INDIAN BROADCASTING FOUNDATION'S ("IBF") PRELIMINARY RESPONSE TO TRAI's DRAFT TELECOMMUNICATION (BROADCASTING AND CABLE) SERVICES INTERCONNECTION (ADDRESSABLE SYSTEMS) (AMENDMENT) REGULATIONS, 2019 (___ of 2019)

We thank the Telecom Regulatory Authority of India (TRAI) for providing the opportunity to participate on this consultation process regarding the draft Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Amendment) Regulations, 2019 (___ of 2019). We hope that the submissions being made herein by us shall be considered favorably by TRAI while evaluating changes to be incorporated in Schedule – III to Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations dated 03.03.2017.

Please see below our comments / response to the draft Second Amendment to draft Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Amendment) Regulations, 2019 (___ of 2019):

Draft

TO BE PUBLISHED IN THE GAZETTE OF INDIA, EXTRAORDINARY, PART III, SECTION 4
TELECOM REGULATORY AUTHORITY OF INDIA

NOTIFICATION

THE TELECOMMUNICATION (BROADCASTING AND CABLE) SERVICES INTERCONNECTION (ADDRESSABLE SYSTEMS) (AMEN *9th September 2019*

2019

(___ of 2019)

New Delhi, 27/08/2019

F. No. 21-6/2019-B&CS.— In exercise of the powers conferred by section 36, read with subclauses (ii), (iii) and (iv) of clause (b) of sub-section (1) of section 11 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), read with notification of the Central Government, in the Ministry of Communication and Information Technology (Department of Telecommunications), No. 39, —

(a) issued, in exercise of the powers conferred upon the Central Government under clause (d) of sub-section (1) of section 11 and proviso to clause (k) of sub-section (1) of section 2 of the said Act, and

(b) published under notification No. S.O.44 (E) and 45 (E) dated the 9th January, 2004 in the Gazette of India, Extraordinary, Part II, Section 3,—

the Telecom Regulatory Authority of India hereby makes the following regulations to amend the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017 (1 of 2017), namely:-

1. (1) These regulations may be called the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Amendment) Regulations, 2019 (___ of 2019).

(2) They shall come into force from the date of their publication in the Official Gazette.

2. For Schedule III of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017, the following schedule shall be substituted, namely:-

"**Schedule III**

(Refer sub-regulation (6) of the regulation 10 and regulation 15)

Scope and Scheduling of Audit

(A) Scope: The annual Audit caused by Distributor shall include the Audit in compliance with this Schedule and the Subscription Audit.

Recommended Revision:

The annual Audit caused by Distributor shall include the Audit to validate compliance with this Schedule and the Subscription Audit.

Recommended Explanation:

(i) Detailed audit methodology / steps provided in Audit Manual read with provisions of the interconnection agreement to be followed.

(ii) The empanelled auditor shall have the right to seek / obtain directly any data / information / declaration from CAS / DRM and SMS vendors regarding audit requirements.

(iii) Empanelled auditor shall have access to complete and unaltered data & logs of the DPO's systems in the audits caused either by DPO or by Broadcaster. There should not be any filtering of data by DPO from CAS and SMS server for any reason whatsoever till the Audit report is prepared and released by the Auditor.

(B) Scheduling: The annual Audit caused by Distributor shall be scheduled in such a manner that there is a gap of at-least six months between the audit of two consecutive calendar years.

Recommended revision:

The annual Audit as caused by Distributor under regulation 15 (1) shall be scheduled in such a manner that there is a gap of at-least six months between the Distributor Audit over two consecutive calendar years, and the Distributor audit shall include all the relevant distributor's group companies, joint ventures and affiliates. Further there should not be a gap of more than 12 months between audits of two consecutive calendar years*. On intimation by the auditor or the broadcaster, the DPO shall ensure that Distributor audit commences

within 7 (seven) days and is completed with 15 (fifteen) days of the audit commencement date. TRAI must take immediate deterrent action against DPOs who fail to comply with the above.

**Justification: Wording in proposed amendment takes care of erroneous situation where DPO causes audits in two consecutive months (December of first calendar year and January of second calendar year). However, this does not take care of the other undesirous situation where DPO causes audit in January of first calendar year and then causes next audit in December of second calendar year i.e. there is a gap of 23 months between two consecutive audits. This long gap if allowed is detrimental to the interest of broadcasters for revenue assurance.*

For example: First audit January 2020. Second Audit December 2021. Gap = 23 months.

Addressable Systems Requirements

(C) Headend and other retransmission equipment: (New section to be inserted in Schedule III)

1. All channels and frequencies re-transmitted by DPO should always (24×7×365) be in encrypted mode and DPO should implement necessary and sufficient methods that all channels and frequencies re-transmitted/configured in Digital Headend should reach at STB in encrypted mode only. The STB should be able to decrypt ONLY those channels / frequencies which were authorized by SMS, CAS and for the period for which they are authorised by CAS and SMS.

2. All transport streams configured at Multiplexer end (which has been audited by empanelled auditor) in DPO's Digital control room should reach STB without any alteration / modification / addition / deletion of TS configuration or addition of new TS in field.
   Explanation: DPO should implement sufficient methods to ensure that LCO or any person in field should not add / alter TS configuration to insert any channel in TS.

3. Each channel and frequency configured in CAS / SMS / Mux should have unique LCN. There should not be any channel feed which is configured on more than any LCN.

4. The Channel name mapped with service ID configured in SMS & CAS should have same audio/video of particular channel feed configured in Mux. The same should also be available in historical logs.
   Explanation: DPO should implement controls to ensure that Channel name configured in SMS, CAS and same channel audio/video to be configured in Mux with unique LCN only.

5. Logs should be generated for any transaction/configuration or any kind of activity done on Mux. All such logs should be generated mandatorily in un-editable format and Mux vendor should not provide any access to and by itself should not change/edit those logs.

6. EIT table or any other configuration table used for configuration of EPG should have same channel name and in the same format which has been defined in CAS/SMS configuration where channel name is stored

7. Each and every channel should have unique ECM PID. The CAS and Multiplexer should not have provision to configure one ECM PID for multiple channels.

8. DPO should configure and pass same service provider name in all Transport stream configured in control room. Also, NIT information should be pass in all Transport streams, in case any change DPO shall inform to Broadcasters.

(C) Conditional Access System (CAS) and Subscriber Management System (SMS):

1. The distributor of television channels shall ensure that the current version of the CAS, in use, do not have any history of hacking.
   Explanation: A written declaration available with the distributor from the CAS vendor, in this regard, shall be construed as compliance of this requirement.

   Recommended Revision:
   The distributor of television channels shall ensure that the current version of the CAS, in use, does not have any history of hacking. In the event hacking of the CAS system is detected, then the same shall be intimated by CAS vendor to DPO and TRAI, and in-turn by DPO to all relevant broadcasters for impact assessment as well as remedial action with a copy to TRAI. Instance of hacking shall include but not limited to cloning of STBs and/or VCs.

   Recommended Explanation:
   As a compliance of this requirement, a written declaration should be available with the distributor from the CAS vendor. In addition to the written declaration, any software upgrade (incorporation of new patches and CW (control word) algorithm) must be updated on a monthly basis in the CAS/ IP QAM. Further, such updates should be published by the DPO on the DPO's website to ensure transparency.

2. The SMS shall be independently capable of generating, recording, and maintaining logs, for the period of at least immediately preceding two consecutive years, corresponding to each command executed in the SMS including but not limited to activation and deactivation commands.
3. It shall not be possible to alter the data and logs recorded in the CAS and the SMS.

4. The distributor of television channels shall validate that the CAS, in use, do not have facility to activate and deactivate a Set Top Box (STB) directly from the CAS terminal. All activation and deactivation of STBs shall be done with the commands of the SMS.

5. The SMS and the CAS should be integrated in such a manner that activation and deactivation of STB happen simultaneously in both the systems.
   Explanation: Necessary and sufficient methods shall be put in place so that each activation and deactivation of STBs is reflected in the reports generated from the SMS and the CAS terminals.

6. The distributor of television channels shall validate that the CAS has the capability of upgrading STBs over-the-air (OTA), so that the connected STBs can be upgraded. The fingerprinting should not get invalidated by use of any device or software.

7. The fingerprinting should not get invalidated by use of any device or software.

8. The CAS and the SMS should be able to activate or deactivate services or STBs of at least Five percent (5%) of the subscriber base of the distributor within 24 hours.

9. The STB and Viewing Card (VC) shall be paired from the SMS to ensure security of the channel.

10. The CAS and SMS should be capable of individually addressing subscribers, for the purpose of generating the reports, on channel by channel and STB by STB basis.

11. The SMS should be computerized and capable of recording the vital information and data concerning the subscribers such as:

    (a) Unique customer identification (ID)
    (b) Subscription contract number
    (c) Name of the subscriber
    (d) Billing address

    Recommended Revision: Billing address with PIN, City, District and State.
    [Recommended Explanation: PIN Code, City, District and State-wise column identifiers are available in all SMS systems & included in CAF forms. Further, in any event, such data is maintained and may be required to be maintained in terms of interconnection agreement between broadcaster and DPO. Hence, the same shall be added.]
    (e) Installation address
    (f) Landline telephone number
    (g) Mobile telephone number

(h) E-mail address

(i) Channels, bouquets and services subscribed

(j) Unique STB number

(k) Unique VC number.

12. The SMS should be capable of:

a. Viewing and printing of historical data in terms of the activations and the deactivations of STBs

Recommended Revision: Viewing and printing of historical data in terms of the activations and the deactivations of STBs which are extracted directly from live database of all servers

b. Locating each and every STB and VC installed.

c. Generating historical data of changes in the subscriptions for each subscriber and the corresponding source of requests made by the subscriber.

13. The SMS should be capable of generating reports, at any desired time about:

Recommended revision: The SMS should be capable of generating reports in un-editable format/pdf and in addition, in excel or csv format, at any desired time about:

(i) The total number of registered subscribers.

(ii) The total number of active subscribers.

(iii) The total number of temporary suspended subscribers.

(iv) The total number of deactivated subscribers.

(v) List of blacklisted STBs in the system.

(vi) Channel and bouquet wise monthly subscription report in the prescribed format.

(vii) The names of the channels forming part of each bouquet.

(viii) The total number of active subscribers subscribing to a particular channel or bouquet at a given time.

(ix) The name of a-la carte channel and bouquet subscribed by a subscriber.

Recommended Revision:

(x) The ageing report of active and de-active for subscription of a particular channel or bouquet.

(xi) The total number of active STBs for testing/demo purpose and should reflect in total active STB report.

(xii) The total number of active subscribers with multiple STBs.

(xiii) The total number and details of white list STB/VC from SMS.

(xiv) The CAS should have historical SID and Product ID mapping detail.

(xv) Channel to package mapping along with service ID including for Historical period

(xvi) Channel to package mapping / composition logs

(xvii) Complete pack activation /deactivation logs.

(xviii) SMS should be able to maintain all historical monthly packages/Bouquet Logs including alteration logs, when the packages/bouquets are modified

Recommended Explanation to (xv) to (xviii):DPOs provide the monthly subscriber report inter-alia for each bouquet/package, however they do not maintain the alteration logs for the same, in absence of such alteration logs auditors will not be able to ascertain the actual subscriber count before such modification being effectuated. Also, DPOs generally insist that they would provide logs by truncating the same however, truncated logs contain incomplete data and is susceptible to be misused by DPOs. Also, veracity of truncated logs will always be doubtful.)

14. The CAS shall be independently capable of generating, recording, and maintaining logs, for the period of at least immediate preceding two consecutive years, corresponding to each command executed in the CAS including but not limited to activation and deactivation commands issued by the SMS.

Recommended Revision:
The CAS shall be independently capable of generating, recording, and maintaining logs (including with user level and command level configuration), for the period of at least immediately preceding two consecutive years, corresponding to each command executed in the CAS including but not limited to activation, deactivation and changes in package composition commands issued by the SMS.

15. The CAS shall be able to tag and blacklist VC numbers and STB numbers that have been involved in piracy in the past to ensure that such VC or the STB cannot be re-deployed.

16. It shall be possible to generate the following reports from the logs of the CAS:

Recommended Revision:
It shall be possible to generate the following reports from the CAS:

a. STB-VC Pairing / De-Pairing
b. STB/VC Activation / De-activation
c. Channels Assignment to STB
d. Report of the activations or the deactivations of a particular channel for a given period.

Recommended revision:

Report of the activations or the deactivations of a particular channel/s and changes in the list of channels constituting a package for a given period.

e. Historical and current mapping of all SID's with channel detail
f. Detail of white list STB/VC.
g. Historical alteration of product (package channel composition) detail
h. The total number of deactivated STB/VC.
i. List of blacklisted STBs in the system.
j. Channel to package mapping along with service ID including Historical period
k. Channel to package mapping / composition logs
l. Complete pack activation /deactivation logs.

Recommended Explanation to (j.) to (l):DPOs provide the monthly subscriber report inter-alia for each bouquet/package, however they do not maintain the alteration logs for the same, in absence of such alteration logs auditors will not be able to ascertain the actual subscriber count before such modification being effectuated. Also, DPOs generally insist that they would provide logs by truncating the same however, truncated logs contain incomplete data and is susceptible to be misused by DPOs. Also, veracity of truncated logs will always be doubtful.)

17. The SMS shall be capable of generating bills for each subscriber with itemized details such as the number of channels subscribed, the network capacity fee for the channels subscribed, the rental amount for the customer premises equipment, charges for pay channel and bouquet of pay channels along with the list and retail price of corresponding pay channels and bouquet of pay channels, taxes etc.
18. The distributor shall ensure that the CAS and SMS vendors have the technical capability in India to maintain the systems on 24×7 basis throughout the year.

Recommended Revision:
The distributor shall ensure that the CAS and SMS vendors have the technical capability in India to maintain the systems on 24×7 basis throughout the year**.** The DPO to maintain CAS and SMS downtime records along with MTBF (Mean Time Between Failure) and MTTR (Mean Time To Restore) validated by CAS and SMS vendors.

19. The distributor of television channels shall declare the details of the CAS and the SMS deployed for distribution of channels. In case of deployment of any additional CAS/ SMS, the same should be notified to the broadcasters by the distributor.
20. Upon deactivation of any subscriber from the SMS, all programme/ services shall be denied to that subscriber.
21. The distributor of television channels shall preserve unedited data of the CAS and the SMS for at least two years.

(E) Fingerprinting:

1. The distributor of television channels shall ensure that it has systems, processes and controls in place to run finger printing at regular intervals.
2. ***Recommend point 2 to be included*:** Finger printing must be video embedded by all DPOs at a subscriber level. Further such finger printing should be detectable through STBs when upgraded through OTA.
3. The STB should support both visible and covert types of finger printing.

   Provided that only the STB deployed after coming into effect of these regulations shall support the covert finger printing.

   Recommended revision: The STB should support both visible, covert types of finger printing and forensic watermarks.

   Provided that only the STB deployed after coming into effect of these regulations shall support the covert finger printing **AND,**

   Provided further that all the STBs deployed shall support covert fingerprinting for all pay channels by sunset date of 1st July 2020.
4. The fingerprinting should not get invalidated by use of any device or software.
5. The finger printing should not be removable by pressing any key on the remote of STB.
6. The finger printing should be on the top most layer of the video.
7. The finger printing should be such that it can identify the unique STB number or the unique VC number.
8. The finger printing should appear on the screens in all scenarios, such as menu, Electronic Programme Guide (EPG), Settings, blank screen, and games etc.
9. The location, font colour and background colour of fingerprint should be changeable from head end and should be random on the viewing device.
10. The finger printing should be able to give the numbers of characters as to identify the unique STB and/or the VC.
11. The finger printing should be possible on global as well as on the individual STB basis.
12. The overt finger printing should be displayed by the distributor of television channels without any alteration with regard to the time, location, duration and frequency.
13. Scroll messaging should be only available in the lower part of the screen

Recommended revision:

Scroll messaging should be only available in the lower part of the screen and should have feature to schedule scroll with duration of display, interval and number of repetition

14. The STB should have a provision that finger printing is never disabled.
15. The watermarking network logo for all pay channels shall be inserted at encoder end only. Provided that only the encoders deployed after coming into effect of these regulations shall support watermarking network logo for all pay channels at the encoder end.

Recommended Revision:

The watermarking network logo for all pay channels shall be inserted at encoder end only.

Provided that only the encoders deployed after coming into effect of these regulations shall support watermarking network logo for all pay channels at the encoder end. AND
Provided further, that all the encoders deployed shall support watermarking network logo for all pay channels at the encoder end by sunset date of 1st July 2020.

(F) Set Top Box (STB):

1. All STBs should have a Conditional Access System or Digital Rights Management (DRM) for content protection.
2. The STB should be capable of decrypting the Conditional Access messages inserted by the Head-end. In case of DRM, the STB should be capable of decrypting the messages inserted by the DRM.
3. The STB should be capable of doing finger printing. The STB should support both Entitlement Control Message (ECM) and Entitlement Management Message (EMM) based fingerprinting. In case of DRM, the STB should also be capable of doing finger printing and the STB should support both particular channel wise and all channel fingerprinting commands.
4. The STB should be individually addressable from the Head-end. In case of DRM, the STB should be individually addressable from the SMS/DRM.
5. The STB should be able to receive messages from the Head-end. In case of DRM, the STB should be able to receive messages from the SMS/DRM.
6. The messaging character length should be minimal 120 characters.
7. There should be provision for global messaging, group messaging and the individual STB messaging.
8. The STB should have forced messaging capability including forced finger printing display.
9. The STB must be compliant to the applicable Bureau of Indian Standards.
10. The STBs should be addressable over the air to facilitate OTA software upgrade.
11. The STBs with facilities for recording the programs shall have a copy protection system.

Recommended Additions:

12. The STBs must be geo tagged.
13. The STBs should have copy protection system on its analog and digital outputs (Macro vision 7, High Bandwidth digital content protection (HDCP) & Digital Transmission content protection (DTCP) to curb piracy.
14. The STB should have any only input and output as per DVB C standard only.
15. The STBs with facilities for recording the linear content shall have following protection:
    a Content should get recorded along with finger printing, scroll message and water marking logo
    b Live finger printing and scroll message should display on play out of recorded content
    c The linear channel content should get recorded along with entitlement of particular channel and recorded channel should get disable in case particular channel is deactivated.

d Recorded content should not be able to play out on any device including STB except for authorized STB from where content get recorded.

(G) Digital Rights Management and Subscriber Management System (SMS)

1. The distributor of television channels shall ensure that the current version of the DRM, in use, do not have any history of hacking.
Explanation: A written declaration available with the distributor from the DRM vendor, in this regard, shall be construed as compliance of this requirement.

Recommended revision:
The distributor of television channels shall ensure that the current version of the DRM, in use, do not have any history of hacking. In the event hacking of the DRM system is detected, such as, but not limited to cloning of STBs and/or VCs, the DRM vendor to be served a show cause notice as to why it should not be blacklisted with immediate effect. In the event of continued default beyond 7 days, the DPO shall be liable to pay 150% of preceding month's billed amount.

2. *Explanation*: A written declaration available with the distributor from the DRM vendor, in this regard, shall be construed as compliance of this requirement. The SMS shall be independently capable of generating, recording, and maintaining logs, for the period of at least immediately preceding two consecutive years, corresponding to each command executed in the SMS including but not limited to activation and deactivation commands.
3. It shall not be possible to alter the data and logs recorded in the DRM and the SMS.
4. The distributor of television channels shall validate that the DRM, in use, do not have facility to activate and deactivate a Set Top Box (STB) directly from the DRM terminal. All activation and deactivation of STBs shall be done with the commands of the SMS.
5. The SMS and the DRM should be integrated in such a manner that activation and deactivation of STB happen simultaneously in both the systems.
Explanation: Necessary and sufficient methods shall be put in place so that each activation and deactivation of STBs is reflected in the reports generated from the SMS and the DRM terminals.
6. The distributor of television channels shall validate that the DRM has the capability of upgrading STBs over-the-air (OTA), so that the connected STBs can be upgraded.
7. The DRM and the SMS should be able to activate or deactivate services or STBs of at least 10% of the subscriber base of the distributor within 24 hours.
8. The DRM and SMS should be capable of individually addressing subscribers, for the purpose of generating the reports, on channel by channel and STB by STB basis.
9. The SMS should be computerized and capable of recording the vital information and data concerning the subscribers such as:
    a. Unique customer identification (ID)
    b. Subscription contract number
    c. Name of the subscriber

d. Billing address

Recommended Revision: Billing address with PIN, City, District and State.
[Recommended Explanation: PIN Code, City, District and State-wise column identifiers are available in all SMS systems & included in CAF forms. Further, in any event, such data is maintained and may be required to be maintained in terms of interconnection agreement between broadcaster and DPO. Hence, the same shall be added.]

e. Installation address
f. Landline telephone number
g. Mobile telephone number
h. E-mail address
i. Channels, bouquets and services subscribed
j. Unique STB number (k) Unique VC number.

10. The SMS should be capable of:

a. Viewing and printing of historical data in terms of the activations and the deactivations of STBs.
b. Locating each and every STB installed.

Recommended Revision:

b. Locating each and every STB/VC installed.

c. Generating historical data of changes in the subscriptions for each subscriber and the corresponding source of requests made by the subscriber.

Recommended Additions:

11. The DRM should be configured for IPTV platform only and should not support any other platform like – OTT, Mobile TV & android base any device etc.

12. The IPTV STB should not have feature to support OTT, mobile TV, Android base device & DVB C.

13. The STBs should have Geo blocking feature, forensic water marking.

14. The SMS should be capable of generating reports, at any desired time about:

Recommended Revision:
The SMS should be capable of generating reports in un-editable format, and in addition, in excel or csv format at any desired time about:

(i) The total number of registered subscribers.
(ii) The total number of active subscribers.
(iii) The total number of temporary suspended subscribers.
(iv) The total number of deactivated subscribers.

(v) List of blacklisted STBs in the system.

(vi) Channel and bouquet wise monthly subscription report in the prescribed format.

(vii) The names of the channels forming part of each bouquet.

(viii) The total number of active subscribers subscribing to a particular channel or bouquet at a given time.

(ix) The name of a-la carte channel and bouquet subscribed by a subscriber.

(x) The ageing report for subscription of a particular channel or bouquet.

Recommended Version:

The ageing of active and de-active report for subscription of a particular channel or bouquet.

Recommended Additions:

(xi) The ageing report of active and de-active for subscription of a particular channel or bouquet.

(xii) The total number of active STBs for testing/demo purpose and should reflect in total active STB report.

(xiii) The total number of active subscribers with multiple STBs.

(xiv) The total number and detail of white list STB/VC from SMS.

(xv) Channel to package mapping along with service ID including for Historical period

(xvi) Channel to package mapping / composition logs

15. The DRM shall be independently capable of generating, recording, and maintaining logs, for the period of at least immediate***ly*** preceding two consecutive years, corresponding to each command executed in the DRM including but not limited to activation and deactivation commands issued by the SMS.

Recommended Revision:

The DRM shall be independently capable of generating, recording, and maintaining all (including user level, change of configuration & command level)logs, for the period of at least immediately preceding two consecutive years, corresponding to each command executed in the DRM including but not limited to activation, deactivation, and changes in package composition commands issued by the SMS.

16. The DRM shall be able to tag and blacklist STB ID that has been involved in piracy in the past to ensure that such STB cannot be re-deployed.

Recommended Revision:
The DRM shall be able to tag and blacklist STB ID/VC ID that has been involved in piracy in the past to ensure that such STB and VC cannot be re-deployed.

14. It shall be possible to generate the following reports from DRM:
    a. STB Activation / De-activation
    b. Channels Assignment to STB
    c. Report of the activations or the deactivations of a particular channel for a given period.

    Recommended Additions:

    d. Historical and current mapping of all SID's with channel detail
    e. Detail of white list STB/VC.
    f. Historical alteration of product (package channel composition) detail
    g. The total number of deactivated STB/VC.
    h. List of blacklisted STB's in the system.
    i. Channel to package mapping along with service ID including Historical period
    j. Channel to package mapping / composition logs
    k. Changes in Package composition

15. The SMS shall be capable of generating bills for each subscriber with itemized details such as the number of channels subscribed, the network capacity fee for the channels subscribed, the rental amount for the customer premises equipment, charges for pay channel and bouquet of pay channels along with the list and retail price of corresponding pay channels and bouquet of pay channels, taxes etc.

16. The distributor shall ensure that the DRM and SMS vendors have the technical capability in India to maintain the systems on 24×7 basis throughout the year.

Recommended Revision:
The distributor shall ensure that the DRM and SMS vendors have the technical capability in India to maintain the systems on 24×7 basis throughout the year. In addition, the DPO should maintain DRM and SMS downtime records along with MTBF (Mean Time Between Failure) and MTTR (Mean Time To Restore) validated by CAS and SMS vendors.

17. The distributor of television channels shall declare the details of the DRM and the SMS deployed for distribution of channels. In case of deployment of any additional DRM/ SMS, the same should be notified to the broadcasters by the distributor.
18. Upon deactivation of any subscriber from the SMS, all programme/ services shall be denied to that subscriber.

19. The distributor of television channels shall preserve unedited data of the DRM and the SMS for at least two years."

Recommended Additions:

1. The STBs with facilities for recording the linear content shall have following protection:

(a) Content should get recorded along with finger printing, scroll message and water marking logo

(b) Live finger printing and scroll message should display on play out of recorded content

(c) The linear channel content should get recorded along with entitlement of particular channel and recorded channel should get disable in case particular channel is deactivated.

(d) Recorded content should not be able to play out on any device including STB except for authorized STB from where content get recorded.

(Sunil Kumar Gupta)
Secretary, TRAI

Note.1----- The principal regulations were published in the Gazette of India, extraordinary, Part III, Section 4 vide notification No. 21-4/2016-B&CS dated the 3rd March, 2017.

Note.2----- The Explanatory Memorandum explains the objects and reasons of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) (Amendment) Regulations, 2019.

Explanatory Memorandum

A consultation paper on "Interconnection framework for Broadcasting TV Services distributed through Addressable Systems" was issued by TRAI on 4th May, 2016. This consultation process resulted in notification of the Telecommunication (Broadcasting and Cable) Services Interconnection (Addressable Systems) Regulations, 2017 (1 of 2017) dated the 3rd March, 2017 [herein after referred to as Interconnection Regulations 2017].

2. During the consultation undertaken to prepare the Audit Manual certain comments and observations reflect some issues in the Schedule III of the Interconnection Regulations 2017.

Scheduling of Audit

3. During the comments and discussion on the Draft Audit Manual many stakeholders have suggested that the authority should specify the schedule of audit for DPOs to ensure that the audit is held effectively and in a timely manner. Clause (1) of Regulation 15 of Interconnection regulation provides that a DPO will get audit completed once every year. Stakeholders that are desirous that the Authority may specify the audit schedule refer to the limited availability of auditors and also that if all DPOs chose to get their systems audited during the last quarter of a year, there will be a severe capacity constraint.

4. On the contrary, most of the DPOs have averred that being responsible stakeholders, they will get their systems audited properly and in a time-bound manner in compliance with the regulations. Further that the new audit regime helps the distributors in staving-off unwarranted audits by multiple pay broadcasters. Therefore, it is in their interest that they maintain a current and valid audit compliance all the time.

5. There is another argument as regards the gap between the two audits caused by the DPOs. One of the comment received by TRAI was that it is possible for a DPO to schedule audits of two different calendar years in consecutive months. That is first one in December of current year and next one in January of next calendar year. In such hypothetical cases, the systems of the distributor will remain out of the ambit of audit for a long period of 23 months. Given that audit is an important foundation in establishing the trust-based regime under the new regulatory framework, the authority considers that the annual Audit caused by Distributor shall be scheduled in such a manner that there is a gap of at-least two quarters between the audit of two consecutive calendar years.

Fingerprinting – Support for Overt and Covert fingerprinting in STBs

6. There are issues related to the availability of both overt and covert fingerprinting on all the STBs. Based on industry information, it has been ascertained that not all the deployed STBs provide both types of fingerprinting. Before the Interconnection Regulation 2017, the STBs with overt fingerprinting would suffice to comply with the regulation. Therefore, some of the distributors have represented that the set-top boxes deployed prior to the year 2017 does not support covert fingerprinting as they were not mandated by The Telecommunication (Broadcasting and Cable Services) Interconnection (Digital Addressable Cable Television Systems) Regulations, 2012. The BIS standards also did not mandate both overt and covert fingerprinting.

7. Quite-a-few number of distributors have requested the authority to review the schedule III of Interconnection Regulation 2017 in view of the above-mentioned inconsistency. These stakeholders are of the opinion that the system requirement of covert fingerprinting specified in Interconnection Regulation 2017 should be applicable only on the set-top boxes which are deployed after the coming into effect of the Interconnection Regulation, 2017 and not on the boxes deployed before the regulation. Some stakeholders have opined that given that average life of an STB is around 3 years, all such old STBs will get retired within next two years.

8. Noting the inconsistency, the Authority is of the view that the STB deployed after coming into effect of Interconnection Regulation 2017 should only be mandated to support the covert finger printing.

Transactional capacity of CAS and SMS systems

9. Para 8 of Section A of the Schedule III of the Interconnection Regulations 2017 specifies that, 'The CAS and the SMS should be able to activate or deactivate services or STBs of at least 10% of the subscriber base of the distributor within 24 hours.'

10. While the requirement seems as reasonable, this puts an unwarranted investment on part of certain large DPOs. The issue becomes really alarming for most of the DTH service providers and top four to five MSOs. Each one of these operators have a subscriber base of more than five million customers. Hence, they have requested the authority to review this threshold limit.

11. In general, these large operators do not need to activate/ deactivate/ re-configure more than 1 % of their active subscribers on everyday basis. Therefore, the operators have represented that prescribing to deploy equipment to cater to 10% of activation/ deactivation is uncalled for.

12. However, some stakeholders have suggested that most of the subscribers are on monthly pre-paid packages these days and by the law of averages every customer is required to pay/ recharge once every month and may require to be configured at the SMS level once every month. Therefore, such stakeholders have argued that a minimum of 3.3 % capacity of CAS/ SMS is necessary. The Authority, having examined the issue, considers that the CAS and the SMS should be able to activate or deactivate services or STBs of at least Five percent (5%) of the subscriber base of the distributor within 24 hours.

Watermarking of Network Logo by the DPO

13. The 'watermarking' logo can be inserted at the encoder end before combining of all the signals by a DPO. Alternatively, a DPO can introduce the 'Watermarking' through their middleware provided in the STB.

14. Para 13 of part B of Schedule -III of Interconnection Regulations 2017, states that, 'The watermarking network logo for all pay channels shall be inserted at encoder end only'.

15. Many DPOs have requested TRAI that the 'Watermarking' network logo can be inserted by the encoder itself, only when the encoders have this feature. However, many of encoders deployed currently by such MSOs are part of their legacy system and do not have the provision for water marking logo insertion.

16. Considering the issue and the cost implications on legacy systems, the Authority is of the view that the encoders deployed after coming into effect of Interconnection regulations 2017 should only be mandated to support watermarking network logo for all pay channels at the encoder end.

Digital Rights Management (DRM)

17. DRM is a systematic approach to copyright protection for digital media. The purpose of DRM is to prevent unauthorized redistribution of digital media and restrict the ways consumers can copy content they've purchased. DRM products were developed in response to the rapid increase in online piracy of commercially marketed material, which proliferated through the widespread use of peer-to-peer file exchange programs. Typically, DRM is implemented by embedding code that prevents copying, specifies a time period in which the content can be accessed or limits the number of devices the media can be installed on. DRM technology focuses on making it impossible to steal content in the first place, a more efficient approach to the problem than the hit-and-miss strategies aimed at apprehending online poachers after the fact.

18. The Schedule III of the Interconnection Regulations 2017 does not provide for the requirements / specifications of DRM based systems. The Authority during its consultations on Audit manual received the feedback that owing to its benefits the IPTV based DPOs are switching to DRM technology. It is necessary that the Audit regime covers the DRM based networks and provides for enabling provisions for such operators. Accordingly, the Authority considers it necessary to include DRM specifications in Schedule III.

19. Accordingly, Schedule III of the Interconnection Regulations 2017 dated the 3rd March, 2017 has been amended.