Response on Consultation Paper On Interoperability of Set Top Box Consultation paper No 19/2019

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It is a welcome step that discussion on the Interoperability has come into forefront again and TRAI has brought the much awaited consultation process as it has been objective to bring the interoperability which has advantages if implemented and will outweigh the counter arguments to its implementation.

As the TV penetration in India is likely to increase with the increasing affordability of the TV sets and the availability of the power to the remote areas , it is important that we empower the subscriber to choose its own service provider without having to invest again and again into a reception enabling device which is just an enabler of the services to his home. It is estimated that TV HHS numbers will continue to grow by with an annual growth rate of 8% which is big numbers as we are a vast and diverse geography.

 TV viewing is the mainstay tool used in our society and not only for the entertainment but also to reach the far flung residing citizens as the TV keeps them abreast with the governmental schemes, approaching natural calamities, imparting basic education through the educational channels, bringing them the diverse thoughts and thus having an inclusive society.

Before we going into the issues raised it is important that we look at the genesis of this issue. The issue of the inoperability came into forefront with the issuance of the DTH License Guidelines and Licensing conditions   which stipulated in its Para 7.1 and 7.2 as under

7.1 The Open Architecture (non-proprietary) Set Top Box, which will ensure technical compatibility and effective interoperability among different DTH service providers, shall have such specifications as laid down by the Government from time to time.

7.2 The Licensee shall ensure subscriber's interests through a Conditional Access System (CAS), which is compatible with an open Architecture (non-proprietary) Set Top Box.

Accordingly the BIS was mandated to finalize the specification of the Set Top Boxes for the DTH as per the extent technology available at that time. BIS published the first standards for MPEG2 Digital STB for the DTH in 2003 and referred that interoperability shall be achieved by using Common Interface conforming to EN50221 " Common Interface specifications

Perhaps it was short sighted approach at that time, that the specs for the Digital Set Top Boxes for cable were never thought of as the cable was analogue.

In the year 2013 the standards for the STB for DTH were revised to add the MPEG4 encoding and new modulations schemes and this too retained the interoperability via CAM and CI slot in its Para 3.1.1 of BIS Standards.

The Cable STB at that point was not thought of and thus the cardinal error of not bringing in the interoperability in the Cable STB. This resulted into a scenario where in the cable customer when he wishes to move from one service provider to another in cable to cable regime or cable to DTH regime pays for the box again, which is not only put financial burden on the consumer but also have grave impact on the environment as churn from one platform or delivery mechanism to another generates e-waste, the precious foreign exchange spent in Importing the box goes waste, the consumer faces the hassle of changing the STB from service provider.

We think it is an effort in the right direction that the present consultation paper again reignites the discussion going on since 2008 when the first consultation paper was issued on the subject matter of Interoperability and hope that this will be taken to a conclusive end.

ISSUES FOR CONSULTATION

Q1. In view of the implications of non-interoperability, is it desirable to have interoperability of STBs? Please provide reasoning for your comment.

Response :

In our view the interoperability is desirable to be provided as it is in the interest of the consumer, industry and saves precious foreign exchange for the nation when the majority of the Set Top Boxes are imported.

The issue for consultation to have interoperability with respect to the DTH was settled long back in 2008 when in its recommendation **on "Interoperability and other issues relating to DTH " dated January 30, 2008** , TRAI had recommended as

Quote

 Technical Interoperability
   (i) There is no need for doing away with the existing technical interoperability conditions.

   (ii) The issue of revision of BIS standards for DTH set top boxes should be taken up by the Government with the Bureau of Indian Standards so that the standards laid down by BIS for DTH Set Top Boxes are updated for advanced technologies.

(iii) Revision of standards should be prospective and should apply to DTH subscribers who are enrolled after six months from the date of such revision. Such revision should not compulsorily require the DTH operators to upgrade the STBs of existing subscribers to conform to revised standards, though they would be free to do so on their own.

(iv) Clause 7.1 of the DTH license conditions should be amended to read as under:-

"7.1 The open Architecture (non proprietary) Set Top Box should be such as to ensure technical compatibility and effective interoperability among different DTH service providers. The DTH Set Top Boxes supplied to the subscribers shall have such specifications as laid down by Government from time to time. However , in cases of revision of specifications such revisions will be applicable prospectively to new subscribers and the licensee will have a transition period of six months from the date of such revision to ensure full compliance with the revised specifications for the new subscribers."

Unquote.

It is a matter of fact that , when the DTH operators signed the Licensing agreement they were aware of the conditions of the License and were aware that the principles of interoperability are enshrined in the license granted to them and they agreed to abide by and have to help implement the same.

During the standard formulation process all the DTH service providers , DD, Manufacturers, Consumer organizations, Hardware manufacturers and many more were part of the BIS committee finalizing the standards and they accepted the same and have been giving an assurance to the Licensor and Regulator that they are complying with the licensing condition that the STB are interoperable.

In the matter filed by the consumer organization Tamil Naidu Progressive Consumer Centre in Hon'ble TDSAT , the DTH operators gave an undertaking that they are complying with the standards as laid by BIS.

So today , in our view the need to discuss the topic that is the Interoperability required should not have been raised. The discussion should have been that how the nearly 60 million active subscribers of the DTH can enjoy the fruits of the interoperability.

It is being raised today as the sector has failed to live up to its own commitment given in the licensing conditions, they never launched the CAM's which would have paved the way for the effective implementation and also they never opened their Set Top boxes to enable consumer add , modify the satellite receive parameters to enable them receive the other satellites.

TRAI has mentioned in the consultation paper that TRAI Recommendations on "Licensing Issues Relating to DTH" dated July 23, 2014:

Ministry of Information and Broadcasting, Government of India sought recommendations of TRAI on the licensing issues relating to DTH services. In response to the Ministry's reference, TRAI recommended retention of existing technical interoperability conditions and updating of standards for set top boxes, as below:

i.   The license condition prescribed at clause 7.1 of the existing DTH Guidelines should be replaced with the following clause
ii.   The Set Top Box offered by a DTH service provider shall have such specifications as laid down by the BIS from time to time.
iii. BIS should come out with updated specifications for STBs from time to time and while doing so, BIS shall consult TRAI.
iv.   The license conditions should mandate the licensee to comply with the tariff order/scheme prescribed by TRAI for commercial interoperability"

The Ministry of I&B accepted the said recommendations that TRAI should work with BIS and Ministry of Electronics and Information Technology to ensure interoperability of set top boxes for direct to home industry.

Thus Regulator has time and again reiterated in its recommendations and opinions that Interoperability as enshrined in the DTH licensing policy needs to be continued and is in the consumer interest.

The reason that this question is raised again and again by the DTH operators and forces the regulator to relook at this question is due to the lack of the adherence to the standards and the lack of monitoring and implementation of the standards from the relevant authorities. The operators wish to have a control over their subscribers and wishes to make their shifting to alternate service provider expensive.

A view point given by the DTH operators that their boxes adhere to the BIS standards on the interoperability however the CAM are expensive and thus not implementable, the CAM costs have been lower then the STB costs always and this can be checked by regulator from the CAM prices and STB price comparison of the relevant periods.

DTH operators from time to time have been going out of the standards, they have chosen the compression and modulation schemes as per their convenience ignoring the standards , When the standards for MPEG4 set top boxes were not there, few operators started using MPEG4 compression which

was clear violation of the licensing conditions and appropriate measures should have been taken by the Licensors and the Regulators at that point of time. Had an appropriate step would have been taken to implement the standards appropriately as extant at that time, the argument of the disparity in the compression and modulation schemes being the reason for removing the interoperability would not have been citied today in this consultation paper also.

It is often said in the discussions of interoperability that certain features of the Middleware and EPG may not be available to the consumers if the interoperability is implemented , to this the Authority in its **Recommendations on Licensing issues relating to DTH" dated August 25th 2006 had recommended.**

- *There should not be any amendment in Articles 7.1 and 7.2 of the DTH License Agreement which mandates technical interoperability among the DTH service providers*
- *The license conditions should be amended to provide for casting an obligation on the service provider to inform and educate the consumer about the limited technical interoperability of the Set Top Boxes with Personal Video Recorders / Digital Video recorders.*
- *The DTH service providers should also be encouraged to provide the Basic or advance Set Top Boxes to consumers under the rental scheme , but there should be no dilution in the technical interoperability conditions as they exist today*.

The Authority in its wisdom and far sighted approach was clear that the informed customer will be able to make a decision on the product he wishes to take , even if there is a sacrifice of few features , the customer may still like to take an interoperable product.

One of the logic being extended by the service providers is that the CI module cost is as good as the cost of the STB, this is when the import of the CI module into the country is minimal and is required for the contribution links of the broadcasters, once the import or purchase of the CI module in the country is on the level of the number of the STB boxes to be brought in then the prices are bound to fall dramatically. When the DTH industry started the cost of the STB was in the range of USD 50-60 and current prices are much lower then that, the reasons are the volume and the constant value engineering which will also happen in the CAM. One of the DTH operator has provided CAM in the Indian market in conjunction with a lead TV manufacturer and the same has been a success story, the numbers can tell.

It is important that consumer organisations and consumer have been asking for interoperability to be implemented as it saves them the ignominy of investing again and again for the Set Top box as they wish to service provider. The process of ensuring interoperability was not only limited to the

implementaiton of the CI slot,

It was also related to the Set top boxes being provided by the DTH operators to the consumers on payment , are they capable of receiving the DD freedish signal in case the consumer does not wishes to continue his/her subscription to the pay platform. (Refer to " The Direct to Home Broadcasting services **(Standards of Quality of Service and Redressal of Grievances) Regulations , 2007 , Para 8 , Titled Prohibition to disable Direct to Home Set Top Boxes)**

The boxes which are paid by the consumers are disabled by as they never gave the permission to users to edit or add frequencies in the STB, modulation and other parameters in the Set Top Boxes and thus the basic tenement of the implementation of the Interoperability is violated and this is infact a position as on date.

Had the operators permitted interoperability , the consumers would have been happier , the quantum of the churned boxes would have been much lower as CAM's would have come in the market and nation would have been saved from e-waste and huge foreign exchange loss which has been very aptly estimated in the consultation paper Para 2.11.4 as reproduced below . It is a matter of fact that a DTH operator launched the CAM's but the same could not meet the success as the boxes of the other operators were closed to any change.

"2.11.4 The financial implications of non-interoperability of STBs are huge. As per industry figures till March 2019, an estimated number of more than 54 million STBs are lying idle or unused in DTH segment only, and a sizeable chunk of the same is because of non-interoperability of STBs. Since the inactive STBs cannot be used for reception of services of the other operator, the money invested into the STB goes waste. Considering an initial capital expenditure around $25 per STB, a total of $1350 million capital is lying unused in DTH segment. The exact data in respect of Cable TV services is not available but it is anticipated that the number of inactive STBs would be of similar order."

The above statement itself mentions the loss and also non adherence to the QOS guidelines which clearly shows that the guidelines were not adhered to and which is an anti consumer approach.

For DTH service providers, in our opinion there was never a doubt on the interoperability condition and we reiterate our view that interoperability should be implemented and this should be extended to the cable set top boxes also. This will go a long way in empowering the consumers, will help industry grow as it will reduce the losses due to the churned boxes and thus will make the operators business case stronger , save the country from huge loss on foreign exchange and save the ecology from the e-waste.

Interoperability in the case of the Cable STB was not planned at the initial stages as it was felt that a particular location is served by single cable

operator and the cable operator will not have the alternate choice available to the consumers, The consumer if he wishes can move to a DTH service provider where there are choices available.

The situation practically remains like that today that a particular locality or the area is served by a LCO and thus providing a very less chance of alternative service provision.

However in the hindsight it is felt had the interoperability should have been built into Cable Set Top Boxes then the cost for the MSO for the provision of the STB's to the consumers would have been much lower as the consumer would have used his existing box with the newer service provider. It would have reduced the e-waste and saved country of huge loss of foreign exchange as majority of boxes are imported.

For consumers , the interoperability provides as inbuilt protection that in case an operator goes out of market or there is a satellite failure of a service provider and renders the service provider incapable of providing service for some time (which has happened in this market) , then the boxes by consumers can be used to access the alternate service provider at a minimal cost and we have seen that in our market, wherein an operator as shut its operations and all the boxes deployed by the same have turned junk.

We therefore are of the opinion that interoperability is an essential for a healthy growth of the industry and is in consumer interest and thus should be implanted.

Q2. Looking at the similar structure of STB in cable and DTH segment, with difference only in the channel modulation and frequency range, would it be desirable to have universal interoperability i.e. same STB to be usable on both DTH or Cable platform? Or should there be a policy/ regulation to implement interoperability only within a platform, i.e.within the DTH network and within the Cable TV segment? Please provide your comment with detailed justifications.

Response :

The ideal position will be to have a universal box as the difference will be only to the extent of the additional tuner in the box, thus the box will need a minor modification in terms of the hardware design and will offer complete freedom to the consumer and will become a openly tradable commodity in the open market. The costs of the boxes are now coming down rapidly and it will be in the interest of the operators also to promote the interoperable universal box .

In the present circumstances the issue has to be approached differently as we have legacy boxes in place. For the DTH the present boxes are in the market and they should be opened up to allow for the edits in the receive parameters and this will encourage the operators to launch CAM as then the CPE cost is only for the CAM , as the LNB, Dish Antenna , Cabling of the existing install

can be used and only the tuning of the box will be required, the boxes can also be used for the DD Freedish , in case the consumer feels that he does not wishes to continue subscribing to the pay service.

The Cable STB (QAM Boxes) which have been deployed cannot be changed however going forward the standards be revised to include the interoperability in the QAM STBs.

Gradually the manufacturing industry will move towards making the combo boxes as it will offer more open market , once the CAM are available in the market.

It is more important to ensure that service providers offer CAM devices as having STB without any CAM devices and only CI slot will be again of no utility. The reason for the interoperability not to work in DTH has not been the boxes but has been the non availability of the CAM devices and in ability to edit the satellite parameters in the Set Top Boxes.

This will also encourage the TV manufactures to bring the sets with QPSK and QAM tuners built in and a USB CAM can be plugged in the standard USB slot of the screen to bring in the Interoperability on an immediate basis. The standards for the TV's and the flat panels will have to be revised to incorporate the Tuners.

The issue of the User interface or the User experience has been raised many a times on the discussion of the interoperability. This brings out an important part to discuss that should the technology on this also be standardized. Worldwide the implementation of the HbbTv is on the increase as it offers improved video experience to the users. The HbbTV has taken efforts to enable the interactive services over the broadcast networks and the connected networks. The good thing of the implementation of the HbbTv is that the HbbTv application can be stored in STB or CAM and provide a seamless user experience even if the box is not connected. The operators can implement the HbbTV application and this will reduce the cost for them as currently most of the operators are using third party solutions of UI and applications from middleware providers. In fact in one of the para in the consultation paper where in the reference to the Cloud TVKey is made, the HbbTV has been used to offer the UI experiences for the consumers.

Any proposed solution needs to keep in mind the growing flat panel display market and the growth of the Smart TV's which offer real estate with resources in it requires to store the browsers applications from HbbTV. The TV are bringing in newer features much faster then STB as they are designed and manufactured for a much wider geographical markets , for example implementation of the UHD in TV's has been much faster then deployment of the UHD in the STB's and thus to leverage the capabilities of TV, the USB CAM is a practical, economical solution, the solution takes the advantage of

the resources built into the TV and thus reducing the implementation time and cost. In fact most of the Smart TV manufacturers playing in the international arena and also present in India have designs and product ready as they are catering to the market of Europe, Latin America and now it is understood few Asian countries are implementing the same. Implementation in the Flat panel displays will save considerable cost for operators and consumers both apart from other benefits such as single remote, power saving, no cables.

Q3. Should interoperable STBs be made available through open market only to exploit benefits of commoditization of the device? Please elaborate.

Response ;

The commoditization of product is possible if it is open and not locked to any particular technology or service provider. The biggest incentive for the STB to be available in the open market will be the ability of theirs to work with multiple service providers. Once the CAM are launched by the service providers, the boxes can be bought from any source and services subscribed for.

The commoditization of the product will help make in India, bring down the prices further and give the consumers a choice to pick up as per their desire, improve the quality and the servicing of the STB.

We can leave the choice to the consumer that if he wishes to buy the STB from the open market or wishes to go to the operator and buy a STB from the operator as in both cases the specifications will be same and service provisioning will have to be done on Set Top Boxes procured from any source.

 As the Set Top Boxes will be available in the open market the operators will move away from provisioning the same as it reduces lot of hassles for them such as servicing, inventory , logistics etc.

The logic given that availability of the STB in open market may bring in low quality STB's which may impact the services to the consumers and the identification of the problems may be tough, the market itself will bring in the balance that a quality levels will be established , the devices with the low quality will be thrown out, the service centers will be easily available as non proprietary boxes will not need proprietary chips.

In very near future if the operators provide the CAM devices which will be both the CI module for the existing STB and the futuristic USB CAM then need for the STB may even not be there as the TV manufacturers can build in the tuners into their sets and thus will give comfort to the consumer of no wiring, single remote and ease of choosing the service provider and even allow them to toggle between the QAM Services and QPSK services.

It is a matter of fact that one of the DTH service provider has worked with a leading TV manufacturer in the country to provide the CAM and has been to establish a significant customer base of its. This way the customer has benefited by having a single remote, no cables and less power consumption, the DTH operator has been benefitted by no cost of the CPE on its side, no service requirements of the STB from its side and offering the customers with unique marketing propositions.

Q4. Do you think that introducing STB interoperability is absolutely necessary with a view to reduce environmental impact caused by e-waste generated by non-interoperability of STBs?

Response :

The interoperability will definitely reduce the e-waste generated as the Set Top Boxes will be reused on all alternative service providers. Going forward the need for the STB may be eliminated as the TV manufacturers will be making sets with built in satellite receivers and USB CAM will be plugged into the USB slots are which are now a default option in the flat panels, this will give multiple benefits to all the stake holders, the operators will be freed of the inventory of STB and CPE to carried, the service needs for the consumers will be minimized, the power consumption will be taken care of, the issue of the churned boxes going as e-waste will be handled.

For Future once the standards are laid, the USB CAM will be the vogue and thus it will offer comfort and interoperability to the consumer with the added advantages of single remote, no cabling, and power saving.

Q5. Is non-interoperability of STBs proving to be a hindrance in perfect competition in distribution of broadcasting services? Give your comments with justification.

Response :

The interoperability impacts the provision of the services and also the competition , it opens up the market as it empowers the consumer to choose the service provider , the STB are enabling devices for the services and once it is locked to a service provider then the freedom of the consumer is curtailed to a great extent as he has already spent the amount to acquire a particular CPE and now changing the service providers means he has to spend more. This hinders the competition in true sense, the current competition amongst the services providers is at the cost of the both the consumer and the service provider.

The service providers looses the subsidy it spends to acquire the consumer and the consumer looses the amount he has paid for a particular service provider which makes both partied to be locked in and thus losing on the benefits of the competition like better pricing, better servicing and the package

of the content for the consumer. Thus the lack of interoperability hinders the perfect competition.

Few operator give a counter agreement that there are multiple DTH operators and offers sufficient choice to the consumer or the consumer can migrate from DTH to cable and vice a versa is also possible and now to the online streaming is also possible, but in all cases the cost of migration is there as the enabling devices are not interoperable.

Thus lack of interoperability is in true sense hindering the perfect competition. An analogy to this the CDMA and GSM mobile phones, the GSM gained lot of popularity as it offered the ease to the subscribers to change their service providers and also choice of the handsets to them, where as in CDMA it was locked phone and the freedom to change the service providers and the handset was not easy and thus the consumers shunned that mode of delivery of the mobile services.

Q6. How interoperability of STBs can be implemented in Indian markets in view of the discussion in Chapter III? Are there any software based solution(s) that can enable interoperability without compromising content security? If yes, please provide details.

Response

The consultation paper in chapter III deals with different approaches to the implementation of the interoperability and primarily again focuses on the DTH service provision sector because of the legacy issues.

We need to keep in view three scenarios here
  1 The legacy DTH boxes which have CI slot
  2 The cable boxes which have no CI slot
  3 Going forward revising the specs of the boxes both Cable and DTH to include the least disruptive method of interoperability without adding another layer of operations so that it is efficient and cost effective.
  4 Enabling an environment which enables the service providers and the consumers to be independent from the STB and encourage the TV manufacturers to incorporate the tuners into the display panel. This is the best step forward as it will handle the issues of the inventory set top boxes and ther CPE accessories of the service providers, the after sales services issues of the STB , single remote , lower power consumption at the consumer end and empowering the consumer to chose his service provider as per his desire.

     For the legacy STB's of the DTH are most low hanging fruits and can be implemented fast with DTH service providers launching their CA modules and enabling the edit features of the satellite parameters in existing STBs. This will propel the market to taste the interoperability.

     A parallel approach can be taken is that CI+2.0 USB CAM's can be launched in the market, this will help in three ways

1. For future boxes the CI slot can be eliminated as most of the STB have a USB slot and USB CAM can work with it (this will take care of the argument that CI slot adds to the cost of the box.), this takes care of the issue being raised that having a CI slot increase the cost of the box.
2. The USB slot of the TV can be used , if the TV manufacturers build in the QAM/QPSK tuners in the TV, they have to implement the CI plus Stack into their display panels which they in case have developed for the European market , thus will be faster approach
3. The price of the USB CAM will be much cheaper then the STB and has not after sales service requirement.
4. Service requirements of the USB CAM are not there
5. The power consumption of the USB CAM is minimal as compared to the STB
6. TV manufacturers who have been reluctant to provide for the PCMCIA slot wouldn't have to modify their HW platform as TVs embed by default USB port (they need to support CIPlus 2.0 SW stack)
7. Consumers have to deal with a single remote.

CI plus 2.0 also gives a better protection to the content and this takes care of the fear of the operators that having a CI implementation is threat to the security of the content. It is interesting here to mention that all the major CAS companies have referenced CI Plus as a trusted export and there is a vast installed based on the networks across the Globe on DVB-S, DBVB-C and DVB-T, platforms. (please refer (http://www.ci-plus.com/deployments/) and if the content is secured on those platforms where the ARPU is much higher then it is secured on the Indian Platforms.

For the cable subscribers the launch of the USB CAM will be most effective way, as this will not need the modifications of the legacy STB , USB CAM can be used directly with the TV which have the CI plus stack built into it,
Most of the cable STB have a USB slot available and the if it is not then the specs of the STB be revised by BIS to include the USB port and to have a CI+ 2.0 SW stack and this will enable the interoperability implementation in the STB at no cost as there is no major hardware changes being asked for.

The approach of a CI + 2.0 can work with both the Card based box and cardless box, thus it makes the whole process independent of any hardware, and does not impacts the cost of the box in any manner.

The approach to the downloadable CAS has its own limitations as admitted in the consultation paper that it needs the keys to fused in the SOC of the box, the issue is that how many CAS keys can be fused and what about the late entrant as mentioned in the consultation paper. It will raise questions to multiple commercial issues , like from when the royalty or the license fee will be payable to the CAS providers , as currently the license fee is charged per box by the CAS provider . Another aspect will come is the security of the box, If a box is compromised then the question will be which key ladder has been

compromised in the box, this will add another layer of mistrust in the whole process. Downloadable CAS (DCAS) has its own limitation such as

1 It has no successful implementation , in fact in few geographies it was experimented with and then dropped.

2 It has commercial and technical issues between the CAS providers

3 The prototype will take months to make in SOC and the time for designing the prototype of the STB.

5 It will not take into account the already boxes deployed in the market esp. the DTH which has a huge churned boxes lying in the market and can be used to watch alternative service providers and also DD free dish services.

6 DCAS also has a similarity to the Trusted authority which will release the key, who bears the cost of the same, ultimately it is an additional step.

7 For the consumer to get the keys from a new operator and leave the other operator will be a complex process

8 Even in mobile no portability the new SIM is issued. CAM (in any form) is like SIM card, now a days USB CAM are available in the market which is further reducing the cost of implementations and operators will use that in future once the standards are amended to include this also as a option.

We do not expect the Downloadable CAS solution to be solution to the issue of the interoperability

Q7. Please comment on the timelines for the development of eco-system to deploy interoperable STBs for your recommended/ suggested solution.

 Response :

Implementation of the interoperability is a joint effort of all the stake holders, it needs the participation from the Operators, their hardware suppliers, software developers, the standard revisions and efforts on consumer education.

 As DTH legacy boxes and current boxes have the provision of the hardware thus they need minimal time on the implementation , they need a CA Module to be made available to the consumers which can be tested with other service providers boxes. This whole process can be achieved in a period of 6-8 months time frame.

In parallel the standards revisions can be taken up for the implementation of the CI+2.0 USB CAM implementation for the STB and the TV's , the process of the standard revision has defined time lines which are to be met and in parallel the Hardware manufacturers, service providers keep on testing the

products and launch as soon as the standards are published.

Q8. Do you agree that software-based solutions to provide interoperability of STBs would be more efficient, reduce cost of STB, adaptable and easy to implement than the hardware-based solutions? If so, do you agree ETSI GS ECI 001 (01-06) standards can be adopted as an option for STB interoperability? Give your comments with reasons and justifications.

Response

The key to implementation of the interoperability is to use a tried and tested implementation process, having the designing and standards unique to one geography deprives it of the worldwide efforts being made to develop the products and looses on the economy of the scale. This will be detrimental to the growth of industry and also will impact the times lines and may even lead to the defeat of the objective. Developing a solution which has not been deployed will need to go through a complete validation process at various levels and by that time the consumers will be deprived of the interoperability.

What will be the fate of the consumers who have the STB already, how will they be able to get the interoperability (especially the DTH subscribers) , will they have to change the STB once the boxes with the new solutions being proposed are brought in if successful . How will this solution help in salvaging back the churned boxes lying unused.

Who is going to bear the cost of the development and testing of the new CAS. It seems it is being suggested to reinvent the wheel.

What are timelines talked about here and have any estimates on timelines and cost done. CAS development is not one time activity, it is an activity which continuous to go on as there are need to continuously upgrade the product. The costs are amortized over multiple installations over vast geographies. Putting all the platforms on to a single platform will create a big risk to the investments of all, the content providers, the platform operators and the consumers also as any failure will have impact on all the stake holders.
The cost impacts of the same have not been analyzed and estimated .It should not happen that it turns out to be commercially more expensive and give another reason for non deployment.

What will be the solution for the display device manufacturers, will they be required to implement this stack into their display panels instead of standard product which they are able to sell world wide.

Q9. Given that most of the STB interoperability solutions become feasible through a common agency defined as Trusted Authority, please suggest the structure of the Trusted Authority. Should the trusted authority be an Industry led body or a statutory agency to carry out the mandate? Provide detailed comments/ suggestion on the certification

procedure?

Response :

We feel having a Trusted Authority will add another layer in the process and solution being discussed needs more deliberations, We do not recommend the implementation of the interoperability via this route which is untested and yet to be developed and leaves the legacy boxes out of its ambit. The process selected should be an approach which is standard based and takes into the considerations the developmental work happening around the globe so that India can take advantages of those.

Q10. What precaution should be taken at planning stage to smoothly adopt solution for interoperability of STBs in Indian market? Do you envisage a need for trial run/pilot deployment? If so, kindly provide detailed comments.

Response ;

The interoperability needs to be looked upon positively by the operators first as they need to ally the fears from the mind that this will lead to the loss of subscribers easily, reality is if the subscriber wishes to move then he will move, why not to minimize the cost of acquiring the new subscriber and prospect of gaining a subscriber who is looking to change the service provider. If a DTH player providers the CA Module then he is saved on the cost of the Antenna , Cable and install and can just ride on the balance CPE at the consumer house.

The mass deployment of the CAM devices will lower the cost of the acquisition of the customer significantly. Any solution being looked into also needs to consider the legacy customers and the boxes they have paid for . If we as an industry can bring out the churned boxes which are lying unused, it will be a great saving for the nation and industry.

Q11. Interoperability is expected to commoditize STBs. Do you agree that introducing white label STB will create more competitions and enhance service offerings from operator? As such, in your opinion what cost reductions do you foresee by implementation of interoperability of STBs?

Response :

By commoditizing any product the costs are the first thing which get impacted and it also brings in best of the services form all , the Service providers, the hardware providers , there will be many white labeled services which will be able to ride on the boxes, as combo boxes such DVB-S, DVB-C and IP will be combined. The cost of the boxes which is already low will get further low , it will reduce the hassle of the Service provider to stock the CPE , thus freeing up its inventory carrying costs.

For the consumer it will mean not spending again when he wishes to change his service provider. If the concept like USB CAM become popular then the STB will be eliminated from the scene and the display panel will be taking over the complete functionality , thus offering much ease of installation, single remote to the consumer and the power saving as the STB will not be there.

Q.12 Is there any way by which interoperability of set-top box can be implemented for existing set top boxes also? Give your suggestions with justification including technical and commercial methodology?

Response

We have dealt in detail in the responses above that how the technical interoperability can be handled in the legacy boxes, both cable and DTH. The commercial interoperability has not been a great success as the cost of the recovery of the box or cost of the return of the box is too high. The consumers are not able to recover the cost which they had paid at the time of taking the connections, similarly for the operator to deploy a used box is not possible as the cost of the recovery of the boxes is cumbersome, then refurbishing the same boxes is an expensive proposition, commercial interoperability has not been s successful experiment.

General

There has been reference to the developments like Cloud TVkey, In which the solution has been developed by CAS provider in conjunction with Smart Tv Manufacturers, The concept works when then the TV is connected , the majority of the consumers for TV in our country are not connected and thus expecting that we have all the TV connected and use same solution may not hold true. There may not be a single solution as we have a huge legacy consumers to serve, legacy STB's to be attended to and ensure that the path is seamless , causing minimal disruptions to the way services are delivered.

It is important that any solution selected should not ask consumer to get connected with an agency or an body or login to a portal to get the authorizations as that will be cumbersome and then where the STB is in the house the cable of the internet is not connected. We also need to keep in view the legacy boxes, try cover majority of those at minimal inconvenience to the consumers. Going forward we should look at solutions which can be easily deployed into the display panels, so that the requirement of the intermediately STB is minimized. We understand that lot of display panel manufacturers have started building QAM tuners as default in different markets.