determining the valuation and calculation of reserve price. Accordingly, in the present exercise city-specific Auction Determined Prices (ADPs) of 2015-2016 auctions have been considered as one of the important indicators of market's valuation of spectrum and used as one of the valuation approach of spectrum. Therefore, the Authority is of the view

that no further benchmarking of this calculated reserve price with the past auction determined prices is required.

3.377 In line with the above-mentioned approach, the Authority has decided that the reserve price of the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A should be set at 70% of the valuation.

3.378 Accordingly, the reserve prices for the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A are as given below:

Table 3.16: Reserve prices for the spectrum required for simulcast by radio broadcasters in 13 cities of category of A+ and A

(Rs. in crore)

City	Category	Valuation	Reserve price (Valuation*0.7)
Chennai	A+	209.55	146.68
Delhi	A+	253.76	177.63
Kolkata	A+	114.22	79.96
Mumbai	A+	277.25	194.08
Ahmedabad	A	57.78	40.44
Bengaluru	A	124.60	87.22
Hyderabad	A	94.07	65.85
Jaipur	A	38.41	26.89
Kanpur	A	29.31	20.52
Lucknow	A	35.13	24.59
Nagpur	A	42.11	29.48
Pune	A	58.94	41.26
Surat	A	36.99	25.89

3.379 Accordingly**, the Authority recommends the following reserve price for auction of spectrum required for simulcast by new radio broadcasters in 13 cities of category of A+ and A**

City	Category	RP for Spectrum for Simulcast (Rs. in crore)
Chennai	**A+**	**146.68**
Delhi	**A+**	**177.63**
Kolkata	**A+**	**79.96**
Mumbai	**A+**	**194.08**
Ahmedabad	**A**	**40.44**
Bengaluru	**A**	**87.22**
Hyderabad	**A**	**65.85**
Jaipur	**A**	**26.89**
Kanpur	**A**	**20.52**
Lucknow	**A**	**24.59**
Nagpur	**A**	**29.48**
Pune	**A**	**41.26**
Surat	**A**	**25.89**

T. Methodology of payment of bid/migration amount

3.380 As per provisions of FM phase III policy, successful bidders are required to pay entire successful bid amount within 15 calendar days of the close of the Auction and notification of successful bidders by the Government. The relevant extracts of the policy guidelines are reproduced below:

"4.7 Payment Methodology:

(i) Successful Bidders shall deposit 25% of the Successful Bid Amount as Bid Deposit within 5 calendar days of the close of the Auction, failing which the Earnest Money Deposit shall stand forfeited.

(ii) Successful Bidders shall deposit the balance amount (Successful Bid Amount less Bid Deposit) within 15 calendar days of the close of the Auction, failing which its Earnest Money Deposit and its Bid Deposit shall stand forfeited."

3.381 Similar provisions have been prescribed in the Notice Inviting Applications (NIA) dated 14th October 2024 issued by MIB.

3.382 In this regard, the Authority has noted that in the NIA[42] for auction of Spectrum in 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz, and 26 GHz Bands issued by Department of Telecommunications (DoT) on 8th March 2024, the successful bidders were given multiple options for payment of the bid amount for which the procedure was prescribed under payment terms. Similar options were also offered in NIA of 2022. The relevant extracts of the NIA dated 8th March 2024, are reproduced below:

"6.1 Payment Terms

6.1.1 Payment Options and procedure

Successful Bidders shall make the payment (in Indian Rupees) in accordance with any of the following two options:

Option 1: *Full or part upfront payment of the bid amount within 10 calendar days from the issuance of Demand Note by DoT. Where part upfront payment has been made, which can be a multiple of complete years with a minimum of two years, the buyer shall have the option of availing moratorium for the*

[42] https://dot.gov.in/sites/default/files/Notice%20Inviting%20Applications%202023-24.pdf

corresponding number of years for which the upfront payment has been made, and the balance amount shall be payable in equal annual instalments over the remaining period, payable in advance at the beginning of each year, after the period of moratorium if any, duly protecting the Net Present Value (NPV) of the bid amount at the applicable rate of interest. The annual instalments shall become due and payable on the Effective Date anniversary of each following year.

Option 2: *Payment of 20 equal annual instalments of the bid amount, duly protecting the NPV of the bid amount at the applicable rate of interest, in advance at the beginning of the year, the first instalment becoming payable within 10 calendar days from the issuance of Demand Note by DoT. The balance 19 instalments shall become due and payable on the Effective Date anniversary of each following year.. ……..*

The applicable interest rate for protecting the NPV of the bid amount is 8.65%."

3.383 The Authority has further noted that the growth of revenue of FM radio broadcasters is sluggish as shown in figure 1.2. The sluggish revenue growth could be attributed to changing user behaviour, increased competition from streaming services and other alternate mediums of content dissemination and consumption e.g. social media.

3.384 In this scenario, it is felt that mandatory upfront payment of successful bid amount may act as an entry barrier for participation in auction of digital Radio channels and there is a need to find ways to make auction lucrative to all the stakeholders, particularly small entities.

3.385 Accordingly, the Authority is of the view that successful bidders in digital radio auction should be offered multiple

options for payment of bid amount as done by Department of Telecommunications and summarised in para 3.382 above**.** The offer of multiple payment options may be a win-win situation both for the Government and the bidders, as it enables larger participation in auctions, while also eases financial burden on FM Radio broadcasters. This may result in easing proliferation of the new technology of digital Radio services and also serve the public interest.

3.386 Introduction of multiple payment options will require a carefully calibrated approach for spectrum price recovery that reflects the gradual development of the receiver ecosystem and proliferation of these services. The authorisation period for 'Terrestrial Radio Service' including digital radio services has been recommended to be fifteen years, during which the adoption of digital receivers is likely to take place gradually over time.

3.387 It is understood that once the digital radio services are decided to be rolled out, it would take around 2 years for rollout of services and further about 3 years for the device ecosystem to fully develop. Hence, the listenership during first 5 years will be very less fetching little or negligible advertisement revenue.

3.388 Considering the lifecycle of vehicles and consumer devices, and the absence of digital receivers in mobile handsets at present, analysis indicates that the ecosystem may take around a decade to reach mass availability. As revenues for broadcasters are solely dependent on advertising, the growth of listenership and therefore commercial returns will be directly tied to the penetration of receiver devices. The adoption and integration of digital radio receivers in various types of consumer equipment is analysed in subsequent paragraphs.

3.389 Radio receivers that need to be adopted for digital radio broadcasting can be broadly classified into following categories:

(1) Standalone Radio receivers;
(2) Radio receivers integrated with infotainment systems installed in vehicles;
(3) Radio receivers integrated with Mobile phones; and
(4) Radio receivers integrated with music systems (including Bluetooth speakers).

3.390 Car Infotainment Systems: The development of affordable digital receivers and their adoption by automobile manufacturers is expected to be gradual. Digital radio systems may begin to appear in new vehicles two years after the conclusion of auction, when the services are rolled out. During the first five years, the penetration of digital receivers in vehicles is expected to be low due to the time taken in roll out of service, development of device ecosystem and its adoption by various manufacturers of automobiles. Once the service becomes available, the new vehicles may start coming with digital radio equipped infotainment systems. As for replacement of existing analog receivers in vehicles, with the lifecycle of vehicles being generally fifteen years or more, the replacement of existing vehicles will take around 15 years. Vehicles are usually fitted with rugged infotainment systems whose life is generally co-terminus with the life of the vehicle. It is expected that around half of the vehicle base may have digital receivers by about 7-8 years, from roll out of services, and full penetration in automobile vehicles may be achieved by about 15 years.

3.391 Personal devices: In personal devices such as headphones, music systems and home theatres, standalone devices etc.,

digital radio adoption may take place over replacement cycles ranging from around 5 years for low end devices to around 10 years for high end systems. Digital radio receivers in personal devices may take around 2 years to be introduced once spectrum is auctioned, i.e., along with rollout of service and a further period of about 3 years may be required for its market wide proliferation before it witnesses meaningful consumer adoption. Beyond the first 5 years, new devices are expected to be widely equipped with digital radio receivers whereas replacement. In practical terms, the number of personal devices supporting digital radio may remain small during the initial 5 years, reaching significant penetration in around 5-10 years and achieving near universal availability in the period beyond the tenth year.

3.392 Mobile handsets: The most unpredictable element in this ecosystem are mobile handsets. At present, while some smartphones include analog FM receivers, these features remain largely disabled in India by manufacturers. It is understood that no device in India and hardly any models globally currently incorporate digital radio receivers. Discussions with major manufacturers indicate no plans for their integration in near future. Several feature phone models do currently have active analog FM radio receivers, but feature phone ownership is declining, and none currently have digital radio receivers in India. Though MeitY has issued advisory for activating FM radio receivers in mobile phones wherever available, further efforts need to be made to encourage mobile handset manufacturers to integrate digital radio receivers. In view of various merits of the alternative of broadcast reception besides data streaming as already acknowledged while issuing previous advisory by MeitY, he probability of its wide adoption notwithstanding the continuation of efforts, is still less in view

of the past experience. Hence, availability of radio receivers in mobile handsets cannot be significantly relied upon for listenership of digital radio.

3.393 Streaming**:** Further, streaming of digital radio channels provides an alternative source for listenership, available immediately owing to internet connectivity in mobile devices and infotainment systems. However, this space is already overcrowded with multiple established and popular streaming services which also provide flexibility of user control. After the first 2 years of rollout of services, another 3 years that follow or so would be needed to build popularity and carve out some listenership for the digital radio streaming. Thereafter, streaming listenership is expected to gradually build, as these services gain popularity. Even so, revenues from streaming would be dependent on the broadcasters' ability to compete for audience attention against established digital apps more so due to absence of user control which is not the case with other streaming apps.

3.394 **Options of payment in annual instalments:** Considering the likely adoption trajectory of digital radio receiver devices and listenership, and considering the significant risk borne by investors in a digital radio broadcasting landscape, spectrum price recovery for digital radio channels component of total price in case of the option of annual instalments needs to be structured in a stepwise manner while the spectrum price recovery for the analog channel can continue to be uniform in case of annual instalments, duly protecting the net present value of the price bid in the auction.

3.395 Considering the discussions in the preceding para, the Authority is of the view that in case of option of annual

instalments, the instalments should be worked out by first working out instalments separately for the analog and digital components of the service and then adding these to get the total annual instalment. While spectrum price for analog channels component of service can be recovered in equal annual instalments over 15 years duly protecting the NPV; the spectrum price recovery for digital radio channels may be gradually stepped up in the slabs of 5 years duration i.e., 'NIL' recovery in the first five years (F1) , 1/3rd of the price recovery in next five years (F2) and 2/3rd of the price recovery in the final five years (F3) duly protecting the NPV. Regarding value from data channel, the Authority has noted that the data channel is likely to be used mainly for program information, early emergency warning and broadcast messages during disaster etc. The small revenue stream, if any, from such services may be ignored compared to sum total of revenue realised from analog and digital channels and therefore value of only three digital channels has been considered besides the analog channel in the valuation at this stage.

3.396 The Authority notes that the first five years includes two years of rolling out period for commencement of services and another three years for market wide development of devices ecosystem before significant revenue streams may start accruing. Thus, the first five years may need to be kept free of any recovery from the digital channels' component of revenue. This stepwise approach for annual instalment option is necessary in view of the significant capital investments made by the digital radio broadcasters and incurring of operational expenses after commencement of services while digital radio receiver devices and listener ecosystem is still evolving to generate significant revenue streams.

3.397 The analysis in the preceding paras shows that while the revenue streams from digital radio may gradually start building up in the next 5 years (F2), the break-even point may be reached by around tenth year. This is based on the factors that by the tenth year, about half of the automobile infotainment eco-system may be equipped with digital radio whereas the personal devices eco-system and the revenue from the streaming is likely to be fully matured by the tenth year. In order to maintain financial sustainability of the digital radio broadcasters, only 1/3rd of the spectrum auction/bid price may be recovered during this second five-year slab (F2). In the final five years (F3), while the automobile infotainment ecosystem builds up further, the personal devices ecosystem and the revenue from the streaming is fully matured, 2/3rd of the spectrum auction/bid price may be recovered in the final five years (F3). In each of the second and third five-year phases i.e., 6th to 10th year (F2) and 11th to 15th year (F3), the spectrum price to be recovered during that five-year period may be distributed in equal annual instalments, duly protecting the NPV of ADP at an applicable interest rate equal to MCLR of SBI for one year period (as on 15th September, 2025, this rate is 8.75%).

3.398 The Authority, in the present recommendations has recommended that for migration to simulcast mode, existing FM radio broadcasters will be required to pay an amount equal to the difference of auction determined price for digital radio broadcasting in a city and the proportionate amount of NOTEF for the remaining period of the existing permission. The Authority is of the view that in order to ensure parity, existing broadcasters who migrate to simulcast should also be given multiple options for payment of additional spectrum required for simulcast.

3.399 Accordingly, the successful bidders for digital radio broadcasting in simulcast mode may be given multiple options for payment like upfront payment, payment in annual instalments duly protecting the NPV of ADP as discussed above. An illustrative table for every Rs. 100 payable annual instalments over a period of 15 years, duly protecting the NPV, as discussed above, is given below:

Table 3.17: Illustration of staggered payments

Year	Analog	Digital	Total
1	7.49	0	7.49
2	7.49	0	7.49
3	7.49	0	7.49
4	7.49	0	7.49
5	7.49	0	7.49
6	7.49	3.97	11.46
7	7.49	3.97	11.46
8	7.49	3.97	11.46
9	7.49	3.97	11.46
10	7.49	3.97	11.46
11	7.49	12.07	19.57
12	7.49	12.07	19.57
13	7.49	12.07	19.57
14	7.49	12.07	19.57
15	7.49	12.07	19.57

Note:

1) The values in above table have been calculated using a discounting rate of 8.75% (MCLR of SBI for one year as on 15th September 2025) for NPV of Rs. 100/-.

3.400 Accordingly, the Authority is of the view that the successful bidders for new frequencies and existing broadcasters, who migrate to simulcast, should be allowed to make payment (in Indian Rupees) in accordance with any of the following three options detailed below for each category. In this regard the government should provide these options in NIA or offer for migration to the successful bidders for new frequencies and

existing broadcasters, who intend to migrate respectively. These broadcasters should give their choice of payment option.

a) For successful bidders for new frequencies:

Option N1: Payment for bid amount may be kept similar to the provisions kept in E-Auction of Third Batch of Private FM Radio Phase-III Channels conducted by the Government in July 2025[43]. The successful bidders, as notified by the Government, are required to deposit 25% of the successful bid amount as bid deposit within 5 calendar days of the close of the auction and notification of successful bidders by the Government, failing which the Earnest Money Deposit shall stand forfeited. Further, the successful bidders are required to deposit the balance amount (successful bid amount less bid deposit) within 15 calendar days of the close of the Auction and notification of successful bidders by the Government, failing which its Earnest Money Deposit and its bid deposit shall stand forfeited.

Option N2: This option enables part payment of bid amount. Part upfront payment of the bid amount should be made within 5 calendar days from the issuance of Demand Note by the Government. Where part upfront payment has been made, which can be a multiple of complete years with a minimum of two years, the buyer shall have the option of availing moratorium for the corresponding number of years for which the upfront payment has been made, and the balance amount shall be payable in equal annual instalments over the remaining period, payable in advance at the beginning of each year, after the period of moratorium if any,

[43] https://mib.gov.in/sites/default/files/2024-12/nia_14oct2024_final.pdf accessed on 29.09.2025

duly protecting the Net Present Value (NPV) of the bid amount at the applicable rate of interest. The annual instalments shall become due and payable on the Effective Date anniversary of each following year.

Option N3: In this option, payment is required to be made in 15 instalments over 15 years duly protecting the NPV. While calculating the annual instalment, the instalments for analog channel portion of valuation (i.e., 2/3rd of total valuation) may be recovered in 15 equal instalments duly protecting the NPV. For the additional valuation due to addition of digital channels (i.e., 1/3rd of total valuation), no payment is required to be made in first 5 years (F1) followed by five equal instalments for 1/3rd of the bid price (F2) in the 6th to 10th year and five equal instalments for 2/3rd of the bid price in the 11th to 15th year (F3), duly protecting the NPV of ADP at an applicable interest rate equal to MCLR of SBI for one year period. The Illustrative example is provided in Table 3.17 above.

b) Existing broadcasters, who migrate to simulcast: the amount to be paid by existing broadcasters, who migrate to simulcast, will be the difference of ADP and proportionate NOTEF of remaining period of existing permission. The ADP for new frequencies may be taken as consisting of 2/3rd amount for analog channel and 1/3rd amount for the addition of digital channels. Since the existing NOTEF corresponds to analog channel, it is prudent that the deduction for proportionate NOTEF of remaining period of existing permission is deducted from the analog component of ADP. For example, consider a case where:

(i) ADP for a new spot frequency is Rs. 900/-, comprising of Rs. 600 for analog spectrum and Rs. 300/- for digital spectrum.

(ii) NOTEF for the 15 years permission period of analog FM was Rs 400/-

(iii) 7.5 years of existing permission period is remaining.

(iv) In this case the proportionate NOTEF to be deducted will be Rs. 200/-.

(v) Hence, the net amount to be paid by the broadcaster for migration will be Rs. 700/- (900-200). This will include Rs. 400/- (600 – 200) for analog spectrum and Rs. 300/- for digital spectrum.

Option M1: Payment for migration amount as described above may be kept similar to the provisions kept in E-Auction of Third Batch of Private FM Radio Phase-III Channels conducted by the Government in July 2025[44]. The broadcasters, who migrate to simulcast, are required to deposit 25% of the migration amount as migration deposit within 5 calendar days from the issuance of Demand Note by the Government for migration amount. Further, these broadcasters should be required to deposit the balance amount within 15 calendar days of exercising the option for migration.

Option M2: This option enables part payment of migration amount. Part upfront payment of the migration amount should be made within 5 calendar days from the issuance of Demand Note by the Government for migration amount. Where part upfront payment has been made, which can be a multiple of complete years with a minimum of two years, the

[44] https://mib.gov.in/sites/default/files/2024-12/nia_14oct2024_final.pdf accessed on 29.09.2025

migrating broadcaster shall have the option of availing moratorium for the corresponding number of years for which the upfront payment has been made, and the balance amount shall be payable in equal annual instalments over the remaining period, payable in advance at the beginning of each year, after the period of moratorium if any, duly protecting the Net Present Value (NPV) of the migration amount at the applicable rate of interest. The annual instalments shall become due and payable on the Effective Date anniversary of each following year.

Option M3: In this option, payment is required to be made in 15 instalments over 15 years duly protecting the NPV. While calculating the annual instalments, the instalments for analog channel portion of valuation (i.e., 2/3rd of total valuation) may be recovered in 15 equal instalments duly protecting the NPV. For the additional valuation due to addition of digital channels (i.e., 1/3rd of total valuation), no payment is required to be made in first 5 years followed by five equal instalments for 1/3rd of the bid price in the 6th to 10th year and five equal instalments for 2/3rd of the bid price in the 11th to 15th year, duly protecting the NPV of ADP at an applicable interest rate equal to MCLR of SBI for one year period . The Illustrative example is provided in as given below:

- A broadcaster will be required to make a payment of Rs. 400/- for analog channel component, in 15 equal annual instalments.
- For digital channels component, it will not make any payment in first five years (F1), followed by payment of Rs. 100/- in five equal annual instalments from 6th to 10th year (F2) and Rs. 200/- in five equal annual instalments from 10th to 15th year (F3). All these

payments have to be made with due protection of NPVs.

3.401 **Accordingly, the Authority recommends that:**

a) the successful bidders of new spot frequencies should be given multiple options for payment of bid amount similar to the spectrum auction done by the Government.

b) existing broadcasters who migrate to simulcast should also be given multiple options for payment of migration amount.

c) In case of payment of bid amount in annual instalments, incremental instalments should be permitted in three slabs of 5 years, whereby recovering 66.67% of the ADP in equal instalments over 15 years duly protecting NPV and balance 33.33% at these rates:

i. Nil in first five years;
ii. 1/3rd in next five years, equally distributed over the five years period;
iii. 2/3rd in the final five years equally distributed over the five years period;

duly protecting the NPV.

d) In case of payment of migration amount in annual instalments, incremental instalments should be permitted in three slabs of 5 years, whereby recovering 66.67% of the ADP reduced by proportionate amount of NOTEF for remaining period of existing permission, in equal instalments over 15 years duly protecting NPV and balance 33.33% of ADP at these rates:

i. **Nil in first five years;**
ii. **1/3rd in next five years, equally distributed over the five years period;**
iii. **2/3rd in the final five years equally distributed over the five years period;**

duly protecting the NPV.

e) **In case of annual instalment option or part payment option, the NPV of ADP/migration amount should be protected by discounting the instalments at an applicable interest rate equal to one year MCLR of State Bank of India.**

Chapter IV
Summary of Recommendations

1. The Authority recommends adoption of a single digital radio technology standard in India for introduction of digital radio broadcasting in VHF Band II.

2. The Authority recommends that

a. The Government should select a suitable Digital Radio Technology for deployment in India.

b. Frequency planning for each of the technology may be done by MIB before auction which should be made public.

c. The Government should conclude the selection of technology before initiating financial bidding in the auction of spectrum for digital radio broadcasting.

d. MIB may select the suitable technology either by holding consultations with main stakeholders, that is, the radio broadcasters and the radio receiver manufacturers or by incorporating selection of technology in the spectrum auction process or any other method considered suitable by the MIB.

3. The Authority recommends that:

a) Simulcast mode should be permitted for migration of existing analog FM Radio broadcasters or commencing services by new broadcasters.

b) The frequency assignment for new frequencies should be auctioned in accordance with Section 4(4) of the Telecommunication Act, 2023.

c) Immediately after the successful assignment of new frequencies through auction for digital radio broadcasting, an offer should be made to the existing FM Radio broadcasters to migrate to simulcast mode.

d) Existing radio broadcasters in a city should be allowed to voluntarily migrate to simulcast mode of Digital radio broadcasting. A time limit of 6 months from the date of conclusion of auction process should be given to existing broadcasters to exercise the option to migrate to simulcast mode.

e) Existing analog FM Radio channels who do not migrate to digital radio broadcasting should be allowed to remain operational till the expiry of their Phase-III permissions.

f) For migration to simulcast mode, existing FM radio broadcasters will be required to pay an amount equal to the difference of auction determined price for digital radio broadcasting in a city and the proportionate amount of NOTEF for the remaining period of the existing permission. In case the difference of auction determined price for digital radio broadcasting in a city and the proportionate amount of NOTEF for the remaining period of the existing permission is less than zero, the existing FM radio broadcaster will not get any refund for migration.

g) In case no bids are received for new frequencies in a city, then ADP for that city for the purpose of migration of

existing broadcasters should be taken as an average of the ADPs for similar category of cities. While extending the average ADP to other cities in the category where no bid is received, this option should be exercised only when at least two cities in that category have received successful bids.

4. The Authority recommends that:

a) Radio broadcasters should commence simulcast operations within two years of conclusion of auction process by new broadcasters or acceptance of option for migration by existing broadcasters.

b) The sunset date for the analog broadcasting should be decided after evaluating the progress of digital radio broadcasting at a later date.

5. The Authority recommends that:

a) Government should introduce a new authorisation for 'Radio Broadcasting Infrastructure Provider' for provision of active and passive digital infrastructure which can be leased to radio broadcasters. However, the introduction of new RBIP authorisation should not be a pre-requisite for considering and implementing Digital radio broadcasting services.

b) In case the Government decides to introduce license/authorisation for Radio Broadcasting Infrastructure Provider, a reference may be made to TRAI for recommending terms and conditions for such a license/authorisation.

6. The Authority recommends that:

a) The Government should issue an advisory regarding availability of digital radio receivers in mobile phones and car infotainment systems, similar to the advisory issued by the Ministry of Electronics and Information Technology (MeitY) for availability of FM Radio receivers in mobile phones.

b) To oversee and monitor the development and proliferation of digital radio receivers and market dynamics, MIB should constitute a high-level steering committee comprising of senior representatives from the MIB, Ministry of Electronics and Information Technology (MeitY), radio broadcasters, device manufacturers, and the technology provider.

7. The Authority recommends that private terrestrial radio broadcasters should be allowed to stream their live terrestrial channels concurrently, without user control. The radio broadcasters opting to stream their live terrestrial channels concurrently shall be subject to Copyright Act, 1957.

Here 'without user control' shall mean features like download, playback, replay etc. are not available to the user while streaming.

8. The Authority recommends that

a) The eligibility conditions (including the minimum net worth criteria) for digital radio broadcasting service authorisation should be same as that for grant of service authorisation for 'Terrestrial Radio

Service', as recommended in its recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' issued on 21st February 2025.

b) the city category wise minimum net worth requirement for participation in the auction of spectrum should be as follows:

City category	**Minimum networth *per City Category in each region (in Rs.)***
A+	**3 crore**
A	**3 crore**
B	**2 crore**
C	**1 crore**
D category Cities and cities with population upto 1 lakh	**50 Lakh**
E	**30 Lakh**
All categories of Cities in all regions	**10 crore**

Illustration: For two or more C category cities in the same region, Net Worth of Rs. 1 crore is required. If the two C category cities are in two different regions, Net Worth of Rs. 2 crore is required.

[1]: Net worth requirement for two or more B category cities in one region will suffice the net worth requirement for a combination of two or more B category or lower category cities (ie, cities in C, D and

J&K/ Ladakh/NE (border) categories) also in the same region. Similarly, for other categories.

Region shall mean North or East or South or West region, comprising states/UT s as under:

North Region: J&K, Punjab, Himachal Pradesh, Haryana, Rajasthan, Delhi, Uttar Pradesh, Uttarakhand & Chandigarh.

East Region: Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tripura, West Bengal, Andaman & Nicobar Islands.

South Region: Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu, and Puducherry, Lakshadweep

West Region: Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Maharashtra, Daman & Diu, Dadar and Nagar Haveli.

9. The Authority recommends that the period of authorisation for Terrestrial Radio Service (covering digital radio broadcasting) should be as under:

a) Validity Period: to remain as 15 years, as prescribed under 'Private FM Phase-III policy'.

b) Renewal of authorisation: 15 years, with a Renewal Fee: Rs. 10,000. However, spectrum for extended period will be required to be acquired separately after following due process.

10. The Authority recommends that:

a) The Notice Inviting Application/Information Memorandum or any other guidelines/instructions should contain terms and conditions for assignment of

frequency including but not limited to the process of frequency assignment, Earnest Money Deposit, Reserve Price, Roll out and other obligations, Blacklisting and Forfeitures etc. and any other relevant aspects.

b) Earnest Money Deposit for frequency assignment in a city should be 25% of the reserve price of that city.

c) A bank guarantee for an amount equal to the annual fee should be levied from successful bidders for ensuring compliance with all the terms and conditions of authorisation including timely payment of due annual fee.

11. The Authority recommends that:

a) Processing fee for the grant of authorisation for digital radio broadcasting should be Rs. 10,000.

b) Application processing fee for frequency assignment for digital radio broadcasting should be Rs. 5,000.

12. The Authority recommends the following timelines for each activity for operationalisation of a digital radio channel:

S.No.	Activity	Timelines of activities from completion of Auction process			
		For cities where Prasar Bharati LTI is available	For cities where suitable LTI other than Prasar Bharati is available	For cities where no suitable LTI is readily available	Remarks
1.	Signing of agreement and making payment to LTI provider	90 days	120 days	150 days	
2.	Appointment of mutually agreed CTI creator, signing of agreement and making payment	90 days(x) (120 days) (+)	90 days(x) (120 days) (+)	90 days(x) (120 days) (+)	(x) & (+) Please refer to N.B. below
3.	Creation of CTI	12 months	18 months	24 months	
4.	Operationalisation of digital radio channel	18 months	18 months	24 months	

(x) N.B. In case the Authorised entities of a city do not mutually agree upon appointment of a CTI integrator, enter into agreement and make payment of their share of CTI to the integrator within a period of 90 days of completion of auction process, then BECIL will automatically be mandated to be their CTI integrator and periods as indicated vide (+) will be applicable for entering into agreement with BECIL and making necessary payments of the share of each Authorised entities for creation of CTI to BECIL.

13. The Authority recommends that:

a) Gross Revenue for terrestrial radio broadcasting would be the gross inflow of cash, receivables or other consideration arising in the course of ordinary activities of the Radio Broadcasting enterprise from rendering of services and from the use by others of the enterprise resources yielding rent, interest, dividend, royalties, commissions etc. Gross Revenue shall, therefore, be calculated, without deduction of taxes and agency commission, on the basis of billing rates, net of discounts to advertisers. Barter advertising contracts shall also be included in the gross revenues on the basis of relevant billing rates. In the case of a permission holder providing or receiving goods and services from other companies that are owned or controlled by the owners of the permission holder, all such transactions shall be valued at normal commercial rates and included in the profit and loss account of the permission holder to calculate its gross revenue.

b) Revenue from streaming of a radio channel is also to be included in the definition of GR, if permitted and streaming is being provided by the radio broadcaster

c) Applicable Gross Revenue (ApGR) should be equal to the total Gross Revenue (GR) of the licensee as reduced by the revenue items not directly related to radio broadcasting services, which inter-alia, shall include, but not be limited, to the below:

i. Revenue from activities under a license/ permission issued by Department of Telecommunications;

ii. Reimbursement, if any, from the Government; and

iii. Other Income:

a. Income from Dividend;

b. Income from Interest;

c. Income from sale of fixed assets and securities;

d. Gains from Foreign Exchange rates fluctuations;

e. Income from property rent;

f. Insurance claims;

g. Written-off bad debts recovered;

h. Excess Provisions written back.

d) Adjusted Gross Revenue (AGR) shall be arrived at after deducting any GST paid (if GST is included as component of GR/ ApGR)

e) The annual authorisation / license fee for digital radio broadcasting should be calculated as 4% of the Adjusted Gross Revenue (AGR) of the radio channel during the respective financial year. For cities of 'Others' category (in border and hilly areas of NE, J&K, Ladakh & Island Territory) and 'E' Category, annual/authorisation fee of 2% of Adjusted Gross Revenue (AGR) should apply for the initial three years, after which annual/authorisation fee at 4% of AGR should be made applicable.

14. The Authority recommends that an Authorised Entity should not be allowed to own more than 40% of the total spot frequencies in a city subject to a minimum of three different broadcasters in the city. However, in case the 40% figure is a decimal, it will be rounded off to the nearest whole number.

Spot Frequency in HD Radio refers to the central analog FM frequency (200 KHz) around which HD Radio places its

digital components. HD Radio requires an additional 200 KHz (two 100 KHz blocks) placed adjacent to either side of the analog frequency, forming a 400 KHz simulcast block.

Spot Frequency in DRM refers to the central analog FM frequency (200 KHz). However, the 100 KHz digital block can be placed anywhere within the FM band (88–108 MHz), not necessarily adjacent to the analog frequency. The total spectrum required for simulcast is 300 KHz, but the digital component is flexibly positioned.

Note (1): The spot frequencies permitted to the following categories of the companies would be reckoned together for the purpose of calculating the total spot frequencies permitted to an entity:

a. **Subsidiary company of any applicant/allottee;**
b. **Holding company of any applicant/allottee;**
c. **Companies with the Same Management as that of applicant/allottee;**
d. **More than one Inter-Connected Undertaking with regard to the applicant/allottee.**

Note (2): In respect of existing license/permission/LoI holders, the spot frequencies already held by them should also be taken into consideration for calculating the 40% limit.

Note (3): In respect of simulcast, the above restrictions should apply subject to the condition that each broadcaster may be allowed to broadcast as many channels as possible within the assigned spot frequency, which the technology permits.

15. The Authority recommends that two new spot frequencies for digital radio broadcasting in each city out of total spot frequencies identified by MIB in category A+ and A cities should be auctioned at this stage. Auction of remaining frequencies in these cities to be considered after reviewing outcome of this round and the progress of development and proliferation of receiver device ecosystem.

16. The Authority recommends that the terms and conditions recommended for 'Programme Content' and 'News and Current Affairs' for the authorisation of 'Terrestrial Radio Service' in the recommendations on 'Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023' issued on 21st February 2025 should be adopted for digital radio broadcasting.

17. The Authority recommends in case of multiple radio channels available on one spot frequency to an entity/related entity(ies) in a city, the attempt should be to distinguish programming on each channel based on era of music, language of music, genre of music etc. to the extent possible to ensure diversity of programming to the listeners. However, the choice of genres should be left to the market forces.

18. The Authority recommends that:

a) The Central Government should notify separate Programme Code and Advertisement Code for Terrestrial Radio Services. The violation of Programme Code and Advertisement Code should be governed as per provisions in these Codes.

b) **The Authorised Entity shall operationalize its services and ensure completion of the activities preceding thereto within the time limits of 24 months from the date of completion of auction process, failing which the frequency assignment will be withdrawn, and the entity shall be debarred from allotment of another spot frequency in the same city for a period of five years from the date of such withdrawal.**

c) **The Central Government may also revoke/withdraw the authorisation, if the channel is closed down, either continuously or intermittently, for more than 180 days within any continuous period of 365 days, for any reason.**

19. The Authority recommends that:

a) **The task of formulating the methodology for examination and creation of new CTIs as well as modification of existing CTIs should be carried out by the concerned stakeholders themselves within a predefined timeline of three months or assigned to BECIL.**

b) **Prasar Bharati should share its land and tower infrastructure (LTI) as well as common transmission infrastructure (CTI) with private broadcasters at concessional rental rates while taking full recovery of operational expenses.**

c) **The condition for mandatory co-location of transmission infrastructure should be removed, and the authorised entities of Terrestrial Radio Service should be allowed to share infrastructure, on voluntary**

basis with the entities of broadcasting services, telecom services, infrastructure providers etc. as per technical and commercial feasibility.

20. The Authority recommends that the following format for Statement of Gross Revenue, Adjusted Gross Revenue for Terrestrial Radio Broadcasting Service:

STATEMENT OF GROSS REVENUE, APPLICABLE GROSS REVENUE, ADJUSTED GROSS REVENUE FOR TERRESTRIAL RADIO SERVICE

***Statement of Revenue and Authorisation Fee* of M/s_____ (Name of the Authorised Entity) for the quarter _____ of the financial year_____**

S.No	Income Heads	Total Revenue (in case of service items, as per applicable tariffs)	Discounts		Agency Commission	Taxes	Net as per P & L account
			Trade	Others			
		(Amount Rupees in Lacs)					
		A	B	C	D	E	F
1	Advertisement						
2	Streaming						
3	Promotional Events						
	3.1 Musical Star Events						
	3.2 Sponsored Programmes						
4	Marketing Rights						
5	Commission						
6	Royalties						
7	Sale of recorded cassettes, CDs, etc						

8	**Rent-Premises**					
9	**Rent-Equipment**					
10	**Interest/Dividend**					
11	**Related Party Transactions**					
	11.1 Goods Sold					
	11.2 Services rendered					
	11.3 Production					
	11.4 Marketing					
	11.5 Miscellaneous					
12.	**Miscellaneous/ Other Revenue**					
	(i) Income from Dividend					
	(j) Income from Interest					
	(k) Income from sale of fixed assets and securities					
	(l) Gains from foreign Exchange rates fluctuations					
	(m) Income from property rent					
	(n) Insurance Claims					
	(o) Written Off Bad Debts recovered					
	(p) Excess Provisions written back					
13.	**Any Government Reimbursements**					
14	**Revenue from services provided under a DoT License**					
15	**Any other non-service revenue**					

16	**Total Taxes**	**Sum Total of taxes at Column E (reported under revenue items above)**				
17	**Gross Revenue (Sum 1 to 16)**	**Sum Total of Column A**				
Excluded Revenue Items:						
18	**Miscellaneous/ Other Revenue**					
	(i) Income from Dividend					
	(j) Income from Interest					
	(k) Income from sale of fixed assets and securities					
	(l) Gains from foreign Exchange rates fluctuations					
	(m) Income from property rent					
	(n) Insurance Claims					
	(o) Written Off Bad Debts recovered					
	(p) Excess provisions written back					
19	**Any Government Reimbursements**					
20	**Revenue from services provided under a DoT License**					
21	**Any other non-service revenue**					
22	**Total Excluded Revenue**	**Sum Total of Items 18-21**				
23	**Applicable Gross revenue (17-22)**					
24	**Deductions:**					
(a)	**GST/Taxes**					

	(if reported under revenue items)	
25	**Adjusted Gross revenue (23-24)**	

Note:

1. **Gross Revenue: [A = B + C + D + E + F].**
2. **Gross Revenue for the purpose of Authorisation Fee (GR) = [A – (B+C)]**
3. **Item 16 (Total Taxes) shall be sum total of column E (taxes reported under each revenue item)**
4. **Applicable Gross Revenue:**
   ApGR = GR – Excluded Revenue Items
5. **Adjusted Gross Revenue (AGR):**
   AGR = ApGR – GST/ Taxes
   (if GST/Taxes have been reported under GR)
6. **Accordingly, Annual/Authorisation Fee shall be:**
   a) **4% of AGR for all the cities of category 'A+', 'A', 'B', 'C' and 'D'**
   b) **For cities of 'Others' category (in border and hilly areas of NE, J&K, Ladakh & Island Territory) and 'E' Category – 2% of AGR for initial period of 3 years, thereafter same as above**
7. **The income heads are only indicative and illustrative, and the Auditor may include all the relevant heads of the Terrestrial Radio Service authorisation.**
8. **The income from the Related Parties shall tally with the Related Parties schedule as per accounting standards no 18. Additional columns may be introduced, if required.**
9. **Column F is the total revenue as per profit and loss account.**
10. **Gross Revenue for this purpose would be the gross inflow of cash, receivables or other consideration arising in the course**

of ordinary activities of the Terrestrial Radio Service entity from rendering of services and from the use by others of the entity resources yielding rent, interest, dividend, royalties, commissions etc. Gross Revenue shall, therefore, be calculated, without deduction of taxes and agency commission, on the basis of billing rates, net of discounts to advertisers. Barter advertising contracts shall also be included in the gross revenues on the basis of relevant billing rates. In the case of an Authorised Entity providing or receiving goods and services from other entities that are owned or controlled by the owners of the Authorised Entity, all such transactions shall be valued at normal commercial rates and included in the profit and loss account of the Authorised Entity to calculate its gross revenue.

21. The current recommendations on Digital Radio Broadcast policy should be considered in modification to the recommendations on Framework for Service Authorisations for provision of Broadcasting Services under the Telecommunications Act, 2023 dated 21st February 2025 in respect of recommendations relating to:

a) Renewal period of service authorisation for Terrestrial Radio Service
b) Provisions related to Licence Fee (GR, ApGR, AGR)
c) Payment options for bid amount for new frequencies and migration amount for existing broadcasters
d) Application Processing fee for frequency assignment
e) Format for Statement of Gross Revenue, Adjusted Gross Revenue for Terrestrial Radio Broadcasting Service

While considering the recommendations dated 21st February 2025, the Government should apply these

modifications to the original recommendations dated 21st February 2025.

22. The Authority recommends the following reserve price for auction of spectrum required for simulcast by new radio broadcasters in 13 cities of category of A+ and A:

City	Category	RP for Spectrum for Simulcast (Rs. in crore)
Chennai	A+	146.68
Delhi	A+	177.63
Kolkata	A+	79.96
Mumbai	A+	194.08
Ahmedabad	A	40.44
Bengaluru	A	87.22
Hyderabad	A	65.85
Jaipur	A	26.89
Kanpur	A	20.52
Lucknow	A	24.59
Nagpur	A	29.48
Pune	A	41.26
Surat	A	25.89

23. The Authority recommends that:

a) the successful bidders of new spot frequencies should be given multiple options for payment of bid amount similar to the spectrum auction done by the Government.

b) existing broadcasters who migrate to simulcast should also be given multiple options for payment of migration amount.

c) In case of payment of bid amount in annual instalments, incremental instalments should be permitted in three slabs of 5 years, whereby recovering 66.67% of the ADP in equal instalments over 15 years duly protecting NPV and balance 33.33% at these rates:

i. **Nil in first five years;**
ii. **1/3rd in next five years, equally distributed over the five years period;**
iii. **2/3rd in the final five years equally distributed over the five years period;**

duly protecting the NPV.

d) In case of payment of migration amount in annual instalments, incremental instalments should be permitted in three slabs of 5 years, whereby recovering 66.67% of the ADP reduced by proportionate amount of NOTEF for remaining period of existing permission, in equal instalments over 15 years duly protecting NPV and balance 33.33% of ADP at these rates:

i. **Nil in first five years;**
ii. **1/3rd in next five years, equally distributed over the five years period;**
iii. **2/3rd in the final five years equally distributed over the five years period;**

duly protecting the NPV.

e) In case of annual instalment option or part payment option, the NPV of ADP/migration amount should be protected by discounting the instalments at an applicable interest rate equal to one year MCLR of State Bank of India

List of Acronyms

Abbreviation	Description
AAC	Advanced Audio Codec
AFS	Alternate frequency signalling
AGR	Adjusted Gross Revenue
AIR	All India Radio
AM	Amplitude Modulation
BECIL	Broadcast Engineering Consultants India Limited
BST-OFDM	Band Segmented Transmission Orthogonal Frequency Division Multiplexing
CDR	Convergent Digital Radio
CELP	Code Excited Linear Prediction
CEPT	European Conference of Postal and Telecommunications Administrations
CMMB	Converged Mobile Multimedia Broadcast
COFDM	Coded Orthogonal Frequency-Division Multiplexing
COFETEL	Mexican communications regulator (CoFeTel)
CP	Consultation paper
CRI	China Radio International
CRS	Community Radio Station
CRTC	The Canadian Radio-television and Telecommunications Commission
CTI	Common Transmission Infrastructure
D2M	Direct-To-Mobile
DAB	Digital Audio Broadcasting
DoT	Department of Telecommunications
DPI	Digital Public Infrastructure
DPIIT	*Department of Promotion of Industry and Internal Trade*
DRM	Digital Radio Mondiale
DSB	Digital Sound Broadcasting
DTT	Digital Terrestrial Television
DVB-S	Digital Video Broadcasting - Satellite
DVB-T	Digital Video Broadcasting - Terrestrial
EBU	European Broadcasting Union
EECC	European Electronic Communications Code
EHAAT	Effective height of Antenna Above Average Terrain
EMD	*Earnest Money Deposit*
ERF	Effective Radiated Power
ETSI	European Telecommunications Standards Institute
EWF	Emergency Warning Functionality
FCC	Federal Communications Commission
FDI	*Foreign Direct Investment*
FM	Frequency Modulation

GOPA	Grant of Permission Agreement
GR	*Gross Revenue*
HD	High Definition
HF	High Frequency
HUF	*Hindu Undivided Family*
HVXC	Harmonic Vector Excitation Coding
IBOC	In-band on-channel
IC	*integrated circuit*
ICASA	South African Regulator (ICASA)
ICEA	India Cellular & Electronics Association
IDC	Inter-Departmental Committee
IEEE	Institute of Electrical and Electronics Engineers
IISc	Indian Institute of Science
IIT	Indian Institutes of Technology
ISDB-S	Integrated Services Digital Broadcasting - Satellite
ISDB-T	Integrated Services Digital Broadcasting-Terrestrial
ISDB-Tsb	Integrated Services Digital Broadcasting for Terrestrial Sound Broadcasting
ITU	International Telecommunication Union
Kbps	Kilobits per second
LF	Low frequency
LLPs	Limited Liability Partnerships
LTI	*land & tower infrastructure*
LOI	Letter of Intent
MEiTY	Ministry of Electronics and Information Technology
MF	Medium frequency
MIB	Ministry of Information and Broadcasting
MHA	*Ministry of Home Affairs*
MP2	MPEG-1 Audio Layer 2 audio codec
MPEG	Moving Picture Experts Group
MPS	main program service
MW	Medium Wave
NFAP	National Frequency Allocation Plan
NOTEF	Non-Refundable One Time Entry Fee
NRSC	National Radio Systems Committee
ODMs	*original design manufacturers*
OEM	Original Equipment Manufacturer
OFDM	Orthogonal Frequency-Division Multiplexing
OHD	Open House Discussion
PBG	Performance Bank Guarantee
PS	Parametric Stereo
QAM	Quadrature Amplitude Modulation
RAVIS	Real-time Audio-Visual Information System
RBI	*Reserve Bank of India*
RF	Radio Frequency
RRI	Radio Republik Indonesia
SA	South Africa

SBR	Spectral Band Replication
SOC	System on Chip
SPS	Supplemental Program Service
SW	Short wave
TEC	Telecommunication Engineering Centre
TRAI	Telecom Regulatory Authority of India
UHF	Ultra-high frequency
UK	United Kingdom
VHF	Very High Frequency
WPC	Wireless Planning and Coordination

Annexure I

MIB reference dated 23.04.2024

संजीव शंकर, (भा.रा.से.)
संयुक्त सचिव (प्रसारण)
SANJIV SHANKAR, IRS
Joint Secretary (Broadcasting)

सत्यमेव जयते

भारत सरकार
सूचना एवं प्रसारण मंत्रालय
शास्त्री भवन, नई दिल्ली - 110115
GOVERNMENT OF INDIA
MINISTRY OF
INFORMATION & BROADCASTING
SHASTRI BHAWAN, NEW DELHI - 110115

D.O. No. – N-38014/1/2024-FM /214

Dated:23.04.2024

Dear Shri Raghunandan,

As you are aware, under the Private FM Phase-III policy, 388 Private FM channels are operational in 113 cities in the country. Out of this, 162 channels operationalized based on two auctions conducted in 2015 and 2016, while remaining channels migrated from FM Phase-II to FM Phase-III policy. The permission periods of these FM Phase-III channels will begin expiring from 1st April, 2030 onwards.

2. TRAI on 01.02.2018 regarding the Issues related to Digital Radio Broadcasting has inter-alia recommended the following:

a) Introduction of Digital Radio Broadcasting services through a Digital Policy framework with a roadmap for its rollout within existing FM frequency band of 88-108 MHz.

b) Auctions for digital services in phases starting with A+ and A category cities.

c) Existing FM broadcasters be given an offer to liberalize their spectrum to provide simulcast broadcast services.

d) Allow broadcasters to use any ITU recognized digital technology.

3. In this context, it is informed that an MIB constituted frequency planning committee has identified new channels to facilitate smooth roll out of digital radio broadcasting under Phase-I in 13 cities belonging to A+ and A categories with maximum number of permissible channels in each city annexed as **Annexure-I**. In line with the TRAI recommendations mentioned in paragraph 2 above, the committee has recommended a digital technology neutral approach, which will allow competitive market forces for advancement of digital radio broadcasting. It has ensured that all new channels proposed can use any of the ITU recommended standard for digital technology applicable within the VHF-II (FM) frequency band of 88-108 MHz for either simulcast or pure digital transmission.

4. The committee also examined the matter of co-location of these new channels with the existing C.T.I. setups. Due to technical constraints, these new channels cannot be accommodated within the existing C.T.I. setups. Therefore, a new C.T.I. setup is required for all such new channels in a given city. As far as the existing broadcasters in these cities is concerned, they may avail the facilities for simulcast / pure digital operations by modifying their existing C.T.I setups itself, with the condition that separate transmission of digital components are made, subject to feasibility, as defined by the respective standards. Alternatively, transmission facility for combined transmission (analogue & digital components) at existing CTI location need to be established with additional infrastructure, subject to feasibility, or establishment of a new CTI. The technical parameters of analogue / digital components for simulcast operations of these simulcast / pure digital channels are at **Annexure-II**.

Contd...2

5. There are certain issues from both the broadcasters as well as the listener's perspective, which need to be addressed in order to effect a smooth rollout of digital radio broadcasting in the country. These are highlighted as below:

a) What should be the optimum number of such channels for auction in each city?

b) What would be the methodology for examination and creation of new C.T.I. setups required for such new channels including its upkeep, given the fact that existing C.T.I. setups and towers do not have vacant space and apertures, respectively, for accommodating additional new channels in these 13 cities?

c) What would be the methodology for examination and modifications to existing CTI setups or creation of new C.T.I setups required for transmission of digital components/ simulcast operation by existing broadcasters including its upkeep given the fact that existing C.T.I. setups, including towers, cannot support addition of digital components without modifications?

d) Potential problems arising due to different broadcasters in a given city deciding to adopt different ITU recommended standard of technology. Probable solutions, which would minimize the hardships for development of associated ecosystem.

e) There are certain issues which the FM radio industry body AROI have been raising for consideration such as permitting private FM broadcasters to simulcast their live terrestrial channels on internet with no additional cost to broadcasters.

f) Besides, to cater to the technology shift, some existing licensing regulations under FM Phase-III policy which may require a relook are indicated in **Annexure-III**.

6. Since broadcasting has been notified to be a Telecommunication Service under Section 2 (1) (k) of TRAI Act recommendations of TRAI are sought as per provisions of Section 11(1) (a) on formulating a digital radio broadcast policy for private operators. Suggestions and issues highlighted in paragraphs 3, 4 and 5 above may also be considered while formulating recommendations for digital radio broadcasting.

7. As Government is keen to bring the digital radio policy, I would request you to kindly have the recommendations of the Authority expedited on priority.

Best Regards,

Encl. as above.

Yours sincerely,

(Sanjiv Shankar)

Shri V. Raghunandan,
Secretary, Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
JLN Marg, Old Minto Road,
New Delhi 110 002

Annexure - I

List of all the channels identified in category A+ and A cities:

City	No. of Channels
Delhi	4
Mumbai	4
Kolkata	8
Chennai	11
Hyderabad	7
Bengaluru	8
Ahmedabad	10
Surat	12
Pune	5
Jaipur	14
Lucknow	7
Kanpur	5
Nagpur	14
Total 13 cities	**Total 109 channels**

Annexure - II

Technical Parameters of analogue / digital components for digital radio broadcasting

'A+' Category.

	Analog	Digital	
		DRM	HD Radio
ERP	46 – 47 dBW (40 – 50 KW)	ΔP=6 dB with reference to Analogue ERP.	ΔP= 8.5 dB (digital total) with reference to Analogue ERP
EHAAT	100 – 175 Mt. (Delhi; 200 Mt.)	100 -175 Mt.	100- 175 Mt.
Frequency spacing	-	ΔF : 200 KHz	PU/PL: ± 150 KHz
Mode	-	4 QAM, R=1/3	MP11
Class of Emission		350KX9EHX	400KX9EHX

'A' Category.

	Analog	Digital	
		DRM	HD Radio
ERP	43– 44.8 dbW (20 – 30 KW)	ΔP=6 dB with reference to Analogue ERP	ΔP= 8.5 dB (digital total) with reference to Analogue ERP
EHAAT	75 – 150 Mt.	75 – 150 Mt.	75- 150 Mt.
Frequency spacing	-	ΔF : 200 KHz	PU/PL: ± 150 KHz
Mode	-	4 QAM, R=1/3	MP11
Class of Emission		350KX9EHX	400KX9EHX

Polarization: Right Hand Circular (RCP) Polarization for all Analogue and digital components. In case common antenna with orthogonally polarized feeds for HD Radio is deployed, the digital component shall be LCP.

Notes:

1. ΔF: Frequency difference between the analogue and digital carrier
2. ΔP: Reduced power level of digital component with respect to analogue component, in dB scale
3. PU / PL: Frequency difference of the upper and lower digital block with respect to analogue component

Annexure-III

Existing FM Phase-III Policy regulations which may need review

1. Eligibility conditions – net worth criterion, etc.
2. Definitions / amounts of various fees charged from broadcasters like Reserve Price/NOTEF, EMD, Annual Fee, PBG, Monitoring fee, WPC spectrum charges etc. and their payment methodology.
3. Any restrictions on channel holdings like city wide basis
4. As digital broadcasts permit multiple channels on single frequency what may be the guidelines for Program content / genres for different channels. Similarly, penalty provisions for violation of programme code by different genre channels? The reporting format for financial accounting by broadcasters.
5. Terms and conditions for allowing digital broadcasting to existing operators in A+ and A category cities.
6. Considering ecosystem for digital broadcasting is not readily available, what should be the prescribed time schedule for operationalizing digital broadcasting.
7. Any other regulations according to TRAI.

***

Annexure-II

Schedule -I

Format For Shareholding Pattern/Capital Contribution to be Furnished Along With Application

Table-1

(i) Shareholding pattern/capital contribution pattern of applicant/authorised company/LLP

(ii) M/s_____ as on_____

(iii) Face Value of the share in Rs. _____(applicable in case of a company)

S No.	**Category of Stakeholders**	**Shareholding**			
		Direct Investment		**Portfolio Investment**	
		No. of Shares/ Capital contributed	**% of total paid up shares/ % of total capital contribution**	**No. of Shares/ Capital contributed**	**% of total paid up shares/% of total capital contribution**
1.	Indian Individual				
2.	Indian Company/LLP*				
3.	Foreign Individual				
4.	Foreign Company/LLP				
5.	NRI				
6.	OCB				
7.	FII				
8.	PIO				
9.	Any Other				

Note:

* For Indian Company/LLP, information as per proforma in Table-2 also to be supplied.

TABLE-2

DETAILS OF SHAREHOLDING PATTERN/CAPITAL CONTRIBUTION PATTERN OF EACH INDIAN COMPANY/LLP HOLDING SHARE/CONTRIBUTED CAPITAL IN THE APPLICANT COMPANY/LLP AS IN SERIAL NO.2 IN COLUMN (1) OF TABLE-1

(i) Name of the Company/LLP

(ii) Information as on date

(iii) No. and %age of shares held by the company in the applicant company/Capital contributed and %age of total capital contribution of the applicant LLP

(iv) Face value of the share in Rs. _____ (applicable in case of company)

(v) Shareholding pattern/capital contribution of the company/LLP

S No.	**Category of Stakeholders**	**Shareholding**			
		Direct Investment		**Portfolio Investment**	
		No. of Shares/ Capital contributed	**% of total paid up shares/% of total capital contribution**	**No. of Shares/ Capital contributed**	**% of total paid up shares/% of total capital contribution**
1.	Indian Individual				
2.	Indian Company/LLP				
3.	Foreign Individual				
4.	Foreign Company/LLP				
5.	NRI				
6.	OCB				
7.	FII				
8.	PIO				
9.	Any Other				

Note: Repeat same information about each Indian Company/LLP holding share/contributed capital in the applicant company/LLP

Annexure-III

ANNEXURE-I

FORMAT FOR CERTIFICATION OF NET WORTH BY STATUTORY AUDITORS.

We have audited the Books of Accounts of _____for the financial year/period ended month-day-year ……. and certify that the "Net Worth" of M/s_____ the Applicant Company as on _____ is Rupees_____lacs (rupees in words lacs). We further certify that the Net Worth of the Applicant Company is computed as follows:

Sl.No.	Particulars	Amount in Rupees-lacs
1.	Book Value of assets	
2.	Book Value of fictitious and intangible assets	
3.	Liabilities other than owner's funds	
4.	Net Worth {1-(2+3)}	

Place/Date Statutory Auditors

Note:

NET WORTH

The excess of the book value of assets (other than fictitious and intangible assets of an enterprise over its liabilities. This is also referred to as Net assets or shareholder's funds

Book Value of assets

The amount at which an item appears in the books of account or financial statement. It does not refer to any particular basis on which the amount is determined. Eg. Cost, replacement value etc

Fictitious assets.

Items grouped under the assets in a balance sheet which has no real value (eg. The debit balance of the profit and loss account)

Liabilities

The financial obligation of an enterprise other than owner's funds.

Annexure-IV

Grouping of States & UTs based on per capita GSDP

State/UT	Per Capita GSDP (Rs) (2023-24)	Category
Chandigarh	482922	J
Delhi	515520	J
Goa	674684	J
Haryana	356829	J
Karnataka	376403	J
Sikkim	707181	J
Telangana	383536	J
Andhra Pradesh	266995	K
Arunachal Pradesh	248825	K
Gujarat	336875	K
Himachal Pradesh	281257	K
Kerala	316015	K
Maharashtra	319474	K
Mizoram	275633	K
Puducherry	291892	K
Punjab	228232	K
Tamil Nadu	353483	K
Uttarakhand	284468	K
Assam	159002	L
Bihar	66686	L
Chhattisgarh	168567	L
Jammu & Kashmir-UT*	174727	L
Jharkhand	115960	L
Madhya Pradesh	155289	L
Meghalaya	156326	L
Odisha	185734	L

Rajasthan	186610	L
Tripura	197372	L
Uttar Pradesh	108097	L
West Bengal	166196	L

Annexure-V

Grouping of states & UTs based on per capita Gross Revenue

State/UT	Per Capita GR (Rs in crore)	Category
Andhra Pradesh	7.71	H
ARUNACHAL PRADESH	6.50	H
ASSAM	4.78	H
BIHAR	2.50	H
Chandigarh	457.73	F
Chhattisgarh	0.92	H
Delhi	136.91	F
GOA	37.74	F
GUJARAT	22.92	H
HARYANA	4.27	H
HIMACHAL PRADESH	7.82	H
Jammu & Kashmir-UT*	15.33	H
JHARKHAND	4.75	H
KARNATAKA	22.72	H
KERALA	33.10	G
MADHYA PRADESH	8.90	H
MAHARASHTRA	29.94	G
MEGHALAYA	11.84	H
MIZORAM	12.05	H
ODISHA	4.12	H
Puducherry	97.37	F
PUNJAB	8.99	H
RAJASTHAN	13.07	H
Sikkim	16.21	H
TAMIL NADU	30.06	G
Telangana	28.07	G

Tripura	4.99	H
Uttar Pradesh	5.37	H
Uttarakhand	9.15	H
West bengal	9.72	H

Annexure-VI

Grouping of states & UTs based on FM Radio Listenership

State	FM radio Listenership weighted by population (in 000')	Group
Maharashtra	104792	Q
Tamil Nadu	70909	Q
Bihar	86558	Q
Gujarat	57466	Q
Karnataka	57308	Q
Madhya Pradesh	66514	Q
Rajasthan	61788	Q
Uttar Pradesh	181128	Q
West Bengal	86596	Q
Telangana	33059	R
Andhra Pradesh	44811	R
Odisha	34998	R
Delhi	16510	S
Goa	1416	S
Kerala	29543	S
Assam	28805	S

Chhattisgarh	21931	S
Haryana	24444	S
Jammu & Kashmir-UT	4230	S
Jharkhand	29697	S
Punjab	26973	S
Sikkim	679	S
Tripura	3458	S
Uttarakhand	9646	S
Meghalaya	2572	S
Mizoram	993	S

Annexure-VII

Reference prices derived from successful bids of Phase-III auction

S No	Name of City	State	Category as per MIB	Successful Bid Amount 1 (Rs. in crore)	Successful Bid Amount 2 (Rs. in crore)	Successful Bid Amount 3 (Rs. in crore)	Successful Bid Amount (Rs. in crore)	Average of Successful Bids (Rs. in crore)
				2015			2016	
1	Chennai	Tamil Nadu	A+	53.39	-	-	-	53.39
2	Delhi	Delhi	A+	169.17	-	-	-	169.17
3	Kolkata	West Bengal	A+	-	-	-	-	31.00
4	Mumbai	Maharashtra	A+	122.81	122.81	-	-	122.81
5	Ahmedabad	Gujarat	A	42.69	-	-	-	42.69
6	Bangalore	Karnataka	A	109.25	-	-	-	109.25
7	Hyderabad	Telangana	A	18.00	18.00	18.00	23.43	19.36
8	Jaipur	Rajasthan	A	28.35	-	-	-	28.35
9	Kanpur	Uttar Pradesh	A	8.01	8.01	8.01	-	8.01
10	Lucknow	Uttar Pradesh	A	14.01	14.01	14.01	-	14.01

11	Nagpur	Maharashtra	A	7.76	7.76	-	-	7.76
12	Pune	Maharashtra	A	42.04	42.04	-	-	42.04
13	Surat	Gujarat	A	3.60	3.60	-	-	3.60

Annexure-VIII

Grouping of existing cities based on the per capita GSDP and population
Matrix-I

City category (based on population) / State/UT category (based per capita GSDP)	A+	A
J	Delhi	Bengaluru, Hyderabad
K	Mumbai, Chennai	Ahmedabad, Surat, Nagpur, Pune
L	Kolkata	Jaipur, Kanpur, Lucknow

Annexure-IX

Grouping of existing cities based on the per capita GR and population
Matrix-II

City category (based on population) / State/UT category (based on per capita GR)	A+	A
F	Delhi	--
G	Mumbai, Chennai	Nagpur, Pune, Hyderabad
H	Kolkata	Ahmedabad, Surat, Bengaluru, Jaipur, Kanpur, Lucknow

Annexure-X

Grouping of existing cities based on listenership of FM radio and population Matrix- III

City category (based on population) / State/UT Category (Based on FM Radio listenership)	A+	A
Q	Mumbai, Chennai, Kolkata	Ahmedabad, Surat, Bengaluru, Nagpur, Pune, Jaipur, Kanpur, Lucknow
R	--	Hyderabad
S	Delhi	--

Annexure-XI

Reference Prices for category 'A+' and 'A' cities grouped based on per capita GSDP

Name of City	State	Category as per MIB	GSDP Per Capita class	Successful Bid Amount (in Rs. Crore)
Delhi	Delhi	A+	J	169.17
Average (A+, J)				**169.17**
Mumbai	Maharashtra	A+	K	122.81
Chennai	Tamil Nadu	A+	K	53.39
Average (A+, K)				**88.10**
Kolkata	West Bangal	A+	L	31.0
Average (A+, L)				**31.0**
Bengaluru	Karnataka	A	J	109.25
Hyderabad	Telangana	A	J	19.36
Average (A, J)				**64.31**
Ahmedabad	Gujarat	A	K	42.69
Nagpur	Maharashtra	A	K	7.76
Pune	Maharashtra	A	K	42.04
Surat	Gujarat	A	K	3.60

Average (A, K)				**24.02**
Jaipur	Rajasthan	A	L	28.35
Kanpur	Uttar Pradesh	A	L	8.01
Lucknow	Uttar Pradesh	A	L	14.01
Average (A, L)				**16.79**

Annexure-XII

Reference Prices for Category 'A+' and 'A' cities grouped based on per capita GR

Name of City	State	Category as per MIB	GR Per Capita class	Successful Bid Amount (in Rs. Crore)	Identification of Outliers
Delhi	Delhi	A+	F	169.17	
Average (A+, F)				**169.17**	
Mumbai	Maharashtra	A+	G	122.81	
Chennai	Tamil Nadu	A+	G	53.39	
Average (A+, G)				**88.10**	
Kolkata	West Bengal	A+	H	31.0	
Average (A+, H)				**31.0**	
Hyderabad	Telangana	A	G	19.36	
Nagpur	Maharashtra	A	G	7.76	
Pune	Maharashtra	A	G	42.04	
Average (A, G)				**23.05**	
Ahmedabad	Gujarat	A	G	42.69	
Bengaluru	Karnataka	A	F	109.25	Excluded as Auction price exceeded twice the average of the category

Jaipur	Rajasthan	A	H	28.35	
Kanpur	Uttar Pradesh	A	H	8.01	
Lucknow	Uttar Pradesh	A	H	14.01	
Surat	Gujarat	A	G	3.60	
Average (A, H) (including outliers)				**34.32**	
Average (A, H) (excluding outliers)				**19.33**	

Annexure-XIII

Reference Prices for Category 'A+' and 'A' cities grouped based on FM Radio Listenership

Name of City	State	Category as per MIB	Listenership Per Capita class	Successful Bid Amount (in Rs. Crore)	Identification of Outliers
Mumbai	Maharashtra	A+	Q	122.81	
Chennai	Tamil Nadu	A+	Q	53.39	
Kolkata	West Bangal	A+	Q	31.0	
Average (A+, Q)				**69.07**	
Delhi	Delhi	A+	S	169.17	
Average (A+, S)				**169.17**	
Ahmedabad	Gujarat	A	Q	42.69	
Bengaluru	Karnataka	A	Q	109.25	Excluded as Auction price exceeded twice the average of the category
Jaipur	Rajasthan	A	Q	28.35	
Kanpur	Uttar Pradesh	A	Q	8.01	
Lucknow	Uttar Pradesh	A	Q	14.01	

Nagpur	Maharashtra	A	Q	7.76	
Pune	Maharashtra	A	Q	42.04	
Surat	Gujarat	A	Q	3.60	
Average (A, Q) (including outliers)				**31.96**	
Average (A, Q) (excluding outliers)				**20.92**	
Hyderabad	Telangana	A	S	19.36	
Average (A, J)				**19.36**	

Annexure-XIV

Matrix-I based on the per capita GSDP and population

(Values in Rs. Crore)

City category (based on population) / State/UT category (based per capita GSDP)	A+	A
J	169.17	64.31
K	88.10	24.02
L	31.00	16.79

Annexure-XV

Matrix-II based on the per capita GR and population

(Values Rs. in Crore)

City category (based on population) / State/UT category (based on per capita GR)	A+	A
F	169.17	--
G	88.10	23.05
H	31.00	19.33

Annexure-XVI

Matrix- III based on listenership of FM radio and population

(Values Rs. in Crore)

City category (based on population) / State/UT Category (Based on FM Radio listenership)	A+	A
Q	69.07	20.92
R	--	19.36
S	169.17	--