

**Dated: 18<sup>th</sup> Dec 2019**

**AIDCF response to Consultation Paper on Interoperability of Set Top Box.**

**PREAMBLE:**

At the outset we would like to thank Authority for providing us with an opportunity to respond to the Consultation Paper on Interoperability of Set Top Box (STB). Federation in this regard, would like to highlight & submit the ongoing techno-commercial advances and challenges faced by the industry and their impact.

DPOs (Distribution platform Operators) have recently implemented the New tariff Order (NTO) released by the Authority, which unfortunately has not provided desired outcome. Rather than bringing choice to consumers, it inadvertently has raised the financial burden on consumers.

Prior to this, in the process of digitization also, MSOs have invested a huge amount of capital in the entire STB ecosystem to adapt to the new set of regulatory regime that has been introduced, and if at this stage any change is required to be made to achieve interoperable STBs, it will dent the financial state of affairs of the MSOs involving huge deployment of manpower and funds at a large level.

It is pertinent to note that Ministry of Information and Broadcasting and Telecom Regulatory Authority of India have been deliberating the issue of set top box (STB) interoperability amidst all restrictive technical and commercial factors over a long period of time.

In terms of the license granted by the Ministry of Information and Broadcasting (MIB), Direct to Home (DTH) operators, started providing broadcasting services. Under License Agreement between the MIB and the DTH Operator, STB compatibility and interoperability has been mandated since inception but the same has remained on paper and has not been strictly adhered to, ever since, due to various reasons. More over only few STBs with the provision of insertion of CAM Module purchased by the DTH Operators for compliance purpose but the same were never commercially exploited because the cost of Cam Module is more than the cost of STB and thus interoperability in DTH has never been truly effected.

Therefore before proceeding further with this consultation paper the Authority is requested to review the adherence of License Conditions of the DTH Operators at field and analyse the behaviour of subscribers. It may be also be noted that due to non-interoperability of set top boxes, even after the merger of Videocon and Dish TV, the platforms are till date, maintaining their separate systems and separate set top boxes with no interoperability. Another such example is the case of Independent TV which also demonstrated a similar scenario when the

existing set top boxes of the DTH player were not interoperable with other DTH players (Videocon, Airtel Digital, Dish TV, Sun Direct, Tata Sky) and viewers had to compulsorily invest in the purchase of new set top boxes to continue availing of broadcasting services, since the previous STBs were non-interoperable. Therefore it is requested that the Authority should get compliance of License Conditions from DTH Operators and then study the behaviour of Subscribers with respect to migration from one DTH Player to another and thereafter such consultation be done if at all there is any need.

Approximately 40 million households, who are availing broadcasting services from Free DISH are using the non- interoperable STBs which the subscribers have purchased leading to an additional cost for the subscribers in the event they want to shift to alternate service provider/ DPO.

Again investment of interoperable STBs would be a burden for Subscribers and would lead to further increase in consumer price for viewing Cable Services.

In view of the above, our response on the issues raised in the Paper is given below:

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

**AIDCF Response:**

AIDCF is of the firm opinion that technical interoperability of set top boxes is not viable for the reasons outlined herein below.

1. First and foremost the Authority needs to fix and freeze the "Solution Architecture of Technically interoperable Set-Top Boxes" with detailed deliberation on the subject. As Authority itself has mentioned in the consultation paper in para 2.14 of the consultation paper that  
*"C- DoT has designed the interoperable STBs and tested it under lab conditions, testing with commercial CAS systems and STBs and demonstration of interoperability is still pending."*
2. In addition to above, there are others pertinent questions which needs to be answered first in accordance to achieve the objective of Interoperability of Set top Box
  - (a) What are the minimum features which should be made available to the end consumers?
  - (b) What is the tune of financial burden to be borne by consumers, as each year, they have to upgrade their boxes due to either advancement in technology platforms or additional interactive services provided by operators?

- (c) Will dependency on consumer for upgrading their set top boxes will not hinder technological advancements/services provided by operators, which today are provided free of cost (FOC) basis to consumers?
  - (d) How CAS and SMS providers shall be set accountable for any proprietary breach, as presently they are not registered with any licensing body in India.
  - (e) What should be the control mechanism/security standards, which needs to be in place for CAS and SMS providers, as most of them are foreign entities?
  - (f) Which central agency will act as nodal for the porting request of the consumers and most importantly who will bear the cost of porting, running and handling complaints for such agency?
  - (g) Which central agency will handle consumer complaints regarding hardware of STBs?
3. We would also like to highlight, that all existing operators (MSOs /DTH) are using different combinations of technology in set top boxes. The existing options in technology available are as given below:
- (a) Compression technology: MPEG 2 and MPEG 4;
  - (b) Transmission technology: DVB C/C2, DVB-S/S2;
  - (c) Different encryption technologies: NDS, Nagra, Irdeto, Conax, Verimatrix etc.
  - (d) Different EPG software.
  - (e) Different SI systems.
4. Use of different Conditional Access System (CAS), compression, encryption, middleware and EPG make the set top box of a DPOs proprietary and hence such set top boxes cannot be 100% inter-operable with the same services/features.
5. Operators differentiated features and competitive edge lies in the development of STB. Service delivery and product differentiation capability are inbuilt in the STB, which drives value proposition for the end consumer. By mandating interoperable STBs, we will be denying consumer to enjoy additional interactive services provided by the operator.
6. We, appreciate the concern of Authority regarding increasing e-waste, wherein it has mentioned that 54 million STBs are lying idle or unused in DTH segment only and similar number in cable segment. In this regard, it is pertinent to highlight the following ground realities.
- (a) Majority of e-waste is not because of interoperability, it is because of re-accessibility of the STB's. Despite STBs are provided on FOC basis to consumers, very few consumers are willing to return their STBs.
  - (b) DTH license has an inherent clause of provision of interoperable set top boxes, and as understood many DTH players have started providing interoperable set

top boxes, than why 54 million STBs are lying idle. Hence this highlights that customer is not willing to use interoperability due to commercial unviability or the lack of features.

- (c) With the advancement in technology and interactive services, the STBs will further be discarded and e-waste will generate substantially.

In view of the above, we would request Authority to resolve the aforementioned primary issues like solution architecture, framework, CAS and SMS registration, security standards, standardizing middleware software, collection and control mechanism of STBs, central agency for STB hardware complaints etc. before deliberation on interoperability of set top boxes. We, therefore request Authority to hold the present consultation paper.

**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.**

**AIDCF Response:**

1. DTH industry is an organized industry where there are only 5 players, while cable industry consist of approximately 1469 MSOs and around 100,000 LCOs. The sheer number of MSOs and LCOs not only reflect the dynamicity involved in the industry whereas also represents the quantum of impacted parties due to regulatory intervention.
2. DTH is already a card based system and most of them have developed solution for interoperability. We therefore suggest that DTH should lead the interoperability of STBs by enabling commercial and technical interoperability between them across all its consumers.
3. The results of above will not only help in understanding certain challenges like e-waste, re-usability, piracy, software adaptability etc. while the same will also act as an roadmap for Cable TV industry
4. Technically, in CATV the signal is modulated using DVB-C/C2 standard whereas in case of DTH, the signal is modulated using DVB-S/S2 standard. Thus, interoperability between CATV and DTH will lead to unnecessary cost burden due to additional component of front end like tuners and other component which are exclusive for DVB satellite and DVB cable for receiving the transmitted signal. For a STB to be able to receive signal both from DTH and cable, there will be a requirement of switchable

demodulator unit, which will further increase the complexity and cost of STB to the end consumer.

In view of above, Authority is thereby requested to treat DTH and Cable TV as different platforms and considering the dynamicity of Cable TV industry (1469 MSOs and 1 Lakh LCOs), the implementation of STB interoperability shall be initiated and implemented with DTH.

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

**AIDCF Response:**

1. As stated, Authority is requested to resolve the aforementioned primary issues like solution architecture, framework, CAS and SMS registration, security standards, standardizing middleware software, collection and control mechanism of STBs, central agency for STB hardware complaints etc. before STBs are made available through open market.
2. In addition to above, it is pertinent to highlight that piracy of content and piracy via unencrypted signal has also increased significantly. Interoperability and commoditization of STBs will fuel the piracy. Authority is therefore requested to float a consultation paper for recommending the control mechanism to curb piracy.

**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?**

**AIDCF Response:**

1. MSOs/DPOs have been pumping money to keep up with the technical developments that take place in the market. As a result of which, new and improved STBs have been invested into.
2. The introduction of interoperable STBs may prove to be beneficial for the environment as such, but as mentioned above there are pressing issues surrounding the introduction of the concept that need to be ironed out first like standards of interoperable STBs, upgradation of the present STBs for re-usability, re-accessibility of STBs from the consumers.
3. We, therefore request Authority to form technology groups/committees and they shall be tasked to design and define the required standards.

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

**AIDCF Response:**

1. We would like to highlight that, at present, cable industry is facing a monthly churn rate of around 2~3%. In addition to this, industry is also observing a drop in its subscriber base.
2. Considering above facts, we don't believe that non-interoperability of STBs is proving to be any hindrance in perfect competition. Consumers are already free to opt for the service provider basis its service delivery, QoS parameters and other benefits accrued to them.

**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.**

**AIDCF Response:**

In the consultation paper, Authority have elaborated on the solutions like "Separation of CAS from STB", DVB CI, DVD CI+2, Downloadable CAS, Embedded Common Interface, connected TV, Hybrid Set top box, TV key, TV key cloud etc. and has also come up to a conclusion that with the present framework, interoperability of STBs is not possible and the same has to be implemented in a prospective basis.

We believe that, with the continuously evolving software based solutions, many of which are tested and implemented by OTT players in their devices, it is of utmost necessity to form a committee of technical experts, security experts from the cable industry/e-commerce industry which shall deliberate and devise a solution which is both technically and commercially viable.

It is further submitted that software-based solutions for interoperability have not been tried and tested so far. Such software-based solutions require extensive trials before the implementation and deployment of interoperable STBs and are not desirable at all at this juncture. The STB is considered as more vulnerable for hacker, as it is the device that the hacker can easily access and try to do piracy. It is common knowledge that if the STB software is compromised then it may get direct access to content from channels. It may be noted that one of such case is of Oreo TV, wherein majority of the content of pay channels are available free of cost. It is to be noted that even a single instance of such nature can compromise and adversely affect the security of the content on the service network. Therefore, software-based solution to interoperability is not desirable considering security of the content and piracy threat.

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

**AIDCF Response:**

Before suggesting timelines for the development of eco-system to deploy interoperable STBs, the Authority may want to decide the standards of interoperable STBs, two three technology groups/committees may have to be formed, the basic minimum format may have to be fixed on among other things.

**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.**

**AIDCF Response:**

The Authority may look into the important issue of maintaining security of the platform as software based solutions heighten the risk of piracy. The Authority needs to maintain diversity of security solutions, as such a solution can potentially be prone to hacking.

**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?**

**AIDCF Response:**

Introduction of a Trust Authority will add as an additional layer of regulation/function which may add procedural and commercial costs to the solution. Authority is therefore requested to devise some solution wherein intervention of TA is not required.

**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.**

**AIDCF Response:**

We would like to suggest that in order to make the STBs interoperable, all the DPOs (DTH players/MSOs) will have to come together and adopt a common technology to take this concept forward in terms of compression, CAS and signalling.

We firmly believe that due to availability of different types of Conditional Access System with varying features, operator specific chipset keys, will require implementation of a controlled & securitized environment.

Authority is therefore requested to form a committee of technical and commercial experts who would set out the guidelines and technical framework for the STB interoperability. They should be from MSO/DTH/STB Vendors/BIS/Chipset/CAS & SMS Vendors.

**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?**

**AIDCF Response:**

As stated above, Authority is requested to form a committee of technical and commercial experts who would set out the guidelines and technical framework for the STB interoperability.

In addition to above, as mentioned in our response to Question No. 5, monthly churn rate of 2~3%, and enhanced service offerings by operators upgrading in almost every six months, signifies no dearth of competition in the industry.

**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?**

**AIDCF Response:**

Even though interoperability is an important objective, the architecture comes with massive technical and commercial challenges and poses practical difficulties in execution of the said functionality in future STBs. It appears difficult to implement the same with respect to existing STBs without creating a commercially viable and feasible technical solution.

**ABOUT AIDCF**

All India Digital Cable Federation (AIDCF) is India's apex body for Digital Multi System Operators (MSOs). The federation works towards the overall growth of the sector and creates an environment for not only complete digitisation of cable TV under regulatory guidelines but also delivers the benefits of digital services including broadband and other value added services to the people of India thus fulfilling the dream of "True Digital India".



AIDCF is the official voice for the Indian digital Cable TV Industry and interacts with ministries, policy makers, regulators, financial institutions and technical bodies. It also provides a platform for discussion and exchange of ideas between these bodies and the service providers, who share a common interest in the development of digital cable TV in the country. It also collaborates with other industry associations such as IBF, CII, FICCI, ASSOCHAM associations etc., with the objective of presenting an industry consensus view to the government on crucial issues relating to the growth and development of the industry.

Members of AIDCF have a market share of more than 60% in the Cable TV Industry.

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