TELECOM REGULATORY AUTHORITY OF INDIA
(Broadcasting & Cable Services Division)

ORDER

Dated: 9th August 2023

Subject: Order to Distribution Platform Operators (DPOs) for deploying Conditional Access System (CAS) and Subscriber Management Systems (SMS) under provisions of regulation 4A of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017.

No. RG-1/2/31/2021-B AND CS(2) Whereas the Telecom Regulatory Authority of India (hereinafter referred to as the "Authority"), established under sub-section (1) of section 3 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997) (hereinafter referred to as "TRAI Act"), has been entrusted to discharge certain functions, inter alia, to regulate the telecommunication services, fix the terms and conditions of inter-connectivity between the service providers, ensure technical compatibility and effective interconnection between different service providers lay down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct the periodical survey of such service provided by the service providers so as to protect the interest of the consumers of telecommunication service;

2. And whereas, the Central Government, in the Ministry of Communications and Information Technology (Department of Telecommunications), vide its Notification No. 39,

(a) issued in exercise of the powers conferred upon it by proviso to clause (k) of sub-section (1) of section 2 of the TRAI Act, and

(b) published under notification No. S.O. 44 (E) dated 9th January 2004 in the Gazette of India, Extraordinary, Part II, Section 3, sub-section (ii) -----

has notified broadcasting services and cable services to be telecommunication service;

3. And whereas the Authority notified a new regulatory framework for Broadcasting and Cable TV services, provided through addressable systems, encompassing the following: -

(a) the Telecommunication (Broadcasting and Cable) Services (Eighth) (Addressable Systems) Tariff Order, 2017 dated 3rd March 2017;

(b) the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017 dated 3rd March 2017; and

(c) the Telecommunication (Broadcasting and Cable) Services Standards of Quality of Service and Consumer Protection (Addressable Systems) Regulations, 2017 dated 3rd March 2017;

4. And whereas the Authority, vide its notification dated 11th June 2021, amended the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017 (hereinafter referred to as Interconnection Regulations 2017) thereby inserting regulation 4A and Schedule IX which provide for the testing and certification of Conditional Access System (hereinafter referred to as "CAS") and Subscriber Management System (hereinafter referred to as "SMS");

5. And whereas regulation 4A of the Interconnection Regulations 2017 provides for compliance to requirements of Addressable System by distributors of television channels, and the relevant provision of the said regulation, inter alia, reads as under:-

"(1) Every distributor of television channel shall, from such date and after such testing and certification, as may be specified by the Authority by order, deploy such conditional access system and subscriber management system which conform to the requirements as specified in the Schedule IX:

Provided that for the conditional access systems and subscriber management systems already deployed before the date of issue of the order referred to in this sub-regulation, the Authority shall specify a separate timeline within which such systems shall get tested and certified to meet the requirements as specified in the Schedule IX.";

6. And whereas the Authority, vide order dated 20th September 2021, annexed herewith as Annexure I, designated Telecommunication Engineering Centre of the Department of Telecommunications (hereinafter referred to as "TEC") as a Testing and Certification Agency to, inter alia, notify and maintain Test Schedules and Test Procedures for CAS and SMS as per the requirements specified under Schedule IX of the Interconnection Regulations 2017, empanel/ declare the list of accredited testing labs that fulfill the requirements for carrying out the testing as per the defined Test Schedules and Test Procedures and provide Certification for all products tested and certified by the accredited testing labs;

7. And whereas TEC has, in pursuance of the order dated 20th September 2021, developed Test Guides, annexed herewith as Annexure II, enumerating the detailed Test Schedule and Test Procedure for evaluating the requirements of CAS and SMS, as specified in Schedule IX of the Interconnection Regulations 2017, and also released a Certification procedure, annexed herewith as Annexure III, for certification of CAS and SMS;

8. And whereas TEC has accredited M/s Salka Global Technologies (P) Ltd. vide its letter dated 30th January 2023, annexed herewith as Annexure IV and M/s Altruists Technologies Private Limited vide its letter dated 27th July 2023, annexed herewith as Annexure- V for testing of CAS and SMS as per the Test Guides, and is in the process of accrediting more test labs for carrying out such testing. The list of such accredited labs are available at TEC website at https://tec.gov.in/cas-sms-certification

9. Now, therefore, the Authority, in exercise of the powers under regulation 4A of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable

Systems) Regulations, 2017, hereby directs all the Distribution Platform Operators to ensure that, –

i. on or after 1st March 2024, only such new CAS and SMS systems are deployed that have been tested by the duly accredited testing labs and certified by TEC, or any other agency designated by the Authority for the purpose, for conforming to the requirements specified in Schedule IX of the Interconnection Regulations 2017; and

ii. on or before 1st March 2025, all existing CAS and SMS systems are upgraded and tested by duly accredited testing labs and certified by TEC, or any other agency designated by the Authority for the purpose, for conforming to the requirements specified in Schedule IX of the Interconnection Regulations 2017.

V. Raghunandan

(V. Raghunandan)
Secretary, TRAI

To,

1. All DPOs.

2. Telecommunication Engineering Centre, Department of Telecommunications.

ANNEXURE - I

Telecom Regulatory Authority of India
(Broadcasting & Cable Division)

ORDER

Dated: 20th September 2021

Subject: Designation of the Testing and Certification Agency for Conditional Access System (CAS) and Subscriber Management Systems (SMS) under sub-regulation (1) of regulation 4A of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017.

No. RG-1/2/(3)/2021-B AND CS(2) - Whereas the Telecom Regulatory Authority of India (hereinafter referred to as the "Authority"), established under sub-section (1) of section 3 of the Telecom Regulatory Authority of India Act,1997 (24 of 1997) (hereinafter referred to as "TRAI Act"), has been entrusted to discharge certain functions, inter-alia, to regulate the telecommunication services; lay-down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct the periodical survey of such service provided by the service providers so as to protect interest of the consumers of telecommunication service;

2. And whereas, the Central Government, in the Ministry of Communications and Information Technology (Department of Telecommunications), vide its Notification No. 39, ---

(a) issued, in exercise of the powers conferred upon it by proviso to clause(k) of sub-section (1) of section 2 of the TRAI Act, and

(b) published under notification No. S.O. 44 (E) dated 9th January, 2004 in the Gazette of India, Extraordinary, Part II, Section 3 – sub-section (ii) ---

has notified broadcasting services and cable services to be telecommunication service;

3. And whereas the Authority notified a new regulatory framework for Broadcasting and Cable TV services provided through addressable systems, encompassing the following: -

(a) the Telecommunication (Broadcasting and Cable) Services (Eighth)(Addressable Systems) Tariff Order, 2017 dated 3rd March, 2017;
(b) the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017 dated 3rdMarch, 2017 (hereinafter referred as Interconnection Regulations,2017); and
(c) the Telecommunication (Broadcasting and Cable) Services Standards of Quality of Service and Consumer Protection (Addressable Systems) Regulations, 2017 dated 3rd March, 2017;

4. And whereas the Authority has notified The Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021 on 11th June, 2021 and incorporated new regulation 4A and Schedule IX in the Interconnection Regulations, 2017;

5. And whereas sub-regulation (1) of the newly inserted regulation 4A provides, inter alia, that every distributor of television channel shall, from such date and after such testing and certification, as may be specified by the Authority by order, deploy such conditional access system and subscriber management system which conform to the requirements as specified in the Schedule IX;

6. Now, therefore, the Authority, in exercise of its power under sub-regulation (1) of regulation 4A of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017, hereby designates Telecommunication Engineering Centre, Department of Telecommunication, Government of India, as a Testing and Certification Agency, which shall:-

(a) carry out overall administration, coordination and execution of testing and certification of Conditional Access System (CAS) and Subscriber Management System (SMS) as per the requirements specified in Schedule IX of the Interconnection Regulations 2017;
(b) notify and maintain Test Schedules and Test Procedures (TSTP) in relation to the requirements specified under schedule IX;
(c) empanel/declare the list of accredited testing labs that fulfil the requirements for carrying out the testing as per the defined Test Schedules and Test Procedures (TSTP);
(d) provide Certification for all products tested and certified by the accredited testing labs; and

(e) maintain the version and deployment details of Conditional Access System (CAS) and Subscriber Management System (SMS) deployed in India.

RAGHUNANDAN VARTHAKAVI

(V. Raghunandan)
Secretary, TRAI

To.

1. **Telecommunication Engineering Centre (TEC), DoT**
2. **All Stakeholders.**

टेस्ट गाइड

सं: टीईसी 57015:2022

TEST GUIDE

No.: TEC 57015:2022

कंडीशनल एक्सेस सिस्टम (सीएएस)

Conditional Access System (CAS)

ISO 9001:2015

दूरसंचार अभियांत्रिकी केंद्र
खुर्शीदलाल भवन, जनपथ, नई दिल्ली-११०००१, भारत
TELECOMMUNICATION ENGINEERING CENTRE
KHURSHIDLAL BHAWAN, JANPATH, NEW DELHI–110001, INDIA
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डा0 पी. डी. वाघेला
Dr. P. D. Vaghela

सत्यमेव जयते

अध्यक्ष
भारतीय दूरसंचार विनियामक प्राधिकरण
Chairman
TELECOM REGULATORY AUTHORITY OF INDIA

FOREWORD

In the last twenty-five years since its formation, the Telecom Regulatory Authority of India, as the sector regulator for both the Telecom and Broadcasting sectors, has endeavoured to establish Regulatory Framework that engenders a trust-based transparent regime to enable and nurture harmonious growth of the sectors. Transparency, Non-discrimination, protection of consumer interests and enabling orderly growth of the sectors have remained cornerstones of the regulatory approach followed by TRAI.

Towards furtherance of the aforementioned objectives, and in order to address issues arising out of deployment of non-standard Conditional Access System (CAS) and Subscriber Management System (SMS) in television broadcasting sector, the Authority notified the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021 on 11th June, 2021 and incorporated new regulation 4A and Schedule IX in the Interconnection Regulations, 2017. In addition to being the first step towards defining an indigenous set of specifications for CAS and SMS, the framework is expected to bring other benefits to the sector, such as enabling better content security, factual reporting of subscriber base and improving end to end compliance.

As the Agency designated to carry out the operationalization of the Testing and Certification of CAS and SMS, Telecom Engineering Centre (TEC) has carried out detailed deliberations with relevant stakeholders and put in a lot of effort in finalizing the Test Guide document containing the Test Schedules and Test Procedures. This is a crucial step in taking forward the testing and certification work. I congratulate TEC and B&CS division of TRAI for their joint efforts in this regard. I am sure that this will eventually achieve the desired objectives of delivering the expected benefits to the stakeholders and the consumers.

(P. D. Vaghela)

महानगर दूरसंचार भवन, जवाहर लाल नेहरू मार्ग, (पुराना मिन्टो रोड), नई दिल्ली-110002
Mahanagar Doorsanchar Bhawan, Jawahar Lal Nehru Marg, (Old Minto Road) New Delhi-110002
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के. राजारामन, भा. प्र. से.
सचिव
K. Rajaraman, IAS
Secretary

सत्यमेव जयते

Azadi Ka Amrit Mahotsav

भारत सरकार
संचार मंत्रालय
दूरसंचार विभाग
Government of India
Ministry of Communications
Department of Telecommunications

Message

I am happy to note that Telecommunication Engineering Centre (TEC) has prepared the Test Guides for Conditional Access System (CAS) and Subscriber Management System (SMS) for Broadcasting and Cable services and are being released as guiding documents for all related stakeholders.

These documents set the test schedules and the testing procedures for CAS and SMS based on the mandatory and desirable requirements notified by TRAI in the form of Schedule-IX vide the Third Amendment of The Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017.

This will help in better conformity to the standards by the CAS and SMS deployed in the country and will also improve the customer experience.

It is commendable that Convergence & Broadcasting Division of TEC, a recently established division, has quickly prepared the test guides after detailed stakeholder consultations. I appreciate the efforts put in by TEC and TRAI. I hope these test schedules make way for ease of doing business and Atmanirbhar Bharat.

14/6/2022
(K. Rajaraman)

14th June, 2022
New Delhi

संचार भवन, 20 अशोका रोड, नई दिल्ली-110001 / Sanchar Bhawan, 20, Ashoka Road, New Delhi-110001
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Foreword

Telecommunication Engineering Centre (TEC) is the technical arm of Department of Telecommunications (DOT), Government of India. Its activities include:

- Framing of TEC Standards for Generic Requirements for a Product/ Equipment, Standards for Interface Requirements for a Product/ Equipment, Standards for Service Requirements & Standard document of TEC for Telecom Products and Services
- Formulation of Essential Requirements (ERs) under Mandatory Testing and Certification of Telecom Equipment (MTCTE)
- Field evaluation of Telecom Products and Systems
- Designation of Conformity Assessment Bodies (CABs)/ Testing facilities
- Testing & Certification of Telecom products
- Adoption of Standards
- Support to DoT on technical/ technology issues

For the purpose of testing, four Regional Telecom Engineering Centers (RTECs) have been established which are located at New Delhi, Bangalore, Mumbai, and Kolkata.

Abstract

This Test Guide enumerates detailed test schedule and test procedure for evaluating requirements of Conditional Access System (CAS) as specified in Schedule-IX of Telecom Regulatory Authority of India (TRAI) Notification dated 11-06-2021.

This Test Guide has been prepared by Convergence and Broadcasting Division TEC.

Contents

A. History Sheet

S. No.	Test Guide No.	Equipment/ Interface	Remarks
1.	TEC 57015:2022	Test Guide for Conditional Access System (CAS)	June 2022

B. Introduction

Considering the need for developing an overarching framework for standardization, certification and testing of various components of the addressable systems in television broadcasting i.e. Conditional Access System (CAS) and Subscriber Management System (SMS), Telecom Regulatory Authority of India (TRAI) notified "The Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021" on 11-06-2021. These Regulations specify the mandatory as well as the desirable requirements of CAS and SMS (Schedule-IX); seek compliance by distributors of television channels by deploying such CAS and SMS which conform to these requirements; and ask such distributors to get their CAS and SMS tested and certified within the stipulated timelines.

TRAI further designated Telecommunication Engineering Centre (TEC) DoT as the Testing and Certification Agency for CAS and SMS used for Broadcasting and Cable TV services as per order dated 21-09-2021.

This Test Guide, prepared as per exhaustive consultations with stakeholders, enumerates detailed test schedule and test procedure for evaluating requirements of Conditional Access System (CAS) as specified in Schedule-IX of Telecom Regulatory Authority of India (TRAI) Notification dated 11-06-2021.

C. General Information: *(to be filled by testing team)*

S. No.	General Information	Details	
1	Name and Address of the Applicant		
2	Date of Registration		
3	Name and No. of Specifications. against which the approval sought (Schedule-IX of TRAI Notification dated 11-06-2021)		
4	Details of Equipment		
	Type of Equipment	Model No.	Serial No.
(i)			
(ii)			
…			
…			
…			
5	Declaration by Vendor/ Applicant of systems already deployed in India with Name of Distribution Platform Operator (DPOs), Address, Model Number and Serial Number.		
6	Any other relevant Information:-		

D. Testing Team: *(to be filled by testing team)*

S No.	Name	Designation	Organization	Signature
1.				
2.				
3.				

E. List of the Test Instruments: *(to be filled by testing team)*

S No.	Name of the test instrument	Make /Model *(to be filled by testing team)*	Validity of calibration *(to be filled by testing team)*
1			dd/mm/yyyy
2			
…			
…			
…			
…			

F. Equipment Configuration Offered: *(to be filled by testing team)*

(a) <Equipment/product name> Configuration:

S No.	Item	Details	Remarks

Relevant information like Software version, Server details, ports, interfaces, size, etc. may be filled as applicable for the product.

(b) <Other equipment name> Configuration:

S No.	Item	Details	Remarks

Relevant information like Software version, Server details, ports, interfaces, size, etc. may be filled as applicable for the product.

G. Equipment/ System Manuals: *(to be filled by testing team)*

*Availability of Maintenance manuals, Installation manual, Repair manual, User Manual etc.***(Y/N)**

H. Test Lab Requirements and General Test Setup:

(a) Test Lab Requirement:

1. Server for the CAS installation (required only if CAS provider is not providing CAS server).
2. Backup CAS server*
3. Standard SMS
4. SMS Server
5. STBs compatible with the CAS (with fingerprint support, B-mail/ Scroll support)
6. EMM generator
7. ECM Generator
8. Live Channels Streams
9. Multiplexer
10. Up convertors
11. SAS server
12. Networking Switches/ routers
13. Firewall
14. Streamer
15. NDA to be signed by SMS, CAS providers with Test Lab.

(b) General Test Setup:

1. Set up of channels, CAS server, encryption of channels, integration of CAS with Mux and EMM generator, connect multiplexer to STB with the up convertor, connect up convertor to STB, connect the SMS to the SAS server which is connected to CAS.
2. A back up CAS server is also provided by the CAS provider and put into the system and the network diagram shared.
3. Need to integrate the streamer with multiplexer or EMM playout if the CAS systems allows.

I. Clause-wise Test Procedure and Results Expected:

a. Conditional Access System Mandatory Requirements (as per Schedule-IX notified by TRAI on 11-06-2021)

Clause No	Requirement	Test Procedure	Test Results Expected
1	**Time Stamping:** All logs shall be stamped with date and time. The system shall not allow altering or modification of any logs. There shall be no facility for the distributor/ users to purge logs.	1. Commands from the SMS to be sent for the sample STBs to the CAS. After sending X number of commands, the audit report/ logs from the CAS server to be taken and header checked for date, time and user stamp. 2. Try to change/ modify/ delete the logs or purge the logs.	1. The logs to be checked and should match with the commands being sent from SMS and no mismatch to be found. 2. The logs cannot be deleted or modified from the database.
2	**Activation and Deactivation:** No access/ login IDs/ user interface/ application shall be provided to the distributor of television channels to execute any commands, including but not limited to, activation/ de-activation, bouquet creation/ modification/ deletion, etc., directly from CAS by bypassing SMS:	Go through the whole UI through operator id from the manuals of the CAS vendor and try to carry out the transactions like activating, deactivating, bouquet creation/ modification/ deletion of the entries directly from CAS bypassing the SMS.	The CAS UI does not allow any command for activation/ deactivation/ creation of bouquet or any other activity directly from CAS by bypassing the SMS.
	Provided that, if any activity has been carried directly from CAS for troubleshooting; such an exception shall be identified through the synchronization mismatch report. Further, for any activity outside the normal channel/ route of SMS-based commands, a secure log shall be maintained and made available on request to the audit or testing agency for scrutiny.	1. Check that all transactions being done in the CAS are being recorded in logs and there should not be any provision to delete the same. Try to get access to the database and try to bypass the logs or delete/ modify the logs. 2. Install/ activate SMS simulator for any troubleshooting purpose. Make one sample client as test client in CAS. Perform activation/ deactivation using operator role user. Extract report from CAS.	1. No modification/ deletion/ purging/ or difference in logs is possible or found. 2. The extracted report should identify that the commands are sent from CAS for troubleshooting purpose. 3. Check if information of these operations carried from CAS directly are properly captured, including user id. 4. Records of last six months can be retrieved.

		3. Check that history of at least last six months alongwith user id is maintained for any direct operation from the CAS bypassing the SMS.	
3	**SMS and CAS Integration:** Each instance of the activity carried out at SMS pertaining to CAS shall be recorded in the logs/ reports of CAS, along with date and time stamp.	Perform all types of the activities from the SMS, the same should be reflected in the CAS and the commands should have date, time, user id and unique transaction id which can be co-related in SMS and CAS uniquely.	1. All SMS commands should be available in transaction logs with date, time and the user/ operator stamp. No exception to be found. 2. SMS and CAS are integrated in such a manner that activation and deactivation of STB happen simultaneously in both the systems.
4	**Set Top Box (STB) Operation:** Upon deactivation of any subscriber from the SMS, all program/ services, including all free-to-air (FTA) and pay channels and platform services, shall be denied to that subscriber:	1. Send commands from SMS for activation of à-la-carte channels, bouquets, services from the SMS to the targeted STBs. Check at the STBs whether the channels/ bouquets get activated or deactivated as intended. 2. Check the status of CAS and SMS logs for each command sent with date and time stamp.	No exception to be found to the service commands given and impact seen on the STB.
	Provided that there shall be a facility for the distribution platform operator (DPO) to continue to provide B-mail/ scroll messages that enable a consumer to get the information in relation to the recharge/ payment of the pending dues.	1. Send B-mail/ scroll messages command for payments or payment reminder from SMS to CAS for (i) the active STBs, as well as (ii) the deactivated STBs. The messaging character length should be minimal 120 characters. 2. Perform the above test for (i) STB switched on, and (ii) STB switched off. 3. STBs to be rebooted to check if the B-mail/ scroll messages are getting displayed in both activated and deactivated condition.	1. B-mail/scroll message should be displayed on the active as well as deactivated STBs. 2. The message should get displayed on the active STBs as well as on de-active STBs, both when the STB is 'on' and also when the STB is switched 'on' from a 'off' or 'stand-by' state.

5	**Channel Addition:** CAS shall be capable to add/ modify channels/ bouquets as may be required from time to time.	1. Add few channels in the SMS through the UI and see if those are encrypted and service ids created in the CAS. 2. Configure duplicate ECM, AC data and SID in MUX and check whether CAS is able to detect duplicate ECM/AC/SID data mapped to multiple channels. 3. Check that logs are created in both CAS and SMS in real time for such addition, deletion, modification of bouquets and à-la-carte services.	1. Additional channels created should reflect both in CAS and SMS and should be able to be activated, deactivated on the targeted STBs. 2. Logs should get created in CAS and SMS in real time for such addition, deletion, modification of bouquets / à-la-carte services and such logs are not possible to be altered.
6	**Logical Channel Number (LCN):** CAS shall not support carriage of channel with same name or nomenclature in the distributor's network served by each headend under more than one LCN, and another channel descriptor.	1. Feed two channels with the same name or nomenclature through the mux. Check whether the CAS is able to detect the channel with same name or nomenclature either through their LCN or their Service ids. 2. Check the channels or service ids created in the SMS and also in the CAS.	1. CAS should not support carriage of channel with same name or nomenclature. 2. Both the systems should have same service ids mapped to each other.
	Further, each channel available in CAS shall be uniquely mapped with channels available in SMS.	Check the channels or service ids created in the SMS and also in the CAS.	Both the system should have same service ids mapped to each other.
7	**Hybrid STB:** In case a distributor of television channels has deployed hybrid STBs, CAS shall ensure that the over-the-top (OTT) App does not get access to the linear Television channels, and the CAS does not get access to channels delivered through OTT platform: Provided that, all the mandatory requirements for CAS shall be complied by the hybrid STBs.	Self-certification may be obtained. *Note: This may be checked at actual deployed site or during regular audits.*	
8	**CAS Reports:** a) CAS database shall have the reports of whitelist of card/ STBs along with details such as	Create a few whitelisted cards/ STBs in SMS, activate a few cards or STB, deactivate a few cards/ STBs. Extract	CAS Reports should be available with active/ inactive status with date and time stamp. The action done from the SMS

	active/ inactive status, with the date and time stamp.	active/ inactive report from CAS GUI.	on the targeted Card/ STBs should be reflected in the CAS status of those Cards/ STBs and there should be no exception.
	b) CAS system shall be capable of generating reports pertaining to the channel/ bouquet subscriptions and active/ deactivated subscribers, or any combination thereof; of sharing the same with SMS as a scheduled activity, and also upon request, including, but not limited to, the following details: (i) STB Number (ii) Viewing Card (VC) Number [or, in case of card-less CAS, chip identification (ID) or virtual card number of the STB] (iii) Product Code pertaining to channels/ bouquets available on the platform (iv) Start date of entitlement (v) End date of entitlement (vi) Status of card (Active/ Inactive)	Take out the CAS reports of the channel/ bouquet subscription and of active/ de-active, blacklisted cards, STBs permanently deactivated or killed, suspended cards.	Cross check the reports with the SMS and no exception to be found. The reports should contain the details mentioned in the clause requirement.
	(c) It shall be possible to generate following reports from the logs of CAS: (i) STB-VC pairing/ de-pairing (ii) STB activation/ deactivation (iii) Channel assignment to STB (iv) Report of the activation/ deactivations of a particular channel for a given period	Extract the four reports mentioned in the clause requirement from CAS UI. For card-less STB, in place of physical VC number, chip-id or virtual card number may be taken.	1. The reports as per clause requirements should be generated from CAS UI. 2. Cross check the reports with the SMS and no exception to be found.
9	**CAS Database and tables:** a) There shall not be any active unique subscriber outside the database tables. Further, there shall not be an option to split CAS database for creation of more than one instance by a DPO or a vendor.	Run the query on the CAS database to check if there is way to split the database, or can the database be maintained in multiple servers, run the query through the CAS UI. Check through the CAS server if there are multiple databases or multiple tables. *Note: The testing agency will check through the UI and CAS server if any database split has been enabled. However by*	No such way is found to split the data to maintain it on the multiple tables/ databases/ servers.

		having admin rights, whether the database is split later, may also be checked at actual deployed site or during regular audits.	
	b) CAS must support the following options with reference to uploading of unique access (UA)/ viewing card (VC) details in CAS database: i) a secure un-editable file of card details, as purchased by the distributor, to be uploaded by the CAS vendor on the CAS Server directly, **or**, ii) if it is uploaded in any other form, UA/ VC in CAS database shall be captured in logs.	Understand the process of loading the VC cards or the UA of the STB in the CAS database, whitelist them in CAS. Check whether the information is uploaded by the CAS vendor or the operator. Check the format of the file to see if it can be edited. Check if the uploading of the file is immediately reflected in the CAS database.	The file cannot be edited and can be uploaded by the CAS vendor only. If the file is uploaded by the operator then an exception to be reported and captured in logs.
	iii) Further, CAS shall support an automated, application programming interface (API)-based mechanism to populate such UA/ VC details in the SMS, without any manual intervention.	Upload a file of the VC cards numbers/ UA IDs of the STB in the CAS, try blacklisting some VC cards in CAS.	The same VC number/ UA ids of the STB should be reflected in SMS; the same VC number should be blacklisted in SMS and no activation or deactivation on those cards can be done.
10	**CAS Logs:** CAS logs such as the user command, configuration, channel/ bouquet creation, modification, etc., shall be kept in a secured and un-editable way.	Check the commands executed for the above tests in the CAS and try modifying them or editing them or deleting them, also altering them. Access logs of the CAS and check if the logs of such changes are recorded. Check that the logs are in readable format and not editable by any process.	1. Logs are generated for any change done in configuration related to channel/ bouquet creation, modification, deletion, etc. (also refer clause 1). 2. Modification/ deletion of logs not allowed. 3. All the CAS logs are exported in readable and un-editable format.
11	**CAS Backup Server:** In the event of provisioning of a backup server, logs of all activities carried out in main server shall be concurrently copied into the backup server: Provided that a log of all such instances shall be maintained along with date and time stamp,	Check redundancy architecture or workflow of CAS. All the entries and changes done in the main server to be cross checked with the data available in the back server. Switch the backup server to main server and repeat the process of	1. The data on main and backup servers should be in sync. 2. Logs related to main and backup usage are available.

	where the backup server has been used as the main server: Provided further that the main and backup server shall always be in sync with regard to the key data such as subscription data, STB UA/ VC details, entitlement level information, etc.	cross-checking the entries, logs, reports.	
12	**CAS-STB addressability:** (a) CAS shall be capable of providing STB/ viewing card information with the current date, time, and name/ logo of the distributor of television channels.	Report to be generated of the targeted VC/ STB in the CAS.	The report should give current date, time , name of the distributor and the user id triggering the report.
	(b) CAS shall be capable of individually addressing subscribers, for the purpose of generating the reports, on channel by channel and STB by STB basis.	Report to be generated by VC and by STB number/ UA ID of the STB for each channel in the setup, or by bouquet and channels in the bouquet.	Cross-check the reports from SMS, no exception to be found. The channel should be uniquely activated on each STB/ UA id, i.e. if it is in bouquet or à-la-carte, for each VC, it is counted as one.
	(c) CAS shall be capable of tagging and blacklisting VC numbers and STB numbers that are involved in piracy, to ensure that such STB/ VC cannot be redeployed.	1. Blacklist a few STBs, VCs, UA ID. 2. Send activation command for activating some channels or bouquet for blacklisted STBs and VCs from SMS.	1. Check if the same STBs/ VCs/ UA id are blacklisted in SMS. 2. Activation on blacklisted VCs and STBs from SMS should fail.
	(d) CAS shall be capable of upgrading STBs over-the-air (OTA), so that the connected STBs can be upgraded.	Take an upgradation file for targeting STB's and play it via CAS. Check that the upgrade is received in the targeted STBs. *Note: While the CAS may play the upgradation file, whether the STBs get upgraded or not through OTA would depend on various factors including compatibility.*	CAS should have the required capability.
13	**Access to Database:** CAS and SMS shall ensure that the access to database is available to authorized users only, and in “read only” mode only. Further, the database audit	1. Try to gain access to the data base through the UI and manual provided, check if the database can be modified, deleted or purged. 2. Check if the access to data base is recorded in the logs of the data base, i.e. date and	1. Logs of database access should be available. 2. Access should be restricted to authorised users only and in “read-only” mode only.

	trail shall be permanently enabled. Explanation 1: Database here refers to the database where data and log of all activities related to STB activation, deactivation, subscription data, STB UA/ VC details, entitlement level information, etc., is being stored.	time of accessing the database and by whom. 3. Check access permissions provided to various users on the on CAS server. *Note: This may also be checked at actual deployed site or during regular audits.*	
14	**Provision of à-la-carte channels or bouquet:** (a) CAS (and SMS) shall be able to handle all the channels, made available on a platform, in à la carte mode.	Create number of channels on the platform, check if the same can be created on the CAS and SMS in à-la-carte.	Channel should be able to be created in à-la-carte in both SMS and CAS and a cross reference report can be generated from CAS and no exception found.
	(b) CAS (and SMS) shall have the capability to handle such number of broadcaster/ DPO bouquets, as required by the DPO.	Create some broadcaster bouquets in the CAS and SMS. Also create some bouquets of the DPO in the CAS and SMS.	Both the CAS and SMS reflect the bouquets created.
15	**CAS and SMS Server Separation:** CAS and SMS applications, along with their respective databases, shall be stored in such a way that they can be separately identified.	Check that CAS server does not have SMS and vice versa. Self-certification may be obtained. *Note: This may be checked at actual deployed site or during regular audits.*	
16	**Finger printing measures:** (a) CAS shall support both covert and visible types of finger printing functionality.	1. Send Global Fingerprinting command from SMS with 5 repetition and random position. 2. Send unique/ individual Fingerprinting command from SMS with 5 repetition and random position.	FP should appear on all the targeted STBs each time.
	(b) The fingerprinting shall be on the topmost layer of the video.	Same as for clause 16(a) above.	FP should appear on the video and be visible.
	(c) The fingerprinting shall appear on the screen in all scenarios, such as menu, electronic programme guide (EPG), settings, blank screen, games, etc.	Same as for clause 16(a) above.	FP should appear each time on all screens of STB in all scenarios mentioned in the clause.

	(d) The fingerprinting shall not get invalidated by use of any device or software.	Same as for clause 16(a) above.	FP should appear each time on all screens and should not be deactivated even if any key on remote or STB is pressed.
	(e) CAS shall have the capability to run fingerprinting at regular intervals (e.g., minimum of 2 fingerprints per hour on a 24x7x365 basis) and provide broadcasters with the fingerprint schedule on request.	Same as for clause 16(a) above.	FP should appear as scheduled each time on the boxes and it should change its location on all schedules.
	(f) The fingerprinting shall be available on global as well as on individual STB basis.	Same as for clause 16(a) above.	FP should appear each time as per schedule on specific STBs and all STBs.
17	**CAS Database (DB) Export:** CAS shall have a provision to export the database/ report for reconciliation with the SMS database. Further, there shall be a provision of reconciliation through secure APIs/ secure scripts.	Export the database details/ report from CAS. Data from SMS may also be pulled and reconciled without manual intervention.	The CAS database is exported in entirety to the period and is in reconcilable format.
18	**Firewall Access:** CAS shall be accessible through a Firewall only.	Firewall of the CAS server OS may be enabled; or, CAS server may be placed behind external firewall. Check that access to CAS is restricted through VPN or a limited IP addresses and all other ports are closed. *Note: The DPO might use the firewall of the CAS server OS or a perimeter firewall. Restricted access to CAS through firewall may also be checked at actual deployed site or during regular audits.*	CAS should be accessible only through Firewall.
19	**CAS Server Hardware:** CAS shall be deployed on hardened secure server hardware. CAS shall protect against any backdoors, malicious software deployments, and cyber security threats.	Check the CAS server: i) OS of Server is updated ii) Check password policy - use of strong passwords is enforced iii) No unnecessary third party software is installed iv) All necessary third party software are updated v) Anti-virus is activated and	The CAS server should meet the server hardening and security checks mentioned in the test procedure.

		updated vi) firewall access *Note: The CAS may be deployed on physical server or cloud server. This clause refers to the capability of CAS to protect against malicious deployments, and cyber security threats. Server hardening may also be checked at actual deployed site or during regular audits.*	
20	**De-entitlement of STB:** CAS should have the following features: (a) The entitlement end date in CAS shall be equal to the entitlement end date in SMS**, or,**	Check the status of the VC/ STB for the activation periods.	The CAS should comply with either clause 20(a) or 20 (b). For 20(a), the activation period of the STB/ VC in CAS should be same as activation period in the SMS. No exception to be there.
20	(b) The entitlement end date in CAS shall be open and SMS shall manage entitlements based on the billing cycles and payments.	Check if the CAS is complying with clause 20 (a) above, if not, then it should not have end date so that it is managed by SMS only.	Either the CAS complies with clause 20 (a) above, or it should not have end date so that it is managed by SMS only.

b. Conditional Access System Desirable Requirements (as per Schedule-IX notified by TRAI on 11-06-2021)

Clause No	Requirement	Test Procedure	Test Results Expected
1a	**Message Queue:** (a) In the event of unsuccessful transmission of messages due to network failure (for instance, due to power failure), the head-end should have an option to queue up the messages. Further, there should be a provision to retry them at specified intervals using additive back off retrial timings.	The message should be on a carousel or streamer in the head-end, messages to be created and then played out on scheduled times and repeated after some pre-decided intervals. Check on the sample set of STBs.	The messages are queued as per this clause requirement.
1b	(b) In the event of unsuccessful deliveries of the messages, the life of the messages should be specifiable.	Repetition of the messages should be checked.	
2	**Geographical Blackout:** CAS shall have the feature of geographical blackout. Explanation 1: Geographical blackout is the ability of CAS to blackout a particular region based on the postal index number (PIN) Codes [Geographic Area Code], if required by government agencies or for other reasons.	Generate different blocks of cards, can be geographical, PIN code based or other criteria like channels of a particular broadcaster. Configure STBs for different geographical areas. Send commands from SMS to the STBs of the geographical area to be deactivated.	The channels of the targeted STBs should be deactivated.
3	**After-Sales Service Support:** The required software and hardware support should be available to the distributor of the television channels' installations from the CAS vendor's support teams located in India. The support should be such as to ensure the CAS system with 99.99% uptime and availability. The systems should have sufficient provisions for backup systems to ensure quality of service and uptime.	1. Check if CAS vendor's support teams are located in India. Record details of the local office address, contact details, names of team members, etc. 2. Check the Service agreements and SLAs with the service providers and if they ensure 99.99% uptime.	1. Record details of the support teams located in India. 2. Agreements have provision of required uptime.
3(i)	Explanation 1: (i) The requirement for hardware support should be applicable, only if the hardware is directly or indirectly provided by the CAS vendor.	Check if the hardware is directly or indirectly provided by the CAS vendor or is it from a third party supplier. Check if the support agreement is in place.	To be recorded.

3(ii)	(ii) The actual service-level arrangement for the system support shall be governed by the mutual agreement/ service-level agreement (SLA) between the service provider, i.e., CAS vendor and the customer (DPO).	SLAs, if available, to be checked and details of service level guarantee to be recorded.	To be recorded.
3(iii)	(iii) The signatories to the said agreement may mutually choose lenient/ stringent service-level guarantee.	SLAs, if available, to be checked and details of service level guarantee to be recorded.	To be recorded.

J. Summary of Test Results: *(to be filled by testing team)*

GR/ IR No.: *Schedule-IX of TRAI Notification dated 11-06-2021*

Test Guide No.: *TEC 57015:2022*

Equipment name & Model No._____

Clause No.	***Compliance*** *(Complied/Not Complied/ Submitted/Not Submitted/Not Applicable)*	***Remarks /*** ***Test Report Annexure No.***

Date:

Place:

Signature & Name of TEC testing Officer /

*** Signature of Applicant / Authorized Signatory**

**** Section J as given above is also to be submitted by the Applicant/ Authorised signatory as part of in-house test results alongwith Form-A. The Authorised signatory shall be the same as the one for Form 'A'.***

K. Annexure *(to be filled by testing team)*

(Please provide the clause wise test procedure for specific Lab tests)

L. List of Abbreviations

Abbreviation	Expanded Form
API	Application Programming Interface
CAS	Conditional Access System
DB	Database
DPO	Distribution Platform Operator
EPG	Electronic Programme Guide
FP	Finger Printing
FTA	Free-To-Air
GUI	Graphical User Interface
LCN	Logical Channel Number
OEM	Original Equipment Manufacturer
OS	Operating System
OTA	Over-The-Air
OTT	Over-The-Top
PIN	Postal Index Number
PSI/ SI	Program Specification Information / System Information
SLA	Service-Level Arrangement
SMS	Subscriber Management System
STB	Set Top Box
TEC	Telecommunication Engineering Centre
TRAI	Telecom Regulatory Authority of India
UA	Unique Access
UI	User Interface

टेस्ट गाइड

सं: टीईसी 57025:2022

TEST GUIDE

No.: TEC 57025:2022

सब्सक्राइबर मैनेजमेंट सिस्टम (एसएमएस)

Subscriber Management System (SMS)

ISO 9001:2015

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डा0 पी. डी. वाघेला
Dr. P. D. Vaghela

सत्यमेव जयते

अध्यक्ष
भारतीय दूरसंचार विनियामक प्राधिकरण
Chairman
TELECOM REGULATORY AUTHORITY OF INDIA

FOREWORD

In the last twenty-five years since its formation, the Telecom Regulatory Authority of India, as the sector regulator for both the Telecom and Broadcasting sectors, has endeavoured to establish Regulatory Framework that engenders a trust-based transparent regime to enable and nurture harmonious growth of the sectors. Transparency, Non-discrimination, protection of consumer interests and enabling orderly growth of the sectors have remained cornerstones of the regulatory approach followed by TRAI.

Towards furtherance of the aforementioned objectives, and in order to address issues arising out of deployment of non-standard Conditional Access System (CAS) and Subscriber Management System (SMS) in television broadcasting sector, the Authority notified the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021 on 11th June, 2021 and incorporated new regulation 4A and Schedule IX in the Interconnection Regulations, 2017. In addition to being the first step towards defining an indigenous set of specifications for CAS and SMS, the framework is expected to bring other benefits to the sector, such as enabling better content security, factual reporting of subscriber base and improving end to end compliance.

As the Agency designated to carry out the operationalization of the Testing and Certification of CAS and SMS, Telecom Engineering Centre (TEC) has carried out detailed deliberations with relevant stakeholders and put in a lot of effort in finalizing the Test Guide document containing the Test Schedules and Test Procedures. This is a crucial step in taking forward the testing and certification work. I congratulate TEC and B&CS division of TRAI for their joint efforts in this regard. I am sure that this will eventually achieve the desired objectives of delivering the expected benefits to the stakeholders and the consumers.

(P. D. Vaghela)

महानगर दूरसंचार भवन, जवाहर लाल नेहरू मार्ग, (पुराना मिन्टो रोड), नई दिल्ली-110002
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के. राजारामन, भा. प्र. से.
सचिव
K. Rajaraman, IAS
Secretary

सत्यमेव जयते

Azadi Ka Amrit Mahotsav

भारत सरकार
संचार मंत्रालय
दूरसंचार विभाग
Government of India
Ministry of Communications
Department of Telecommunications

Message

I am happy to note that Telecommunication Engineering Centre (TEC) has prepared the Test Guides for Conditional Access System (CAS) and Subscriber Management System (SMS) for Broadcasting and Cable services and are being released as guiding documents for all related stakeholders.

These documents set the test schedules and the testing procedures for CAS and SMS based on the mandatory and desirable requirements notified by TRAI in the form of Schedule-IX vide the Third Amendment of The Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017.

This will help in better conformity to the standards by the CAS and SMS deployed in the country and will also improve the customer experience.

It is commendable that Convergence & Broadcasting Division of TEC, a recently established division, has quickly prepared the test guides after detailed stakeholder consultations. I appreciate the efforts put in by TEC and TRAI. I hope these test schedules make way for ease of doing business and Atmanirbhar Bharat.

14/6/2022
(K. Rajaraman)

14th June, 2022
New Delhi

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Foreword

Telecommunication Engineering Centre (TEC) is the technical arm of Department of Telecommunications (DOT), Government of India. Its activities include:

- Framing of TEC Standards for Generic Requirements for a Product/ Equipment, Standards for Interface Requirements for a Product/ Equipment, Standards for Service Requirements & Standard document of TEC for Telecom Products and Services
- Formulation of Essential Requirements (ERs) under Mandatory Testing and Certification of Telecom Equipment (MTCTE)
- Field evaluation of Telecom Products and Systems
- Designation of Conformity Assessment Bodies (CABs)/ Testing facilities
- Testing & Certification of Telecom products
- Adoption of Standards
- Support to DoT on technical/ technology issues

For the purpose of testing, four Regional Telecom Engineering Centers (RTECs) have been established which are located at New Delhi, Bangalore, Mumbai, and Kolkata.

Abstract

This Test Guide enumerates detailed test schedule and test procedure for evaluating requirements of Subscriber Management System (SMS) as specified in Schedule-IX of Telecom Regulatory Authority of India (TRAI) Notification dated 11-06-2021.

This Test Guide has been prepared by Convergence and Broadcasting Division TEC.

Contents

A. History Sheet

S. No.	Test Guide No.	Equipment/Interface	Remarks
1.	TEC 57025:2022	Test Guide for Subscriber Management System (SMS)	June 2022

B. Introduction

Considering the need for developing an overarching framework for standardization, certification and testing of various components of the addressable systems in television broadcasting i.e. Conditional Access System (CAS) and Subscriber Management System (SMS), Telecom Regulatory Authority of India (TRAI) notified "The Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021" on 11-06-2021. These Regulations specify the mandatory as well as the desirable requirements of CAS and SMS (Schedule-IX); seek compliance by distributors of television channels by deploying such CAS and SMS which conform to these requirements; and ask such distributors to get their CAS and SMS tested and certified within the stipulated timelines.

TRAI further designated Telecommunication Engineering Centre (TEC) DoT as the Testing and Certification Agency for CAS and SMS used for Broadcasting and Cable TV services as per order dated 21-09-2021.

This Test Guide, prepared as per exhaustive consultations with stakeholders, enumerates detailed test schedule and test procedure for evaluating requirements of Subscriber Management System (SMS) as specified in Schedule-IX of Telecom Regulatory Authority of India (TRAI) Notification dated 11-06-2021.

C. General Information: *(to be filled by testing team)*

S. No.	General Information	Details	
1	Name and Address of the Applicant		
2	Date of Registration		
3	Name and No. of Specifications against which the approval sought (Schedule-IX of TRAI Notification dated 11-06-2021)		
4	Details of Equipment		
	Type of Equipment	Model No.	Serial No.
(i)			
(ii)			
…			
…			
…			
5	Declaration by Vendor/ Applicant of systems already deployed in India with Name of Distribution Platform Operator (DPOs), Address, Model Number and Serial Number.		
6	Any other relevant Information:-		

D. Testing Team: *(to be filled by testing team)*

S No.	Name	Designation	Organization	Signature
1.				
2.				
3.				

E. List of the Test Instruments: *(to be filled by testing team)*

S No.	Name of the test instrument	Make /Model *(to be filled by testing team)*	Validity of calibration *(to be filled by testing team)*
1			dd/mm/yyyy
2			
…			
…			
…			
…			

F. Equipment Configuration Offered: *(to be filled by testing team)*

(a) <Equipment/ product name> Configuration:

S No.	Item	Details	Remarks

Relevant information like Software version, Server details, ports, interfaces, size, etc. may be filled as applicable for the product.

(b) <Other equipment name> Configuration:

S No.	Item	Details	Remarks

Relevant information like Software version, Server details, ports, interfaces, size, etc. may be filled as applicable for the product.

G. Equipment/ System Manuals: *(to be filled by testing team)*

*Availability of Maintenance manuals, Installation manual, Repair manual, User Manual etc.***(Y/N)**

H. Test Lab Requirements and General Test Setup:

(a) Test Lab Requirement:

1. Server for the SMS installation (required only if SMS provider is not providing SMS server).
2. Backup SMS server (optional)
3. Standard CAS
4. CAS Server
5. STB compatible with the CAS
6. EMM generator
7. ECM Generator
8. Live Channels Streams
9. Multiplexer
10. Up convertors
11. SAS server
12. Networking Switches/ routers
13. Firewall
14. NTO Document with NCF regulations
15. SMS Server with all the mentioned Interfaces
16. Application (simulated or actual DPO/ LCO Panels) allowing subscribers to choose their channels/ bouquets, etc. (Web interface/ Desktop app/ Mobile app)
17. NDA to be signed by SMS, CAS providers with Test Lab

(b) General Test Setup:

1. Set up of channels, CAS server, encryption of channels, integration of CAS with multiplexer and EMM generator, connect multiplexer to STB with the up convertor, connect up convertor to STB, connect the SMS to the SAS server which is connected to CAS.
2. Create users, Create Subscribers, Create a targeted set of Paired STBs and VCs.
3. List of APIs provided by CAS and SMS.
4. Prepare Data with all the live Command Activities that will hit CAS.
5. Have some wrong dummy data with fields 1b(i) till 1b(iv). (To test results of unsynchronized Data.)
6. Have some correct data with fields 1b(i) till 1b(iv) from CAS. (To test results of unsynchronized Data.)

I. Clause-wise Test Procedure and Results Expected:

a. Subscriber Management System Mandatory Requirements (as per Schedule-IX notified by TRAI on 11-06-2021)

Clause No	Requirement	Test Procedure	Test Results Expected
1	**Synchronization of the data of both CAS and SMS:**		
1a	(a) CAS and SMS data shall be synchronized with each other. There shall be a facility to trace data mismatch between CAS and SMS on periodic basis, to be made available during audits.	Activate and deactivate some STBs/ Viewing Cards (VCs) from SMS. Get unsynchronised data; trigger the synchronisation process. Get synchronised data; trigger the synchronisation process.	1. Feature to trigger the synchronisation process is available. 2. This feature generates mismatch reports for both negative (mismatch) and positive (match) cases.
1b	(b) SMS shall have a provision to generate synchronization report, with date and time, with the minimum fields as listed below: (i) STB No. (ii) VC No. (Or in case of card-less CAS, chip ID or virtual card number of the STB) (iii) Product Code pertaining to à-la-carte channels and bouquets available on the platform (iv) Start Date of entitlement (v) End Date of entitlement (vi) Status of card (Active/ Inactive)	Same as for clause 1(a) above.	Synchronisation report as per the requirements of the clause is generated.
1c	(c) The file output of CAS shall be processed by SMS system to compare and generate a 100% match or mismatch error report.	Take CAS data as a CSV/ Excel file. Input this file to SMS and generate a synchronisation report. Test it for both positive and negative scenarios.	1. SMS can process file output of CAS. 2. SMS can generate 100% match or mismatch error report.
2	**Channel/ Bouquet management:** SMS shall support the following essential requirements:	Create à-la-carte channels, broadcaster's bouquets , platform's own bouquets , their tariffs,	

2a	(a) Create and manage all channels and bouquets along with the relevant details such as name, tariff, broadcaster, or DPO bouquet, etc.	Create different products with all the given parameters to test. Check the reports in SMS and see the changes made are reflected or not.	There should be no exception and the reports show all changes with date, time stamp and user id.
2b	(b) Manage changes in the channel/ bouquet, as may be required, from time to time.	Make changes in the created bouquets, add/ delete channels from the list. Check the reports in SMS and see the changes made are reflected or not.	There should be no exception and the reports show all changes with date , time stamp and user id.
2c	(c) Link the products' IDs for à-la-carte channels and bouquets (Single and Bulk) created in CAS with the product information being managed in SMS, for smooth working of SMS and CAS integration.	1. Update the CAS product IDs in the test channels/ bouquets configured for clauses 2(a) and 2(b) above. 2. Use bulk update feature to update Product IDs on all the products.	The reports in SMS should reflect the changes made and there should be no exception. All changes should have date, time stamp and user id.
2d	(d) Management of historical Data of Product name, i.e., Broadcasters (name), maximum retail price (MRP), distributor retail price (DRP).	Modify the details on different dates for same product. Include the TRAI NTO.x regulation of per channel rate and bouquet rate and content rate. Check each case with all combinations. Check the historical changes done on all the parameters like channels, pricing, bouquet, DRP, MRP.	The report should give the chorological changes done , with time and date stamp and user signatures at the time of changes.
3	**Network Capacity Fee (NCF) Policy Creation**: SMS shall support all Network Capacity Fee related requirements mandated by the applicable tariff order.	1. Check the availability of the NCF parameters. 2. Add and delete a few channels in the NCF package, check the price change. 3. Check its implementation in Subscriber Billing. 4. Take Point of all the validations related to NCF calculation from TRAI NTO.x regulations. Check each point.	1. Feature to manage NCF Policies with all its parameters is available. 2. The reports on NCF are as desired with all the parameters (the number of TV channels, name and the prices). 3. Resultant Billing Reports are as expected.

4	**Bill/ Invoice Generation**: SMS shall be capable of generating proper subscriber bill/ invoice with explicit details of NCF charges, Pay Channels charges (with clear itemized details of à-la-carte channel cost and bouquet costs), rental charges for STB (if any), other applicable charges, including Goods and Services Tax (GST).	Check previously raised invoices. Check if the billing is on per day basis. Generate invoices for the targeted subscribers for Prepaid, Post-paid and Advanced Paid Subscriptions. Also generate invoices with and without taxes, invoices with and without NCF. Check each component mentioned in the clause requirement.	SMS should generate proper subscriber bill/ invoice with explicit details as per clause requirements such as NCF fee, pay channel charges, itemised billing for the pay channels à-la-carte and bouquet, GST and any other charges. The invoice should show the start date and end date and the same should tally with the subscriber entitlement dates on the cards and end date in the SMS.
5	**Password Policy Creation for Users**: SMS shall have a defined password policy, with minimum length criteria and composition (upper and lower-case characters, numeric, alphabets or special characters), forced password changes or any other appropriate mechanisms or combinations thereof.	Password policy to be checked for: 1. minimum length criteria 2. composition - upper and lower-case characters 3. composition - numeric 4. composition - alphabets 5. composition - special characters 6. forced password changes Change password of an existing user with & without qualifying password policy criteria.	The password should meet all the policy requirements.
6	**Management of Logs:**		
6a	(a) SMS shall have the facility to provide user detail logs with the ID of users on each login event.	1. Keep a note of all the logins and logouts done by various users. 2. Fetch the Login Logout Report and verify it with the information noted.	1. Verification should match 100%. 2. The logs cannot be deleted or modified.
6b	(b) SMS shall have the provision of generating the user activity log report to enable tracking users' work history. It shall not be allowed to delete the records from the log.	1. Keep a note of all the Activities done on SMS. 2. Fetch the Log Report and verify it with the information noted. 3. Scan the whole SMS for the feature of editing the logs.	1. The reports should be able to give the user working history and changes done. 2. The logs cannot be deleted or modified.
6c	(c) All logs shall be stamped with date and time and the system shall not allow	Access logs of the SMS and check that the logs are not editable by any process.	1. All log reports should have time stamp, date stamp and user id with it.

	altering or modifying any logs.		2. There is no feature to modify, alter or delete the logs. 3. All the logs are exported in readable and un-editable format.
6d	(d) The logs shall be maintained for a period as specified in Schedule III or at least two audit cycles, whichever is later.	1. Check the history of logs maintained in the SMS and check if they meet the requirement of Schedule III. 2. Take out random reports of the logs and verify the date, timestamp, user-id login. 3. Check if there is an option of auto delete. Change the SMS Server dates and perform activities and then verify if the data is auto deleted of 2 years of period.	1. Logs are as per schedule III. 2. Logs contain Date & Time Stamp with User-ID. 3. No way to modify the logs. 4. Delete or purge option, if any, is only for the logs older than 2 years or as described in Schedule III.
7	**Channel subscription report:** SMS shall be able to provide the total counts of monthly subscribers of channels including both à-la-carte and bouquet subscriptions.	1. Add and Modify the Subscription data and keep a note of all the modifications. 2. Fetch the reports (all combinations of à-la-carte, bouquet both of broadcaster and DPO) and compare the numbers derived from the above-noted data. 3. Compare the SMS report with the CAS data.	SMS should generate the channel subscription report. There should be no variance during comparison.
8	**SMS Database and tables:**		
8a	(a) There shall not be any active unique subscriber outside the database tables.	Check the database, does it exist on one server or multiple servers, does it has a backup server, how frequently data is synchronised between backup and main, is data stored in cloud; generate random reports of the active subscribers, de-active subscribers, blacklisted cards/ STB.	Check the random reports and there should not be any exception of any VC or STB missing in any data report of active/ deactivate subs, blacklisted cards or whitelisted cards. SMS should include all active STB/ VC numbers irrespective of their status i.e. suspended, in stock/ testing/ repairable/ non-repairable.

8b	(b) SMS shall not provide an option to split SMS database or for creation of more than one instance.	Run the query on the SMS database to check if there is way to split the database, or can the database be maintained in multiple servers, run the query through the SMS UI. Check through the SMS server if there are multiple databases or multiple tables. *Note: The testing agency will check through the UI and SMS server if any database split has been enabled. However by having admin rights, whether the database is split later, may also be checked at actual deployed site or during regular audits.*	No such way is found to split the data to maintain it on the multiple tables/ databases/ servers.
8c	(c) SMS shall have the provision to enable or disable channel (à-la-carte channel or bouquet of channels) selection by subscribers either through website or an application through interface provided by the distributor platform operator.	1. Check if the SMS is capable of accepting inputs through the interface of the application (simulated or actual DPO/ LCO Panels) allowing subscribers to choose their channels/ bouquets, etc. (Web interface/ Desktop app/ Mobile app). 2. Login as a subscriber in the application and select à-la-carte channels and bouquets. Check if the selections are reflected in the SMS.	1. The SMS should have provision to interface with the DPO/ LCO application/ web interface. 2. The changes done as subscriber from all the three modes, web interface, desktop app and mobile app should reflect in the SMS and also be in CAS and should be done instantaneously. If any delay, the same should be noted along with the exception.
8d	(d) SMS shall be capable of capturing the following information required for audit or otherwise: (i) Bouquet à-la-carte status change history (ii) Bouquet composition change history (iii) Change in status of connection (primary to secondary and vice versa)	1. Make changes in test channels à-la-carte and Bouquet composition configured for clause 2(a) above. 2. Designate a set of STB as primary and few secondary, then change the sequence in the same STB. 3. Check the history reports maintained in the SMS for all the changes done as	No historical data is missing in the history reports.

		required for clauses 8d(i) to 8d(iii).	
9	**Firewall Access:** SMS shall be accessed through a Firewall.	Firewall of the SMS server OS may be enabled; or, SMS server may be placed behind external firewall. Check that access to SMS is restricted through VPN or a limited IP addresses and all other ports are closed. *Note: The DPO might use the firewall of the SMS server OS or a perimeter firewall. Restricted access to SMS through firewall may also be checked at actual deployed site or during regular audits.*	SMS should be accessible only through Firewall.
10	**STB-VC pairing**: STB and VC shall be paired from the SMS to ensure security of channel.	1. On a STB that supports VC, pair STB-VC from the SMS. Activate channels on the STB/ VC. Check that the channels are available from STB. 2. Insert the activated VC in some other STB. Check if the channels are available from that STB. 3. Insert some other VC in the activated STB. Check if the channels are available from the STB. 4. De-pair the STB-VC from SMS. Check if the channels are available from the STB.	1. The SMS should perform pairing and de-pairing of STB and VC. 2. The channels should be activated on the paired STB-VC. 3. The channels should not be available when the STB or the VC are interchanged.
11	**SMS-STB addressability:** The SMS shall be capable of individually addressing subscribers, for the purpose of generating the reports, on channel by channel and STB by STB basis.	Take the report of a few subscribers, it should be triggered with parameters like channel reports, STB reports i.e. details of channels active on the targeted STBs, and also details of STBs active for the targeted channels. Compare with the reports from CAS.	The SMS should generate channel-wise and STB-wise reports. These reports should tally with the reports from CAS.

b. Subscriber Management System Desirable Requirements (as per Schedule-IX notified by TRAI on 11-06-2021)

Clause No	Requirement	Test Procedure	Test Results Expected
1	**Data Verification:** SMS should have the facility to carry out auto-reconciliation of channels/ à-la-carte and all bouquets with their respective ID created in SMS with CAS configuration, and the variance report should be available in the system with logs.	1. Trigger Auto Reconciliation Option in SMS. 2. Do some direct entries in CAS to create a mismatch in SMS and CAS. 3. Check Reports for both Match and Mismatch of Data.	SMS should generate correct Mismatch and Match Reports.
2	**SMS Reports**: SMS should have a provision of generating the following reports pertaining to STB/ VC:	1. Check the availability of each report for clauses from 2(a) to 2(g) 2. Prepare data for each report. 3. Generate each report and reconcile with CAS for clauses 2a, 2b, 2d, 2e, 2f and 2g. For the point 2c, reconcile with the stock ledger of store.	Feature available and generating reports for clauses from 2(a) to 2(g) as expected.
2a	(a) White list of STB/ VC along with active/ inactive status		
2b	(b) Faulty STB/ VC - repairable and beyond repairable		
2c	(c) Warehouse fresh stock		
2d	(d) In stock at local cable operator (LCO) end		
2e	(e) Blacklist		
2f	(f) Deployed with activation status		
2g	(g) Testing/ demonstration STB/ VC with location		
3	**Audit-related requirements**: SMS should have the capability to capture below-mentioned information that may be required for audit and otherwise:		Resultant report is as desired. For 3(a) to 3(d).
3a	**a. Subscriber related:**		
3a(i)	(i) Subscriber contact details change history	1. Change the contact details of a subscriber on different dates.	

		2. Check the effect in the Subscriber Contact Details History Report.	
3a(ii)	(ii) Connection count history	1. Create and activate and deactivate some subscribers on different dates. 2. Check the connection count report is effected or is it showing only the current count. 3. If MSO has implemented multiple CAS, extract the report for each CAS date-wise.	
3a(iii)	(iii) Transition of connection between Disconnected/Active/Temporary Disconnected	1. Move the connection of one subscriber from one state to another (Active/ Temporary Disconnected/ Disconnected). 2. Check the report for its history with date.	
3a(iv)	(iv) Subscription change history	1. Change the subscription of Bouquet and à-la-carte of one connection on different dates. 2. Check the report which shows subscription history of the connection.	
3b	**b. LCO related:**		
3b(i)	(i) LCO Contact details change history	1. Change the contact details on different dates. 2. Check the report that shows the change history of the data.	
3b(ii)	(ii) LCO and DPO sharing change history	1. Change the Sharing policy on different dates. 2. Do a billing/ Renewal/ activation of the subscription. This activity should include the product on which the sharing was changed. 3. Check the report that shows the change history of the data.	
3c	**c. Product (Bouquet/ à-la-carte channel) related:**		
3c(i)	(i) Broadcaster à-la-carte relation	1. Change Broadcaster à-la-carte data on different dates.	

		2. Check the report that shows the change history of the data.	
3c(ii)	(ii) Bouquet name change history	1. Change bouquet name data on different dates. 2. Check the report that shows the change history of the data.	
3c(iii)	(iii) À la carte name change history	1. Change à-la-carte name data on different dates. 2. Check the report that shows the change history of the data.	
3c(iv)	(iv) Bouquet à-la-carte channel rate change history	1. Change bouquet à-la-carte channel rate data on different dates. Also check on renewal and subscription screens. 2. Check the report that shows the change history of the data.	
3d	**d. STB/ Smartcard related:**		
3d(i)	(i) Change in location history	1. Change location of a STB/ subscriber on different dates. 2. Check the report that shows the change history of the data.	
3d(ii)	(ii) Change in status (Active/ Damaged/ Repaired)	1. Change status of a STB/ subscriber on different dates. 2. Check the report that shows the change history of the data.	
4	**User Authentication:** SMS should have the capability to authenticate its subscribers through registered mobile number (RMN) through one-time password (OTP) system.	Check that the SMS generates OTP during following activities: 1. Registration of Mobile number 2. Connection activation 3. Subscription Change Completion of these activities will depend on the OTP verification.	1. SMS generates OTP. 2. Activities mentioned in test procedure completed successfully with OTP and failed without OTP verification.
5	**Miscellaneous:** SMS should have the provision to support the following miscellaneous requirements:		
5a	(a) List of à-la-carte channels and bouquets, digital headend (DHE) and Zone-wise: Provision to support/ manage Zone/ Sub-Headend-wise list	1. Create digital headend (DHE) and Zone.	1. Functionality is available. 2. The filter is working as expected.

	of à-la-carte channels and bouquets, in sync with the list available in CAS.	2. Mark the products that need to be visible under a specific DHE/ Zone. 3. Check if the products are available for use as per their respective DHE/ zone.	
5b	(b) Revenue Sharing Between DPO and LCO: Provision to define and calculate DPO and LCO revenue share separately for distribution fee as well as for NCF, as per the agreement executed between them, with the option to maintain historical information can be very useful and is desirable.	1. Define Revenue Sharing Between DPO and LCO for Bouquets. 2. Define Revenue Sharing Between DPO and LCO for NCF. 3. Do changes in the policies on different dates. 4. Generate Bills after each change to verify the effect of changes on its calculation. 5. Check the Detailed Sharing report of all the monthly transactions.	1. Functionality is available. 2. All the said tests results were as expected.
5c	(c) LCO invoicing with GST: Provision to generate invoicing under multiple GST registration numbers of LCO's and to comply with GST invoicing norms as applicable.	1. Provision to generate GST Invoice for LCOs is available. 2. Verify the calculations and invoice format as per GST Norms.	Both tests ran as expected.
5d	(d) Product (à-la-carte channels and bouquets)-wise Renewal and Reversal setting for the Subscriber Account: Provision to allow renewal of a product to a subscriber after the expiry date of a product, and provision to auto-calculate and refund the amount to a subscriber if he discontinues a product midterm. These requirements may be configurable on selective products, as required by the DPOs as per their business plans.	1. Mark a product A to be Auto-Renewable. 2. Mark a product C to be Manually-Renewable. 3. Mark a product B to be Refundable on a pro-rata basis. 4. Mark a product D to be non-refundable. 5. Subscribe to products A and B on some connections. 6. Wait for the expiry date of products A and C. 7. Discontinue products B and D on any one of the connections before their expiry date.	1. Product A will be auto renewed for the next cycle. 2. Product C will be unsubscribed. 3. There will be a refund entry for Product B based on the remaining days of expiry. 4. No refund will be there for product D.

5e	(e) Product (à-la-carte channels and bouquets)-wise Reversal setting for LCO Account: Provision to calculate and refund the amount due to LCO, if he or the subscriber discontinues a product midterm.	All the tests mentioned for clause 5(d) above should be tested for LCO.	Test Results should be same as mentioned for clause 5(d) above.
5f	(f) Product (à-la-carte channels and bouquets) Tenure-wise LCO and Subscriber Discount Scheme/Free Days Scheme: Provision to create Discount Scheme and Free-day scheme for LCO and Subscriber, based on the duration (Tenure) of the product subscription.	1. Create Discount Policies based on Tenure for LCO. 2. Create Discount Policies based on Tenure for Subscriber. 3. Give subscriptions on one of the connection.	Subscriptions discount days should get added automatically.
5g	(g) Calendar/Activity Scheduling: Provision to auto-schedule activities like STB activation/deactivation, à-la-carte channels and bouquets addition/removal, channel/bouquet composition modification, etc.	Check the provision to auto-schedule activities for future executions of: 1. Connection activation/ deactivation 2. à-la-carte channels and bouquets addition/ removal 3. channel/ bouquet composition modification	1. Provision is available. 2. The scheduled activity got executed successfully on the given date.
5h	(h) Bulk Channel/ Bouquet Management: Provision to perform bulk activity of à-la-carte channels and bouquets addition and removal on all or a designated group of STBs.	1. Select all or a group of active STBs/VCs. 2. Select a channel and/ or a bouquet to add it to all the above selected STBs/ VCs. 3. Add the product as a bulk operation. 4. Similarly, select a channel and/ or a bouquet to remove it from all the above selected STBs/ VCs. 5. Remove the product as a bulk operation.	1. In addition to the process of selecting one STB/ VC at a time and add or remove the product, the feature of bulk operation is available. 2. The result of the feature is as expected.
5i	(i) Token-number-based reports: Provision to download multiple generated reports with the help of token number, such as audit reports with different intervals.	1. Generate the report. 2. The report process gives a token number and goes in the background*. 3. Go to the centralized screen to check the status of the generated report. Download the report.	1. Feature of downloading multiple generated reports with the help of token number is available. 2. The result of the feature is as expected.

		*Check if the feature of background worker for Reports is available. There may be different ways to implement it. One of the implementation logic can be that the report is generated and uploaded to a centralized location and can be downloaded from there later. Its importance is when we have big data for a report e.g. audit reports.	
5j	(j) Third-Party Integration: Provision to support integration with relevant third-party systems, such as, payment gateway integrations, interactive voice response (IVR) Integrations, SMS Gateway Integrations, etc.	Check whether the SMS has been integrated with: (i) payment gateway (ii) interactive voice response (IVR) (iii) SMS Gateway (iv) email Gateway (v) any other third-party systems.	Record the details of third-party systems with which the SMS has been integrated.
5k	(k) Bill payment and reconciliation feature: Provision for bill payment and reconciliation (in case a DPO is running service in post-paid mode).	Generate bills for various STBs. Enter payment details for a few STBs. Generate reports for outstanding bills and paid bills.	Verification of reports done successfully.
5l	(l) Generation of Reports: Provision to generate the following reports for operational purpose:	1. Prepare fresh data concerning the report to be tested for each of the clause from 5l(i) to 5l(iv). 2. Extract the corresponding report and verify it with the activity done and data prepared.	Verification of reports done successfully for clauses from 5l(i) to 5l(iv).
5l(i)	(i) All, selective and single boxes' current status with their first-time activation date.		
5l(ii)	(ii) Total number of à-la-carte channels and bouquets and STB expiring detail till given future date on the dashboard, according to the permission.		
5l(iii)	(iii) Today's fresh activation count, de-activation count, re-activation count, à-la-carte channels and bouquets addition/ removal count on dashboard, according to the permission.		

5l(iv)	(iv) Total active and inactive subscriber's details with multiple criteria (network-wise, à-la-carte channels and bouquets-wise, state-city wise and broadcaster-wise).		
6	**After-Sales Service Support**: The required software and hardware support should be available to the distributor of the television channels' installations from the SMS vendor's support teams located in India. The support should be such as to ensure the SMS system with 99.99% uptime and availability. The systems should have sufficient provisions for backup systems to ensure quality of service and uptime:	1. Check if SMS vendor's support teams are located in India. Record details of the local office address, contact details, names of team members, etc. 2. Check the Service agreements and SLAs with the service providers and if they ensure 99.99% uptime.	1. Record details of the support teams located in India. 2. Agreements have provision of required uptime.
	Explanation 1:		
6(i)	(i) The requirement for hardware support should be applicable, only if the hardware is directly or indirectly provided by the SMS vendor.	Check if the hardware is directly or indirectly provided by the SMS vendor or is it from a third party supplier. Check if the support agreement is in place.	To be recorded.
6(ii)	(ii) The actual service-level arrangement for the system support shall be governed by the mutual agreement/ SLA between the service provider, i.e., SMS vendor and the customer (DPO).	SLAs, if available, to be checked and details of service level guarantee to be recorded.	To be recorded.
6(iii)	(iii) The signatories to the said agreement may mutually choose lenient/ stringent service-level guarantee.	SLAs, if available, to be checked and details of service level guarantee to be recorded.	To be recorded.

J. Summary of Test Results: *(to be filled by testing team)*

GR/IR No.: *Schedule-IX of TRAI Notification dated 11-06-2021*

Test Guide No.: *TEC 57025:2022*

Equipment name & Model No._____

Clause No.	***Compliance*** *(Complied/Not Complied/ Submitted/Not Submitted/Not Applicable)*	***Remarks / Test Report Annexure No.***

Date:

Place:

Signature & Name of TEC testing Officer /

*** Signature of Applicant / Authorized Signatory**

**** Section J as given above is also to be submitted by the Applicant/ Authorised signatory as part of in-house test results alongwith Form-A. The Authorised signatory shall be the same as the one for Form 'A'.***

K. Annexure *(to be filled by testing team)*

(Please provide the clause wise test procedure for specific Lab tests)

L. List of Abbreviations

Abbreviation	Expanded Form
CAS	Conditional Access System
CSV	Comma Separated Value
DHE	Digital Headend
DPO	Distribution Platform Operator
DRP	Distributor Retail Price
ECM	Entitlement Control Message
EMM	Entitlement Management Message
GST	Goods and Services Tax
IVR	Interactive Voice Response
LCO	Local Cable Operator
MRP	Maximum Retail Price
NCF	Network Capacity Fee
NDA	Non-Disclosure agreement
NTO	New Tariff Order
OTP	One-Time Password
RMN	Registered Mobile Number
SAS	Subscriber Authorization System
SLA	Service-Level Arrangement
SMS	Subscriber Management System
STB	Set Top Box
TEC	Telecommunication Engineering Centre
TRAI	Telecom Regulatory Authority of India

भारत सरकार
दूरसंचार विभाग
दूरसंचार अभियांत्रिकी केंद्र
Government of India
Department of Telecommunications
Telecommunication Engineering Centre
K.L. Bhawan, Janpath, New Delhi- 110001

No. 4-6/2021-IT/TEC/CAS-SMS-TSTP Date: 07-06-2023

Subject: Certification procedure for certification of Conditional Access System (CAS) and Subscriber Management System (SMS) - reg.

Telecom Regulatory Authority of India (TRAI) has notified "The Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021" on 11-06-2021. These Regulations specify the mandatory as well as the desirable requirements of CAS and SMS (Schedule-IX).

2. TRAI further designated Telecommunication Engineering Centre (TEC) DoT as the Testing and Certification Agency for CAS and SMS used for Broadcasting and Cable TV services as per order dated 21-09-2021. Accordingly, TEC has also issued the Test Guides [TEC 57015:2022 and TEC 57025:2022] for evaluating requirements of CAS and SMS as specified in Schedule-IX of TRAI Notification dated 11-06-2021. TEC may issue a certificate after evaluating the test reports of the testing lab designated by TEC for testing of CAS/SMS.

3. Now, following instructions are hereby issued as "Certification procedure for certification of Conditional Access System (CAS) and Subscriber Management System (SMS)";

(i) Name of Certificate shall be known as "**Approval Certificate for CAS/SMS**".
(ii) The validity of this TEC certificate shall be valid for 3 years from the date of issue, or any updation in the offered CAS/SMS, whichever is earlier.
(iii) Any applicant meeting the below eligibility conditions may apply for certification;
   a. Any Indian OEM who is manufacturing the product in India either itself or through contract manufacturing in part or in full under whose brand name the product is being sold or is proposed to be sold.
   b. Any Authorised Indian Representative (AIR) / channel partner/branch office of a foreign OEM which is authorized by the foreign OEM to trade as well as to apply to TEC for certification of the product manufactured outside India, herein after referred to as 'Trader'.
   c. C-DoT or any Government Organization/Research Organisation/MSME/Start-ups
   d. Any DTH Operator or Multi-Service Operator for the CAS/SMS deployed in their network
(iv) Applicant, after getting the CAS/SMS tested from a designated lab, has to fill the '**Form-1**' (enclosed here at Annexure-1) and submit the application along with all

the required documents mentioned in the form, receipt of Administrative fees and Test Report issued by TEC's Designated Labs to the Regional Telecom Engineering Centre (North), Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi-110001. Applicant has to submit separate application for each Model of CAS/SMS for certification.

(v) Administrative fees for each application of certification shall be Rs. 10,000/- in case of Indian OEM or Traders. This shall be deposited by online payment through Non-Tax Revenue Portal (NTRP) of Government of India (https://bharatkosh.gov.in/). There will be no fees for C-DoT/Government Organisation/Research Organisation/MSME/Start-ups as per instruction issued from time to time.

(vi) The application submitted as above shall be registered and scrutinized by the RTEC NR to check submission of requisite documents. During scrutiny, if any shortcoming(s)/ deficiencies are noticed, the applicant shall be informed accordingly to resubmit the same within 15 days after taking corrective action.

(vii) After scrutiny of RTEC NR and found the application ok, then the case will be forwarded to concerned core division (i.e. C&B) for evaluation of test reports issued by the designated lab.

(viii) Concerned Core Division will check the test reports as per TEC Test Guide and TRAI mandate. After evaluation, the case alongwith the report/comments will be sent back to RTEC NR for further process.

(ix) RTEC NR will prepare the Activity Report & Draft Certificate in the prescribed format (enclosed here at Annexure-3 & 4) and will submit to the head of RTEC for review and approval.

(x) The approved draft Certificate shall be sent to RC unit of TEC-HQ and the certificate will be issued by Director(RC), TEC-HQ or any other officer designated for the purpose. The RC unit may seek any clarifications/corrections in the ARDC from the concerned core division or RTEC NR, if required.

(xi) The information regarding the certificate so issued shall be put on the TEC website.

4. Above certification procedure for CAS and SMS will continue to be valid till the provisioning of online process by TEC.

5. If, any situation arises for clarification or any point not covered above, the TEC "CERTIFICATION PROCEDURE No. TEC 05019:2021" shall be referred.

6. This is issued with the approval of the competent authority.

H Sharma

(Harsh Sharma)
Director(C&B), TEC New Delhi
Email: dircb2.tec-dot@gov.in

To,

1. All Stakeholders

Copy for kind information to-

1. PPS to Sr. DDG TEC, New Delhi
2. All DDGs of TEC/RTECs

ANNEXURE-1

DEPARTMENT OF TELECOMMUNICATIONS
TELECOMMUNICATION ENGINEERING CENTRE
RTEC <Delhi/Kolkata/Mumbai/Bengaluru>
Application for Product Certification

Form-1

A. Details of the applicant

Registered Name			
Registered Address			
Country		PIN:	
Type of Applicant < Manufacturer or Trader or C-DoT or any Government Organization/Research Organisation/MSME/Start-ups or MSO/DTH Operator>			
Telephone		FAX	
Mobile		E-mail	
Website			
Address for correspondence	PIN:		
Telephone		FAX	
Mobile		E-mail	
Website			

B. Details of the Product to be certified

Product Name (CAS/SMS)			
Model No.		Year of Manufacture	
S/w version, if any			
Registered Name & Address of the Manufacturer /OEM			
Country		PIN:	
Telephone		FAX	

Mobile		E-mail	
Website			

C. Please tick (√) the type of certificate required

Approval Certificate for Conditional Access System (CAS)	
Approval Certificate for Subscriber Management System (SMS)	

D. Standard/Specifications details

Title of the TRAI/TEC Standard/Test Guide	
TRAI/TEC Standard/Specification No. against which the certification is sought	

E. Please tick (√) whether the application is for

New certificate	
Renewal of certificate	
Certification against amended/revised TRAI/TEC Standard of existing certificate	

F. Details of the manufacturing location of the product [In case Indian OEM or Traders]

Registered Name			
Address			
Country			PIN:
Telephone		FAX	
Mobile		E-mail	
Website			

(In case there are more than one manufacturing location, the same should be mentioned/annexed)

G. Details of the contract manufacturer in case of contract manufacturing in part or full [In case Indian OEM]

Whether manufacturing in Part or full	
Registered Name of the contract manufacturer	
Registered Address	

Country			PIN:
Telephone		FAX	
Mobile		E-mail	
Website			
Address of the manufacturing location			
Country			PIN:
Telephone		FAX	
Mobile		E-mail	
Website			

(Please attach separate sheet in case of more contract manufacturers)

H. Details of TEC Designated Lab for testing

Name of the Lab	
Address	
Test location	

I. Administrative Fee details

NTRP transaction / reference No.		Dated	
Bank name			
Amount (Rs.)	(in figures) (in words)		

Dated: Signature of the authorized signatory
Place: _____

To be filled by TEC/RTEC NR

Application Registration No.	
TEC Ack No.	

OFFICE STAMP

Signature of Receiving officer:
Date:
Name & designation:

List of documents to be attached (as applicable)

(A) In case the applicant is an Indian OEM/MSME/Start-ups

S. No.	Type of document	Check (√) for submitted document or N/A (for not applicable)
i	Copy of Industrial License/MSME registration/Copy of Certificate of Incorporation/Partnership Deed/Certificate of Recognition in case of Startup by Department for Promotion of Industry and Internal Trade(DPIIT),Government of India as applicable. Note 1: *Shareholding pattern/equity participation of the foreign company in the Indian Firm, if so should also be provided.*	
ii.	In case the manufacturing is carried out through contract manufacturing, copy of Agreement/MoU between the applicants also called the principal manufacturer and the Contract manufacturer(s) who is/are actually manufacturing the product thereof. Further, a copy of the manufacturing license(s) of the Contract manufacturer(s) shall also be provided.	
iii.	Authorization letter for the authorized signatory for signing form-1.	
iv.	An affidavit attested by notary public for each equipment/model as per proforma given in 'Annexure-2'.	
v.	Test Report of TEC designated lab	

(B) In case the applicant is an Indian Trader of foreign OEM

S. No.	Type of document	Check (√) for submitted document or N/A (for not applicable)
i.	Copy of Registration/Certificate of Incorporation of trader in India as applicable.	
ii.	Copy of the authorization by foreign OEM declaring the applicant as their authorised Indian trader/ dealer/ distributer/ representative/ Channel partner/ Branch office for the product clearly indicating the after sale support and the validity period.	
iii.	Authorization letter for the authorized signatory for signing form-1.	

vi.	An affidavit attested by notary public for each equipment/model as per proforma given in 'Annexure-2'.	
vii.	Test Report of designated lab	

(C) In case the applicant is an C-DoT or any Government Organization/ Research Organisation or MSO/DTH Operator

S. No.	**Type of document**	**Check (√) for submitted document or N/A (for not applicable)**
i.	Authorization letter for the authorized signatory for signing form-1.	
ii.	Test Report of designated lab	
iii.	Registration with Ministry of Information and Broadcasting (to be filled by MSO/DTH Operator only***)***	

ANNEXURE-2

SPECIMEN AFFIDAVIT

(To be submitted along with Form 'A')

To be submitted on non judicial stamp paper of Rs 100 and duly attested by a first class Magistrate, Oath Commissioner or by a Notary Public.

AFFIDAVIT

[Strike off/delete whichever is not applicable]

I _____ son/daughter of _____resident of _____ do solemnly declare and affirm as follows.

1. That I am the sole Owner/Proprietor of the firm/company _< name of the firm/company>_____having its headquarter at _< registered address of the firm/company>_____.

   OR

   That I am authorised to sign this affidavit and apply to TEC for certification on behalf of the firm/company _< name of the firm/company>_____having its headquarter at _< registered address of the firm/company>_____

2. That the firm/company is manufacturing the < name of the product >_____ with <Model No. *_____> at its own manufacturing plant / through contract manufacturing in part / full at ____<address of the manufacturing site>___ and we have test and repair facility for this product at < name and address of the facility>_____.

   OR

   That the firm/company is an authorized Indian dealer/distributor/channel partner/ representative/branch office of the foreign OEM__<name and address of the foreign OEM of the product>_____for manufacturing the <name of the product> _____ with <Model No. *>_____ at ____< address of the manufacturing site>_____ and we have test and repair facility for this product at_< name and address of the facility>_____.

   * *In case the product consists of more than one non-integrated units the model numbers of individual units are as below:*

S. No.	***Unit Name:***	***Model No.***
i		
ii		
iii		
……		

3. [In case of Indian Trader] That we affirm and declare that the import of the product as described at serial 2 above has been done within the framework of rules of Government of India as prescribed in its Export and Import policy or any other law, rule or notification in force.

   OR

[In case of Indian OEM] That we affirm and declare that the import of various parts of the product which have been imported has been done within the framework of rules of Government of India as prescribed in its Export and Import policy or any other law, rule or notification in force.

4. [In case of Renewal/Revision of certificate or testing of Additional Optional Interfaces of a certified product] That there is no change in the hardware of the product as compared to the model tested and certified by TEC vide existing certificate No._____ dated_____.
5. In case of Renewal/Revision of certificate a testing of additional optional interfaces of a certified product, we affirm that "software version has changed from ____ to _____ and TEC has been informed that despite other software version change, the product is in compliance to the TEC Standard for IR/GR/Manufacturer's Specification against which the product has been certified and that acknowledgement of TEC in this regard is attached herewith". (Note:- This clause is applicable only if there is a change in software version.)
6. We affirm and declare that we indemnify TEC/DoT from any dispute, litigation, obligation and/or loss/damage etc. arising out of TOT/ use of technology, brand or model of the product mentioned above and we shall be solely responsible for any such eventuality.

[DEPONENT]

VERIFICATION

Verified _____ day of _____ year 20___ that the contents of above affidavit are true to the best of my knowledge and belief and nothing untrue has been stated nor any facts has been concealed.

[DEPONENT]

Witnesses

1. < Signature > (<Name> & Address)

2. < Signature > (<Name> & Address)

ANNEXURE-3

Government of India
Department of Telecommunications
Telecommunication Engineering Centre
Khurshid Lal Bhavan, Janpath, New Delhi-110001

भारत सरकार
दूरसंचार विभाग
दूरसंचार अभियांत्रिकी केंद्र
खुर्शीदलाल भवन, जनपथ, नई दिल्ली-110001

APPROVAL CERTIFICATE FOR CAS/SMS

No.:_____ Date: <dd.mm.yyyy>

This is to certify that the product described below conforms to the TRAI Mandate /TEC Standard indicated below. This certificate is issued subject to the terms and conditions given overleaf.

APPLICANT
(Name and Address)

TRAI/TEC Standard/Test Guide No.
*(*Standard *No. along with Amendment No. and date , if any)*

(Type of applicant-Trader / Manufacturer)

PRODUCT NAME
(As per TEC Standard*)*

MODEL No.

Original Equipment Manufacturer*
(Registered Name and Address)

SOFTWARE VERSION
(*If any)*

VALID UP TO
REMARKS:
(As per requirement of the TEC Standard*)*

1. _____
2. _____
3. Number and Date of last certificate#: _____
4. Effective date of this certificate*: <dd.mm.yyyy>

*Note: *#To be mentioned in case of revision/renewal of Certificate*

(NAME)
DIRECTOR(RC)
e-mail: dirta.tec@gov.in
TEC website: www.tec@gov.in

* "The Certificate is not a proof of Manufacturing location/capabilities, ownership details, claim regarding local content of the product etc.Kindly refer other Terms and Conditions mentioned OVERLEAF"

1/2

No. : _____ **Date:** <dd.mm.yyyy>

TERMS & CONDITIONS

i) This certificate merely indicates conformance to the TRAI Mandate/TEC Standard document mentioned herein and the actual use of the product is subject to the applicable government rules and regulations including security requirements.
ii) This certificate does not cover any functions or features beyond the scope of the TEC Standard mentioned herein, nor the performance of the equipment in different environment conditions.
iii) This certificate issued by TEC shall not be valid for any hardware variant of the product. Any hardware variant of the product shall be treated as a different model for which a fresh certificate shall be required.
iv) The software version mentioned in this certificate was the version declared by the certificate holder at the time of testing of the product. Any change in the software version of the product has to be brought to the notice of TEC along with a declaration as per the prescribed procedure to avoid cancellation of the certificate. TEC will issue an acknowledgement of receipt of such declaration.
v) During the validity of this certificate, TEC reserves the right to inspect and/or test the product/equipment at any premises where it is in use or at the place of the manufacturer. If any adverse effect/deterioration in the performance of the approved product/equipment or interconnected system is noticed during inspection and/or testing or its use in Indian telecom network, TEC reserves the right to cancel/suspend the certificate.
vi) For radio communication equipment, the operating frequencies shall comply with the approved frequencies by Wireless Planning and Co-ordination (WPC) wing of Department of Telecommunications. Possession, use, sale and operation of the wireless product is subject to applicable permissions/licenses.
vii) This certificate should not be construed to be an authorization for trading or manufacturing activities which may be subject to applicable laws/rules/regulations.
viii) TEC may amend/suspend/cancel this certificate in view of Government orders and rules or any anomaly noted by TEC/RTEC.

Tested by: CAB<Name & Address>____

(NAME)

DIRECTOR (RC)

To

<APPLICANT's ADDRESS>

2/2

Annexure-4

TELECOMMUNICATION ENGINEERING CENTRE
(DEPARTMENT OF TELECOMMUNICATIONS)
ACTIVITY REPORT

A.1	Name of the RTEC	
2	File Number	
3	Registration Number & date	
4	Approval Certificate (for CAS or for SMS)	
5	TRAI Mandate No. and/or TEC Standard / Specification/Test Guide No.	
B.1	Type of Applicant (Trader/Manufacturer/C-DoT/MSME/Start-ups/Govt. Organistion/MSO/DTH Operator or others)	
2	Name and address of the Applicant (H.O. address & Factory address)	
3	Contact details (e-mail and mobile no.)	
4	Name of the Product Software Version, if applicable	
5	Model Name / Number	
6	In case of trader, Is he authorized for trade? State the status of testing / repair facility and the location of the same (Pl. indicate the date till which the trade Authorization is valid)	
7	Does the product comply with all the clauses of the TRAI Mandate/TEC Standard/Specification/Test Guide?	
8	Is any relaxation granted by Sr. DDG (Details to be given)	

9	Is it a New case / renewal case / addition of some facility to earlier approved product? (Other than new case old Approval certificate No. to be given)	
C.1	Date of receipt of Form - "A"	
D.1	Amount of Administrative Fee collected through NTRP	
2	NTRP Transaction No. and date	
3	Name and Address of TEC Designated Lab used for testing	
E.1	If the approval is not for full period subject to some condition(s) the reasons thereof	
2	Remarks, if any	
3	Copy of the Draft Certificate	

Signature of the RTEC Officer

Name :

Designation:

Approval Certificate for CAS/Approval Certificate for SMS: APPROVED

Date: DDG, RTEC.

*****

ANNEXURE - IV

Department of Telecommunications
Telecommunication Engineering Centre
Khurshid Lal Bhawan, Janpath, New Delhi -110001
(Convergence & Broadcasting Division)

सत्यमेव जयते

No. 4-6/2021-IT/TEC/CAS-SMS-TSTP **Dated: 30.01.2023**

To,

M/S SALKA GLOBAL TECHNOLOGIES (P) LTD (SALKATECH)
SB Tower, 5th Floor, Film City, Sector-16A
Noida UP 201301 IND

Subject: Designation for Testing of Conditional Access System (CAS) and Subscriber Management System (SMS).

References:

1. TRAI Order No. NIL Dated 20.09.2021
2. TEC EOI No. NIL Dated 24.06.2022
3. Your Email Dated 22.11.2022

With reference to above competent authority has approved the designation of M/S SALKA GLOBAL TECHNOLOGIES (P) LTD (SALKATECH) Noida UP for testing of Conditional Access System (CAS) and Subscriber Management System (SMS) as per the TRAI notification and TEC Test Guides:

i. Test Guide for Conditional Access System (CAS) : TEC 57015:2022
ii. Test Guide for Subscriber Management System (SMS): TEC 57025:2022

30/01/2023

Brajesh Kumar
Director (C&B-1), TEC New Delhi

Copy to:

1. Secretary TRAI, New Delhi in reference of TRAI Order No. NIL Dated 20.09.2021.
2. Director (IT), TEC for uploading in TEC Website.

भारत सरकार
दूरसंचार विभाग
दूरसंचार अभियांत्रिकी केंद्र
खुर्शीद लाल भवन, जनपथ, नई दिल्ली-110001
Government of India
Department of Telecommunications
Telecommunication Engineering Centre
K.L. Bhawan, Janpath, New Delhi- 110001

ISO 9001:2015

No. 9-1/2023-C&B/TEC **Date: 27.07.2023**

To,

M/s Altruist Technologies Private Limited
Plot No. 2, Sector – 22, Technology Park,
Panchkula Haryana, Pin Code: -134112
Lab Address: City Plaza Mall, Jhansa-Tangori Rd,
Patti Mehar, Ambala, Haryana, Pin Code: -133006

Subject: - Designation for Testing of Conditional Access System (CAS) and Subscriber Management System (SMS).

The Competent Authority has approved the designation of M/s Altruist Technologies Private Limited, Panchkula, Haryana for testing of Conditional Access System (CAS) and Subscriber Management System (SMS) as per TRAI Notification dated 11-06-2021 (specified in Schedule-IX) and TEC Test Guides:

i. Test Guide for Conditional Access System (CAS): TEC 57015:2022
ii. Test Guide for Subscriber Management System (SMS): TEC 57025:2022

2. Designation will be valid for 3 years from the date of issue.

3. Designation Lab shall ensure all the terms and conditions stipulated in the TEC procedure for designating domestic testing labs for testing of Conditional Access System (CAS) and Subscriber Management System (SMS) No. TEC 57019:2023.

HSharma 27/07/23
Harsh Sharma
Director (C&B) TEC, New Delhi

Copy to:

1. Advisor and Head TEC New Delhi for kind information.
2. Secretary TRAI, New Delhi in reference of TRAI Order No. NIL Dated 20.09.2021.
3. Director (IT), TEC for uploading in TEC Website.
4. Office Copy