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August 25, 2017

Mr. Sunil Kumar Singhal,
Advisor (B&CS),
Telecom Regulatory Authority of India (TRAI),
Mahanagar Doorsanchar Bhawan,
Jawahar lal Nehru Marg,
Old Minto Road,
New Delhi – 110 002

Subject: Comments on the Consultation Note on "Solution Architecture for Technical Interoperability of Set Top Boxes" for digital television broadcasting services, issued by the TRAI on August 11, 2017 ("**Consultation Note**").

Dear Sir,

This is with reference to Consultation Note. In this regard, please find enclosed our comments on the issues arising for consultation.

The same are for your kind perusal and consideration.

Yours sincerely,

For Sony Pictures Networks India Private Limited

25/8/17

Authorised Signatory

Encl: As above

CONSULTATION NOTE ON "SOLUTION ARCHITECTURE FOR TECHNICAL INTEROPERABLE SET TOP BOXES" FOR DIGITAL TELEVISION BROADCASTING SERVICES DATED AUGUST 11, 2017

TO

THE TELECOM REGULATORY AUTHORITY OF INDIA

FOR AND ON BEHALF OF

SONY PICTURES NETWORKS INDIA PVT. LTD.

Dated: August 25, 2017

We welcome the initiate taken by the Telecom Regulatory Authority of India (TRAI) in issuance of the Consultation Note on "Solution Architecture for Technical Interoperable Set Top Boxes" ("**Consultation Note**"), and seeking comments from the stakeholders on the proposed solution architecture framework. We have provided our thoughts on the Consultation Note herein below for your kind perusal.

With the completion of the digitization process by the Ministry of Information and Broadcasting (MIB), digital television has undergone a major transition in India. Even though Digital Addressable System (DAS) is implemented now, there are several issues like non- encryption, CAS & SMS integration and non-availability of Set Top Boxes (STBs) hindering the smooth functioning. Also, we face a clear absence of standards in video distribution eco system. Due to this, the interoperability of STBs across the platforms can become a non-starter.

As detailed in the Consultation Note, following are the five major reasons/ hindrances in operationalization of interoperability of STBs in India.

→ Different encryptions of EMM/ECM across the platforms:

- Algorithms used for ECM/EMM encryption are not standardized. When the relevant decryption algorithm is embedded in the CA module of the STB, it cannot be open architecture or interoperable across different networks using different CA systems.

- Currently there are a huge number of Chinese products (CAS vendors) operational in the market and sadly, they are not being monitored by any Government agencies for quality/feature/standards at any level. They are free to introduce their products at their whims and fancies. Broadcasters have only name-sake control in terms of system validation. In the validation process, the reports, capabilities which are detailed in Schedule I are verified which are basic features resulting in the inclusion of any sub-standard systems in their product.

- Prescription of standards for encrypting EMM/ECM therefore lies with the TRAI. Kindly note, we are discussing the interoperability at the time, when almost 80-90% of STB penetration is done or underway. Revisiting these boxes for software upgrade or physical swap means a cost to the MSO.

- Each CA vendor has his own encryption keys for ECM/EMM, which makes it difficult to switch service providers.

→ Different Operating Systems (OS)/ Middleware and other devices:

- OS of a STB controls entire functioning of the device. Every OEMs (Original Equipment Manufacturer) has unique architecture. These OS processes Service Information (SI) which in turn makes the box user friendly.

- Even if we manage to make STBs compatible for encryption of EMM/ECMs, the EPG (Electronic Program Guide) middle ware varies with each platforms. Without proper EPG Middleware, STB can't identify the new service provider's signals.

- Middleware opens up User to Multi screens, Network DVR or VOD and such other value added services of that particular platform. The moment consumer swaps his service provider, box should identify the new operator using middleware, which we see as a major roadblock.

→ Different Modulation Standards:

- Cable Television (read as Cable Distribution Head-Ends) uses QAM Modulation (Quadrature Amplitude Modulation) and Satellite Television (read as DTH) uses QPSK (Quadrature Phase Shift Keying) modulation. Since both are working on a different architecture, specific STBs are required to modulate the signals.

- Making each STB compatible for both the modulations may be costlier affair at this stage of implementation

→ Different Compression Standards:

- When we embraced digitisation, our platforms were designed for MPEG2 compression standard, as the cable enjoys a large spectrum of bandwidth. But, over the years, the number of channels have increased and DTH also faces major bandwidth crunch, DPOs are changing to MPEG4 compression.

- But MPEG2 STBs can't take MPEG4 signals. This becomes a major hindrance in the given scenario.

So, in the absence of the proper standards, flexibility and the openness of any system will remain at risk.

Even methods of interoperability like CAM (Conditional Access Module)/ Cable Card or Downloadable CAS (D CAS) are not yet popular as they have inherent problems in making them universal.

→ Content Security/ Risk of Piracy:

- Content Owners (Broadcasters) demand protection against piracy of their intellectual property and require that content licensees (DPOs) take steps to prevent security breaches.

- In interoperable environment, STB needs enhanced security features. The ultimate security goal of the device manufacturer is to raise the cost of hacking to a level where the hacker's window of opportunity to profit from piracy is diminished, if not entirely eliminated.

- Security requirements of these set-top box systems can be broadly defined as, a) protecting conditional access systems, b) meeting compliances and robustness rules, and c) Security bridging (secure transcoding, transcription and usage rights mapping).

- Cloning of cards to be prevented.

In the present digital environment, it is difficult to achieve interoperability in India. Instead of helping in protecting consumer interest, this move will create chaos, rampant piracy and under-declaration of subscriber numbers by operators.

Even though the concept is good and affordable when implemented properly, present situation doesn't permit the same.

C-Dot frame work for STB interoperability is appealing, but actual implementation and practical issues faced are to be evaluated thoroughly.

We are happy to note that the commercial interoperability has already been stipulated for all the DTH operators and digital MSOs by TRAI. Under the regulations notified by TRAI, a consumer can procure the STBs on payment of security deposit and monthly rental and in case a consumer is not satisfied with the service of a particular service provider i.e. DTH or MSO, he/she can switch over his digital service provider by returning the STB and claiming refund of the security after a small deduction of depreciation of STB which also has been stipulated by TRAI. We are given to believe that the commercial interoperability is working well on the ground and provides a viable exit option for the consumers.

Hence in our view, commercial interoperability should be the way forward. It is fast, economical and security of content is not compromised.

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