

**COMMENTS ON TRAI CONSULTATION PAPER ON**  
**REGISTER OF INTERCONNECTION**  
**AGREEMENTS REGULATIONS, 2019**

Lt Col VC Khare (Retd), Cable TV industry Observer

**Introduction**

While Cable TV Networking has assumed proportions of BROADCAST over wireline medium, Govt of India has NOT yet accorded broadcast(point to multipoint electronic transmission using wireless RF spectrum over a medium including but NOT limited to wireless) status to this facility.

Broadcaster, wireless/wireline provides content to Headend Service Provider(HSP), a better term than MSO in DAS environment, either concluding Inter Connect Offers directly or through their aggregators. The HSP has to be registered with the MIB to operate a DAS Headend . At the headend, the content, PAY or FTV(Free to Viewer) is turned around ( encoded, encrypted, multiplexed, modulated and combined), and made addressable /controlled by SMS(Subscriber Management System). The addressability is enabled by a computer system combo (CAS+SMS); SMS acting as frontend and CAS as backend. Such Digitally addressable multi-program, multi-channel transport stream is delivered in proximity of a Cable Operator's Network(Cable Operator is one who is registered for wireline distribution of digitally addressable program stream to subscribers and is registered for this purpose with the Department of Posts) to deliver the program stream to the Subscriber through a digitally addressable STB(Set Top Box).

Cable TV Networks (a) operate over 5-862 MHz RF Spectrum(5-40 MHz upstream and 47-862 MHz down Stream) (b)started delivering ONE Program per Channel(7-8 wide MHz RF space in the Spectrum facilitating transmission of 106 channels) and thus CHANNEL (not defined anywhere in the glossary of Cable TV Act or TRAI Regulations) became synonymous with PROGRAM, and continues to be mis-connoted (c) compress 10 to 24 programs per channel in digital delivery of TV content over CATV networks mandated to be digitally addressable implying encryption and authorized viewing over a domestic Television Receiver through a digitally addressable Set Top Box (STB) (d) are a point to multi-point RF communication(like broadcast over the air) over wireline medium (largely uni-directional like BROADCAST) but with capability for upgrade to bi-directional communication.

So! Un-encrypted, non-addressable television broadcast (by BROADCASTERS) over the air is deemed Broadcast by the MIB, but Digitally Addressable broadcast of same TV content over wireline medium is NOT considered Broadcast. The implication, therefore, is that despite BROADCAST being a Central Govt Subject (and cable TV fulfilling the definition of TV broadcast) this service is left to State Govts to administer and LEVY entertainment tax (a state Govt prerogative) and hence leads to little or no interest in DAS implementation by the State Govts.

Most Prasar Bharti television broadcasts are **Free to Viewer** and hence do not attract levy of entertainment tax by State Govts. TV over IP wireline broadcasts by TELCOs too do NOT attract entertainment tax since telecommunication is a Central Govt Subject and hence State Govts lack jurisdiction over that service.

**COMMENTS ON TRAI CONSULTATION PAPER ON**  
**REGISTER OF INTERCONNECTION**  
**AGREEMENTS REGULATIONS, 2019**

Lt Col VC Khare (Retd), Cable TV industry Observer

Cable TV operates under a legislated statute (unlike broadcasting without a statute in India but is NOT questioned being Govt Owned/Approved) and also contains element of PAY content, besides Free to Viewer, and hence has been imposed Entertainment Tax by State Govts as a revenue source.

Further, PAY TV content is that for which HSP (Headend Service Provider; a better term than popular and prevalent MSO) pays to Broadcaster, at rates per subscriber per month per program as per a B2B agreement called INTERCONNECT OFFER (ICO) which shrouds provisions for addressability ( a facility to enable or disable access to content selectively and remotely) by the broadcasters besides security and copy rights.

Broadcasters, both Free to Viewer and PAY content, rely heavily on advertisements, besides subscription revenue flow contracted in the ICO. Hence have an obligation for ensuring that the content reached viewer eyeballs. This required delivery of CLEAR PICTURE AND SOUND up to the farthest point in the wireline networks. But was not feasible in SOME HOW CONNECT networks erection.

Due to **near** total absence of training (compounded with absence of any technical qualifications prescribed for Cable TV networking) coaxial wireline segment of the networks could not meet this requirement since SKIN effect equalization was NOT engineered. On a 0-5 subjective scale( 5-DVD replay Quality, 4-Clear broadcast reception quality, 3-Tolerable and intelligible, 2- Annoying and 1- Audio only), out of 106 analog channels, starting from 47 MHz( lowest end start frequency) to 862 MHz , about 20 scored 4, 30 scored 3, another 20 scored 2, 20 scored 1 and 10 qualified for 0. This result emerged from the phenomenon of SKIN EFFECT in coaxial cable transmissions and could NOT be improved due to lack of training and deliberate design in networks erected by Cable Operators (registered with Deptt of Posts and prohibited from performing any function of a DAS Headend).

HSPs draw the program mapping table in which Broadcasters wanted their programs allocated lower frequency slots for assurance on visibility of advertisements, booked and aired by them, over most visible portions of the network. Hence HSPs got an opportunity for bargaining the mapped slot. That gave rise, ONE, to CARRIAGE FEE/PLACEMENT FEE and TWO, opportunity to HSPs to barter their rates for PAY content in the ICO. Thus Carriage Fee became a counterpoise for arbitrary increases in PAY content rates by Broadcasters.

With proliferation of TV broadcast content, both PAY and FTA, and their licensing by the MIB, necessity arose to create an avenue for such content to reach eyeballs. This was a limitation with DTH(due to paucity of transponders) as well as HITS( that is why HITS operator want to provide only infrastructure platform for PAY content). Cable TV using wireline broadcasting technique over 106 RF channels could compress 10 to 24 programs per RF channel enhancing the carriage capacity from 1060(1:10) to 2544(1:24). Further in Digital transmission a 0-1 state prevails, i.e either all programs are visible through the STB on the TV or nothing is visible.

**COMMENTS ON TRAI CONSULTATION PAPER ON**  
**REGISTER OF INTERCONNECTION**  
**AGREEMENTS REGULATIONS, 2019**

Lt Col VC Khare (Retd), Cable TV industry Observer

This technically eliminates the need for visibility based placement malpractice of Carriage Fee. But TRAI, seemingly under influence of Broadcasters, has gone about regularising this practice contrary to the provision of Cable Act and Rules.

By reading the consultation paper, the centre point of the consultation **appears to be** addressing the **CARRIAGE FEE** phenomenon **for the Broadcasters**, in particular, and **MIS** in general.

Coming to placement fee, this largely pertains to lack of understanding of DVB and MPEG. In statistical multiplexing, each channel (7-8 Mhz) enveloping 10 to 24 programs has to be carefully accorded priorities to prevent freezing or pixelization due to over compression. Thus the programs are mixed such that drifts in content volumes, such as sports or games, which fluctuate in data volumes affecting the adjoining programs, are left with pre-determined margins at the aggregation end. As a good engineering practice data volume loading should not exceed 80%, in any RF channel, despite compression. Program Association Table lists the frequency details of placement of programs but Program Mapping Table lists them in the group in appropriate genre in the EPG. Hence even the practice of paying for placement charges should cease.

DAS, if implemented in letter and spirit of the statute, kills the carriage fee and its associated maladies including Placement Fee. In any case both, since not provisioned in the statute, cannot be deemed legal.

**System Entities - Subscriptions Management in CATV**

There are five entities to the revenue appropriations of the subscriptions:-  
FIRST – Taxes to the Govt to be remitted by the Headend Service Provider.  
SECOND- Share of Cable Operator  
THIRD – Payment to the Broadcaster as invoiced and adjusted as per ICO  
FOURTH- Provisioning of STBs/other Services  
FIFTH- Remainder to the Headend Service Provider.

The essential ICOs concerning these entities, and processed in the SMS, are as under :-

- (a) B2B ICO between Broadcaster and HSP
- (b) B2C ICO by way of SAF between HSP and Subscriber
- (c) B2B ICO between HSP and Cable Operator
- (d) Taxation levies on itemized bills by HSP.

So far, neither TRAI nor MIB have been able to get the basis for pricing of PAY TV content from Broadcasters. These fixations remain the sole prerogative of the Broadcaster who is supposed to draft ICOs with 'a-la-carte' rates only. Broadcasters invariably compute these on COST PLUS basis to meet their establishment costs, profits and taxes over some minimum viewership.

Next, the HSP having obtained the a-la-carte rates from the Broadcaster has to ADD (a) OPEX for the Headend including but NOT limited to CAS and SMS licensing,(b) taxes (c) Share of

COMMENTS ON TRAI CONSULTATION PAPER ON

REGISTER OF INTERCONNECTION  
AGREEMENTS REGULATIONS, 2019

Lt Col VC Khare (Retd), Cable TV industry Observer

Cable Operators (d) Depreciation (e) Share of Cable Operators and (f) payments for networking fees (i.e. gratification to Govt Servants towards NO HARRASSMENT since all RoW is NOT legal and (g) profits. At the end of this exercise the rate card for the subscriber on PER PROGRAM PER SUBSCRIBER PER MONTH is to be promulgated and fed into the SMS for generation of itemized bills in the SMS.

Hence MOST important MIS is to be derived from (a) rates for PAY Content in B2B after banning Carriage Fee in the DAS environment , (b) rate card prepared by the HSP for subscriber and (c) Revenue appropriation percentages by the HSP for Cable Operators in B2B ICO with Cable Operator.

**Comments on Consultation Paper**

The central idea in the consultation mentions Broadcaster, HSP and Cable Operator. Concern for Subscriber does'nt seem to be of any concern to TRAI. Their ICO i.e. B2C agreement by way of SAF/CAF, Rate Card by HSP and corresponding inputs from the SMS are totally absent and hence do NOT appear any where in the consultation.

Intention appears to be study of trends, not realizing that rates also relate to QoE(Quality of Experience) measured against specified QoS.

Utmost concern in the consultation seems to be incidence of Carriage fee levied on Broadcaster licensed by the Ministry of Information and Broadcasting(Wireless). **Carriage fee in any case needs to be prohibited in DAS.**

These ICOs, principally, pertain to PAY TV content (that for which HSP has to pay to the Broadcaster)

Thus there are THREE distinct documented references in the subscription appropriation chain.

FIRST B2B ICO, envisages terms between Broadcaster and HSP. Based upon rates and terms agreed with Broadcaster, HSP has to prepare a rate card for the subscriber. The application by the subscriber to avail DAS constitutes a B2C ICO between the HSP and Subscriber. Thus SECOND ICO deals with HSP and Subscriber. Since Cable Operator delivers the program stream to the subscriber, a contribution is required for them, and hence THIRD B2B ICO is necessitated.

That makes FOUR entities in the subscription chain e.g. Broadcaster, HSP, Cable Operator and Subscriber, are connected through these three ICOs. There is also a parasitic entity, the Taxation Authority in the chain. While Broadcaster-HSP ICO can be uniform in principle, the other two ICOs depend on market forces. HSP has to mark up the Broadcaster's agreed rates with cost of own overheads+ share to Cable Operators+ Contribution in business and formulate a rate card to issue itemized bills to subscriber

**COMMENTS ON TRAI CONSULTATION PAPER ON**  
**REGISTER OF INTERCONNECTION**  
**AGREEMENTS REGULATIONS, 2019**

Lt Col VC Khare (Retd), Cable TV industry Observer

**Answers to Questions in the Consultation Paper**

**Q1 Why all information including commercial portion of register should not be made accessible to any interested stakeholders**

Since everything originates with seeding of PAY TV Content's price, its basis needs to be standardized. This requirement has never been fulfilled in all these years of Cable TV Networks Regulation by the MIB or TRAI. One suggested way could be (a) Cost Plus to price of Content (b) uplinking cost (c) aggregator's commissions (d) License Costs all aggregated and divided by some percentage of connectivity (i.e. part of 120 million subscriber base) to arrive at per subscriber per month cost of content to constitute MRP for the Broadcaster+HSP ICO. This information can also be put on TRAI's web site for access by any stake holder.

**Q2. If the commercial information is to be made accessible,**

**(a) In which way, out of the three ways discussed above or any other way, the commercial information should be made accessible to fulfil the objective of non-discrimination?**

The primary location of Broadcaster-HSP ICO register is the Broadcaster's Premises. Its other location is TRAI's or HSP's premises. The parameters for Broadcaster's price per subscriber per month should be publicised for HSPs to note while negotiating ICOs with Broadcasters. Genre wise Program pricing has to be fixed for a duration and variations recorded in ICO as discounts leading to chargeable price from the HSP. This information can also be put on TRAI's web site for access by any stake holder. Similarly, rate card prepared by HSP for subscriber should be placed on HSP's website. However, re-appropriations of revenue in B2B HSP-Cable Operator ICO may remain confidential.

Since TRAI is mandating submission of Information from Broadcasters and HSPs, both, they should analyze and publish MRP trends for each program on per subscriber per month basis extracted from the MIS. However from the experience in the mindset of Cable TV Industry the trend analysis is of little value to Cable Operator who seldom visits TRAI's website. HSPs might like to refer to such rates before signing the ICO.

**(b) Should it be accessible only to the service providers, general public or both?**

Both

**(c) Should any condition be imposed on the information seeker to protect the commercial interests of the service providers?**

No!

**COMMENTS ON TRAI CONSULTATION PAPER ON**  
**REGISTER OF INTERCONNECTION**  
**AGREEMENTS REGULATIONS, 2019**

Lt Col VC Khare (Retd), Cable TV industry Observer

**Q3. If the commercial information is not made accessible to stakeholders, then in what form the provisions under clause (vii) and (viii) of Section 11 (1) (b) of TRAI Act be implemented in broadcasting and cable sector so that the objective of non-discrimination is also met simultaneously?**

Once MIS is mandated by TRAI where is the question of information's inaccessibility to stakeholders?

Discrimination has its roots in the nature of Indian Broadcaster's forum who own the content, while some of them also have interests in networks besides mutual bartering, in decisions of providing content to HSPs. Provision of content to registered HSPs must be mandated on application to kill the discrimination. On violation of this mandate, license to downlink program should be revoked.

**Q4. Please provide suggestions on regulation 5 of the draft regulations regarding periodicity, authentication etc.**

Copy of ICO must be filed with TRAI within 10 days of signing. Its scanned copy should be uploaded on Broadcaster's web site

**Q5. Please provide comments on how to ensure that service providers report accurate details in compliance of regulations?**

Empanel persons with experience to audit DAS compliance and provide for first time compliance registration followed by random reviews at the cost of entity.

**Q6. Please provide comments on digitally signed method of reporting the information**

Initial Information should come as hard copy under an affidavit and updates could come on digitally signed documents format

**Q7. Please provide suggestions on regulation 6 of draft regulations and also the formats given in schedules? Stakeholders can also suggest modified format for reporting to make it simple and easy to file.**

7.01 Table A-2 – Bouquets by Broadcasters are contrary to spirit of DAS statute. Hence such provision should NOT exist anywhere in the Regulation at Broadcaster level confining them to 'a-la-carte' system only.

7.02(a) Table A-1 Column 4 should read PAN INDIA for HITS and DTH

(b) Table B-1 - % should cover BST, FTA over and above BST, Pay TV 'a-la-carte', Pay TV bouquets, Service Charges and Any other charges.

(c) Table B-2 should be banned and prohibited

**Q8. Any other suggestions relevant to the draft regulations**

In definitions the following should be included :-

8.1 **Channel** means a specified band of radio frequency of suitable width, bound by lower and upper frequency indices, pertaining to a carrier which when modulated envelopes the content being transmitted, pertaining to one program per channel in Analog Mode and Several Programs per channel in digitally compressed modes.

**COMMENTS ON TRAI CONSULTATION PAPER ON**

**REGISTER OF INTERCONNECTION**  
**AGREEMENTS REGULATIONS, 2019**

Lt Col VC Khare (Retd), Cable TV industry Observer

8.2 **Program** means any television content(audio, visual or audio-visual) being broadcasted (point to multipoint on wired or wireline medium) and included exhibition of films, features dramas, advertisements and serials whether live or replayed through players or servers. Programs can also be classified as Action, Adventure, Business, Comedy, Crime, Drama, fantasy, History, Horror, Mystery, Paranoid, Philosophy, Political, Romance, Satire, Slice of Life, Speculation, Thrillers and Religion

8.3 **Genres** are categories of programs used in television distribution including but NOT limited to news and current affairs, infotainment, sports, kids, movies, devotional, general entertainment, science and technology and service based information.

8.4 **Addressability** in simple terms, in context of video delivery, in DAS, means a facility to enable or disable viewing of video content selectively and remotely.