

**By Email**

03<sup>rd</sup> June 2020

To,

**Mr. Anil Kumar Bharadwaj, Advisor (B&CS),**

Telecom Regulatory Authority of India

Mahanagar Doorsanchar Bhawan

Jawahar Lal Nehru Marg,

New Delhi – 110002

**Sub: Our comments on Consultation Paper titled “Framework for Technical Compliance of Conditional Access System (CAS) and Subscriber Management Systems (SMS) for Broadcasting & Cable Services”**

Respected Sir,

We, GTPL Hathway Limited (“**GTPL**”), are grateful to the Telecom Authority of India (“**Authority**”) for granting us the opportunity to share our comments/response on the Consultation Paper and would like to thank you for taking up the initiative to address the concerns raised in the said Consultation Paper.

Please find attached our response to the Consultation Paper as Annexure a for your consideration.

Thanking You

Yours Sincerely,

For **GTPL Hathway Limited**

**Chintan Dixit**

**Authorised Signatory**

## **ANNEXURE A**

### **OUR COMMENTS/RESPONSE TO THE CONSULATION PAPER**

**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?**

**GTPL Comments:** The exhaustive list which will ensure content protection and factual reporting of subscriptions is detailed as follows:

#### **A. SMS FEATURES:**

##### **a) MASTER SETUP MODULE**

- Country Setup
- State Setup
- City Setup
- Area Setup
- Location Setup
- Street Setup
- Building Setup
- Plans & Pricing
- Head End Creation Setup
- Area Level Bouquet Master
- City Level Bouquet Master
- Channel List Master
- Channel Map Master
- CATV Provisioning Master
- Payment Master
- Invoice Master

##### **b) EMPLOYEES & USER MANAGEMENT MODULE**

- Roles & Permission
- User & Role Mapping
- Edit Contact Details
- Change User Password

- Update Service Status and Access Type
- Admin User, Normal User, Super USER

**c) CUSTOMER TICKET MASTER SETUP**

- Group Creation
- Team Creation
- Queue Creation
- Group Admin Mapping
- Team Admin Mapping
- Team Engineer Mapping
- Team & Queue Mapping
- Team Lead Mapping
- Call Type Creation
- Call Area Creation
- Ticket Category Creation
- Ticket Sub-Category Creation
- Resolution Creation
- Action Creation

**d) INVENTORY MANAGEMENT**

- Inventory Search
- Loading
- Location Updater
- State Change.
- Attribute Update
- Inventory Device Life Cycle
- Repairing management

**e) ACCOUNT MANAGEMENT**

- Customer Account Registration
- Parent-Child for Residential,
- E-CAF (Digital CAF)
- Hardware Allocation
- Service Activation
- Business User Creation ( User ID creation)
- Business Unit Creation ( LCO / JV/ Company master creation )

**f) PROVISIONING**

- New Activation
- Change Plan
- Cancel plan

- Suspend
- Re-activation
- Add plan Ala Carte
- Add Plan Bouquet
- Terminate Service
- Retract
- Change Bouquet Id
- Entity Change
- B-Mail
- Finger printing
- Reset Pin
- Change Location
- Set Personal Bit Provisioning

**g) CUSTOMER TICKET MANAGEMENT**

- Work Order
- Add Child Ticket
- Transfer Ticket
- Create ID-AHD Tickets
- View TAT Summary
- My Work Order

**h) CUSTOMER MANAGEMENT**

- Service Details
- Active Plan Details
- Customer Details
- Contact Information
- Account Information
- Address Information
- Bill & Service Details
- Bill Information
- Unbilled Information
- Service & Plans
- Active Service
- Service Hold
- Service Suspension
- Service Termination
- Add Plan
- Change Plan
- Cancel Plan
- Device Swap
- Inactive Service
- Terminated Service:
- Failed Provision Resubmit

- Adjustment
- Account Level Adjustments
- Bill Level Adjustments
- Item Level Adjustments
- Disputes
- Payments
- Payment Reversal
- Deposit & Deposit Refund
- History
- History Search
- Notes
- Bills
- Search Bills option (last 6 months)
- Provision – To search and check the provisioning orders status (Success/failed)
- Customer Ticket
- Customer Ticket Creation
- FTR
- Open Work Order
- Reopen Work order
- Work Order Notes

**i) SUBSCRIPTION MANAGEMENT MODULE**

- Package Creation for Broadcaster & DPO with NCF Value & Applicability Setting
- Package Modification
- CA ID Update for Packages & A-la-carte Channels
- Channel Detail Update DHE wise
- Historical Data Management of Broadcasters, DRP, MRP & Product Name
- Product Revenue Sharing Between Broadcaster & MSO
- Product Revenue Sharing Between LCO & MSO Entity & Tenure wise
- NCF Revenue Sharing Between LCO & MSO Entity & Tenure wise
- Various Pay term plans as per Regulation
- All Plan to be prepaid or post-paid in nature
- refund on cancellation or plan change or termination
- Feature for End of Life of any product
- One plan can have multiple product
- Bundling of products in one single plan

**j) LCO & SUBSCRIBERS MANAGEMENT MODULE**

- Multiple Pay Term Available for Prepaid & Post-paid Billing of LCOs & Subscribers
- Monthly billing cycle
- Multiple Billing cycle as per state e.g. 1<sup>st</sup> of Month, 5<sup>th</sup> Of month etc.
- LCO & Subscriber Billing with (30 Days, 60 Days, 90 Days etc.)
- LCO & Subscriber Billing with (Add-on & A\_la\_carte Equal to Base Package Mode)

- LCO & Subscriber Billing with (LCO wise End Date)
- Date Alignment as per base plan
- Refund for all kind of transactions
- Discount on Plans
- 7 Days Demo plans
- NCF Refund on pro-rata basis
- Itemized LCO & Subscribers Billing formats with Product Subscription
- Auto Calculate CGST-SGST & IGST Tax in LCO & Subscriber Billing Transactions
- SMS - renewal, payment, general information
- Bmail – For Renewal, information
- Auto-scheduling of SMS/Bmail Delivery as per business rules
- Daily Auto Mailing Capability
- LCO communication module giving updates on customer complaints
- Daily Auto Text Messaging capability
- Daily Auto Mailing capability
- LCO Mobile App & Self-service Web Portal for Different Activities on Daily Basis
- Fresh Subscriber STB
- STB De-Activation
- STB Temporary De-Activation
- STB Re-Activation
- Product Addition
- Product Removal
- Plan Change (Addition & Removal)
- Product Renewal
- Auto-renewal (Enable/Disable)
- Activity Scheduler for (Activation, Deactivation)
- STB & VC Pairing & De-Pairing
- Renewal (Package Wise & Connection Wise) Both
- Subscriber Debit & Credit Note (Single & Bulk)
- LCO Debit & Credit Note (Single & Bulk)
- LCO & Subscriber Payment Reconciliation
- 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 & vice versa)
- E-CAF Module with Digital CAF generation
- Management of Agreements with LCOs
- Auto SMS & CAS reconciliation on daily basis

**k) CAS PROVISIONING MODULE**

- Verify and Execute CAS Commands
- Separate Middleware for processing CAS Commands
- Integration with multiple CAS systems
- All commands are on real-time basis

- Blacklisting of STBs
- View Blacklisted STB-VC Details
- Set Default Boot up Channel on STBs
- All Type of CAS Commands Provisioning Log Report with Multiple Criteria

#### **l) SUBSCRIBER HISTORY MANAGEMENT**

- Transaction History
- Life Cycle History
- Activation History
- User information who has done the transaction
- Device Life cycle history
- Invoices are available for 6 months
- Billing information history
- Data maintained for 2 years User Activity Log Reports

#### **m) BI & REPORTS**

- 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
- STB-VC History Report Transaction Date wise
- Material History Report Transaction Date wise
- 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

**n) TRAI & BROADCASTER'S AUDIT REPORTING MODULE**

- 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)
- A-la-Carte Channel's Summary Report
- 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
- Capacity of processing of 1Lakh transactions or provisioning actions per hour
- System Health Check Monitoring
- CAS-SMS Data Sync Tool
- Add-on Products & Services
- Self-Care Portal with Payment Gateway
- Self-Care Android /iOS Mobile App for Subscribers with Payment Gateway

**o) THIRD PARTY INTEGRATION**

- CAS Integrations
- Exclusive Payment Gateway Integrations
- 3rd party IVR Integrations
- 3rd party SMS Gateway Integration
- OTT plat form integration

**B. CAS REQUIREMENTS:**



Security is the core feature of CAS. CAS architecture must allow DPOs to handle all their content security needs for all distribution technologies, consumer devices and security clients in one unified management system. CAS should combine all DVB and IPTV 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.

**d. Standard features of CAS**

- **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 access to content 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 Mail-Box, Scroll with schedule and repetition. Supports international character sets and Indian languages.
- **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.
- **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.
- **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
- **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.

#### **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.

**C. General Features CAS & SMS :**

- . The CAS and SMS should be integrated in such a manner that activation and deactivation of STBs can happen simultaneously in both the systems.
  - a. It shall not be possible to alter the data and logs recorded in the CAS.
  - b. The DPO should validate that the CAS, in use, does not have facility to activate and deactivate a Set Top Box ("STB") directly from the CAS terminal. All activation and deactivation of STBs should be done with the commands of the SMS.
  - c. The CAS should have the capability of upgrading STBs over-the-air ("OTA") or over-the-cable ("OTC"), as may be applicable, so that the connected STBs can be upgraded.
  - d. The fingerprinting should not get invalidated by use of any device or software.
  - e. The CAS and SMS should be able to activate or deactivate services on STBs of at least 10% of the subscriber base of the distributor within 24 hours.
  - f. The STB and Viewing Card (VC) should be paired from the SMS to ensure security of the channel.
  - g. The CAS and SMS should be capable of individually addressing subscribers, for the purpose of generating the reports, on channel by channel and STB by STB basis.

- h. The CAS shall be independently capable of generating, recording, and maintaining logs, for the period of at least immediate preceding two consecutive years, corresponding to each command executed in the CAS including but not limited to activation and deactivation commands issued by the SMS.
- i. The CAS 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.
- j. It should be possible to generate the following reports from the logs of the CAS:
  - STB-VC Pairing / De-Pairing
  - STB Activation / De-activation
  - Channels Assignment to STB
  - Report of the activations or the deactivations of a particular channel for a given period.
- k. CAS should be securely integrated with the chipset and implement "Secure Root of Trust". Since the root of trust is a logical target for an attacker, it should be made as secure as possible to safeguard it from compromise. Both chip vendor and CAS vendor should have access to its own 'virtual' security core and perform secure functions without having to 'trust' other entities.
- l. Secure bootloader for all Set top boxes with a stipulated standard.
- m. Digital certificate should be incorporated in the secure bootloader to prevent unauthorized swapping of Set Top Boxes among MSOs.
- n. Fingerprinting:
  - The CAS & STB should support both visible and covert types of finger printing.
  - The finger printing should not be removable by pressing any key on the remote of STB.
  - The finger printing should be on the topmost layer of the video.
  - The finger printing should be such that it can identify the unique STB number or the unique VC number.
  - The finger printing should appear on the screens in all scenarios, such as menu, Electronic Programme Guide (EPG), Settings, blank screen, and games etc.
  - The location, font colour and background colour of fingerprint should be changeable from head end and should be random on the viewing device.
  - The finger printing should be able to give the numbers of characters as to identify the unique STB and / or the VC.

- The finger printing should be possible on global as well as on the individual STB basis.
- The overt finger printing should be displayed by the distributor of television channels without any alteration with regard to the time, location, duration and frequency.
- Scroll messaging should be only available in the lower part of the screen.
- The STB should have a provision that finger printing is never disabled.

**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?**

**GTPL Comments:** Despite the extant regulations requiring all DPOs to adhere to the minimum criteria/compliances specified under Schedule III of Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017, most DPOs are still not fully aware of the technical requirements. As rightly observed by the Authority, unscrupulous vendors of CAS/SMS deploy systems based on non-standard security solutions that are vulnerable to hacking. Accordingly, CAS/SMS system(s) in the case of most DPOs do not adhere to minimum technical requirements thereby leading to piracy, inconsistency in services to the subscribers *et cetera*.

In order to keep a check on such non-compliant CAS/SMS vendors as well as DPOs, it is suggested that the Authority should make it mandatory for the vendors to declare all the versions of CAS/SMS that have been installed/deployed by such vendor in the market. This list, which has been submitted by the vendors, should then be compared by the Authority, with the monthly/quarterly PMR report(s) submitted by the various DPO(s) to the Authority. However, it is pertinent to note that the submission of monthly/quarterly PMRs is practically restricted to a select major DPOs. Hence, in order to make sure that the aforesaid compliance measure is duly implemented, the Authority must ensure that all DPOs (*irrespective of their size*) make submissions of monthly/quarterly PMRs, as required under the extant regulations.

**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?**

**GTPL Comments:** Yes. There is certainly an urgent need to define a framework for CAS/SMS systems. It must be noted that currently all CAS/SMS systems largely vary in terms of the following:

- a. **Security features** – There is no set standard of security implementation. As acknowledged by the Authority, several CAS providers are not providing “Secure IP Core/RoT” which only few prominent CAS vendors are providing.
- b. **Performance features** –
  - For large MSO networks, performance is critical as it determines the no. of activation/deactivation requests can be successfully processed in one second. Many CAS vendors fall short as regards to the requirements of the MSO. It is therefore essential to standardise the performance criteria.
  - Under the applicable regulations, DPOs are mandated to grant their customers a free choice to make their own package(s). However, it is pertinent to mention that most CAS available in the market have an upper limit to the number of packages in which the same service/channel can be repeated. Therefore, it is necessary that CAS should be able to be upgraded for offering all services and combinations thereof, available on such platform.
  - Availability of full technical local support in India. Almost all CAS vendors have their experts based out-of-India which may affect DPO’s QoS as the availability of off-shore resources may sometime take time as they help remotely.

**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?**

**GTPL Comments:** TRAI should form an Industry-led body consisting of Representatives from :

- A. TRAI
- B. C-DAC



- C. DPO's (1 representative each from MSO & DTH ((having minimum 5 mn Subscriber base), (to be rotated on yearly basis)
- D. BECIL
- E. Technical experts from IIT or equivalent premier institutions
- F. CAS/SMS Vendor (1 representative each from CAS & SMS (tier 1), to be rotated on yearly Basis)

The proposed body would be responsible for:

1. laying down the framework for CAS/SMS to benchmark the minimum requirements of the systems to be deployed in India.
2. laying down the framework for registration of all CAS/SMS vendors providing services in India.
3. laying down certification framework for deployment of new version for CAS/SMS in India.
4. laying down the Audit procedure to randomly check on whether any SMS/CAS vendor is deploying any CAS/SMS in India without registration /certification of his CAS/SMS.
5. laying down norms for banning and taking punitive action against the CAS/SMS vendor for doing business in India, in violation of the framework laid down by the body.
6. laying down the rules /procedure for functioning of the body.

All SMS/CAS vendors would be required to get themselves registered with the industry body and complete the certification process for both CAS & SMS before deploying it in the country. This will help all the stakeholders and consumers interest. Certification process will ensure that CAS & SMS vendor has to first certify their product before it is ready for deployment.

Also it should be made mandatory for the CAS/SMS vendor to be registered under Companies Act 2013. This would ensure that the CAS/SMS vendor in case of any default, can be held accountable under Indian Laws.

**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.**

**(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.**

**GTPL Comments:**

(a) Kindly refer to our response to Question 4.

(b) It is suggested that in addition to the BIS certification, the vendors of CAS/SMS should be required to get an ISO certification. ISO certification requires comprehensive documentation and standard operating procedures, which shall facilitate the vendors in producing streamlined and effective CAS/SMS system(s). ISO certification which is an internationally accepted standard will ensure that the vendors are continually providing performance and service higher than the essential minimal standards. Moreover, the regular audits of the vendor(s) shall assure the DPOs of the quality of CAS/SMS.

**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.**

**(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?**

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

**GTPL Comments:**

(a) Kindly refer to our response to Question 4.

(b) It is hereby suggested that the Industry-led body may after considering the suggestions of its members, lay down guidelines for standardising CAS/SMS systems. Pursuant to this, a period of three months should be granted to the CAS/SMS vendors for implementation and subsequent certification in terms of the guidelines. Implementation of the guidelines may be done by the DPO's over-the-air or over-the-cable (*as may be applicable*) and such set top boxes may continue to provide services to the subscribers.

In case the already deployed CAS & SMS are not certified within the suggested timeframe of 3 months, intimation to be given to the DPOs using such CAS & SMS, to change the same to a certified alternative CAS/SMS within 3 months of such intimation. Any DPO who inspite of the intimation, fails to move to a certified CAS/SMS, TRAI to recommend MIB for revocation of their MSO registration under Rule 11 of the Cable Television Network Rules 1994 as amended ( from time to time).

(c) In order to ensure continued compliance, it is suggested that the Authority may cause audit of CAS/SMS vendors bi-annually, similar to the existing audit framework under Interconnection Regulations that are applicable to DPOs. Internationally, all major CAS vendor get their CAS audited. One such noted security agency doing such audits for the CAS is "FRANCOMBE SECURITY AUDIT" (<https://www.cartesian.com/services/content-security/farncombe-security-audit/farncombe-security-audit-mark/>).

The Industry body can adopt the same set of Audit for CAS being deployed in India.

Additionally, as suggested in our response to Q.5, the Authority should make ISO certification, of the CAS/SMS vendors mandatory, covering all security aspects.

**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?**

**GTPL Comments:** Kindly refer to our response to Q. 7

**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.**

**GTPL Comments:** Standardization of CAS/SMS shall:

- a. bring parity among the DPOs, in terms of security and performance features which in turn shall enhance customer experience.
- b. ensure a level playing field among the DPOs, in terms of the investment(s) made in the CAS/SMS infrastructure. This is essential since the subscription charges have already been fixed by the Authority, however there is still no standardization of important sub-systems, which may lead to low capex investments by several DPOs on account of sub-standard CAS/SMS systems, thus, creating a non-level playing field among them.
- c. Service subscription renewal will be almost instant as standardise SMS will not have any bottle neck in processing multiple transactions from various renewal options like mobile app., website, etc.
- d. Prevent Loss of government revenues.

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

**No Comments**