

Response to TRAI Consultation Paper on Digital Radio Broadcasting in India

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Issues for consultation:

4.9 Is there a need to encourage or facilitate introduction of digital radio transmission at present? If so, what measures do you suggest and in which market?

Yes, there is indeed a need to facilitate orderly introduction of digital radio transmissions (broadcasting) in India.

There are several substantive reasons for taking this measure.

A. FM Radio Markets

1. In major FM radio markets there is a shortage of FM channels vis-à-vis the market demand. Radio entrepreneurs have already established a well proven business model, which is sustainable and provides alternative radio programming to the listeners. Introduction of digital radio in the FM band will offer more radio channels for the radio industry to grow.

2. Digital radio has powerful transmission characteristics. Digital radio in dense metro cities and other major cities will overcome the current transmission defects and loss of signal.

3. Digital radio in the FM band will also provide much better service quality in terms of superior audio quality and additional value added services.

B. Medium Wave (MW) Radio Markets

1. In the MW radio markets, the main impairment currently of analogue services is the quality of service. Continuing to strengthen introduction of digital radio in MW radio markets overcomes / will continue to overcome these transmission problems and ensure continuity of service.

2. Digital radio offers enhanced number of channels (services) in MW; up to two stereo or even 3 channels in place on one analogue channel – all within the currently assigned frequency allocation.

In both cases, FM and AM markets, there are additional benefits of low transmission power requirement which is a major saving for the broadcasters.

4.10 Is there a need to frame a roadmap for migration to digital radio broadcasting for private FM broadcasters? If yes, which approach, mentioned in para 4.7, should be adopted? Please give your suggestions with justification.

Yes, a national framework should be set up for introduction and changeover to digital radio in the FM band. This ensures well-coordinated introduction of new technologies and services, which in turn, brings substantive benefits to the broadcasters and to the industry as a whole. The FM radio stations of All India Radio should also be included in this framework for similar reasons. In addition, the requirements of Highway Radio should also be included so as to have an integrated approach.

Many countries, including some in the region, have / or are in the process of setting up such framework for digital radio.

It is submitted that the outcome of ITU-D and ITU-R studies are more general in nature. These are basically guidelines developed to provide guidance. Actually, each country / entity has to develop / adopt its own methodology for migration to digital radio (and digital TV) to suit the environment and industry requirements in that country.

Among the technical issues that may be addressed in the roadmap, some important ones pertain to selection of the broadcasting system standard(s), coverage of the target areas, ensuring project of satisfactory reception to the digital radios and other devices in the target reception area, optimum design and setting up of the digital radio delivery network (including gap fillers), optimum use of the frequency spectrum licensed for the purpose, efficient use of the technologies in reducing costs and operating expenses, supporting an optimum number of digital radio channels for each of the broadcasters, efficient generation of new content and its processing for digital radio, making full use of the new service types and added-value services the digital radio platform offers, effective monitoring of technical services and technical performance of the system, setting up of a maintenance team as well as a maintenance routine, and taking up other technical activities.

In view of this, our recommendation would be to consider a 'Managed Introduction' which responds to the continued development of the market and at the same time brings about an orderly transition to full digital radio in the desired time frame. In this approach, several priorities may be established (as a part of national objectives) and incentives may be earmarked for quick transition to digital radio. The 'Managed Introduction' should address the responsibilities and needs of all the stakeholders in the radio industry, infrastructure providers, operators, spectrum regulator, content regulator, content creators, equipment manufacturers, digital radio retailers and the consumers. The approach should not only address technical issues, but should deal with implementation in a holistic manner.

4.11 Should the date for digital switch over for radio broadcasting in India need to be declared? If yes, please suggest the date with suitable justification. If no, please give reason to support your view.

It is highly desirable that the digital switchover should have a date, so that the whole project gains due momentum and we have an end point to guide us.

The date for digital switch over for radio broadcasting has to be determined with due care and after adequate studies on the current state of the industry, its ability to invest in infrastructure (including content production), digital radio receivers and several other factors. The views of the stakeholders will also have to be considered.

It is not essential that a single date should be fixed for the whole country. That will not be practicable to achieve and may create hurdles rather than help smooth implementation and transition.

The dates could be determined territory-wise, all those areas included which may have impact on each other. The dates could be treated as guidelines and should not be strict. The whole idea is to make it easy for the industry to invest in digital radio broadcasting and carry it forward without any roadblocks.

Key transmission parameters should be selected keeping in view the requirements of coverage areas. Consideration should be given to use of SFN network to argument and improve signal strength in shaded areas.

In summary, a switch over date cannot be suggested / arrived at without sufficient ground work.

However, to support the initial introduction of digital radio, the idea is supported to have another date defined and communicated within the industry and to the public way ahead of a possible switch-over date:

an official national 'Digital Radio Launch Date'. This Launch Date for digital radio also needs to be agreed and supported by all stakeholders including AIR, private broadcasters, regulator and government, as well as the receiver and automotive industry.

The purpose of this date is to set a common goal that all stakeholders can work towards and commit to. Otherwise it may happen that the installation of transmission infrastructure drags on for a long time, or the new digital content will not be defined and ready to broadcast in-time, or the receiver and automotive industry may not be ready with devices (probably due to the lack of even knowing about the time-line defined by the broadcasters internally to ready with digital transmissions).

All these typical difficulties during the roll-out of a digital radio standard on a national level can be overcome by early defining and communicating a 'Launch-Date' agreed by all stakeholders, by which date all the components required for a successful launch of digital radio will be ready: from signal transmissions and content to receivers and shop-owners/points-of-sale well educated, to information campaigns to the public explaining the benefits of the new digital radio services.

Issue for consultation:

4.19 Is present licensing framework or regulatory framework is restrictive for migration to digital radio broadcasting? Please explain with justification.

4.20 Should single digital radio technology be adopted for entire country or choice of technology should be left to radio broadcasters? Support your reply with Justification.

Ideally, a single digital radio technology for the entire country would be the best option. It would provide benefit of economies of scale both in infrastructure building (and operations) and in the price of digital radio receivers.

However, radio broadcasting spreads over several frequency bands and each of these frequency bands may have specific optimum technologies, addressed as follows:

In the shortwave frequency band (HF) the only technology is DRM (Digital Radio Mondiale).

For the entire medium wave band, there are two technologies, DRM and possibly HD-Radio. As of now, All India Radio has implemented DRM for a substantial part of its MW radio network and services are on-going. This will have to be continued. DRM is a non-proprietary system standard and is being considered / used in many countries in the world.

Again, for the FM band there are two technologies, DRM and HD-Radio. While the technologies are different, both make use of the same in-band principles. DRM may seem to be more flexible in location of the digital radio carriers in the FM band. This provides more flexibility for the radio operators (and the spectrum regulators) in the phase when both FM and digital radio in FM band are operating. DRM is a non-proprietary system standard (i.e. the direct successor of the analogue FM technology) and is being considered in many countries in the world.

For the VHF band III (when it is vacated by TV transmissions) we have two technologies; DRM and DAB+. Since this frequency band would be open (when made available in future), both these systems could be implemented (either singly system or simultaneously). The main difference lies in the fact that while DRM provides a single broadcaster solution equal to the FM broadcast approach, DAB+ works on a multiplex principle under which many radio broadcasters have to bundle up their services into the same multiplex. The latter does impose some restrictions for the broadcasters intending to cover different areas. A set of DRM

transmissions on the other hand can be transmitted from a single transmitter site just as efficiently, equal to the FM antenna combining approach already in use today in India.

It may be argued that DAB+ would be useful (in VHF band) for covering the densely populated cities and other major cities with many services. However, DRM will also serve the same purpose with same or better efficiency and flexibility, but supporting both the FM and the VHF frequency bands.

To cover the larger geographical areas efficiently (power, frequency wise) DRM system in the MW band is the ideal solution.

In respect of digital radio receivers, DRM receivers for the full set of frequency bands from SW and MW to FM and VHF band-III are already available. The global receiver chipset industry for the DRM technology is located in India and the relevant know-how well established and embraced, which is easily possible thanks to the fact that the whole DRM technology is openly specified and published, and therefore accessible to everyone without the need to first sign legal contracts. The Indian and international automotive industry is rolling out more and more car models with native DRM support. Development work and cooperation with the Indian mobile phone industry is ongoing to bring DRM reception to mobile phones in the country.

There are many choices of digital radio receivers for DAB+ in the VHF band available in Europe and Australia. Receivers – mainly automotive receivers – are also available for HD-Radio, although may not be for the frequency raster obtained in India (these receivers are mostly made for the US market).

Ideally, a single digital radio receiver should be offered to the public for all the compatible systems and frequency bands that may be used in India for digital radio broadcasting. There are reports of such receivers already developed or under development (all-band DRM and DAB+). At least one software receiver (Tablet based) has already been launched meeting this requirement.

As a summary, DRM is the only digital radio standard that supports all transmission bands from the AM bands all the way up to the FM and VHF-band III, and it is already established in India with AIR's MW and SW transmissions after multiple selection and review processes.

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

As stated in item 4.20 above.

4.22 How issues of interference and allocation of appropriate spectrum allocation can be settled in case the option to choose technology is left to radio broadcasters?

The spectrum regulator should establish acceptable interference threshold levels, in accordance with ITU-R Recommendations and national spectrum practices.

Key transmission parameters should be selected keeping in view the requirements of coverage areas.

Issues for consultation:

4.28 Should the permission for operating FM channel be delinked from technology used for radio broadcasting? If yes, please provide a detailed framework with justification.

4.29 Should the existing operational FM radio channels be permitted to migrate to digital broadcasting within assigned radio frequency? If yes, should there be any additional charges as number of available channels in digital broadcasting will increase? Please provide a detailed framework for migration with justification.

4.30 Should the future auction of remaining FM channels of Phase-III be done delinking it from technology adopted for radio broadcasting? Please give your suggestions with detailed justification.

4.31 In case future auction of remaining FM channels of Phase-III is done delinking it from technology, should the present auction process be continued? If no, what should be the alternate auction process? Please give your suggestions with detailed justification.

4.32 What modifications need to be done in FM radio policy to use allocated FM radio channels in technology neutral manner for Radio broadcasting?

Issues for consultation:

4.38 What measures should be taken to reduce the prices of digital radio receivers and develop ecosystem for migration to digital radio broadcasting?

1. Clear indication of time frame of implementation and initiation of digital radio broadcasting, along with a Launch Date agreed by all relevant stake-holders and well communicated to the industry and eventually the listeners.
2. Clear selection of digital radio broadcasting system standard(s) and enunciation of the intended purpose.
3. Clear demarcation of the coverage areas of digital radio broadcasting signals with time frame of completion / implementation.
4. Guidance to digital radio receiver manufacturers / retailers on projected sales volumes in various territories and time frames.
5. Framing of broad specifications for digital radio receivers to promote homogeneity of products and to benefit for economies of scale.
6. Market research should be carried out to identify consumer needs.
7. Providing incentives for digital radio receiver manufacturers to make the products in India, including other devices that can provide digital radio functions as well.
8. Providing type approval for digital radio receivers so that the public consumer does not have to find it difficult to find the right type of receiver for purchase.

Digital radio broadcasting will initiate a new interest in purchase of appropriate receivers and devices. As the digital radio receiver is mostly a personal device, specific and new types of advertising messages would have to be generated to address the audiences.

9. Making new content creation for digital radio broadcasting an integral part of the overall digital radio strategy. If analogue radio content is also used for digital radio, few consumers will purchase digital radio receivers.

Innovative content deals with creation of high-quality radio programs. In addition, these programs can be made more interactive by the use of advanced text information services with graphics support, as a kind of audience-tailored free-to-air Internet content accessible by everybody through their radio set. This will deliver a truly multimedia experience to the audiences. In addition, audience interest can be sustained through use of value-added services which provide interesting and useful information and guidance to the audiences.

10. Constant monitoring of the progress in manufacture of digital radio receivers vis-à-vis the progress of the digital radio implementation plans.
