

***Response of***  
***Siti Networks Limited***  
***to***  
***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**

At the outset we are thankful to the authority for its continuous engagement towards growth of the broadcasting and cable TV sector. The present consultation though has come very late however, we welcome the step taken by the authority to regulate this very important aspect of the Distribution Platform. CAS and SMS are the integral part of the content distribution network. As rightly highlighted by Authority in the consultation paper, CAS and SMS are pivotal for the Digital Addressable Broadcast ecosystem and are responsible for delivery of the content in a secure & encrypted manner only to authorized subscribers. This was very much required for providing the level playing field to the stakeholders in the country. Presently in absence of any regulatory environment to regulate the CAS and SMS providers in the country it is difficult for the Distribution Platform Operators to finalize the terms of service with the providers.

In this context it is very important to mention here that in absence of any registration process, the vendors can have their own terms with respect to price and support service. It has been observed in many cases that firstly the vendor sell their product (CAS) and after deployment of a sizable inventory by the player, the vendor set their own terms with respect to price and support. It is pertinent to mention here that once a vendor stop their service support to the service provider, they can not run their operations and already deployed boxes and they have to agree to all such unreasonable terms in the over all interest of the business.

One more important aspect which we wish to highlight here is that payment to the CAS vendor is normally made in USD/Euro/Foreign currency where as the collection by the service providers is being done in INR which creates a huge difference in the value in the event of fluctuation in exchange rate. Hence there should be a registration process for all such CAS and SMS vendors to operate in India and their service terms should also be regularized. The payment of fees should also be made in the INR to ensure stability in the prices to the service providers.

In absence of any regulatory guidelines from the Government, many service providers buy cheap products in the event such products does not meet regulatory guidelines, the service providers are asked to pay for any development/feature required in the product. It is submitted that the service providers not only invest in CAS but also in the STBs which have embedded CAS and in the event when a vendor stop the service support for any reason whatsoever, the entire investment of service providers remains at stake and they have to agree to such unreasonable terms of the vendors in the overall interest of their business.

With respect to the specific questions in the consultation paper, we would like to submit our response as below;

- 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?
- A1.** As desired by the Authority we have tried to compile most of the requirement in SMS and CAS for DPOs operating in present regulatory environment. The Authority may take its own view regarding the mandatory features to be advised to the CAS/SMS providers;

## SMS Features

### ***Company Management Module***

- Company creation with hierarchy (National Level MSO, State Level MSO, JV's/Distributors, Sub Distributors, LCO & Sub LCO & line man) (Single & Bulk)
- Set Billing Entity of Operator to Manage & Auto Calculate Taxes
- Bank Creation & Linking with MSO & LCO (Single & Bulk)
- Zone, Headend, Sub-headend creation & other related hierarchy as per business needs
- Reference Number Format Setting on Interface (Invoice Number, Subscriber ID, Receipt Number & Etc.)
- India State wise District Master with relevant details of Municipal Council / Municipal Office / Gram Panchayat etc. details

### **Employee & User Management Module**

- Employee & User Creation (Single & Bulk), Update & Modify Employee & Users
- Password Policy Creation for Users
- User Block, Unblock & Force Logout (Single & Bulk)
- Product Permission User wise (Single & Bulk)
- Company Permission User wise (Single & Bulk) - LCO-lineman & Distributor wise, zone, region, state & mix of company & other entities
- Menu wise User Permission (Single & Bulk)
- Dashboard Permission User wise (Single & Bulk)
- Product Permission Material wise (Single & Bulk)
- Product Permission Company wise (Single & Bulk)
- Notification message Configuration & display on User Portal (Single & Bulk) - can also be a scroll
- Department wise Grouping for User Permission (Single & Bulk)
- User wise Limit on Bulk Operations

### **Product Management Module**

- Location Wise Bouquet Creation Under DHE & Zone, region, state, Distributor or LCO
- 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 Detail Update DHE wise (Single & Bulk)
- Historical Data Management of Broadcasters, DRP, MRP & Product Name

- NCF Policy Creation - in bulk too... in case of different setup for different companies/JVs
- Product Revenue Sharing Between Broadcaster & MSO (Single & Bulk)
- Product Revenue Sharing Between LCO & MSO Entity & Tenure wise (Single & Bulk)
- NCF Revenue Sharing Between LCO & MSO Entity & Tenure wise (Single & Bulk)
- Required Base Package for Particular Add-on Package Setting - in NTO customer is allowed to take even a single channel - not sure how this configuration helps - it will be required if NTO is either rolled back or selection of certain pack/s becomes mandatory
- Required Add-on Package for Particular Base Package Setting - same as above

#### **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 LCO (Single & Bulk)
- 360 degrees view of inventory management module for stock repairs, replacement and replenishment module - STB vendor till LCO (Single & Bulk)
- STB Hardware Schemes - zone, JV, Distributor, LCO wise (Single & Bulk)
- STB & VC allocation, de-allocation, replacement (Single & Bulk)

#### **CRM Management Module**

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

#### **LCO & Subscriber's Billing Module**

- Multiple Modes Available for Prepaid & Post-paid Billing of LCOs & Subscribers
- LCO & Subscriber Billing with (Last Day of The Month Mode)
- LCO & Subscriber Billing with (30 Days Mode)
- LCO & Subscriber Billing with (Addon & A\_la\_carte Equal to Base Package Mode)
- LCO & Subscriber Billing with (LCO wise End Date)
- LCO & Subscriber Billing with (Fix Tenure Mode)
- Product wise Reversal setting in LCO & Subscriber Account (Enable & Disable Mode on pro-rata basis)
- Product wise Renewable setting for LCO & Subscriber (Enable & Disable on pro-rata basis)
- Product Tenure wise LCO & Subscriber Discount Scheme
- Product Tenure wise LCO & Subscriber Free Days Scheme
- Material's Transaction Type wise LCO & Subscriber Billing on Return or Replacement

- NCF Amount Reversal with True/False Setting Base for LCO & Subscriber on Pro-rata basis
- Itemized LCO & Subscribers Billing formats with Product Subscription
- Auto Calculate CGST-SGST & IGST Tax in LCO & Subscriber Billing Transactions

#### **Text MSG & Mailing Module**

- Text MSG Template Creation Activity wise for Subscribers
- Text MSG Template Creation Activity wise for Employee
- Text MSG Template Creation Limited Activity wise for LCO
- Mailing Template Creation Activity wise for Subscribers
- Mailing Template Creation Activity wise for Employee
- Mailing Template Creation Activity wise for LCO
- Daily Auto Mailing of Last Night Expired & Renewed STBs Details to MSO & other entities
- Daily Auto Mailing of next Day Expiring STBs details with required amount to MSO & other entities
- Auto Text Massaging for Subscriber & LCOs Related to CRM Complain Management
- Daily Auto Text Messaging of Payment Reminder to LCOs Before Expiry of STBs
- Daily Auto Mailing of Payment Reminder to LCOs Before Expiry of STBs
- Auto Text Messaging to LCO of LOW Wallet Amount
- LCO Invoice PDF File Send to LCO's Mail Id

#### **LCO & Subscriber Management Module**

- LCO 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)
- Subscriber's Company Transfer (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)
- Daily Auto OSD on STBs Before STB Expiry Date
- Renewal (Package Wise & Connection Wise) Both
- Balance Transfer from MSO to Distributor

- Balance Transfer from Distributor to LCO
- Balance Transfer from LCO to LCO
- Balance Transfer from LCO to Customer
- Subscriber Debit & Credit Note (Single & Bulk)
- LCO Debit & Credit Note (Single & Bulk)
- LCO & 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 Conversion (Post-paid to Prepaid)
- Subscriber Sequence
- KYC Management-Subscribers
- Management of Agreements - LCOs
- Auto SMS & CAS reconciliation at defined interval

#### **CAS Provisioning Module**

- Verify and Execute CAS Commands
- OSD ECM & EMM Based on STBs According to Fields Available in CAS (Single & Bulk)
- OSD Global ECM & EMM Based on STBs According to Fields Available in CAS (Single & Bulk)
- 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
- All Type of CAS Commands Provisioning Log Report with Multiple Criteria

#### **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

#### **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 (Network Wise, 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
- LCO Ledger Details of Deduction & Reversal with their Respective Activity Heads Information
- Subscriber Ledger Details of Deduction & Reversal with their Respective Activity Heads Information
- Easy Export Option to Extract the All Type of Reporting
- MSO & LCO Earning Report
- Subscriber Due Report
- Product Entitle Log Report
- All Company 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
- LCO & Subscriber Receipt Details Report
- Periodic Fresh Activation Report
- Periodic De-Activation Report
- Periodic Re-Activation Report
- Periodic Product Addition Report
- Periodic Product Removal Report
- Account Balance Transfer Details 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
- MSO's Overall Subscriber Base Report
- Broadcaster Package Summary Report
- MSO/DPO Package Details (List wise)
- LCN Ranking with Channel Genre
- A\_la\_Carte Channel's Summary Report
- Complete CAS Commands Log
- Performance Monitoring report of DPO required by TRAI

#### **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

#### **Add-on Products & Services**

- PayTV Self-Care Portal with Payment Gateway
- PayTV Self-Care Android /iOS Mobile App for Subscribers with Payment Gateway (optional)
- SMS Web Service Credits

#### **3rd Party Services Integrations**

- CAS Integrations
- Exclusive Payment Gateway Integrations
- 3rd party IVR Integrations
- 3rd party SMS Gateway Integration

#### **General**

- 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 10% 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 as of 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup>, 28<sup>th</sup> on a specified time and 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.

### **LINEAR CONTENT**

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

- Channel packages
- À la carte
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- Pay per View

- Supports all Subscription models like open ended, time limited, pre-paid and pre-loaded
- Preview and teaser

### **TIME SHIFTED CONTENT**

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

- PVR
- nPVR

### **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.

#### **Standard features of CAS**

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

#### **Standard Features**

- **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.
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- **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
- **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, broadband-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, widevine, 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. But this may not be mandatory.
- **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.
  - **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.

#### **A 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.

**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?

**A2.** Presently there is no guidelines/system for the CAS and SMS suppliers to operate and sell their product in India. There is no regulatory or government control on these companies. Most of the CAS and SMS do not comply with all the features mentioned in answer to question 1. In absence of such governmental control and guidelines, many service providers buy sub-standard product which does not have most of the features as specified in the answer to question 1. When a service provider decides their CAS providers, they also invest high capex in buying the STBs. In the event of failure of CAS for whatsoever reasons, their investment on the STBs also become unproductive.

To ensure compliance, the authority should mandate for registration of CAS and SMS providers in India and specify the requisite features of CAS and SMS. The pricing is also important as it has to come from the revenue structure regulated by the Authority, hence, it is requested to issue the guidelines for pricing structure as well. For all existing vendors who are already providing services in India, they should also be brought in the ambit of such regulation. There should be an independent Govt. body to check all features and give compliance certificates to all SMS & CAS vendors.

**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?

**A3.** Yes, it is a MUST. It has been observed that SMS and CAS vendors demand exorbitant amount for upgradation of their CAS/SMS according to the mandatory requirements of the regulations and the service providers does not have any option other than agree to their blackmailing due to the compliance requirement. Any such statutory upgradation in the system should not be burdened on the service providers.

**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?

**A4.** Below are some of the safeguards to be enforced to protect interest of DPOs and consumers;

1. Registration of all CAS and SMS vendors in India. In case of any dispute, all the legal issues should be in jurisdiction of India.
2. Their commercials should be controlled by TRAI or a similar Govt Authority. Presently most of these vendors charge in US\$ or Euro and have very high commercials.
3. In case of hacking, CAS vendors have to be made responsible for compensation to the loss of DPOs, replacement of STB/ VC without any cost to DPO.
4. All CAS vendors must give declaration of all hacking issues in their CAS in past to TRAI
5. All the Updation in CAS and SMS related to compliance must be provided free of cost to the DPOs

**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.**

**A5(a).** Framework must be defined, written and certified by an independent government or regulatory body.

Quality Council of India may be entrusted to develop accreditation standards to support accreditation programs.

Standardization Testing and Quality Certification (STQC) or another similar body may be entrusted for testing and quality certification. This is because STQC laboratories have national/International accreditation and recognition's in the area of testing and calibration.

**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.**

**A5(b).** Representatives from Industry Federations should be inducted in the governing body on rotational basis to ensure level playing field for all stake holders and transparency in the decision-making process.

**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 empaneled by the standards making agency/ government? Please provide detailed suggestion including the benefits and limitations (if any) of the suggested model.**

A6 a) It is proposed that accredited testing labs empaneled by the standards making agency/ government should be entrusted to carry out the testing and certification to ensure compliance to proposed framework. Regarding CAS standards, DVB is the most acceptable and implemented standard worldwide. For any kind of modification in CAS standards, TRAI must involve all stakeholders consisting of the operators, chip manufacturers, concerned ministries and organizations of the Government.

**(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?**

A6 b) TRAI should take reference from the matured and widely implemented solution, like DVB. Also it should see that all stakeholders in the eco-system have adopted most of the features mentioned in standardization of CAS and SMS document. TRAI also has to ensure that CAS & SMS database of all vendors must be stored at physical servers or Cloud in India only. No vendors should be allowed for data cloning or storage outside India. It is a matter of national interest.

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

A6c.) As per the mandatory requirement of audit in a calendar year wherein the CAS and SMS providers should be mandated to provide a compliance certificate to the service providers to be further submitted to the auditors.

**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?**

A7. We propose that new framework should be mostly derived from the DVB standards. If this is accepted, all existing deployed CAS and SMS systems must be mandated to the new framework. Without conformation to the new framework, it is not possible to assure level playing field. However, this should be taken care of that in the event that a CAS / SMS provider is not willing to provide the required upgrade, existing operators who are already using it should not be burdened for migration to new providers as it will involve huge investment/cost



to the DPOs. However, such CAS/SMS providers should not be allowed to further provide their services to any DPO.

All existing CAS and SMS vendors be given adequate time for upgradation of their products to conform to the new standards. However, any such upgradation should be mandatory to the CAS and SMS providers and not to the DPOs as this will give to SMS/CAS vendors an opportunity to charge DPOS for their upgradation.

**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.**

**A8.** Yes, We are hopeful that standardization and certification of CAS and SMS will provide better efficiency and improve quality of service and improve end-consumer experience.