

Subodh Kumar Gupta,  
Advisor (B& CS)  
Telecom Regulatory Authority of India  
Mahanagar Doorsanchar Bhawan,  
Jawahar Lal Nehru Marg, New Delhi-110 002  
Tel. No.011-23237922 Fax No.011-23220442  
E-mail : traicable@yahoo.co.in , bcs@traai.gov.in

**Subject: Response to the Consultation paper on “Technical Interoperability of DTH Set Top Boxes” 20<sup>th</sup> August, 2010.**

Dear Sir,

I welcome the opportunity to respond to the Telecom Regulatory Authority of India's (TRAI) Consultation Paper on “**Technical Interoperability of DTH Set Top Boxes.**”

Please find my response to the consultation paper.

I would like to participate in any further opportunity to discuss these issues and looking forward to the counter-comments on the same.

Yours Sincerely,

**Pawan Anand**  
MBA – Telecom Management (2nd Year)  
Contact: pawanand007@yahoo.co.in  
Mobile - +91-9850757243

**Research Supervisor:      Mr. Giri Hallur**  
Asst. Professor (Telecom)  
SITM, Pune.

**Symbiosis Institute of Telecom Management (SITM)**  
**Symbiosis Knowledge Village,**  
**Gram Lavale, Tahasil Mulshi**  
**Near Lupin Research Park,**  
**Pune, India - 411042**

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**Please note that the views presented below are solely of the students and not of the Institute.**

**3.1 Is it possible to have an Open Architecture based Set Top Box (STB) for DTH services that could ensure technical interoperability i.e. technical compatibility and effective interoperability among different DTH operators who have adopted same or different standards?**

**Ans** Yes, it is possible to have Open Architecture Set Top Box (STB) for DTH services. This is mentioned in the Clause 7.1 of the DTH license conditions.

Ideally, for technical interoperability the same STB should suffice for all DTH service providers but

1. The video compression standards used by the DTH service providers are MPEG-2 and MPEG-4. The transmission standards used by the DTH service providers are DVB-S and DVB-S2. These standards require different hardware decoders as the technology is only backward compatible. This is a major hindrance in technical interoperability.
2. The Conditional Access Service (CAS), i.e., the encryption methods used by the different DTH service providers is different. This makes the STB proprietary in nature. This is another reason of not having technical interoperability.
3. Technical Interoperability is provided through CI slot. CAM modules by different DTH operators can be used to receive services of one particular DTH operator. But the cost of CAMs is more or less equal to the STB itself which makes it economically non feasible.
4. Another option is to have multiple decoders in one STB. This again would increase the price of the STB making it economically non feasible. Also, it doesn't fit the requirements of either the DTH operator or the subscriber.

**3.2 If yes, how can the interoperability be implemented and what would be the implications to the stakeholders?**

**Ans** Interoperability can be implemented and the implications to the stakeholders are as follows

1. DTH operators can provide CAM modules in STB for subscribers to receive their services. This is not being used because the cost of CAM module is almost equal to the STB itself thus making it non feasible.
2. DTH operators can be asked to switch to same technology but that cannot be made mandatory because if the operator feels the need then it will automatically switch in order to stay in the market and retain its customers.
3. STB can have multiple decoders in order to decode more than one standard of transmission and compression standards. This would make the STB costlier.

4. The above case is not favourable to either the DTH providers or the subscribers. This is because the subscribers would not be too keen to change the technology by paying higher cost for a STB which can be availed at a lesser price. On the other hand the DTH providers would also not like to invest in a higher priced STB because the ROI (Return on Investment) would be low.
5. By looking at the current DTH industry, it is observed that the prices of STBs are reducing and the significance of technical interoperability is reducing. Commercial interoperability is a better option for the DTH subscribers as the exit load is low.

### **3.3 Is there a need to mandate any particular standard so that the objectives of technical interoperability can be achieved? If so, which standard?**

**Ans** There is no need to mandate any particular standard. The main reason behind it being that technology is ever changing and improving. The DTH providers use the technology that suits them and serves their subscribers in the best possible manner. In future if the DTH providers feel the need to switch to a new technology (to beat competition or to stay in the market) then they would do that in a phased manner. This is because changing STBs of millions of DTH subscribers requires capital and is also a time consuming process. The subscribers might not be willing to bear the extra cost of a new STB. If any particular standard is mandated then the DTH providers would demand for subsidy on the new STBs and this financial load would be borne by the Government. In order to avoid all this there shouldn't be any mandatory standard for DTH providers.

Earlier DTH providers used MPEG-2 and DVB-S standards. New DTH players are using MPEG-4 and DVB-S2 standards and both the set of operators are competing in the market. There is enough competition in the market so that there are options for the subscribers to choose from.

### **3.4 If technical interoperability for STB is not possible, is there any other mechanism to safeguard the interests of the subscribers.**

**Ans** Other mechanism to safeguard the interests of the subscriber are as follows

1. Commercial interoperability should be in place so that whenever any subscriber wishes to switch from one service provider to other, it is easily done.
2. The exit load in commercial interoperability should be kept as low as possible for the benefit of the customers.
3. The details of the exit should be explicitly mentioned in the subscriber form at the time of customer acquisition so as to maintain transparency between the subscriber and the DTH provider.

4. This would also lead to the decision which plan (out of 3 available options for ownership of STB) any subscriber wishes to opt for.
5. Any particular standard should not be mandated for the best interest of the subscribers.

### **3.5 Any other relevant issue that you may like to mention or comment upon.**

**Ans** Following are the issues of concern

1. BIS recommendations for MPEG-4 and DVB-S2 should be given at the earliest possible time.
2. Clauses 7.1 and 7.2 of the DTH license conditions should be altered so that the interoperability is made mandatory to all DTH providers and a deadline be given for the same to be implemented.
3. This would make the market further more competitive and favourable for the subscribers.
4. This would result in better QOS (Quality of Service) by the DTH providers in order to retain their subscribers.
5. DTH services should be allowed in Ku band only. Only then mini antennas will be of use.
6. The existing DTH operators with MPEG-2 and DVB-S standards should not be pushed to switch to newer technology (MPEG-4 and DVB-S2). This will entitle unnecessary financial burden on the subscribers and also on DTH providers.

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