



Telecom Regulatory Authority of India

Workshop on Solution Architecture for Technical Interoperable Set Top Box

5th September, 2017

Mahanagar Door Sanchar Bhawan, Jawahar Lal Nehru Marg, New Delhi – 110002

INTRODUCTION

1. The Telecom Regulatory Authority of India (TRAI), *suo moto*, has taken up the issue of Set Top Box (STB) interoperability in the Indian broadcasting TV sector. A STB is a device that is required to receive the digital TV broadcasting services by the subscribers. The STB receives encrypted TV signals, decrypts those signals into a form that can be viewed on a TV set. For reception of Pay TV services, the STB enables the subscriber to view the TV channels authorized by its service provider.
2. Presently, Distribution Platform Operator (DPO) provides STB, which is compatible with his network, to provide services to subscriber. Over a period of time, variety of technologies has been deployed by DPOs into the networks. It has led to a situation where STBs provided by one operator are not compatible with the system of the other operator. This impedes portability of a subscriber from one operator to another in case he wishes to do so.
3. In the perspective of subscribers, provision of switch-over from one operator to another without replacing the STB is known as technical interoperability, whereby the same STB can be used by the subscriber for availing the services of any other operator after authorization from that operator.
4. Recognizing the significance of choice to the subscribers to change their service provider, TRAI had earlier issued a pre-consultation paper on 4th April 2016 to identify various issues relating to technical interoperability of STBs, challenges and concerns of the industry. The said paper was released with intent to drive the focus of the TV broadcasting industry towards the suitable practical solutions for technical interoperability of STBs. In response to the pre-consultation paper a total of 28 comments were received from stakeholders. These comments are available on TRAI's website www.traigov.in.
5. Also, TRAI approached various academia & research organisations to collaborate with them to find solutions for interoperability of STB. In response, IIT-Bombay came onboard and has been working on the issue. IIT Bombay was independently charged with studying the feasibility of open STBs and suggest possible paths towards its implementation. This study concluded that open STBs are indeed feasible and recommended that a program towards its implementation should be undertaken. They suggested an open STB architecture consisting of a secure communication channel between the open STB and the operator

dependent CAS module based on asymmetric cryptography. The keys for such a system are to be managed by a central trusted authority.

6. In parallel, Centre for Development of Telematics (C-DOT), the telecom technology development centre of the Government of India, came up with a framework for interoperable STBs based on Smart Card. Approaches suggested independently by IIT Bombay, and the architecture independently developed by C-DOT have strong similarities.

7. TRAI released the said framework (developed by C-DOT) in form of a consultation note on “Solution Architecture for Technically Interoperable Set Top Box” on its website on 11th August 2017 for gathering response of the entire sector. Stakeholders were requested to provide their comments on the solution architecture by 25th August 2017. A total of 19 comments have been received & uploaded on TRAI’s website.

8. TRAI’s objective is to chalk out a framework to facilitate consumer choice, innovation, orderly growth and healthy competition in the industry. The framework should enable an ecosystem to give the market a chance to evolve at its own pace and independently respond to consumer demands. To meet the said objective, TRAI is organising a workshop on proposed solution architecture for interoperable STBs. This workshop has been organised to deliberate on the proposed architecture solution. TRAI has also contemplated to launch a pilot project with a short-term objective of development of a prototype of the interoperable STB & compatible Smart cards. Interested stakeholders are encouraged to join the said workshop and be the part of the pilot project.

9. The workshop will be held in Delhi on **26th September 2017** from 2.00 PM to 5.30 PM at **“Gulmohar” Habitat World, India Habitat Centre, Lodhi Road, New Delhi-110003 (Entry from gate number 3 on Vardhman Marg)**.

THE INTEROPERABILITY FRAMEWORK

1. In this framework, STB interoperability is attained by embedding the proprietary conditional access functionality only in Smart Card and making the STB a generic device. The interoperable STB would have an open architecture containing operator configurable blocks and the configuration of those blocks would be done through the Smart Card/ Over the Air (OTA).
2. Each operator will have their own Smart Cards that will be compatible with the interoperable STBs. The subscriber would require buying a new Smart Card in case he/she wishes to change his/her service provider due to any reasons. He/ She would not require buying a new STB. The framework also ensures that existing STBs deployed in the networks will continue to work without any interruption.
3. The framework envisages an establishment of a Trusted Authority (TA). The TA will be responsible for issue of authentication codes to STB manufacturers as well as to operators. STB manufacturers and Operators would be required to apply for getting an authentication code from the TA. Using these authentication codes, the STB manufacturer and the operators, at the manufacturing stage, would fuse the STBs and smart cards with some individual secure keys.
4. Complete details of the proposed architecture, as provided by C-DOT are available on TRAI's website as an annexure to the consultation note on "Solution Architecture for Technically Interoperable Set Top Box" released on 11th August 2017.

AIM OF WORKSHOP

5. To fulfil the ultimate goal of bringing STB interoperability in the country, it is important that the framework for such interoperability addresses reasonable concerns of the stakeholders. After the release of C-DOT's solution architecture for STB interoperability, TRAI has received the concerns and views of the stakeholders. Keeping them in mind, TRAI now aims to launch a pilot project with an objective of development of a prototype of the interoperable STBs & compatible Smart cards. Stakeholders are encouraged to join the pilot. The workshop has been organised to discuss the feasibility of this pilot with the stakeholders. Objectives of the pilot are:

- (a) Demonstrate that separation of STB & operator specific CAS functionality is possible in a secure manner.
- (b) Frame out & test the specifications for interoperable STBs & SCs in real life conditions, and suggest improvements.
- (c) Jointly develop a business model that fairly allocates value to each provider.
- (d) Fine tune the architecture proposed by C-DOT and finalize the specifications based on pilot.
- (e) Test out integrated and swapping of SCs with STBs in a fully secure manner.

WHO SHOULD PARTICIPATE

- (a) Entities of broadcasting sector: CAS providers, SoC vendors, Middleware providers, STB manufacturers and Service providers like Broadcasters, Multi System Operators, HITS Operators, Cable Operators, DTH Operators etc.
- (b) Smart Card Based Solution Providers:
- (c) Certification Authorities.
- (d) Any start-ups & entrepreneurs willing to work in this field.

HOW TO PARTICIPATE

6. Interested entities (company, proprietorship, societies, non-profits, etc.) can register to attend this workshop on TRAI's website (under the "WORSHOP" field) with the following details latest by **21st September 2017**:

- (a) Name
- (b) Organization Name
- (c) Email
- (d) Mobile
- (e) Address
- (f) State
- (g) Country

In case of any clarification/information, Shri Sunil Kumar Singhal, Advisor (B&CS) may be contacted at Tel. No.: +91-11-23221509, Fax: +91-11-23220442. 011-23220209.