



Reliance Communications Limited

**Comments on the TRAI's
Consultation Paper
on
Issues Relating to
Mobile Television Service**

Comments of RCOM on the Consultation Paper on Mobile Television Service

General Comments

1. Worldwide a number of mobile operators have conducted mobile TV field trials and reported positive results. The Mobile broadcasting commercial services have been introduced in Korea, United States, Finland, Germany and few other countries. In India also, Doordarshan has currently launched a Mobile TV pilot project and is in the process of rolling out commercial Mobile TV services. To foster competition and technology innovation in the marketplace, private operators should also be given an opportunity and therefore formulation of proper regulatory framework and identification of proper spectrum bands for launch of this service are important.
2. We would like to stress that the mobile TV shall be a personalized service with an element of interactivity. Due to interactive features, the broadcasting service in the purest form shall be excluded. In this context mobile TV should be seen as coming together of the traditional broadcasting (point to area coverage) and communication services (one to one) in mobile environment. Therefore such services should be specifically provided under the Telecom license like Unified Access Service Licenses.
3. The innovative high capacity broadcast technologies with interactive capabilities of the communication networks shall spark the mobile TV services. **The TRAI should, therefore, recommend an enabling framework so that telecom operators are able to use their infrastructures and have the benefit of synergies for the provisioning of the Mobile TV Services.**
4. The TRAI should also address the important issue of interconnection like availability of content on non-discriminatory basis on mobile TV platform. The modification of the clause 5.6 of the Down linking Policy should be taken up so that TV channels could be made available on mobile TV platform also.
5. Comments on the specific issues raised in the consultation paper are as given below:
 1. **Whether the technology for mobile television service should be regulated or whether it should be left to the service provider?**
 2. **If the technology is to be regulated, then please indicate which technology should be chosen and why. Please give reasons in support of your answer.**
 - India has adopted the principle of technological neutrality as a regulatory principle. The regulation should only define the objectives to be achieved and should neither impose, nor discriminate in favour of the use of a particular type of technology to achieve those objectives.

- We firmly believe that all technologies be treated at the same level so that stakeholders have a choice of selecting the technology most suited to their consumers and their business interest. In this regard, a technology-neutral approach will provide the utmost flexibility in their Mobile TV planning and ultimately lead to a long term successful Mobile TV service.
- There are a number of technologies available including T-DAB, T-DMB, DAB-IP, DVB-H, DVB-SH, Media-FLO, etc. which have been deployed in different parts of the world in various spectrum bands. Deployment of combination of technologies may also be needed for the optimum utilization of resources. Broadcast technologies using telecom technologies can be used for popular content and value added services like Video on demand, etc.
- The technology neutrality and flexibility available in the legislation and licenses help the government and the operators to adopt emerging technologies. The market should have the flexibility to develop appropriate mobile broadcast solutions through deployment of latest technologies.
- All existing telecom license are technology neutral. Government in the UAS Licenses has specified that the technology to be deployed should be based on standards issued by ITU/TEC or any other International Standards Organization/bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. **It is, therefore, suggested that similar provisions can also be specified for Mobile Television platform.**

3. What will be the frequency requirement for different broadcast technological standards for terrestrial and satellite mobile television transmission in India?

- For optimum utilization of spectrum, transmission in analogue mode should not be permitted.
- The VHF I band cannot be used for mobile TV due to the requirement of large-sized receiving antenna. The TRAI has identified following bands for the mobile Transmissions:
 - VHF Band III (174-230 MHz)
 - UHF Band IV(470-582 MHz)
 - UHF Band V (582-806 MHz)
 - L-Band (1452-1492 MHz)
 - S Band (2500 -2690 MHz)
- The TRAI has separately sent recommendations for the allocation of 3G spectrum in 400 MHz band, 800 MHz band and 2.1 GHz bands which can also be used for mobile television services.

- Our comments on various spectrum bands are:

VHF Band III

- This Band is suitable for mobile TV use from propagation and coverage point of view but for hand-held devices receiving antenna efficiency is not as good. This band therefore would not be the most preferred band. However all channels in this band have been allocated to the Doordarshan and, therefore, there is little scope for allocation of spectrum to the private operators.

UHF IV and UHF V Bands

- The UHF IV and UHF V should be the preferred bands for Mobile TV services as spectrum is available in these bands.
- These channels are preferred from a propagation/coverage point of view and from network cost perspective also.
- Most deployments for mobile TV are expected in these bands which shall give benefit of economies of scale on equipment procurement
- The spectrum band in contiguous sub-bands would improve the spectrum efficiency, indoor functionality and reduce the rollout cost as well as equipment deployment complexity.
- Considering the large number of mobile operators in each circle and diversity of cultures, languages, age profiles there shall be large spectrum requirement for mobile TV. **To start with at least 3 TV channels of 8 MHz each be set aside for each operator to meet the present requirement. For long term requirement additional 1 channel of 8 MHz may also be identified for each operator.**
- **The TRAI has already examined the issue of minimum number of operators in each market in its recommendations on the licensing issues. In line with that recommendation, it is proposed that there could be 4 to 5 operators to provide mobile TV services.**

L Band

- We also welcome the TRAI's focus on the L Band for Mobile TV. However very few countries are focusing on this band for introduction of Mobile TV service in this band.
- The propagation is less favorable in this band which increases the infrastructure cost, particularly in rural areas.
- This band can be a solution in medium to long terms perspective when spectrum availability in UHF bands is not sufficient to meet the demand.

S Band (2500 -2690 MHz)

- **We strongly oppose consideration of 2.5 GHz - 2.69 GHz band for Mobile TV broadcasting.**
- This band has been allocated in the U.S., Mexico, Brazil and number of other Southeast Asian countries for deployment of broadband services. The operators are deploying WiMAX technologies. Even in Europe this band has been excluded for deployment of Mobile TV.
- The wireless broadband technologies can be used to provide Mobile TV and therefore it need not be identified and allocated for broadcast based mobile TV service.

4. Which route would be preferable for mobile TV transmission – dedicated terrestrial transmission route or the satellite route? Should the mobile TV operator be free to decide the appropriate route for transmission?

- Reliance feels that the licensor/regulator should be technology neutral. They should only set the goals and identify the spectrum band for delivery of proposed services. The identification and choice of technology for delivery of services should be left for the operators to decide.
- It is difficult to identify one single technology to provide services as convergence offer opportunities to use mix of technologies to provide consumer with more personalized services.
- Number of hybrid technologies exists to provide the mobile TV. The Hybrid terrestrial/satellite systems are being used to provide mobile multimedia services in several regions including the United States (more than 12 millions subscribers in about 5 years of operation), Japan and Korea (more than 0.8 million receivers sold in 17 months of operation). These hybrid systems use a satellite component covering the entire geography of the targeted service area, and terrestrial repeaters providing complementary coverage in some specific areas, such as dense urban areas, where the satellite-only reception is subject to blockage by buildings or natural obstacles. Therefore specification of a particular technology would hinder implementation of these innovative mechanisms to offer services. The license should not hinder deployment of any technology.
- The combination of satellite and terrestrial technologies shall result in wider service area.
- **Therefore the selection of technology including the terrestrial/satellite route to provide services should be left to the market**

5. How should the spectrum requirements for analogue/ Digital/ Mobile TV terrestrial broadcasting be accommodated in the frequency bands of operation? Should mobile TV be earmarked some limited assignment in these broadcasting bands, leaving the rest for analog and digital terrestrial transmission?

- **Due to limited availability of Spectrum, it should not be allocated for analogue transmission.** Doordarshan is already transmitting number of TV channels on analogue mode in VHF Band II and, therefore, **there is no need to allocate additional spectrum for analogue channels.**
 - Worldwide including USA, Canada, Europe have set deadlines to discontinue analogue terrestrial transmission. The spectrum so vacated is being used for Digital Terrestrial Services or Mobile TV services.
 - Considering cultural, linguistic, age diversity of the population, there is a need for large quantum of spectrum for carriage of large number of channels, therefore, analogue transmission is not desirable.
 - Analogue transmission shall not be economically viable
 - The TRAI should also suggest a deadline to switchover from analogue to DTT services. The Digital transmission should be considered only in the existing VHF Band III.
 - **Since terrestrial TV is not preferred vis a vis DTH or Cable TV, spectrum need be allocated only for Mobile TV and that too only the UAS Licensees.**
- 6. In the case of terrestrial transmission route, how many channels of 8 MHz should be blocked for mobile TV services for initial and future demand of the services as there are nearly 270 TV channels permitted under down linking guidelines by Ministry of Information and broadcasting?**
- Considering the large number of mobile operators in each circle and diversity of cultures, there shall be large spectrum requirement for mobile TV.
 - **The spectrum should be allocated in the UHF Bands**
 - **Each TV channels of 8 MHz will be capable to carry around 20-25 Mobile TV channels. To start with at least 3 TV channels of 8 MHz be set aside for each operator to meet the present requirement. The 3 TV channels can be used to carry about 70-75 Mobile TV channels.**
 - **For long term requirement, additional one channel of 8 MHz should also be identified for each operator.**
- 7. Whether Digital Terrestrial Transmission should be given priority for the spectrum assignment over mobile TV, particularly in view of the fact that the Mobile TV all over the world is essentially at a trial stage.**
- Digital Terrestrial Transmission should not be given any priority over Mobile TV. Now digital TV services are available in every part of the country through DTH including free DTH services from Doordarshan.
 - The Digital channels are also available in Metro Cities on CAS platform and shall soon be available over IPTV.
 - Digital Terrestrial Transmission can be considered only when Government decides that existing analogue services be discontinued or part of the spectrum being used for analogue transmission can be used for DTT.

- World over DTT share the same frequency band with the existing analogue Television on a non-interference basis. Number of countries has adopted plans for discontinuation of transmission over analogue mode.
 - The TRAI should suggest similar plans for discontinuation of terrestrial transmission in the analogue
 - **Therefore it is recommended at this stage, spectrum should not be given priority for DTT services.**
- 8. Whether the frequency allocation for the mobile TV should be made based on the Single Frequency network (SFN) topology for the entire service area or it should follow Multi Frequency Network (MFN) approach.**
- SFN provides an opportunity to improve spectral efficiency over MFN. However, licensor should not define the network architecture that is to be deployed by the service providers. The choice of technology and designing of network architecture should be available with the operator.
 - It shall be in the interest of the operators deploy efficient technologies so that capacity in the system is maximized.
 - **Therefore it is suggested that the license should not provide the system architecture that should be deployed by the operator.**
- 9. Whether frequency spectrum should be assigned through a market led approach – auctions and roll out obligation or should there be a utilization fee?**
- TRAI in its recommendations on “Review of license terms and conditions and capping of number of access providers” has recommended that all frequencies should be auctioned. In line with this recommendation, it is suggested that frequencies be allocated through auctioning.
 - Simultaneous ascending auction (SAA) is the best mechanism to determine a clear winner in a fair and transparent fashion. The SAA method is now a standard approach to spectrum auction.
 - The SAA method has been used by FCC on a number of occasions. Countries such Australia, Canada, Mexico, Netherlands and the UK are also using these auctioning processes. The Authority also recommended this approach for auctioning of 3G spectrum.
- 10. What should be the eligibility conditions for grant of license for mobile television services?**
- 11. Whether net worth requirements should be laid down for participation in licensing process for mobile television services? If yes, what should be the net worth requirements for participation in licensing process for mobile television services?**
- 12. What should be the limit for FDI and portfolio investment for mobile television service providers?**

13. What should be the tenure of license for the mobile television service providers?

- In addition to the content streaming under 3G, other technologies like MediaFLO or DVB-H can be used for delivery of high capacity content for TV channels. Such services can be made interactive using the telecom network available with the telecom operators. The interaction of mobile communication and digital TV broadcasting shall develop mobile applications in which strengths of mobile communication and broadcasting will be used.
- The mobile TV shall be a personalized service with element interactivity. Due to interactive features the broadcasting service in the purest form shall be excluded. In this context mobile TV should be seen as coming together of the traditional broadcasting (point to area coverage) and communication services (one to one) in mobile environment. Therefore such services are not possible without Telecom license like Unified Access Service Licenses.
- Therefore the licensing conditions should be enabling for use of broadcasting and telecom technologies under the same license. Unless such enabling conditions are put in place, the mobile TV shall not be successful.
- The existing Unified Access Service Providers should be permitted to obtain additional UHF/ L Band spectrum or other spectrum identified by the TRAI /Government for Mobile TV services. Unless this is allowed, consumers would not get benefit of converging technologies and would continue to receive the existing services.
- UAS Licensees are already providing video services using streaming technologies.
- **It is therefore suggested that existing UAS Licensees should only be permitted to provide Mobile TV Services.**
- **There should not be any separate entry fee besides the auctioned Spectrum acquisition fee.**

14. What should be the license fee to be imposed on the mobile television service providers?

15. Whether in view of the high capital investment and risk associated with the establishment of mobile television service, a revenue share system would be more appropriate?

- There should not be any entry fee for UAS Licensees as they are already permitted to provide mobile TV service.
- The only charge payable should be the spectrum acquisition fee.
- The license fee should be charged as percentage of the revenue earned. The rate of license fee should be charged at the rate as specified in the UASL.

16. Whether any Bank Guarantee should be specified for licensing of the mobile television service providers. If yes, then what should be the amount of such bank guarantee? The basis for arriving at the amount should also be indicated.

- Performance Bank Guarantees should be taken by the Government so as to discourage non-serious operators.
- As in the case of FM Radios, the bank guarantee should be equivalent to 50% of the spectrum acquisition fee
- UASL are also required to submit additional bank guarantee equivalent to one year annual fee.

17. Whether the licenses for mobile television service should be given on national/ regional/ city basis.

- UAS Licensees are already permitted to provide mobile TV and therefore the licensed areas should be same as those specified for the UASL.
- This is also desirable as circles are generally co-terminus with the state boundaries and TV content is language dependent.