



22nd July, 2016

To,

The Advisor (B&CS)

Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
Jawahar Lal Nehru Marg,
Old Minto Road,
New Delhi – 110 002

Dear Sir,

Re: Submissions to Telecom Regulatory Authority of India ("TRAI") in response to the Consultation on the Issues related to Digital Terrestrial Broadcasting in India

At the outset, we would like to thank the Authority for giving us an opportunity to tender our views on the "Issues related to Digital Terrestrial Broadcasting in India".

In regard to the present consultation process, we submit that we have perused the said paper highlighting the intricacies of Digital Terrestrial Systems and their proposed advent in India carefully. We hereby submit our comments attached as Annexure. The said comments are submitted without prejudice to our rights and contentions, including but not limited to our right to appeal and/ or any such legal recourse or remedy available under the law.

The same are for your kind perusal and consideration.

Yours Sincerely,

For ABP News Network Pvt. Ltd.



Kishan Singh Rawat

Head – Administration and Regulatory Affairs

Authorised Signatory

Encl: As above



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BY HAND/ELECTRONIC MAIL

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Kind Attention:

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INTRODUCTION

Analog terrestrial TV broadcasting is being phased out world over. Many countries in the world have switched off analog terrestrial transmission and many more are in the process to implement their digitization plans. In digital domain, TV broadcasting is moving in two distinct areas. Firstly, it can be implemented where the resolution of broadcast signal is increasing from HD to 4K and 8K to provide new viewing experience to the viewers using large TV / projection screens with multiple channel of surround sound. The other area is the increasing universe of handheld devices such as mobile phones, where required resolution is often much lower. Here TV channels can be provided either through broadcast channels or through telecom networks. Terrestrial broadcast method can provide multiple TV Channels to unlimited users in the coverage area without impacting the quality. In case of mobile TV channels through telecom networks, network congestion is an issue and quality of service may get affected if several users are using the service simultaneously. Unlike the broadcast method, the telecom network cannot provide mobile TV channels to unlimited number of users in a given coverage area. Therefore terrestrial broadcasting is relevant not only for traditional broadcast delivery but also for mobile and handheld devices.

The DTT standards have been designed in a manner to maximize utilization of existing infrastructure; however digitization of terrestrial broadcasting is cost intensive and requires creation of new infrastructure. Digitization of terrestrial broadcasting has become a necessity to meet demand for good quality multiple services and to avoid continuance of the obsolete analogue infrastructure as it will soon become unviable to sustain analogue broadcasting operations.

DTT SERVICES IN PRESENCE OF MULTIPLE DELIVERY PLATFORMS

Today multiple delivery platforms such as DTH, Cable, IPTV, HITS etc. are available for distribution of broadcasting services. Consumers have choice for access to TV channels from different platforms. Prasar Bharati (PB) also operates free-to-air DTH platform which at present broadcast 59 TV channels and 24 radio services. It is planned to be upgraded to carry more number of services in near future. Thus, a large number of TV channels are available to the people through various delivery platforms providing them a greater choice of subscription.

The terrestrial services are free to air so that the consumers do not pay any recurring subscription. It is therefore assumed that DTT services may also follow the same approach. However, pay DTT services are also likely to be introduced depending up on its commercial viability. For receiving DTT services, the consumer will have to either buy set top box (STB) or a TV receiver with inbuilt set top box and an antenna, which is going to be an important factor in acceptability and penetration of DTT services.

Thus, given that DTT services have the potential to offer a wide array of services for conventional broadcasting and to handheld devices, we strongly feel that they can



coexist with other distribution platforms to create an efficient broadcasting universe. In this regard, we discuss the issues relating to DTT services in presence of multiple delivery platforms hereinunder:

1. Do you perceive the need for introduction of Digital terrestrial transmission in presence of multiple broadcasting distribution platforms? Please provide your comments with justification?

In furtherance to the details given above, Digital terrestrial transmission system (DTT) for broadcasting TV programme services was first introduced in the UK in 1998 by deploying the first generation DVB-T standard developed by the European Digital Video Broadcasting (DVB) group. Since then, many new standards have evolved and at this juncture implementation of the second generation standards are underway. The DTT broadcasting spectrum has been harmonized with earlier analog spectrum allocation and therefore DTT makes use of similar analog channel allocations. DTT provides a number of additions which ensures that it may coexist with multiple broadcasting distribution platforms and some of them are as enumerated below:

- Efficient use of frequency – one DTT transmitter can broadcast multiple TV channels.
- Frequency reuse possible – a single frequency network (SFN) can be implemented to cover a large geographical area.
- Efficient reception of TV channels in portable environment
- TV channels can also be received on mobile phones and handheld devices.
- The 7 or 8 MHz TV frequency band can accommodate 10-12 Standard Definition (SD) TV channels or it can be employed as a data pipe to deliver different type of services including radio services.
- DTT platform is flexible and content format agnostic – newer formats of TV channels such as HD TV, 3D TV, UHD TV, data and radio services etc. can thus be delivered.

2. If yes, what should be the appropriate strategy for DTT implementation across the country? Please provide your comments with justification.

With standardized DTT transmission and clear advantages in terms of effective frequency utilization as well as enhanced TV quality, many countries the world over have laid down clear roadmaps to switch-off analog terrestrial TV transmission with a transition to DTT. In India, though work for changeover from Analog terrestrial transmission to digital terrestrial transmission by DD has already commenced.

For implementation of digitization of terrestrial TV network in the country, an analog switch off date is required to be mandated for each phase and an eventual switch off date has to be decided to ensure that the stakeholders are able to plan and create necessary eco system for introduction of DTT services. In India, PB has also planned to complete the digitization process by 2017 and implement switch off by 2020 which is a difficult roadmap for a vast country like India but may be implemented if work is undertaken in the most efficient manner possible.



The earlier recommendation for commencement of digital terrestrial broadcast in selected cities which is given here in under is the correct way to go which is justified in our comments below:

- I. Step I - Delhi - 2010
- II. Step II - All mega cities - 2011
- III. Step III - All Tier II & Tier III cities - 2012
- IV. Step IV - All other areas - 2013

The status of digitization of terrestrial TV broadcasting in the country is that around only 40 DTT transmitters have been installed so far. Analog transmission in these places is still continuing as services to be broadcast over DTT platform are yet to be finalized.

Thus, DTT should be implemented in a phased manner on the basis of several criteria such as regions, major cities covering large population, existing terrestrial channels etc. The planning has to be meticulous for switching off analog transmitters throughout the country. The switch off dates may be mandated for each phase. A phased approach may provide some benefits such as learning and evolving strategies from the experience, spreading required costs and resources thus making huge digitization more manageable. It allows observing how the DTT market develops before finally deciding how and when to end analog services. Some large countries like ours began the process in large urban areas with high population. Some examples of successful DTT implementation in large countries are USA and Australia.

PRIVATE PARTICIPATION IN TERRESTRIAL TV BROADCASTING

Indian broadcasting sector has seen phenomenal growth ever since private sector was allowed to participate in DTH and FM services. The cable sector in the country has been excessively driven by private operators. Entry of private operators in the FM sector has rejuvenated the scene of radio listening in the country, taking FM services in far flung areas. This success story has therefore been primarily dependent on the private players who offer wider choices to the consumers in a competitive environment. DTT migration world over has also been influenced by private sector as there were private terrestrial TV broadcasters already operating in the analogue domain.

3. Should digital terrestrial television broadcasting be opened for participation by the private players? Please provide your comments with justification.

As per the statistics given in the present consultation, PB has planned to introduce 630 DTT Transmitters to replace the existing 1412 analog transmitters. As per government estimates, this project will cost more than Rs 3000 Crores. Not allowing private sector in this domain will leave this entire burden of infrastructure on the public exchequer. However, allowing the private sector in terrestrial TV broadcasting would result in inflow of private capital in the sector and growth of terrestrial services. Private sector may develop DTT as competitive and viable optional alternative platform to consumers.



The issue relating to private participation in the terrestrial television broadcasting was also examined by the Authority in 2005 vide its recommendation on "Issues Relating to Private Terrestrial TV Broadcast Service" dated 29th August 2005. There are various advantages/reasons in favour of allowing private sector participation in terrestrial TV broadcasting. These are briefly discussed below:-

- Since large investment is required for migration to digital, sole dependence on government funded approach may not be feasible. Allowing the private sector in terrestrial TV broadcasting would result in inflow of private capital in the sector and growth of terrestrial services. Private sector may develop DTT as competitive and viable optional alternative platform to consumers.
- Presently, terrestrial broadcasting is under the exclusive domain of DD and there is no competitive platform in terrestrial TV services. By allowing the private sector in terrestrial TV broadcasting innovation in services will get encouraged. As of now there is little content differentiation between platforms. Private sector may develop new business models for commercial utilization of DTT services. Content differentiation between terrestrial and other platform may improve as private sector may bring in new services.
- Even today a large number of free to air Satellite Channels are available to the viewers. However, to avail these channels a person has to pay monthly subscription fee to DPOs. Therefore, even though a broadcaster may be offering a channel as free to air, the viewer can get it only after payment of certain recurring fee. In case of terrestrial broadcasting, the viewers may get such Free to Air channels without having to pay any subscription fee in case of FTA DTT services.
- Currently, the Satellite TV Channels have programmes directed at the national/regional audience. It is expected that private terrestrial television broadcasting will lead to enhanced coverage of local issues, events, music and culture.
- The public service broadcasting may get strengthened as private service operators will provides new socially relevant programming such as education, health, etc. Private terrestrial television broadcasters may complement the services of DD by generating more content.

IDEAL MODEL FOR DTT IMPLEMENTATION

4. **Which model or a combination thereof for Digital terrestrial transmission will be most suitable in Indian context? Please furnish your comments with justification.**

According to our views, Transmission Network Model will be the most suitable model for Indian context. This will tackle the dual problem of providing network to the entire country and also to discourage monopolization in the broadcasting network through DTT.

DTT network may be set up and operated by a separate transmission entity/ ies authorized to carry out digital terrestrial transmission. Such entities may be a



consortium formed by private stakeholders and regulated by the government. Keeping view the huge size of the country, there could be single or multiple entities for DTT transmission network on regional /state basis. In this case all DTT infrastructures will be planned and implemented by the entity and the service providers may seek required capacity on the network for providing their services. This model will have some pros and cons as mentioned in the consultation, but compared to the other suggested models; the pro's fairly outweighing the cons.

SPECTRUM FOR DTT SERVICES

5. **What should be the approach for implementing DTT network (MFN/SFN/Hybrid)? Please furnish your comments with justification.**

The approach for implementing DTT network must be a hybrid approach. In DTT network, both Multi Frequency Network (MFN) and Single Frequency Network (SFN) architecture can be implemented simultaneously. Given that MFN is the simpler method of implementation, it may introduce the DTT network through existing analog spectrum which can gradually be phased out to higher spectrum. Implementation of SFN maybe simultaneously taken up with new infrastructure and allotment of new spectrum Implementation of SFN is as it is complicated and requires synchronizing all the transmitters working in the SFN.

6. **What should be the criteria for arriving at optimum size of DTT multiplex at any location? Please furnish your comments with justification.**

The criteria for arriving at optimum size of DTT multiplex must solely be based on the demand for channels and availability of spectrum in the area. Given that spectrum allocation as well as provision of services should be optimal given that spectrum is a scarce resource, the optimum size of DTT multiplex at any location must be based on a thorough and detailed study of issues such as DTT implementation architecture, DTT models and services, roadmap for digitization etc. alongwith particular demand in different locations before arriving at any conclusion.

7. **How many digital multiplex per DTT operator should be planned for metro, major cities, urban and rural areas and why? Please furnish your comments with justification.**

Given that the actual demand of terrestrial service and actual spectrum requirement cannot be readily ascertained, it would not be appropriate to comment on the number of digital multiplex per DTT operator without appropriate study on demand, spectrum and capacity of providers.

8. **What should be most appropriate frequency band as per National Frequency Allocation Plan 2011 for implementation of Digital terrestrial transmission including mobile TV? Give your comments with justification.**



Since terrestrial sector should be open to private players, and operators must take full advantage of DTT by provide mobile TV channels and more choice of services to consumers by setting up maximum possible, **Band IV and Band V** will be the most appropriate spectrum for DTT implementation as well as efficient utilization of spectrum with demand for mobile TV, HD TV, 4K TV etc. After final implementation of DTT, the analog systems may be utilized for other services. Moreover, with stakeholders in the telecom operations also contending that spectrum allotted to them is not completely utilized, DTT will come in as perfect gap filler for the same.

9. **Should spectrum be exclusively earmarked for roll out of DTT services? If so, what should be the quantum considering the broadcasting sector requirement in totality?**

Spectrum should exclusively be earmarked to roll out DTT services in higher **Bands IV and V** given that it will ensure maximum utilization of spectrum in these bands. This earmarking should however be done at the last stage of implementation of DTT.

ROADMAP FOR DIGITIZATION OF TERRESTRIAL TV BROADCASTING

10. **What should be the roadmap for digitization of terrestrial TV network in the country? Please provide your comments with justification.**

We have already laid down the appropriate road map in Issue No. 2.

11. **What should be the analog switch off date(s) for the terrestrial TV channels in context with the suggested roadmap for DTT implementation? Please provide your comments with justification.**

As mentioned in the response to Issue No. 2, the roadmap for digitization of terrestrial TV network in the country, an analog switch off date is required to be mandated for each phase and an eventual switch off date sometime in 2020 may be decided at a later stage of DTT implementation wherein the idea of having a completely digitised terrestrial broadcasting technology can be fathomed.

CONCLUSION

The DTT standards have been designed in a manner to maximize utilization of existing infrastructure; however digitization of terrestrial broadcasting is cost intensive and requires creation of new infrastructure. Digitization of terrestrial broadcasting has become a necessity to meet demand for good quality multiple services and to avoid continuance of the obsolete analogue infrastructure as it will soon become unviable to sustain analogue broadcasting operations. DTT must thus be seen as an efficient alternative to other modes of broadcasting which can also be utilised for alternate



modes like handheld and portable devices. Moreover, as mentioned in the paper, various telecom stakeholders and other users of spectrum have contended that the spectrum allocated to them is underutilized. Thus, DTT will not only be an efficient correlative to the existing systems but will also provide a method for effective utilization of spectrum thus ensuring efficiency in use of our scarce resources. It is a broader network that caters to different kind of formats of channels and facilitates varied modes of infrastructure. In the current environment broadcasting under terrestrial systems is the exclusive domain of DD. Introduction of DTT will require significant upgradation in infrastructure and technology. Allowing the private sector in terrestrial TV broadcasting would result in inflow of private capital in the sector and reach of television all over the country. In India, though work for changeover from analog terrestrial transmission to digital terrestrial transmission by DD has already been commenced, a clear roadmap is however unavailable which we seek to bring clarity to with the help of this consultation.

A paper of this massive importance requires a lot more enquiry and far greater research and analysis which we admittedly could not afford at this stage owing to the shortage of time. We therefore request the Authority to grant us some more time in order for us to come back with a better-rounded and well considered response. In the meanwhile we request the Authority to take this preliminary submission on record.


