

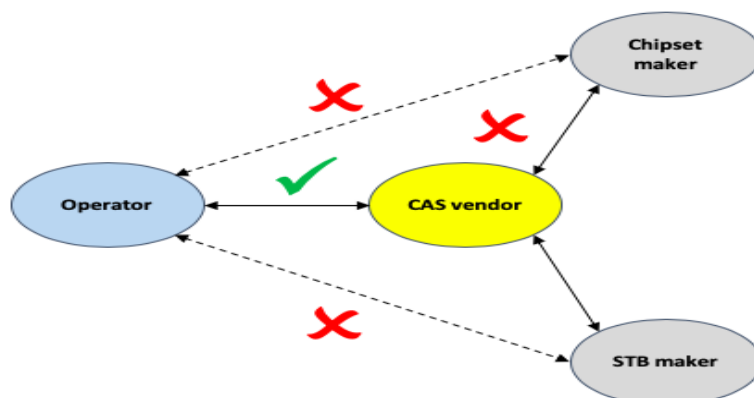
**RESPONSE OF DISH TV INDIA LIMITED TO THE  
CONSULTATION PAPER ON FRAMEWORK FOR  
TECHNICAL COMPLIANCE OF CONDITIONAL ACCESS  
SYSTEM (CAS) AND SUBSCRIBER MANAGEMENT  
SYSTEMS (SMS) FOR BROADCASTING & CABLE  
SERVICES DATED 22ND APRIL 2020**

**Submitted by:**  
**Ranjit Singh**  
e-mail: [ranjit.singh@dishd2h.com](mailto:ranjit.singh@dishd2h.com)

We, Dish TV India Limited (Dish TV), welcome the Authority for undertaking this exercise to look into the framework for technical compliance of Conditional Access System (CAS) and Subscriber Management Systems (SMS) for broadcasting & cable services. This was long due as the Authority touched upon almost every aspect in the sector since the year 2004 when Central Government entrusts regulatory functions relating to broadcasting and cable TV sector to TRAI vide its notification dated 09.01.2004. The need to have a regulation for CAS and SMS became all the more required after the sector was digitized whereupon the dependency on the CAS and SMS provider have increased manifold.

Although the process of digitization was brought upon after the Central Government Ordinance of 2011, the DTH sector, being an addressable platform since beginning, felt the need of a regulation for CAS/SMS services since beginning. Further, Dish TV being the pioneer of DTH services in India, our experience with such service provider are way more than any other operator in India and in such long duration we have felt the necessity of having a regulation in this aspect almost on every step of our operation.

Because of the fact that almost the CAS and SMS lies at the core of the services provided in an addressable system, such service providers have an advantageous position being in a controlling position as they control the entire system of a DPO. This can be explained as under:



In today's scenario, a DPO are therefore fully exposed with CAS operator with rest of the things being decided and controlled by CAS vendor in terms of compliance with SMS, MW, SoC or STB vendors. Therefore the DPO's are absolutely in a hostile situation with CAS operator and beyond that DPO doesn't have any rights or

knowledge of related echo-system partner and the CAS vendor is in complete control of everything and thereby driving the pay tv industry without any piracy insurance scheme.

Being in such position, such vendors are aware that the control of the entire business operation of the DPOs lie at their hand and DPOs are forced to play at their hands and pay exorbitant charges as per the whims and fancies of the CAS/SMS providers. Such charges mostly in dollars/euros, DPOs have to pay the same which adversely affects the viability of their business operation. This coupled with the fact that of currency fluctuation whereas the collection is done in INR make the entire process all the more worse.

We are thus of the strong opinion that the CAS/SMS providers should also be treated like other stakeholders of the industry and the Authority should prescribe a process of the registration of the CAS and SMS providers laying guidelines for the services to be provided by them and making provisions therein for (i) compliance reporting, (ii) penal liabilities in case of any failures. The following process may be adopted:

- a. There should be a nodal government body such as TRAI which should act as a regulator for all the CAS/SMS providers providing services in India.
- b. The nodal agency should prescribe eligibility criteria for provisioning of services by CAS/SMS provider.
- c. All the CAS/SMS providers should require mandatory registration after approval of technical parameters by the nodal agency.
- d. Adherence to prescribed tariff in INR.
- e. Compliance of prescribed guidelines including but not limited to the present requirement as provided in Interconnect Regulations and any subsequent updation arising out of changes in regulatory compliances should be passed on to the DPO at zero cost.
- f. Dispute resolution mechanism providing jurisdiction of India.

In the above backdrop, we provide our response to the issues for consultation as under:

**Q1. List all the important features of CAS & SMS to adequately cover all the requirements for Digital Addressable Systems with a focus on the content protection and the factual reporting of subscriptions. Please provide exhaustive list, including the features specified in Schedule III of Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017**

## Dish TV Response:

### SMS Features

#### **a. Company Management Module**

- Company creation with hierarchy which include
  - Trade partners ,
  - Dealers ,
  - Distributors,
  - Service centres and etc.

#### **b. User Management Module**

- User Creation, Update & Modify Users as per requirement.
- Password Policy Creation for Users
- User Block, Unblock & Force Logout (Single & Bulk)
- Product Permission User wise (Single & Bulk)
- Permission User wise (Single & Bulk) – Trade partners, dealers, distributors and Service centres.
- Menu wise User Permission.
- Dashboard Permission User wise.
- Product Permission Material wise.
- Product Permission as per role.
- Notification message Configuration & display on User Portal- can also be a scroll
- User wise Limit on Bulk Operations like refresh, Pairing etc.

#### **c. Product Management Module**

- DPO's and Broadcaster Bouquet Creation Under, region, state.
- Channels Creation with NCF Value & Applicability Setting (Single & Bulk)
- Channels Modification (Single & Bulk)
- Package Creation for Broadcaster & DPO with NCF Value & Applicability Setting (Single & Bulk)
- Package Modification (Single & Bulk).
- CAS Product Ids Update for Packages & A-la-carte Channels (Single & Bulk)
- Channel addition and Deletion as per Headend.
- Historical Data Management of Broadcasters, DRP, MRP & Product Name
- NCF Policy Creation as per TRAI guidelines
- Product Revenue Sharing Between Broadcaster and DPO.
- Trade partner and Dealers commission payments.
- Required to fulfil all NTO requirements.

#### **d. Inventory Management Module**

- STB & VC Pattern Setting to Avoid Wrong STB & VC Serial Number Updation in SMS

- STB & VC Material Creation with Pattern Setting (Single & Bulk)
- 360 degrees view of inventory management module – STB vendor till subscriber (Single & Bulk)
- 360 degrees view of inventory management module for stock repairs, replacement and replenishment module – STB vendor till subscriber (Single & Bulk)
- STB Hardware Schemes (Single & Bulk)
- STB & VC allocation, de-allocation, replacement (Single & Bulk)

**e. CRM Management Module**

- Activity Head, Category, Reason Creation for Call Centre
- Activity Reason Linking with Activity Head
- Ticketing Creation
- Call Centre Tickets Escalation Updation

**f. Subscriber's Billing Module**

- Multiple Modes Available for Prepaid Billing of Subscribers
- Subscriber Billing with (Addon & A-la-carte Equal to Base Package Mode)
- Product Tenure wise Subscriber Discount Scheme
- Product Tenure wise Subscriber Free Days Scheme
- Material's Transaction Type wise Subscriber Billing on Return or Replacement
- Itemized Subscribers Billing formats with Product Subscription
- Auto Calculate CGST-SGST & IGST Tax in Subscriber Billing Transactions
- NCF Amount Reversal with True/False Setting Base for Subscriber on Pro-rata basis

**g. Text MSG & Mailing Module**

- Text MSG Template Creation Activity wise for Subscribers
- Text MSG Template Creation Activity wise for users
- Mailing Template Creation Activity wise for Subscribers
- Mailing Template Creation Activity wise for users
- Daily Auto Messaging of Last Night Expired & Renewed STBs Details to subscribers.
- Auto Text Massaging for Subscriber Related to CRM Complain Management
- Daily Auto Text Messaging of Payment Reminder to subscribers Before Expiry of STBs

**h. Subscriber Management Module**

- Mobile App & Web Portal for Different Activities on Daily Basis
- Fresh Subscriber STB Activation Single & Bulk
- STB De-activation Single & Bulk
- STB Temporary De-activation Single & Bulk
- STB Re-Activation Single & Bulk
- Product Addition Single & Bulk
- Product Removal Single & Bulk

- Product Change (Addition & Removal) Single & Bulk
- Product Renewal Single & Bulk
- Auto & Manual Setting for Renewals – Product wise & Connection wise (Single & Bulk)
- Activity Scheduler for (Activation, Deactivation, Product Addition, Product Removal & Package-Channels Composition Modification)
- Bulk Package Addition & Removal with Different Products on Different Cards
- Expected Deduction Amount Information While Renewal or Recharge (Single & Bulk)
- STB & VC Pairing & De-Pairing (Single & Bulk)
- Renewal (Package Wise & Connection Wise).
- Parent and child connection management.
- Subscriber Debit & Credit Note (Single & Bulk)
- Subscriber Payment Reconciliation
- Many Type of Default Setting Available to Enable & Disable
- Functionality of the Software for All Major forms Like
- (Phone, Pin Code Mandatory or Not)
- Single Button for Refresh Card
- Resend CAS Commands (Re-Pair, Re-Entitle, Re-Activation, Re-Deactivation, Re-Add Card)
- Subscriber Sequence
- KYC Management-Subscribers
- Management of Agreements –subscribers
- Auto SMS & CAS reconciliation at defined interval

**i. CAS Provisioning Module**

- Verify and Execute CAS Commands
- Finger-Print ECM & EMM Based on STBs according to fields available in CAS (Single & Bulk)
- Finger-Print Global ECM & EMM Based on STBs according to fields available in CAS (Single & Bulk)
- Cancel OSD & Finger Printing on STBs according to features availability in CAS (Single & Bulk)
- B-Mail on STBs according to fields available in CAS (Single & Bulk)
- B-Mail Global on STBs according to fields available in CAS (Single & Bulk)
- Blacklisting of STBs (Single & Bulk)
- View Blacklisted STB-VC Details
- Set Default Bootup Channel on STBs and can be controlled for particular group of customer.
- All Type of CAS Commands Provisioning Log Report with Multiple Criteria

**j. User's Log Reporting Module**

- Application Panel User Detail Report with Assigned Permissions
- User Activity Log Reports

- Application Panel User Login Details Report
- Employee Wallet Ledger Report

**k. Business Intelligence Module**

- Total Active STB Count on Dashboard According Permission
- Total In-Active STB Count on Dashboard According Permission
- Total STB & VC Stock Count on Dashboard According Permission
- Total Number of Product & STB Expiring Detail till Given Future Date on Dashboard According Permission.
- Today's Fresh Activation Count on Dashboard According Permission
- Today's De-Activation Count on Dashboard According Permission
- Today's Re-Activation Count on Dashboard According Permission
- Today's Product Addition Count on Dashboard According Permission
- Today's Product Removal Count on Dashboard According Permission
- Total Active & Inactive Subscriber's Details with Multiple Criteria
- All Reports with Multiple Criteria (, Product Wise, State-City Wise & Broadcaster Wise)
- Complete Inventory Report of STB In Detail wise & Summary Wise
- All, Selective & Single Boxes Current Status With their First Time Activation Date
- Daily Expiry Report with Required Renewal Amount
- Subscriber Ledger Details of Deduction & Reversal with their Respective Activity Heads Information
- Easy Export Option to Extract the All Type of Reporting
- Subscriber Due Report
- Product Entitle Log Report
- All trade partners , dealers and service centres Listing Report
- Column Hide & Unhide Option on All Statistics Reports
- One Line SOA Report
- STB-VC History Report Transaction Date wise
- Material History Report Transaction Date wise
- Ticket Listing Report with Multiple Criteria
- STB-VC Pairing & De-Pairing Details Report
- Periodic Fresh Activation Report
- Periodic De-Activation Report
- Periodic Re-Activation Report
- Periodic Product Addition Report
- Periodic Product Removal Report
- TRAI & Broadcaster's Audit Reporting Module
- Monthly and quarterly reports (PMR) in the format advised by TRAI
- As-on-Date Active-Inactive Subscriber's Details
- Product wise As-on-Date Active-Inactive Subscriber's Details
- Month End wise Subscriber's Active-Inactive Historical Details
- As-on-Date Package-Channel Composition Details
- Historical Package-Channels Composition Details (Package Channels

- Composition Modification Log)
- Product Ageing Report
- Subscriber Ageing Report
- A-la-Carte wise Active STB's Count Report
- Package wise Active STB's Count Report
- Channel Under Package wise STB's Count Report
- Package & A-la-Carte wise Active STBs Count Report
- Unique Channels wise Active STB's Count Report
- Material wise Active STBs Count Report
- HD & SD wise STB's Active Count Report
- DPO's Overall Subscriber Base Report
- Broadcaster Package Summary Report
- DPO Package Details (List wise)
- LCN Ranking with Channel Genre
- A-la-Carte Channel's Summary Report
- Complete CAS Commands Log
- Platform to Download Multiple Generated Reports with the Help of Token Number
- Performance Monitoring report of DPO required by TRAI

**l. Performance & Monitoring Module**

- CAS Commands Monitoring tool
- Multiple Threading management for simultaneous CAS wise Command execution to handle Bulk Load
- System Health check Monitoring
- CAS-SMS Data Sync Tool
- System auto Self-decision making for CAS commands traffic control to avoid any delay in execution

**m. Add-on Products & Services**

- Mobile and web services for subscriber with Payment Gateway
- SMS Web Service Credits
- 3rd Party Services Integrations
- CAS Integrations
- Exclusive Payment Gateway Integrations
- 3rd party IVR Integrations

**n. 3rd party SMS Gateway Integration**

- Capability for generations, recording, and maintaining logs, for the present period and preceding two consecutive years, corresponding to each command executed in the SMS including but not limited to activation and deactivation commands
- It shall not be possible to alter the data and logs recorded in the SMS.
- All activation and deactivation of STBs shall be done with the commands of the SMS.



- The SMS and the CAS should be integrated in such a manner that activation and deactivation of STB happen simultaneously in both the systems.
- The SMS should be able to activate or deactivate services or STBs of at least 20% of the subscriber base of the Distributor within 24 hours.
- Capable for Viewing and printing of historical data in terms of the activations and the deactivations of STBs.
- Capable for Locating each and every STB and VC installed.
- Capable for generating historical data of changes in the subscriptions for each subscriber and the corresponding source of requests made by the subscriber.
- The SMS shall be able to tag and blacklist VC numbers and STB numbers that have been involved in piracy in the past to ensure that such VC or the STB cannot be re-deployed.
- SMS vendors have the technical capability to maintain the systems on 24x7 basis throughout the year.
- Should be able to generate report on month end for broadcasters
- Should be capable to manage at least 1M subscribers and should be scalable
- Should be able to segregate subscription and hardware revenues/charges

### **CAS Features**

Security is at the core of CAS. CAS architecture must let handle DPOs all their content security needs for all distribution technologies, consumer devices and security clients in one unified management system. CAS should combine all DVB, IPTV and OTT clients in the same management system which is easy to use, navigate and configure, including an intuitive management system with step-by-step wizards, diagnostics, reporting and extensive audit logging, a comprehensive monitoring system to check the detailed statistics so that potential problems can be detected before they become an issue.

CAS system should have unique flexibility in the system to allow remote activation of new features, enabling easy upgrade of operation.

#### **a. LINEAR CONTENT**

CAS must support all relevant business models for packaging linear content.

- Channel packages
- À la carte
- Rental
- Pay per View
- Supports all Subscription models like open ended, time limited, pre-paid and pre-loaded
- Preview and teaser

#### **b. TIME SHIFTED CONTENT**

- CAS must enable services that allow the end user to consume time shifted content in several different ways.

- PVR
- nPVR
- Catch-up
- Start-over

**c. ON DEMAND CONTENT**

- On demand services is an essential part of any PAY-TV offering. CAS should facilitate to enable both Subscription and Transaction based On Demand Services (VOD and TVOD) for movies, TV-series and other PAY-TV content.
- EASY INTEGRATION TO 3RD PARTY SYSTEMS
- CAS should offer extensive and modern features for integrating with 3rd party systems.

**d. STANDARD FEATURES OF CAS**

- Subscription
- Flexible Subscription
- Subscription Regions
- Pairing
- Messaging
- Fingerprinting
- Event Scheduling
- Content Usage Control
- Multi Operator
- On-demand
- EMM Pull
- OTT
- Geographical Blackout
- Multi-DRM Support - Microsoft PlayReady, Widevine, and Conax Connected Access, also with Common Encryption (CENC)

**Standard Features in details:**

Subscription - To be given access to content for a specified period of time (the subscription period). The subscription period is defined by the SMS - Time-limited subscription and Open-ended subscription

- Flexible Subscription - Flexible subscription gives subscription for desired period and auto expires when subscription period ends.
- Regional Products - Enables the operator to define regional products that are sold to only to a region or headend. It is very useful in distributed operations like cable.
- Chipset Pairing - Security extension providing a cryptographic coupling between smart cards and STBs. Prevents STB hijacking, SC cloning and CW sharing.
- Messaging - User text messages to be displayed on the TV screen, messaging can be sent in different mode like OSD, Mail-Box, Scroll with schedule and repetition. Supports international character sets.
- Fingerprinting - A visible text displayed for a limited time on-screen by

the STB to identify the CA client of the STB. It can be based on service or clients delivered using both EMM and ECM.

- Watermarking - End-to End watermarking solution full filling MovieLabs recommendations
- Pay Per View - PPV enables to sell time-limited access to one or more content, such as TV channels and On Demand content.
- Content usage control - Specifies how the content can be consumed by the consumer like copy control, trick play control and device sharing.
- EMM Pull - Serve EMMs to IP-connected STBs and CAMs upon request from STB with instant activation and no need to wait cycle-time of EMM payout.
- OTT - Over-the-top (OTT) is a service offering online delivery of content to a media-enabled, broad band and- Connected consumer device. Supports all OTT features and devices (IOS, Android Browser)
- Multi-DRM - A multi-DRM solution basically has license management features for multiple DRMs (Playready, widewine, fairplay) with proprietary DRM and Connected Access clients and provide single point solution to operator.
- Connected Access - Connected Access is introducing the next generation IPTV security with a unique security client integrating two-way Cardless CAS and DRM in one single security client
- Geographical Blackout - Capability for Geographical Blackout
- MATURITY RATING - Enabling the end-user to set a PIN code is important to meet some content owner requirements as well as expectations from end- users. This feature will enable the end-user to control the access to content in the home and cover the need for parental control of specific content.
- Card & Cardless - High security CA with or without a physical smart card in the STBs must utilize state of the art physically separated secure processors in modern DVB chipsets.
- CAM Cards - CA Modules must supports all DVB CI, CI+ standards with integrated CAM option.
- PVR rules - Controlling the PVR recordings is an important aspect of the requirements from content owners. CAS should enable to use predefined or customized URI profiles to control the output, set limitation on time and control the availability to copy the recordings.
- Time constraints - Set parameters defining the time constraints on viewing specific PVR content based on content rights. DPO can allow the end-user to have unlimited access to a specific PVR recording or set a clearly defined time restriction. Both the time of playback and time of recording can be used to determine whether the client should be allowed to play the recorded content or not.
- Output control - With the output control DPO can enable or disable analogue outputs, control if recording on outputs are allowed and trigger downscaling of HD content.
- Copy control - Remain in control even after the recording is done by specifying copy restrictions and applying retention limits on digital content. Set parameters to allow or restrict PVR recording and set time limits for how long the end user is entitled to view the individual recording. CAS must enable DPO to apply HDCP

where this is required.

- Trick play control - Controlling the trick play options is important for advanced pay-TV services. CAS should enable DPO to apply restrictions on playback, limit the availability of pausing, control the allowed duration for time-shift and block fast-forward functionality during commercials. There are also options to restrict the speed the end-user should be able to jump in the program or deny it all together

### **Device Management:**

CAS should enable DPO to have complete control over the devices in his operation and master the complexity of different device models. Configure the number of allowed devices per account, and how often it should be allowed to change a device.

These settings can be applied globally or per account and the devices can be either operator or user controlled. The device management can control which content is allowed to which device model by setting device profiles.

### **Messaging:**

The messaging feature can be used to send short, alphanumeric messages to one or more subscribers. These messages can be delivered on-screen or to a mailbox and contain promotions, instructions or important customer information. All messages can be delivered immediately or on a scheduled basis.

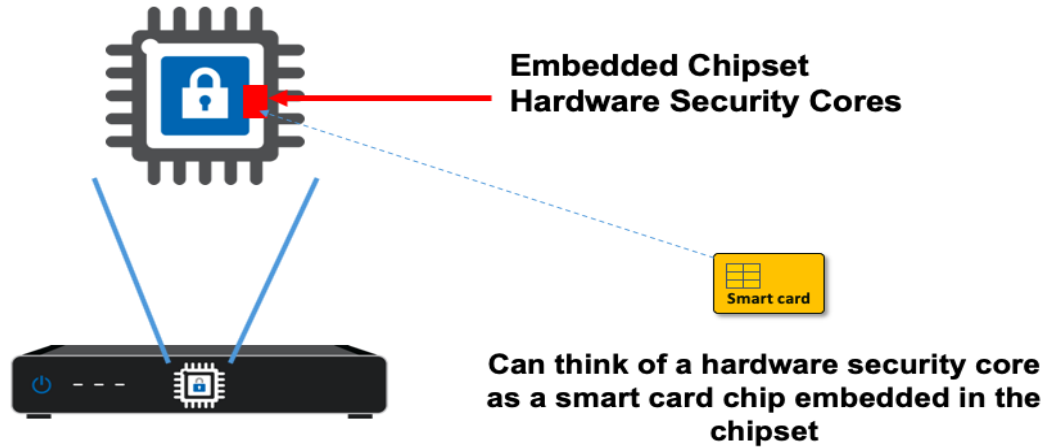
### **Multiple Operators:**

CAS should allow multiple pay-TV operators to share a single installation of one particular CAS. Unlike other optional features, Multi Operator is a system configuration that should allow to register multiple pay-TV operators and optionally share content, secure clients, OTT accounts, and STBs in a secure and controlled manner.

## **RANGE OF SECURITY CLIENTS**

- Smart Cards - The Smart Card is a specialized tamper resistant cryptographic hardware used to control access to content on the client side.
- Cardless - The Cardless is a CA client where the CA client runs inside a purpose-built area of the STB chipset instead of in a physical smart card. It is designed to work in one-way broadcast operations and is based on the latest development in STB chipsets providing sufficient hardware security mechanisms to enable secure implementation of the CA client, hardware root of trust.
- IPTV - CAS client is the next generation security client for IPTV ready to safeguard premium content over a variety of environments by employing the CAS security hardware root of trust, Trusted Execution Environments (TEE's) and software-only implementations to ensure that operators can reach any device with the highest level of security achievable.
- OTT Accounts - An OTT account is used to authorize either one or a collection of OTT client devices such as tablets, smartphones and PCs. The consumer can be enabled to self-manage the devices and add/ remove devices from the OTT account.

In addition to the above, we need to define Next Evolution of Pay TV Security towards essential content protection with embedded Hardware security supported by CAS vendor.



Next Evolution security feature must be included as below;

- a. All CAS must be supported embedded chipset Hardware Security cores
- b. All CAS must be supported operator owned or 3rd party key ladder
- c. All CAS must be compliance with all approved SMS system
- d. All CAS vendor must provide 24x7 support to respective DPO existing subs even no new business in terms of new Box order or new smart card order. In case any CAS vendor do not support for any reason, he will be penalised for all losses.
- e. All SMS system must not be exposed with any CAS security info.
- f. All SMS must be certified with and listed with entrusted body then only any SMS system to be deployed.

**Q2. As per audit procedure (in compliance with Schedule III), a certificate from CAS / SMS vendor suffices to confirm the compliance. Do you think that all the CAS & SMS comply with the requisite features as enumerated in question 1 above? If not, what additional checks or compliance measures are required to improve the compliance of CAS/SMS?**

**Dish TV Response:** Many features as mentioned -above are not present in some CAS/SMS Vendors and the same are not disclosed by the CAS/SMS Vendors in the beginning. Once the DPO signs up with these service providers, surprises start coming up. Every time a new Change Request for every new feature is created, which means more dollars for them. The CAS/SMS providers in the absence of any guidelines or regularity mechanism are not answerable to any law enforcement agency of the Government of India and hence this needs to be course corrected at the earliest. This is also required to safeguard the huge investments deployed by the DPOs in the process of the development of Set Top Boxes and its procurement. We thus suggest that the Authority must prescribe registration process for all the CAS/SMS providers under a regulatory body of the Government of India along with laying guidelines for

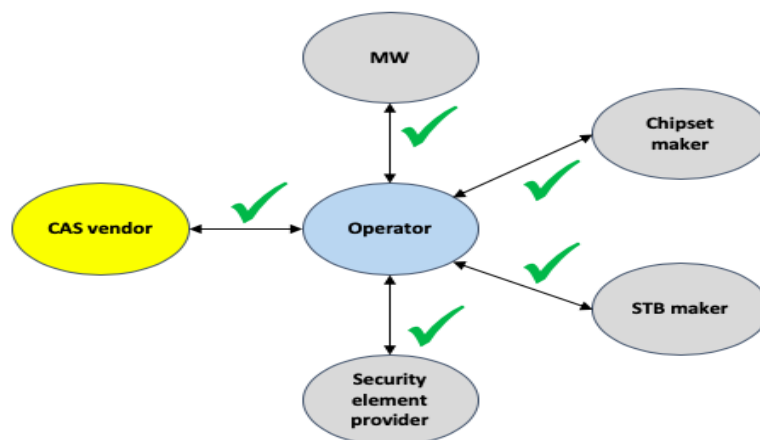
them with the requirement for reporting of compliance and price protection. They should give an undertaking to the registering authority about functioning availability of every feature mentioned in point 1 above. Also, they should provide an undertaking that any changes required to be done on the instructions by TRAI, shall be done by the service provider in their respective systems without any additional charge to the DPO. Any certificate should be issued to them only after complying with these undertakings. The existing service providers should also be brought under the new regime within a prescribed timelines.

Most important compliance requirement from CAS vendor is to protect end-to-end content i.e. from DPO headend till it is delivered to the last miles via DPO's STBs at customer place. In case of any security breach or piracy of content, the CAS Company should be held responsible and compensate for the losses suffered by the DPOs.

**Q3. Do you consider that there is a need to define a framework for CAS/ SMS systems to benchmark the minimum requirements of the system before these can be deployed by any DPO in India?**

**Dish TV Response:** Absolutely Yes. As mentioned in our response 2 above, we strongly advocate for a comprehensive framework for CAS/SMS system especially for the requirement of end to end content protection and transparency in business for the CAS side and an end to end business enablement from the SMS side. At stated above, it is the CAS operator who controls and coordinates with the other stakeholders in the value chain and the DPOs are at the whims and fancies of the CAS operator and beyond that DPO doesn't have any rights or knowledge of related echo system partner because the CAS vendor is in complete command of everything and driving the pay tv industry without any piracy insurance scheme.

On the CAS end, we thus recommend the below operating model wherein the DPO should have direct contract with each stack-holder viz. CAS service provider, SoC/Chipset maker, Middleware, Security element provider and STB maker wherein the CAS vendor will be as one of stack holder in entire echo system like others.



On both SMS/CAS sides, we also recommend, the service providers to give a guarantee to the TRAI to continue support at a pre-agreed minimal price, in case of no new business being given by the DPO. Such a support becomes an essential thing, because in the absence of the same, all the existing boxes deployed will start facing problem and the customers will have to end up wasting their current investment and opt for new boxes.

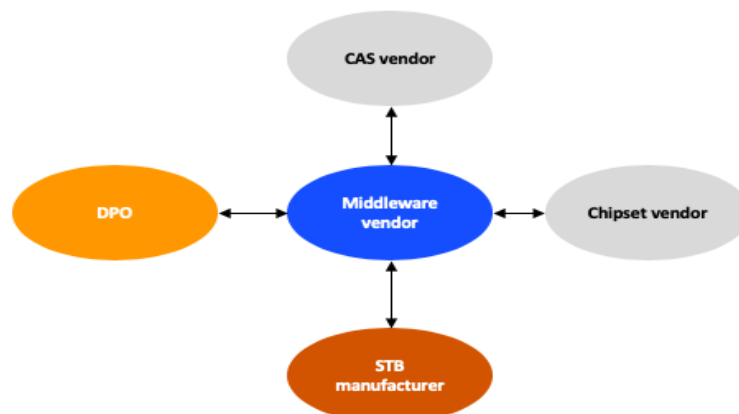
**Q4. What safeguards are necessary so that consumers as well as other stakeholders do not suffer for want of regular upgrade/ configuration by CAS/ SMS vendors?**

**Dish TV Response:**

As stated hereinabove, in today's scenario, it is the CAS provider which plays the central character and decide the scheme of the things. In fact there are cartel formed between the CAS, SMS and other stakeholders and the DPO after choosing a CAS provider are not left with much of a choice but to go ahead with the suggested vendors by the CAS provider. For the said reasons, the DPOs, most of the time, play at the hands of the partners and is not able to anything despite clear defect in the services provided by any of them.

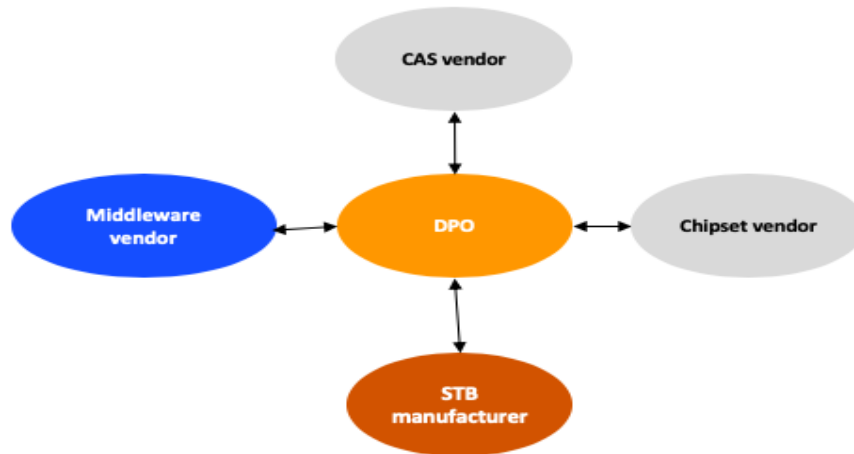
Further, after choosing any CAS/SMS provider, it is impossible to change any partner and therefore if a DPO decides to hire new CAS/SMS partner, no services / updates are provided by the CAS/SMS providers in respect of the old and legacy boxes even in case of mandatory and regularity updates required in the same resulting into noncompliance by the DPOs.

Another example of this is the case of Middleware. In the current situation, Middleware is the CAS gatekeeper who Controls the STB as the other sub-systems are under middleware control. Most of CAS vendors have their own proprietary SMS which means that the complete control of entire stockholders and all decision-making power is with CAS/SMS vendor only. This can be explained from the following picture:



**Current Structure of CAS/SMS engagement in entire ecosystem**

This structure needs to be changed for Indian DPO for transparent business requirement and security compliance. New structure should be as below where DPO will be in the centre with control on all stockholder control.



### Proposed Structure of CAS/SMS engagement in entire ecosystem

The authority should take notice of the above and must provide a clear guideline for the CAS/SMS provider requiring them to comply with the same and file reports of compliance at a regular interval. The guidelines should take care of the facts mentioned hereinabove.

Besides the above, there are two more elements.

Each CAS provider, should agree and ensure that the system is enabled for Simulcrypting so that if a DPO wants to change the CAS provider, then it should be free to do so without being at the mercy of the CAS provider. In case such a situation arises, the system should not require any intervention from the CAS provider and if any configuration is required, that should not be held back.

Second point is about SMS. Each service provider of SMS should undertake to ensure a perfect data portability to another SMS system, as chosen by the DPO. In case, a DPO decides to go for another SMS system, the erstwhile service provider, should not held him at ransom for porting the existing data. This should be at an pre-agreed reasonable price and feasibility of any such transfer should be undertaken by the service provider at the time of registering with TRAI.

**Q5. a) Who should be entrusted with the task of defining the framework for CAS & SMS in India? Justify your choice with reasons thereof. Describe the structure and functioning procedure of such entrusted entity.**



**Dish TV Response:** There should be Committee of industry expert comprising of major DPOs, Broadcasters and Govt. agencies which should be responsible to define all required framework for CAS/SMS for minimum compliance feature and security requirement to safeguard Broadcasters content and DPO business.

Suggestive structure and functioning of the said Committee may be as follows:

- a. The Committee should have Equitable representation from all DPO's i.e. Government body (may be BIS) to avoid any conflict.
- b. This Committee should propose guideline and certification process for CAS/SMS vendors and send the same for approval by Government and suggest changes in the same from time to time based on the experience of the industry.
- c. There should be a nodal government body such as TRAI which should act as a regulator for all the CAS/SMS service providers providing services in India prescribing the guidelines for CAS/SMS provider including security and technical features along with accountabilities and penal provisions.
- d. The nodal agency should prescribe eligibility criteria for provisioning of services by CAS/SMS service provider.
- e. All the CAS/SMS service providers should require mandatory registration after approval of technical parameters by the nodal agency.
- f. The nodal agency should finalise and empanel registered CAS / SMS vendor for the services in India.

**Q5. (b) What should be the mechanism/ structure, so as to ensure that stakeholders engage actively in the decision making process for making test specifications / procedures? Support your response with any existing model adapted in India or globally**

**Dish TV Response:** As stated above, the Committee should consist of members from all across the industry which in itself would be a collaborative approach by all. The process adopted for formulation and finalization of the Audit Manual may be followed.

**Q6. Once the technical framework for CAS & SMS is developed, please suggest a suitable model for compliance mechanism.**

- a) **Should there be a designated agency to carry out the testing and certification to ensure compliance to such framework? Or alternatively should the work of testing and certification be entrusted with accredited testing labs empanelled by the standards making agency/ government? Please provide detailed suggestion including the benefits and limitations (if any) of the suggested model.**

**Dish TV Response:** Yes, there should be designated agency to ensure the compliance framework as under:

- Based on framework all vendor product can carry out certification from accredited testing lab

- The Nodal Agency should not only prescribe technical compliance parameters for vendors but also ensure prescribe cross platform compliance like mandatory technical support to all DPO including support and upgradation time to time.
- Vendor has to certify his product before deployment in India and by doing this practice industry will be benefited and limitation as follow.

Benefits:

- a. STANDARD and certified CAS/SMS/ENCODERS/MUX AND STBS SoC WILL BE DEPLOYED
- b. PIRACY WILL BE in BETTER CONTROLLED
- c. REVENUE OF BROADCASTER , DPO AND GOVT WILL INCREASE

Limitations:

- a. IMPLEMENTATION IN EXISTING INSTALLED CAS AND SMS.
- b. COST OF IMPLEMENTATION INITIALLY HIGHER
- c. LABS CREATION OR IDENTIFICATION FOR CERTIFICATION PROCESS

- b) What precaution should be taken at the planning stage for smooth implementation of standardization and certification of CAS and SMS in Indian market? Do you foresee any challenges in implementation?**

**Dish TV Response:** Unanimity amongst the industry stakeholders would be the biggest challenge. Therefore acceptance should be taken from all major DPOs and Broadcaster associations to avoid any such that may come in implementation. Already existing CAS and SMS providers should also standardise their Systems according to the new guidelines.

New Framework to be designed while including following important points:

- a. Current situation faced by DPOs from CAS providers
  - i. Smart Card did not help against emerging piracy.
  - ii. STB chipsets are also vulnerable.
  - iii. Not able to get contributors of security elements to cooperate due to outdated security support model.
  - iv. Old security model did not work – required a new model.
- b. Roadmap for framework:
  - i. We must look for Strong STB security which may last 8-10 years.
  - ii. Not to be stuck with a single security chain and rather enable several alternative STB security options in both at chipset level and software level.
  - iii. Easy and flexible to include dormant or combine active security elements.
  - iv. Ensure security support from all providers of security elements and not only relate to CAS vendor and be unable to reach behind.

- v. Need to split security model into two layers a STB security foundation layer and a CA system layer.
- vi. Need to control key-ladder and bootloader keys.
- vii. Need to enable additional security blocks in STB chipset and supported by CAS.
- viii. New legal framework for security support. Focus on acting if security issues and less on liabilities.

**c) What should be the oversight mechanism to ensure continued compliance? Please provide your comments with reasoning sharing the national/international best practices.**

**Dish TV Response:** At the age of consistent technological advancement, the security parameters are also bound to be dynamic and any mechanism for compliance should envisage keeping this factor at the central focal point. Therefore for continuous compliance monitoring, the Committee members should regularly meet to discuss about content security and piracy status. Based on reports submitted by the Committee, the Nodal Agency should take appropriate action against the errant party. Oversight Mechanism should be as below;

- a. There should be an online secured (end-to-end encrypted) CRM portal where all DPOs and Broadcasters can raise their day to day voice and based on that input, the Committee may call security meeting with respective vendor and ensure the compliance.
- b. Quarterly Security review meeting of the Committee with the CAS/SMS vendor's Security expert /solution architect for their advance feature. In this meeting, the Committee may also discuss best practice and adaption of new technology for further enhancement of content protection guideline.
- c. Since piracy affects the industry at the core, and the pirates are having a free run with no fund limitation and with the best of technology at their disposal, the industry should be at least one step ahead and keep tracking of worldwide piracy status and try to improve proactively rather than having a reactive approach.
- d. Therefore, the Committee should also empanel a neutral third party security and content protection agency for common assessment of worldwide piracy situation so that the best practice can be implemented.
- e. Based on security foot printing from various sources and field report on piracy, the Committee should consistently improve the framework and guidelines.

**Q7. Once a new framework is established, what should be the mechanism to ensure that all CAS/ SMS comply with the specifications? Should existing and deployed CAS/ SMS systems be mandated to conform to the framework? If yes please suggest the timelines. If no, how will the level playing field and assurance of common minimum framework be achieved?**

**Dish TV Response:** Once framework established, all existing CAS /SMS vendors would need to ensure that their system are in compliance with new framework and for this a time period of 6 months should be sufficient.

**Q8. Do you think standardization and certification of CAS and SMS will bring economic efficiency, improve quality of service and improve end- consumer experience? Kindly provide detailed comments.**

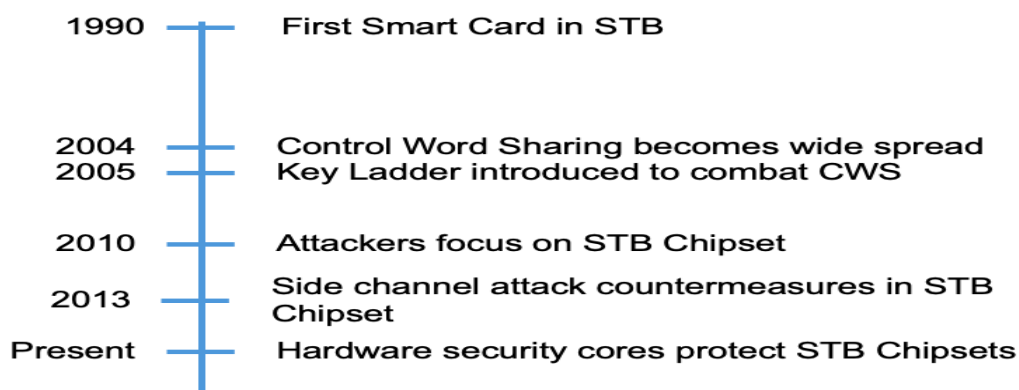
**Dish TV Response:** Definitely yes. Standardization and certification of CAS and SMS will bring economic efficiency, improve quality of service and improve end- consumer experience. At first stage may be economic efficiency not achieved but later on it will be beneficial for the DPOs to save cost because monopoly of CAS and SMS will not exist after standardization which will ultimately be beneficial for the end consumers. This will enhance the revenue of all the stakeholders.

**Q9. Any other issue relevant to the present consultation.**

**Dish TV Response:** According to us, the current security framework which was laid down way back in 2003 has become obsolete now and pay TV industry is suffering huge revenue loss. Therefore, it is not only CAS/SMS partners responsible for piracy but all connected echo-system partners are equally responsible for the same like Encoder/MUX where CAS system getting control word (CW) and then ECM/EMM being generated and if Encoder/MUX having escape root for CW leakage then only CAS/SMS improvement will not be not very effective.

Similarly, we should also look in depth on client side equipment i.e. STB which is last mile and integral part of whole DPO backend and if client / STB get compromised then whole purpose gets defeated. Therefore, we should not plan framework for only CAS and SMS rather we should make holistic approach along with entire ecosystem framework including Encoders, MUX, STB SoC, STB Vendor, Middleware vendor etc.

Trends in PayTV Security:



- a) We should not enforce the interoperability box option via any CI CAM because of major security lapse, also the industry will suffer unnecessary loss of time and money and ultimately there will not be any major achievement and benefits at ground. It is evident since 2003 we have a mandatory clause to carry PCMCIA CI slot in each boxes and only pay TV DTH operators have been investing since last 19-years and so far around 150 million US dollar lies wasted in vain.
- b) Similarly new amendment CI+ USB 2.0 CAM on STB and TV notification happened by TRAI and forcing us to integrate USB 2.0 CI+ CAM feature in all STB (DTH plus Cable box).

This is highly non-practical for normal subscribers who has an old legacy box from one DTH operator and if he now wants to change from one DTH operator to another DTH operator then he has to buy new USB 2.0 CI CAM from new DTH operator and he will insert in his old legacy box. Here subscribers has two options - either he will buy new operator USB CI CAM or directly buy new box from new operator. With new box he will also get warranty support whereas with old box+new USB CAM he will not enjoy any such benefit.

Also in current scenario, new USB CI+ CAM cost would be higher than new box then who will opt for USB dongle instead new box? Therefore, it is very important to re-look into as an entire echo system user behaviour and then decide accordingly.

- c) It is advisable to continue USB CI+ CAM mandatory for only TV set only where user will have option either to buy new STB or only buy USB dongle. Since TV is expensive box compare to STB, further investment may be possible and good for industry.
- d) Also, we should form one core technical expert committee from industry stakeholders who will provide new idea and technological support to new Committee as well as TRAI/BIS on Interoperability and Content protection.

\*\*\*\*\*