



# Report on ACTIVITIES

(1<sup>st</sup> January 2016 to 31<sup>st</sup> December 2016)



TELECOM REGULATORY AUTHORITY OF INDIA



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Mahanagar Doorsanchar Bhawan, Jawahar Lal Nehru Marg,

(Old Minto Road), New Delhi-110002

Telephone : =91+11-23236308

Fax No:+91-11-23213294

E-mail : ap@trai.gov.in

Website:<http://www.trai.gov.in>



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## PREFACE

The Telecom Regulatory Authority of India (TRAI) is a statutory body set up for regulating the Telecom and Broadcasting Sectors. TRAI was created by enacting the TRAI Act 1997 (as amended in the year 2000). This Act, along with the notification of the Government dated 9<sup>th</sup> January 2004, empowers TRAI to recommend conditions for entry of new telecom service providers as well as terms and conditions of license and ensure compliance of the terms and conditions of the license. The Act also empowers TRAI to lay down the standards of quality of service and ensure compliance, specify the tariff policy and make recommendations regarding terms and conditions on which Addressable Systems of TV shall be provided to customers and parameters for regulating maximum time for advertisements in pay as well as other TV channels. TRAI's scope of work also includes issues relating to telecom and cable tariff policy, commercial and technical aspects of interconnection, free choice and equal ease of access for the public to different telecom services, resolution of conflicts that may arise due to market developments and diverse network structures for various telecom services. TRAI also facilitates development of forums for interaction amongst service providers and interaction of the Authority with consumer organizations to further the consumer interest.

The Authority initiated various measures to promote the growth and development of the telecom and broadcasting sectors during 2016. On the telecom front, TRAI addressed the issue of quality of services of Mobile Banking and a revised framework was laid down for mobile banking transactions and USSD based mobile banking and payment services. TRAI also made amendments in the Telecom Tariff Order (TTO) by reducing the ceiling tariff for the use of USSD for USSD based mobile banking services to make mobile banking more lucrative. During the period Recommendations were made to Government on 'Valuation and Reserve price of Spectrum of various bands', 'Interconnection over IP Interface' and licensing framework for audio conference/Audiotex/Voicemail services' besides other issues.

In the Broadcasting Sector, the Authority addressed the issues of Interconnection of Digital Addressable Cable TV System (DAS). Recommendations were made to Government on issues related to 'Radio Audience Measurement and Rating in India'.

Through its regional offices located in different parts of the country, the Authority strived to increase its field level outreach by holding consumer

outreach programmes (CoPs) and workshops for enhancing consumer awareness and soliciting consumer participation. These efforts were made to extend TRAI's consumer interface and address systemic issues quickly. TRAI also focused on effective implementation of its orders, directions and regulations. Close monitoring of adherence to regulatory requirements, imposition of financial disincentives for non-compliance, and institution of prosecution complaints in cases of grave misdemeanor, all resulted in better compliance and regulatory enforcement.

This report presents an abstract of the activities of the Authority during the calendar year 2016. This report is also available in the public domain for information of all stakeholders. The classification of activities has only been done to provide ease of reading. All the recommendations, regulations, orders and directions etc. referred in this report are available on the TRAI website [www.trai.gov.in](http://www.trai.gov.in) and can be referred to for detailed information. It is hoped that this report gives the stakeholders a broader view and better understanding of the initiatives taken by the Authority to enhance the growth of telecom and broadcasting sectors.

**(Sudhir Gupta)**  
**Secretary**

# REPORT ON ACTIVITIES

## 1. CONSUMER INTERESTS

Protection of interest of the consumers is one of the important functions of TRAI. The Authority has taken several measures to improve the regulatory mechanism which contributes towards improving consumer satisfaction. TRAI also interacts with consumer organizations to increase their awareness and include their views and concerns in policy making.

### Quality of Service

The Authority has laid down the standards of Quality of Service (QoS) for various services provided by the telecom service providers (TSPs) to their customers. TRAI also monitors and ensures compliance of the standards to ensure good service to consumers.

For ensuring quality of service, TRAI has been closely monitoring the performance of service providers against the quality of service benchmarks through Performance Monitoring Reports. TRAI is also having regular interactions with service providers for improving quality of service. Further, TRAI has engaged independent agencies for auditing and assessing quality of service and surveys are being done regularly through independent agencies to assess the Customer Perception of Service. The results of the audit and assessment of quality of service and surveys are published for the information of stakeholders. TRAI has also been imposing financial disincentive on service providers for failure to comply with the quality of service benchmarks.

TRAI has issued Show Cause Notices/ Financial Disincentive Orders to service providers as detailed below, during the report period for not meeting the prescribed benchmarks:

#### **(i) Non compliance of QoS Benchmarks:**

During the year, TRAI issued 34 Show Cause Notices to Broadband Service Providers for not meeting the Broadband QoS benchmarks, 13 notices to Telecom Service Providers for not meeting the QoS benchmarks for basic services, 30 notices for 2G Services and 14 notices for 3G Services.

In response to the above Show cause notices, 54 financial disincentive orders towards non-compliance of QoS Regulations and towards delay in submission of compliance reports of QoS Regulations have been issued as detailed below:

<b>Services</b>	<b>Total Amount</b>
2G	334.0 lakhs
3G	53.0 lakhs
Broadband	35.6 lakhs
Basic	34.0 lakhs
	<u>456.6 lakhs</u>

**(ii) Quality of Service on Metering & Billing**

- (a) Show Cause Notice dated 1<sup>st</sup> February 2016 issued to 2 CMTSPs - M/s RCL and M/s RTL for contravention of the provisions of the Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulations, 2006.
- (b) Show Cause Notice dated 18<sup>th</sup> February 2016 issued to M/s Vodafone for contravention of the provisions of the Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulations, 2006.

In response to above show cause notices, 4 financial disincentive orders towards non-compliance of Metering and Billing Regulations were imposed for Rs. 159 lakhs.

**(iii) Unsolicited commercial communication**

During the period, TRAI issued 400 Show Cause Notices to the Telecom

Service Providers for contravention of provisions of UCC Regulations.

In response to the above Show Cause Notices, 63 financial disincentive orders were issued for an amount of Rs. 557.71 lakhs.

**(iv) The Mobile Banking (Quality of Service) (Second Amendment) Regulations, 2016 dated 22<sup>nd</sup> November 2016**

TRAI issued Regulation on “The Mobile Banking (Quality of Service) (Second Amendment) Regulations, 2016” dated 22<sup>nd</sup> November 2016 to lay down a revised framework for mobile banking transactions and USSD based mobile banking and payment services. These regulations were issued to promote use of USSD based mobile banking services, for the subscribers having feature phone.

**(v) Consultation Paper dated 5<sup>th</sup> August 2016 on “Review of network related Quality of Service Standards for Cellular Mobile Telephone Service”**

TRAI issued Consultation Paper dated 5<sup>th</sup> August 2016 on Review of network related Quality of Service Standards for Cellular Mobile

Telephone Service. This consultation paper describes various parameters and respective benchmarks for assessment of Quality of Service of 2G & 3G networks. The views of the stakeholders are called for so as to bring about changes in these benchmarks and possibly add parameters, if required, to improve the Quality of Service experience by the customers. It is also envisaged to add relevant parameters for 4G/BWA services also, in view of their development in the network. The consultation paper seeks to know from the stakeholders as to what will be the appropriate way to calculate call drop rates through meta data analysis of CDRs. The mechanism of imposing financial disincentives in case of below the bench mark performance has also been raised in this consultation.

## **2. Mobile Number Portability**

### **Contraventions of Mobile Number Portability Regulations**

To ensure that the provisions of the MNP Regulations are not violated, TRAI monitors the service providers through samples collected from time to time or through complaints. If any violations are noticed during this process, financial disincentives are levied on the service provider. During the year 2016, a sum of Rs.3.90 lakhs was levied as financial disincentive on the service providers for violating the provisions of the MNP Regulations, 2009.

## **3. Consumer Protection and Empowerment**

### **(i) Telecom Consumers Protection (Tenth Amendment) Regulations (TCPR), 2016**

Telecom Regulatory Authority of India notified the Telecom Consumers Protection (Tenth Amendment) Regulations (TCPR), 2016 permitting longer validity for data-packs (i.e. Special Tariff vouchers with only data benefits) on 19<sup>th</sup> August 2016. This amendment increased the maximum validity of STVs with exclusive data benefits to 365 days instead of 90 days allowed earlier.

### **(ii) TRAI analytics Portal and “ Myspeed” App**

As a means of consumer facilitation and to empower the consumers, TRAI has launched “TRAI ANALYTICS Portal” ([www.analytics.trai.gov.in](http://www.analytics.trai.gov.in)) and the mobile app to measure data speeds (TRAI Myspeed). The TRAI’s “Myspeed” App allows users to explore the mobile data experience of consumers across India. This App allows users to measure their data speed and submit the results to this Portal. The application also sends information related to coverage, data, speed, network etc along with device and location of the test to the TRAI server.

## 4. Retail and Wholesale Tariffs

TRAI protects interests of consumers through Tariff Regulation and determines the rates at which telecom and broadcasting services are offered to consumers. Tariff regulation is carried out to ensure clarity and transparency in tariff offers to consumers and fixing of tariff where the market fails to provide competitive tariffs. In view of the intense competition in the telecom sector, the Authority has exercised forbearance vis-à-vis the tariff for most telecom services. The following tariffs related activities were undertaken during the period:

### (i) **Prohibition of Discriminatory Tariffs for Data Service Regulations, 2016 dated 8<sup>th</sup> February 2016**

TRAI has always been upholding the principle of non-discrimination in pricing of telecommunication services in the country. Any differential tariff within the same class of subscribers is considered to be discriminatory. The Regulation on Prohibition of Discriminatory Tariffs for Data Services, 2016 notified on 8<sup>th</sup> February 2016 is consistent with the principle of non-discrimination followed by TRAI hitherto. The Authority has decided that *ex ante* regulation, rather than a case by case tariff intervention regime, would be more appropriate as it would give the much needed certainty to industry participants. Such a step is also warranted in view of the high costs of regulation in terms of time and resources that will be required for investigating each case of tariff discrimination.

The Regulation prohibits differential pricing for data usage based on the websites, applications or platforms accessed by the users and therefore following has been mandated:

- a) No service provider shall offer or charge discriminatory tariffs for data services on the basis of content.
- b) No service provider shall enter into any arrangement, agreement or contract, by whatever name called, with any person, natural or legal, that has the effect of discriminatory tariffs for data services being offered or charged by the service provider for the purpose of evading the prohibition in this regulation.
- c) Reduced tariff for accessing or providing emergency services, or at times of public emergency has been permitted.
- d) Financial disincentives for contravention of the regulation has also been specified.

**(ii) Telecommunication Tariff (Sixty First Amendment) Order, 2016 dated 22<sup>nd</sup> November 2016**

The availability and easy access to banking services for all our citizens is a major objective of public policy. However, the harsh reality is that a large section of our population is still unbanked/ under-banked. With a significant penetration of mobile telephony in rural India, the mobile phone can be leveraged to achieve the goal of financial inclusion. Accordingly, in November, 2013, with a view to facilitate mobile banking for financial inclusion, TRAI had established a framework to facilitate the agents of the banks to interface with the access service providers for use of SMS, USSD and IVR channels to provide mobile banking services and prescribed ceiling tariff of Rs. 1.50 per USSD session for USSD-based mobile banking service.

However, all these initiatives did not lead to the desired result and both the number of transactions and success rate are below expectation.

Therefore, to facilitate uptake of USSD based banking services the Telecommunication Tariff (Sixty First Amendment) Order, 2016 dated 22<sup>nd</sup> November 2016 was amended to bring down the ceiling tariff from Rs 1.50 to Re.0.50 per USSD session for USSD-based mobile banking and payment services. This amendment will facilitate the banks or its agent or any entity authorized by the Reserve Bank of India for better delivery of banking and payment services through mobile phones over USSD.

**(iii) Decision of the Authority relating to ‘Inflation linked hikes for TV Tariff’**

TRAI, on 9<sup>th</sup> May 2016, uploaded the Decision of the Authority relating to ‘Inflation linked hikes for TV tariff’ through press release. Pursuant to the observation of the Hon’ble Supreme Court in its final orders dated 4<sup>th</sup> August 2015 while upholding the order dated 28<sup>th</sup> April 2015 of the Hon’ble TDSAT, the matter was examined afresh by TRAI taking into account the GDP Deflator as a measure of the inflation. Other associated factors like increase in the number of subscribers and also the increase in total revenues accrued to the broadcasters were studied to carry out a detailed and holistic analysis of the issues at hand.

During analysis of relevant data and the impact of various factors on the issue of inflation linked hikes in tariff ceilings at the wholesale levels, the Authority has observed that the annual revenues that actually accrued to the broadcasters have surpassed the estimated revenues that should have accrued to them after taking into account the year-on-year hike in inflation as calculated using the GDP deflator. The compound annual growth rate (CAGR) of the year-on-year revenues accruing to the broadcasters has also witnessed a positive growth.

More importantly, this growth has kept well ahead of the estimated revenues compensated for the year-on-year change in the inflation as computed using the GDP deflator.

Consequent to aforesaid analysis of the facts, the Authority has observed that there is a healthy growth in the industry with rise in revenues outstripping the increasing inflation over the years and therefore concluded that inflation linked hike provided earlier vide 11<sup>th</sup> and 13<sup>th</sup> TTO dated 31<sup>st</sup> March 2014 and 31<sup>st</sup> December 2014 respectively, which have been set aside by Hon'ble TDSAT (said order of Hon'ble TDSAT has also been upheld by the Hon'ble Supreme Court of India), are not required at present.

## **5. Consumer Advocacy & Education**

Given the importance of reaching out to consumers all over the country, TRAI has a public interface with telecom subscribers through its website and through Consumer Outreach Programmes conducted across the country. TRAI has instituted a system for registration of consumer organizations as Consumer Advocacy Groups (CAGs). They act as interlocutors between consumers, Telecom Service Providers & TRAI and assist TRAI in consumer education. TRAI is working for increasing consumer's awareness of their rights and service related issues through educational/publicity material including media campaign in the print and electronic media.

### **(i) Consumer Outreach Programmes (CoP)**

During the year, TRAI organised 86 Consumer Outreach Programmes (CoPs) across the country. List of CoPs organized by TRAI is annexed. 7 Regional Workshops for Capacity Building of Consumer Advocacy Groups and Consumer Education were organized. Through these interactive programmes, the consumers/CAGs were informed about the various measures taken by TRAI for protecting the interests of the consumers.

### **(ii) Consumer Educative Literature and Media Campaigns**

TRAI has released updated Consumer Handbooks on telecommunications for creating awareness among the consumers. The handbook has been published in Hindi, English and also 10 regional languages (Tamil, Telugu, Kannada, Malayalam, Marathi, Punjabi, Gujarati, Bengali, Odiya and Assamese) and is distributed amongst the consumers and Registered Consumer Advocacy Groups free of cost for enhancing consumer awareness.

TRAI has undertaken media campaign on several important issues of consumer interest for creating widespread awareness among the consumers. Advertisements were published on issues like EMF Radiation, Tower fraud, Toll free number 198 and Data Services in

Hindi, English and various regional languages across the country. Advertisement on benefits of digitalization of cable services was released on FM Radio in several cities.

As part of its media campaign for creating widespread awareness among the consumers, TRAI aired advertisement in “TRAI My Speed App” in Hindi and 11 regional languages through 61 FM Radio Channels across 37 cities in the month of August 2016.

### **(iii) Registration of Consumer Advocacy Groups**

Consumer advocacy Groups (CAGs) registered with TRAI co-ordinate and articulate consumer responses to TRAI’s activities to assist TRAI in consumer education, and to work for protection and propagation of the interest of the consumers. Registration of 24 CAGs has been renewed for another two years and 4 new CAGs have been granted registration during this period. The total number of registered CAGs with TRAI is presently 56. Regional offices of TRAI are interacting with these CAGs, coordinating their activities and helping them to sort out consumer related issues with the Service Providers. CAGs are participating in the CoPs and workshops organized in their respective areas.

## **6. Unsolicited Commercial Communication**

### **Mobile App for Monitoring UCC Complaints**

TCCCP Regulations being complaint based regulation, there was a need to put in place an additional complaint mechanism which is easy to use by the consumer. Hence, TRAI has developed a mobile App (DND Services) for easy registration of UCC Complaints to the service providers. With this App, the consumer can also check the status of his complaint.

## **7. Interconnection**

Interconnection of various telecommunication networks facilitates the customer of different networks to be connected with each other without subscribing to the different networks. During the report period, the Authority has taken various measures to enhance interconnection mechanisms as detailed below:

### **(i) The Telecommunication (Broadcasting and Cable Services) Interconnection (Digital Addressable Cable Television Systems) (Sixth Amendment) Regulations, 2016 dated 7<sup>th</sup> January 2016**

TRAI, on 7<sup>th</sup> January 2016, notified the Telecommunication (Broadcasting and Cable Services) Interconnection (Digital Addressable Cable Television Systems) (Sixth Amendment) Regulations, 2016. The Authority observed from the interconnection details submitted by the service providers that

signals of TV channels are being provided by several broadcasters to Multi System Operators (MSOs) and MSOs to Local Cable Operators (LCOs) even in the absence of valid written interconnection agreements. It was also observed that continuing the retransmission of signal without a valid written interconnection agreement, on the pretext of continuing mutual negotiations, often result into disputes and sometimes result in abrupt disconnection which adversely affects the quality of service to the consumers.

Through this amendment, the Authority made it mandatory that a broadcaster of pay channels enter into a written valid interconnection agreement with the MSO for retransmission of its pay channels irrespective of the fact whether subscription fee is paid by the multi system operator to the broadcaster or not. The amendment provided for sufficient time (minimum sixty days) for entering into new interconnection agreement prior to expiry of an existing interconnection agreement between the service providers for retransmission of TV signals. After this amendment, there is no scope under the pretext of mutual negotiations, for continuation of provisioning of TV signal upon expiry of the existing interconnection agreement.

The MSOs were mandated to inform the consumers in the event of a failure to execute new interconnection agreement, about the date of expiry of its existing interconnection agreement and disconnection of TV channels, fifteen days prior to the expiry of existing interconnection agreement so as to enable the consumers to take an informed decision in respect of their choice.

**(ii) The Telecommunication (Broadcasting and Cable Services) Interconnection (Digital Addressable Cable Television Systems) (Seventh Amendment) Regulations, 2016 dated 15<sup>th</sup> March 2016.**

The Authority, issued the Telecommunication (Broadcasting and Cable Services) Interconnection (Digital Addressable Cable Television Systems) (Seventh Amendment) Regulations, 2016 on 15<sup>th</sup> March 2016 prescribing formats for Model Interconnection Agreement (MIA) and Standard Interconnection Agreement (SIA) to be signed between MSO and LCO for provisioning of cable TV services through Digital Addressable Systems (DAS). The Authority's view is that the prescription of standard MIA and SIA formats will pave the way for growth of the sector, result in reduce incidence of disputes between the MSOs and LCOs, provide level playing field to the parties and increase healthy competition in the sector that will ultimately help in bettering the quality of services to the subscribers.

## 2. RECOMMENDATIONS

Recommendations were made to the Government on diverse subjects including management of scarce resources such as spectrum, Interconnection and Improving Telecom Services. Under this mandate, TRAI took action on the following matters during the period:

### TELECOM SECTOR

#### Spectrum

#### 1. Recommendations dated 27<sup>th</sup> January 2016 on “Valuation and Reserve Price of Spectrum in the 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands”

Department of Telecommunications (DoT) sought the Authority’s Recommendations on Reserve Price and associated conditions for auction of 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands. DoT also sought the Authority’s recommendations on the liberalization of administratively allotted spectrum in 900 MHz band.

After considering the comments received from the stakeholders and further analysis, the Authority gave its recommendations on “Valuation and Reserve Price of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz Bands” on 27<sup>th</sup> January 2016. The salient features of the recommendations are given below:

- APT700 band plan should be adopted for the 700 MHz (698-806 MHz) spectrum band with Frequency Division Duplex (FDD) based frequency arrangement. Entire available spectrum (2x35MHz) in the 700 MHz band should be put to auction in the upcoming auction.
- DoT should carry out carrier re-assignment exercise in the 800 MHz band at the earliest and ensure that entire spectrum that is available with DoT for commercial use should be put to auction.
- DoT, in coordination with Defence and the TSPs, should complete harmonization process in the 1800 MHz band before upcoming auctions so that the entire spectrum that is made available due to this exercise is put to auction.
- As part of rollout obligations for 700 MHz band; all towns/villages having population of 15,000 or more but less than 50,000 to be

covered within 5 years and all villages having population of 10,000 or more but less than 15,000 to be covered within 7 years.

- Audit for all allocated spectrum both commercial as well as spectrum allocated to various PSUs/Government organizations should be done by an independent agency.
- Recommended reserve price for various spectrum bands is as per table given below:

<b>RECOMMENDED RESERVE PRICE (Rs in Crore)</b>							
<b>LSA</b>	<b>700</b>	<b>800</b>	<b>900</b>	<b>1800</b>	<b>2100</b>	<b>2300</b>	<b>2500</b>
	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>
	<b>Per MHz (Paired)</b>				<b>Per MHz (Unpaired)</b>		
<b>Delhi</b>	1595	848		399	554	143	143
<b>Mumbai</b>	1192	727		298	461	146	146
<b>Kolkata</b>	596	160		149	116	33	33
<b>AP</b>	971	606		243	272	68	68
<b>Gujarat</b>	952	285	673	238	258	39	39
<b>Karnataka</b>	740	303	558	185	328	98	98
<b>Maharashtra</b>	1272	799		318	341	58	58
<b>Tamil Nadu</b>	900	360		225	344	132	132
<b>Haryana</b>	186	57	151	47	55	8	8
<b>Kerala</b>	334	243		83	177	16	16
<b>MP</b>	331	408		83	123	8	8
<b>Punjab</b>	308	119		77	91	21	21
<b>Rajasthan</b>	364	204		91	140	6	6
<b>UP (East)</b>	459	219	776	115	110	9	9
<b>UP (West)</b>	384	182	739	96	111	12	12
<b>West Bengal</b>	183	82		46	52	5	5
<b>Assam</b>	158			40	46	2	2
<b>Bihar</b>	248	136	444	62	86	6	6
<b>Himachal Pradesh</b>	64	24		16	20	1	1
<b>Jammu &amp; Kashmir</b>	52			13	11	1	1
<b>North East</b>	44			11	12	1	1
<b>Orissa</b>	152	57		38	38	4	4

**2. Clarifications/Response forwarded to DoT on 18<sup>th</sup> April 2016 regarding Recommendations on “Valuation and Reserve Price of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands dated 27<sup>th</sup> January, 2016”**

The Authority had sent its recommendations on “Valuation and Reserve Price of Spectrum in the 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands” on 27<sup>th</sup> January 2016 to DoT. On 1<sup>st</sup> April 2016, DoT sought clarifications/ reconsideration on some of the recommendations.

After considering the comments given by DoT, the Authority furnished its response to the Government on 18<sup>th</sup> April 2016. In its response the Authority mostly reiterated its earlier recommendations.

**3. Recommendations dated 27<sup>th</sup> January 2016 on “Charging of liberalization of Administratively allocated spectrum”**

The Authority sent its recommendations on ‘charging of liberalization of administratively allocated spectrum on 27<sup>th</sup> January 2016. The Recommendations includes price to be charged for liberalization of spectrum where market determined price or government approved reserve price for the spectrum band is not available. The Recommendations made were as follows:

- As an interim measure, recommended Reserve Price by the Authority in the Recommendations on ‘Recommendations on the reserve price for auctions of right to use of spectrum 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz dated 27<sup>th</sup> January 2016 may be taken as provisional price for liberalization of the administratively allocated spectrum.
- Subsequent to the next round of auction and with the availability of auction determined price, provisional price already charged can be suitably adjusted with the auction determined price.

**4. Clarifications / Reconsideration dated 12<sup>th</sup> July 2016 on Recommendations on “Valuation and Reserve Price of Spectrum in the 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands”**

On 27<sup>th</sup> January 2016, the Authority had sent its recommendations on “Valuation and Reserve Price of Spectrum in the 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands” to the Department of Telecommunications (DoT). On 24<sup>th</sup> June 2016, the DoT sought clarifications/ reconsideration on the recommendations made on spectrum usage charges. After considering the observations

made by DoT, the Authority furnished its response to the DoT on 12<sup>th</sup> July 2016. The key recommendations made were:

- As bid values are a reflection of how the TSP values the band, taking into account market determined price based on bid values might lead to a result that more closely approximates the result/reality.
- However, any solution based on Weighted Average Rate, irrespective of the proxy that is used, is at best a temporary solution.
- All possible steps should be considered by the DOT to move to a simple, transparent and flat ad valorem SUC regime in accordance with law.

## Interconnection

### 1. Recommendations dated 11<sup>th</sup> February 2016 on “Interconnection over IP Interface”

The Authority issued a Consultation paper on “Migration to IP based network” on 30<sup>th</sup> June 2014 which was followed by an Open House Discussion on the subject on 2<sup>nd</sup> December 2014. In response to the consultation paper, some telecom service providers had submitted that as the imminent transition towards IP based network is widely anticipated, it is essential to amend the license conditions to explicitly provide for IP based interconnection.

Department of Telecom, vide its communication dated 10<sup>th</sup> November 2015, had also written to TRAI that one of the issues of concern to the Telecom Industry is removal of restriction of Interconnection at IP level to ensure seamless IP interconnection. TRAI initiated a short consultation with the stakeholders vide “Consultation Note on IP Based Interconnection”, dated 27<sup>th</sup> November 2015. After analyzing the various issues involved and considering the comments received from stakeholders, the Authority recommended for the amendment to clause 27.3 in the Unified License for interconnection at IP level. It was also recommended that similar amendment to this effect may also be incorporated in the relevant clauses in other license agreements.

The proposed text for clause 27.3 is as under:

*“Interconnection between the networks of different Licensees for carrying circuit switched traffic shall be as per national standards of CCS No. 7 and for carrying IP based traffic as per Telecom Engineering Centre (TEC) standards as amended from time to time and also subject to technical feasibility and technical integrity of the Networks and shall be within the overall framework of interconnection/regulations/directions/orders issued by the TRAI/Licensors from time to time. For inter-networking between circuit switched and*

*IP based network, the Licensee shall install Media Gateway Switch. Further, the Licensor may direct the LICENSEE to adopt any other technical standards issued by TEC on interconnection related issues”.*

Department of Telecommunications vide its communication dated 19<sup>th</sup> April 2016 informed the Amendments to the Unified License for interconnection over Internet Protocol (IP) Networks in accordance with the TRAI’s Recommendation on interconnection over IP interface.

**2. Recommendations dated 21<sup>st</sup> October, 2016 on “Violation of the provisions of License Agreements and the Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009 by M/s Airtel, Vodafone & Idea”**

The Authority has recommended to Department of Telecom that a penal action of Rs.50 crore per LSA where POI congestion exceeded the allowable limit of 0.5% may be initiated against M/s Bharti Airtel Ltd., M/s Idea Cellular Ltd. & M/s Vodafone India Ltd.

## **Improving Telecom Services**

**1. Recommendations dated 01<sup>st</sup> February, 2016 on “Implementation Strategy for BharatNet”**

The Authority issued the Consultation Paper on “Implementation Model for BharatNet” on 17<sup>th</sup> November, 2015 to find alternate model for implementation of BharatNet. Meetings were held with Infrastructure Providers, Construction Companies, Financial Institutions, Multi-Service Operators (MSOs) and Broadcasters on 02<sup>nd</sup> December, 2015. A separate meeting with Telecom Service Providers (TSPs), Internet Service Providers (ISPs), Industry Associations, Multiple System Operators (MSOs) and Broadcasters was also held on 11<sup>th</sup> December, 2015. An Open House Discussion (OHD) with stakeholders was organized on 18<sup>th</sup> December, 2015.

After considering the comments from the stakeholders and further analysis, the Authority came out with its Recommendations on “Implementation Model for BharatNet”. The salient features of the recommendations are as follows:

- A PPP model that aligns private incentives with long term service delivery in the vein of the Build-Own-Operate-Transfer/Build-Operate-Transfer models of implementation be the preferred means of implementation.
- The scope of the concessionaire’s work should include both the deployment and implementation of the OFC and other network infrastructure as well as operating the network for the concession period. Concessionaires shall be entitled to proceeds of revenue from dark fibre and/or bandwidth.

- Concessionaires should be selected by way of a reverse bidding process to determine minimum Viability Gap Funding sought for concession. The area of implementation may be analogous with the Licensed Service Areas (LSAs)/or the State/UT.
- The Contracting Agency may, in the first phase, explore the appetite and response of the potential BOOT participants through bidding process. This can either be done in one go for the entire country (by having States/ LSA or packages as ‘Schedules’) or it can be done beginning with certain States with larger potential of bidders’ response.
- In the second phase (after excluding those area where BOOT model can be implemented), EPC contractor may be selected. Such EPC contractor should be responsible for building the network and will have defect liability period of two years after completing the network. When the network is about to be completed, the Contracting Agency should engage a third party (through bidding process) who should be responsible for managing and marketing the network as per the broad principles laid down by the Government. The overlapping defect liability period of two years should be used to ensure smooth transition from construction to maintenance phase.
- The period of concession should be coterminous with the technical life of the fibre at present the consensus on this is 25 years. Such a period should be sufficient time to align the concessionaire’s incentives with high quality installation for service delivery, while also providing a large enough window to make a reasonable profit. The period may be further extended in blocks of 10/20/30 years at the mutual agreement of the Government and the concessionaire.
- Care must be taken to ensure that the concessionaire provides access to all service providers in a non-discriminatory and transparent manner.
- In addition, the relationship between the concessionaire and the service provider should be at arm’s length. This can be ensured by mandating a legal separation of the businesses of infrastructure provision and service provision in case of overlapping interests to preclude the possibility of a vertically integrated entity abusing its position.
- Concessionaires be provided with flexibility in terms of route for laying optical fibre, choice of construction, topology and technology in order to ensure technical as well as economic efficiency.
- The Central and State Governments act as anchor clients to purchase a minimum amount of bandwidth (100 Mbps) to be purchased at market

prices for the provision of services. Additionally, the mandating of a minimum amount of fibre (e.g. 50%) be set aside for use by other service providers in order to encourage competition may be considered.

- RoW is perceived as a major risk factor by the private sector, safeguards recognising such a possibility and outlining the steps to be taken must be put in place under the agreement to attenuate such risk and encourage participation. Guaranteed provision of free RoW is a necessary and non-negotiable precondition to successful deployment of BharatNet, subject to the reinstatement of public property to its original condition.
- Involvement of State Governments is essential for success of the project irrespective of the strategy chosen for implementing it. States/UTs should be made an integral part of the project implementation and an institutional mechanism both at the State and District level should be created to effectively coordinate and sort out the implementation issues.
- The Central and State Government should additionally consider becoming involved with the concessionaire by becoming a minority equity partner (~26%) in the selected consortium - this can reduce the perceived risks and thus lower the costs of obtaining private finance while also automatically solving the risks associated with windfall profits. In addition, this can help the Government check monopolistic behaviour on the part of the concessionaire.

## **2. Recommendations on “Sale/Rent of International Roaming Cards / Global Calling Cards in India”**

The Authority had received complaints from the consumers who had availed the services of Indian entities who sale/rent International Roaming SIM cards/ Global Calling cards in India. The complaints ranged from overcharging, to poor customer care to transparency in tariffs etc. The Authority issued a letter on 19<sup>th</sup> May 2015 to all such companies, asking them to respond to a questionnaire seeking details of type of SIM cards marketed, consumer grievance redressal mechanism etc. Out of the 38 companies listed on DoT's website as on 17<sup>th</sup> April 2015, response was received from 17 operators.

After analyzing the response received from these companies and taking into account the grievances of the consumers, the Authority submitted its *suo motu* Recommendations on “Sale/Rent of International Roaming SIM Cards/ Global Calling Cards of foreign operators in India” to DoT, in the interest of the consumer on 9<sup>th</sup> May, 2016. The recommendations are as follows:

- (a) Itemized bill should be provided to the customers within 10 days of the date of culmination of the journey. If the journey is undertaken for a period exceeding 30 days then the itemized bill shall be generated in 30 days cycle from the date of the commencement of the journey and provided to the customer within 10 days.
- (b) The customer should be given the option by the firm to choose a data service or a voice service or combination of both.
- (c) In respect of a postpaid connection, there shall be a credit limit which may be fixed as per the customer's requirement and customer be transparently informed of the same. The customer shall be informed through SMS/USSD message upon reaching 70% of the credit limit. If the credit limit is breached the services should be barred till such time the customer deposits the necessary amount with the operator.

**3. Response of the Authority dated 23<sup>rd</sup> March 2016 on issues referred back by DoT on TRAI's Recommendations dated 22<sup>nd</sup> July 2014 on "Improving Telecom Services in Andaman and Nicobar Islands and Lakshadweep"**

Through its reference dated 7<sup>th</sup> January 2014, DoT had requested TRAI to provide its recommendations on a Comprehensive Telecom Plan for Andaman and Nicobar Islands (ANI) and Lakshadweep after making a gap analysis and investment required for providing quality telecommunication services in these islands. The Authority after consultation with the relevant stakeholders sent its recommendations on 'Improving Telecom Services in Andaman & Nicobar Islands (ANI) and Lakshadweep' on 22<sup>nd</sup> July 2014.

DoT, in its back references, has intimated that in accordance with the TRAI recommendations, Telecom Commission had accorded 'in principle' approval for Comprehensive Development Plan for A&N Island and Lakshadweep in its meeting held on 7<sup>th</sup> November 2014 and the work of augmentation of satellite bandwidth and the work of augmentation of Intra-Island OFC network in Andaman & Nicobar Islands was awarded to Bharat Sanchar Nigam Limited (BSNL) on nomination basis. Accordingly, DoT, through its letter dated 8<sup>th</sup> February 2016 and 9<sup>th</sup> March 2016, forwarded a copy of the Detailed Cost Estimates of (a) augmentation of satellite bandwidth in Lakshadweep and (b) and augmentation of Intra-Island OFC network in Andaman & Nicobar Islands. DoT requested TRAI to give its views regarding the technical requirements and detailed cost estimates, prepared by BSNL for these particular projects.

After examining the issues involved, TRAI sent a reply to DoT on 23<sup>rd</sup> March, 2016. TRAI has in its response reemphasized that:

- Providing sufficient bandwidth is the key element of the Comprehensive Telecom Plan of ANI and Lakshadweep. Providing connectivity through submarine cables is a primary and integral part of the TRAI's recommendations dated 22<sup>nd</sup> July 2014. As laying of submarine cable is a resource intensive and time-consuming task, augmentation of satellite bandwidth should be carried out as an immediate and short-term solution.
- Since providing telecom facilities in Union Territories of ANI and Lakshadweep is not a viable commercial proposition for the telecom service providers, it is necessary for the Government to step-in and utilize the Universal Services Obligation Fund (USOF) for augmentation and development of telecom infrastructure and connectivity in these islands on a priority basis.
- DoT has not spelt-out clearly whether it has approved the recommended Comprehensive Telecom Plan for ANI and Lakshadweep in its entirety. Keeping in view the strategic importance of these islands, entire Telecom Plan for ANI and Lakshadweep, must be implemented without any further delay.
- Decision about the BoQ (Bill of Quantity) based on factors such as the availability and suitability of existing telecom infrastructure, their residual life etc and the detailed cost implications can be taken by DoT keeping in view that the broad objectives outlined by the Authority in its recommendations are fulfilled, even if the estimated costs of the project(s) is somewhat more than the costs estimated by the Authority.

#### **4. Recommendations dated 24<sup>th</sup> May, 2016 on “redefining the definition of broadband speed/increase the Broadband speed”**

A report on need for reviewing definition of Broadband along with the recommendations of the Authority that the current definition of broadband in the country be reviewed and minimum download speed be increased to 2 Mbps was sent to DoT on 24<sup>th</sup> May, 2016.

### **Licensing Framework**

#### **1. Recommendations dated 16<sup>th</sup> December 2016 on “Licensing framework for Audio Conferencing/Audiotex/Voice Mail Services”**

TRAI received a reference from the Department of Telecommunications for review of the terms and conditions for issue of fresh licences for Voice Mail/Audiotex/Unified Messaging Services (UMS) and for migration of existing licenses.

Keeping in view the changes in technology and the resultant new user applications and service delivery scenarios, there was a need to review

the technical specifications, financial terms and conditions, scope and guidelines for the Voice Mail/Audiotex/Unified Messaging Services (UMS) and the licence conditions.

The Authority after carefully examining various issues emanating from the written submissions of the stakeholders and Open House Discussions issued Recommendations on 16<sup>th</sup> December 2016.

The salient features of the Recommendations are as under:

- A new chapter for authorisation titled “Audio Conferencing/ Audiotex/ Voice Mail services” should be added in the Unified Licence. However, licensees with Access Services licence authorisation should also be allowed to provide these services.
- The latest TEC specifications on Audio Conferencing/Audiotex/Voice Mail should be specified in the technical conditions of the recommended chapter in UL subject to modifications or updations from time to time. However, Licence terms and conditions should override anything mentioned in the technical specifications.
- The clauses in the ‘Operating Conditions’ of the existing Voice Mail/ Audiotex/Unified Messaging Services licence should be made a part of the recommended chapter on Audio Conferencing/ Audiotex/Voice Mail in the Unified Licence. Dial out facility using resources of more than one access service provider may be allowed with the condition that STD/ISD traffic should not be bypassed.
- The terms and conditions for providing these services under access service authorisation as well as under Audio Conferencing/ Audiotex/ Voice Mail services authorisation recommended by the Authority, should be same.
- Calls originating from PSTN/PLMN/GMPCS/Internet Telephony networks should not be interconnected with those from Private/CUG networks.
- There should not be any standalone licence for Unified Messaging Service. The UMS service may be provided with access service authorisation or Internet Service authorisation under Unified Licence.
- In the recommended chapter for Audio Conferencing/ Audiotex/ Voice Mail services authorisation under UL the service area should be National Area only. The services should not be used in whatsoever manner for any illegal by pass of STD/ISD traffic of any licensed access service provider.
- The financial terms and conditions for the recommended Audio Conferencing/Audiotex/Voice Mail authorisation under UL should be as follows:

<b>Sl No</b>	<b>Service</b>	<b>Minimum Equity (Rs. Cr.)</b>	<b>Minimum Net worth (Rs. Cr.)</b>	<b>Entry Fee (Rs. Cr.)</b>	<b>PBG (Rs. Cr.)</b>	<b>FBG (Rs. Cr.)</b>	<b>Application Processing Fee (Rs. Cr.)</b>
1	Audio Conferencing/ Audiotex/ Voice Mail (National Area)	Nil	Nil	0.100	0.100	0.010	0.0015

- The annual licence fee for the recommended Audio Conferencing/ Audiotex/Voice Mail Service authorisation should be made same as that in other licence authorisations in the Unified Licence (which is presently 8% of Adjusted Gross Revenue; inclusive of USO levy which is presently 5% of AGR).
- The definition of AGR for the recommended Audio Conferencing/ Audiotex/Voicemail service authorisation under Unified Licence should be made similar to that for access service authorisation under Unified Licence.
- The Authority reiterates its recommendations on “Definition of Revenue Base (AGR) for the Reckoning of Licence Fee and Spectrum Usage Charges” dated 6<sup>th</sup> January 2015.
- The duration of the recommended Audio Conferencing/ Audiotex/ Voice Mail authorisation should be made twenty years similar to other authorisations under UL.
- Standalone Voice Mail/Audiotex/Unified Messaging Services licence should be discontinued. No, further renewal of these licences should be done.
- The existing Voice Mail/Audiotex/Unified Messaging Services licensees may be given the option to migrate to the recommended Audio Conferencing/ Audiotex/ Voice Mail authorisation under UL. There should not be any mandatory migration.
- The annual licence fee for existing standalone Voice Mail/ Audiotex/ UMS licensees who do not migrate to UL should also be made equal to 8% of Adjusted Gross Revenue. The definition of AGR should be made similar to that for Access service authorisation under UL.
- The existing standalone Voice Mail/Audiotex/UMS licensees may be allowed to acquire customers only in the SDCA for which the licence

has been granted; as per the clause 2.1 of the existing licence agreement document.

- The terms and conditions for provision of these services under Basic Services Licence, UASL or CMTS may also be clearly specified and should be made similar to the terms and conditions in the recommended chapter on Audio Conferencing/Audiotex/Voice Mail Services in the UL.

## Free Data

### 1. Recommendations dated 19<sup>th</sup> December, 2016 on “Encouraging Data usage in Rural Areas through Provisioning of Free Data”

The Authority submitted its recommendations to DoT on ‘Encouraging Data usage in Rural Areas through Provisioning of Free Data’ on 19<sup>th</sup> December 2016. Summary of Recommendations are as below:

- (i) In order to bridge the affordability gap for the persons residing in rural areas and to support Governments efforts towards cashless economy by incentivising digital means, the Authority recommends that a scheme under which a reasonable amount of data say 100 MB per month may be made available to rural subscribers for free.
- (ii) The cost of implementation of the scheme may be met from USOF.
- (iii) To increase participation of other entities for incentivizing free data, there is a need to introduce third party (Aggregator) to facilitate schemes which are TSPs agnostic and non discriminatory in their implementation.
- (iv) Scheme for free data must be TSP-agnostic, must not involve any arrangement between the TSP and the aggregator/content provider and should not be designed to circumvent the “The Prohibition of Discriminatory Tariffs for Data Services Regulations,” notified on 8<sup>th</sup> February, 2016.
- (v) The following mechanism is recommended:
  - The Aggregators will need to register with DoT.
  - The registrant must be a company registered under Indian Companies Act, 1956.
  - The validity of registration shall be 5 years.
  - The registrant shall not either directly or indirectly, assign or transfer the Registration in any manner whatsoever to a third party either in whole or in part.

## Broadcasting Sector

### 1. Recommendations dated 15<sup>th</sup> September 2016 on “Issues related to Radio Audience Measurement and Ratings in India”

TRAI, on 15<sup>th</sup> September 2016, forwarded its Recommendations on “Issues related to Radio Audience Measurement and Ratings in India. The salient features of the recommendations are:

- Guidelines for rating system to be notified by MIB.
- Any agency meeting the eligibility conditions can apply and get registered with MIB for doing the rating work. No cap on number of rating agencies has been prescribed.
- All rating agencies including industry led body are required to comply with the guidelines.
- Guidelines to cover registration, eligibility norms, cross-holding, methodology for conducting rating, complaint redressal, sale & use of ratings, audit, disclosure, reporting requirements and penal provisions.
- Voluntary code of conduct by the industry for maintaining secrecy and privacy of the listeners included in the rating process.
- Restrictions on ‘substantial equity holding of 10% or more’ between rating agencies and broadcasters/ advertisers/advertising agencies have been prescribed.
- The rating agency to set up an effective complaint redressal system.
- Data/reports generated by the rating agency to be made available to all interested stakeholders in a transparent and equitable manner.
- The rating agency to get its entire methodology/processes audited internally on quarterly basis and through an independent auditor annually. All audit reports to be put on the website of the rating agency.
- Penal provisions for non-compliance of guidelines.
- Twelve months time given to the existing rating agency to comply with the guidelines.

## III OTHER ISSUES

### Regulations

**(i) “The Reporting System on Accounting Separation Regulations, 2016” dated 10<sup>th</sup> June 2016**

The Authority after consultations with all the stakeholders, notified “The Reporting System on Accounting Separation Regulations, 2016” on 10<sup>th</sup> June 2016 by repealing “The Reporting System on Accounting Separation Regulations, 2012”. The Accounting Separation Regulations 2016 was issued in order to capture the current developments in the Indian telecom service sector and to eliminate the difficulties/concerns with regard to the requirements/reporting under Accounting Separation Regulations, 2012. The major changes made in Accounting Separation Regulations 2016 in comparison to Accounting Separation Regulations 2012 are as below:

- Merger of Access Service (Full Mobility) and Access Service (WLL) as Access Service (Wireless).
- In the Accounting Separation Regulations 2016, separate reporting for Tower Business service, Dark Fiber service and Cable Landing Station service has been done away and are now captured under other specified telecom services.
- Separate reporting for post-paid segment and prepaid segment under Access Services has been discontinued.
- Provision has been made to bring uniformity in reporting period for reports based on Replacement Cost Accounting.
- Submission time of reports has been increased from six months to seven months.

The Authority has also issued guidelines on Accounting Separation Regulations, 2016 which contains broad methodology and principles to be followed by telecom service providers while preparing reports under Accounting Separation Regulations, 2016.

### Directions

**(i)a. Direction dated 12<sup>th</sup> January 2016 all Unified Access Service Providers and Cellular Mobile Service Providers for submission of data of network parameters through web-service**

**(i)b. Amendment Direction dated 4<sup>th</sup> April 2016 to all Unified Access Service Providers and Cellular Mobile Service Providers for submission of data of network parameters through web-service**

The direction dated 12<sup>th</sup> January 2016 and subsequent amendment dated 4<sup>th</sup> April 2016 mandates the cellular mobile telephone service providers, to submit to TRAI, the master cell data of network parameters and upload daily cell network parameters data to server of TCCMS portal of TRAI through web-service in the prescribed format. This will enable TRAI to have faster access to information on network parameters.

**(ii) Direction dated 2<sup>nd</sup> February 2016 to Broadcasting TV service providers, to stop display notice of disconnection or discontinuation or non - availability of TV channels by way of full or partial 'on screen display' messages on TV screens**

TRAI on 2<sup>nd</sup> February 2016 issued Direction under the TRAI Act, 1997 to all the broadcasters, DTH Operators, HITS Operators, IPTV Operators and MSOs to stop displaying notice of disconnection or discontinuation or non-availability of TV channels by way of full or partial on screen display message on TV screens immediately.

**(iii) Direction dated 11<sup>th</sup> February 2016 to Multi System Operators**

TRAI on 11<sup>th</sup> February 2016 issued Direction under the TRAI Act, 1997 to all the Multi System Operators registered for providing cable TV services through Digital Addressable Systems (DAS) to prominently publicize information with respect to various schemes of supply and installation of STBs offered by them, on their websites and also directed to provide the URL link of their websites showing the details of schemes offered by them to the Authority.

**(iv) Directions to M/s Videocon Telecommunication Ltd. (M/s VTL) all TSPs and MNPSPs dated 25<sup>th</sup> April 2016, 6<sup>th</sup> May 2016 and 23<sup>rd</sup> June 2016**

Pursuant to Spectrum Trading Guidelines, M/s Videocon Telecommunication Ltd. (M/s VTL) entered into an agreement with M/s Bharti Airtel Ltd to trade right to use the entire 1800 MHz spectrum allotted to it. M/s VTL intimated the Authority that it shall discontinue its commercial services with effect from 11<sup>th</sup> May 2016 in Bihar, Haryana, Gujarat, Madhya Pradesh, UP (East) and UP (West) licensed service areas.

In order to facilitate Mobile Number Portability for subscribers of M/s VTL and also to ensure that subscribers are duly informed about the porting-out options available to them, the Authority issued directions to M/s VTL, all TSPs and MNPSPs dated 25<sup>th</sup> April 2016, 6<sup>th</sup> May 2016 and 23<sup>rd</sup> June 2016. Through these directions additional codes were provided for generating UPC and the 90 days condition for activation of number in a network for subscribers of M/s VTL was relaxed.

**(v) Direction dated 9<sup>th</sup> May 2016 to broadcasters of pay channels**

TRAI on 9<sup>th</sup> May 2016 issued Direction under the TRAI Act, 1997 to the broadcasters to comply with the provisions of twin condition as stipulated in clause 3C of Tariff Order, 2004 and clause 4 of the Tariff Order, 2010 at the time of providing signals of TV channels including in terms of Cost-Per-Subscriber (CPS) agreements.

**(vi) Directions to M/s Reliance Communications Ltd (M/s RCL), all TSPs and MNPSPs dated 20<sup>th</sup> May 2016 and 24<sup>th</sup> June 2016**

M/s RCL informed the Authority regarding discontinuation of its CDMA services subsequent to liberalization of spectrum held by them:

- (i) In Haryana, Himachal Pradesh, Orissa, Punjab & West Bengal licensed service areas (LSAs) w.e.f. 15<sup>th</sup> May 2016;
- (ii) In Andhra Pradesh, Bihar, Delhi, Gujarat, Kolkata, Madhya Pradesh, Maharashtra, Mumbai, UP (East) & UP (West) LSAs w.e.f. 31<sup>st</sup> May 2016; and
- (iii) In Tamil Nadu (including Chennai), Karnataka, Kerala and Rajasthan LSAs w.e.f. 6<sup>th</sup> July 2016.

In order to facilitate Mobile Number Portability for subscribers of M/s RCL in these LSAs, TRAI issued direction to M/s RCL, all TSPs and MNPSPs on 20<sup>th</sup> May 2016 and 24<sup>th</sup> June 2016 providing additional codes for generating UPCs and also to relax the 90 days condition for activation of number in a network for subscribers of M/s RCL.

**(vii) Direction dated 14<sup>th</sup> June 2016 to pay broadcasters M/s Silver Star Communications Limited and M/s E24 Glamour Limited in r/o non-compliance of The Register of Interconnect Agreement, Regulations**

It is mandatory for every broadcaster to enter in to written interconnection agreement with DPO before providing signals of its Pay channels. Silverstar and E24 had declared its channels as pay channels. They were providing signals of their TV channels without any written interconnection agreement on the premise that they are not charging any money from DPOs though their channel is pay channel. The Authority directed Silverstar and E24 to enter in to written interconnection agreement for their pay channels and file the information relating to such agreement within 45 days from the date of issue of the direction.

**(viii) Direction dated 7<sup>th</sup> October, 2016 to comply with the Standards of Quality of Service Of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009**

In order to ensure compliance of the terms and conditions of the license relating to interconnection and the provisions of the Standards of Quality

Of Service Of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009, direction to all service providers holding Unified License, Universal Access Service License and Cellular Mobile Telephone Service License, Basic Service Operators, were directed to comply with the Standards of Quality Of Service Of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009 dated the 20<sup>th</sup> March, 2009 and the terms and conditions of their respective licenses.

**(ix) Direction dated 31<sup>st</sup> October, 2016 to service providers for delivering broadband services in a transparent manner by providing adequate information to broadband consumers**

In order to address the issue of delivering broadband services in a transparent manner by providing adequate information to broadband consumers, direction to All Unified Licensees, Unified Access service Licensees (UASL), Cellular Mobile Telephone Service Licensees (CMTS), Internet Service Providers (ISPs) were issued.

## **Consultations**

**(i) Consultation Paper dated 29<sup>th</sup> January 2016 on “Tariff issues related to TV services”**

A Consultation Paper on ‘Tariff issues related to TV services’ was issued on 29<sup>th</sup> January 2016. This consultation is an attempt to create an enabling environment for growth of the sector in the light of various developments related to technology, emergence of multiple distribution platforms, evolving business models, and enhanced addressability across platforms. The objectives of current consultation were:-

- To carry out a review of existing Tariff arrangements and developing a Comprehensive Tariff Structure for Addressable TV Distribution of “TV Broadcasting Services” across Digital Broadcasting Delivery Platforms (DTH/ Cable TV/ HITS/ IPTV) at wholesale and retail level.
- To ensure that the tariff structure is simplified and rationalized so as to ensure transparency and equity across the value chain.
- To ensure that subscribers have adequate choice in the broadcast TV services while they are also protected against irrational tariff structures and price hikes.
- To encourage investments in the TV sector.
- To encourage production of good quality content across different genres.

**(ii) Consultation Paper dated 4<sup>th</sup> May 2016 on “Interconnection framework for Broadcasting TV Services distributed through Addressable Systems”**

TRAI on 4<sup>th</sup> May 2016, released a Consultation Paper on “Interconnection framework for Broadcasting TV Services distributed through Addressable Systems”. This consultation paper aims at fostering competition, increasing trust amongst service providers, facilitating ease of doing business, reducing disputes, improving transparency & efficiency, promoting sustainable & orderly growth and providing effective choice to consumers.

**(iii) Consultation Paper dated 19<sup>th</sup> May 2016 on “Issues related to Quality of Service in Digital Addressable Systems and Consumer Protection”**

TRAI on 19<sup>th</sup> May 2016 released a Consultation Paper on “Issues related to Quality of Service in Digital Addressable Systems and Consumer Protection”. The objectives of consultation were:-

- To develop unified regulatory framework for Addressable TV Platforms (DTH/ CABLE TV/ HITS/ IPTV) for QoS and consumer protection.
- To make consumers aware of the choices of services, terms and conditions of services, and providing ease of subscription.
- To simplify complaint booking and speedy redressal of complaints.
- To ensure orderly growth and level playing field for overall development of the broadcasting sector.
- To encourage use of modern Information Communication Technologies (ICTs) for improving QoS and providing better Quality of Experience to consumers.

**(iv) Consultation Paper dated 10<sup>th</sup> June 2016 on “Cloud Computing”**

TRAI issued Consultation Paper on 10<sup>th</sup> June 2016 on Cloud Computing for seeking the comments of stakeholders. In cloud computing, resources such as computing power & infrastructure, application platforms, and business processes are provided through the internet as general utilities to users in an on-demand fashion. A consumer can access and use these resources and services from anywhere and anytime through a internet connection. The end user may not be aware of the equipment that is being used to provide him this service. Business enterprises are now increasingly seeking to reshape their business models to gain benefits from this new paradigm of resource sharing.

With a view to bring out all relevant aspects of the issues and to provide a suitable platform for discussions, TRAI initiated this consultation paper to engage the industry and all the stakeholders. While examining the various dimensions and area, the following key issues were discussed in the paper:

- Regulatory framework for Cloud Computing.
- Security over the Cloud.
- Cost benefit Analysis.
- Quality of Service of the Cloud Services.
- Inter-operability amongst the cloud players.
- Incentivisation for conceptualization and implementation of India based Cloud Services.
- Legal framework for multiple Jurisdictions/ Areas of operation.
- Implementation Strategies of Cloud Services in Government (Central and States/UTs) Organizations and other strategic networks.

**(v) Consultation Paper dated 24<sup>th</sup> June 2016 on “Issues related to Digital Terrestrial Broadcasting in India”**

TRAI on 24<sup>th</sup> June 2016, released a Consultation Paper on ‘Issues related to Digital Terrestrial Broadcasting in India’. This Consultation Paper examines the existing terrestrial TV broadcasting scenario with an objective to evaluate the ongoing digitization efforts in the light of international practices adopted for such digital migration. The following were the broad objectives of the consultation:-

- To develop and suggest a road map for the transition to Digital terrestrial TV transmission/ Mobile TV transmission and also suggest the timelines for switching off the existing analogue transmission.
- To examine probable models for implementation of DTT in the country keeping in view the availability of multiple TV distribution platforms.
- To examine the feasibility of participation of the private sector in the growth of India terrestrial broadcasting ecosystem.
- To broadly assess the spectrum utilization for existing and future digital terrestrial broadcasting services.

**(vi) Consultation Paper dated 6<sup>th</sup> June 2016 on “In-Building Access by Telecom Service Providers”**

Technological developments are enhancing demand for telecom services (both wireless and wireline). Due to ever-increasing urbanization i.e. rural population moving to urban areas for economic opportunities, there is a huge pressure on the urban areas for infrastructure development. Therefore, a robust telecom infrastructure is indispensable for providing reliable services to the consumers.

The Authority in the past has dealt with many infrastructures related issues, however, there are issues related to In-building access that are still faced by the TSPs. There is a requirement to evolve a framework applicable to in-

building facilities to enable the telecom operators to obtain efficient access on reasonable terms and conditions. Therefore, the Authority *suo-motu* released a Consultation Paper on 'In-building Access by Telecom Service Providers' on 6<sup>th</sup> June 2016. In the Consultation Paper, issues related to In-building Telecom infrastructure have been discussed.

**(vii) Consultation Paper dated 22<sup>nd</sup> June, 2016 on “Internet Telephony (VoIP)”**

Internet Telephony has been permitted to Internet Service Providers (ISPs) in restricted manner under ISP licensing conditions issued by Government in October 2007. As per ISPs licensing provisions, there is no restriction on PC-to-PC Internet Telephony calls. PC or adapter can be used to call PSTN/PLMN abroad; however Internet Telephony calls from such devices to PSTN/PLMN in India are not permitted under ISP license. ISPs are also not allowed to have interconnection with PSTN/PLMN networks.

The present Licensing framework permits Unified Access Service Licensees (UASL), Cellular Mobile Telecom Service (CMTS) Licensees and Unified Licensees to provide unrestricted Internet Telephony. Licenses further permits that while providing Internet Telephony service, the Licensee may interconnect Internet Telephony network with PSTN/PLMN/GMPCS network. Despite of the fact that these licensees were allowed to provide unrestricted Internet Telephony, the service has not taken off in the country.

The objective of the consultation paper (CP) is to identify issues in providing Internet Telephony Services and address them. Some of the important issues are allocation of telephone numbers, Interconnection, Interconnection Usage charges, Quality of Service and access to Emergency etc.

**(viii) Consultation Paper dated 13<sup>th</sup> July, 2016 on “Proliferation of Broadband through Public Wi-Fi Networks”**

The growth of Internet penetration in India and realisation of its full potential is closely tied to the proliferation of broadband services. WLANs created using Wi-Fi technology can be used for extending the “last-mile connectivity” of broadband connections to a wider segment of users. Wi-Fi networks can offer affordable, scalable and versatile technologies that can facilitate the spread of Internet access in rural and urban areas alike.

It is felt that Wi-Fi hotspots can be proliferated in every nook and corner of the country and it should be possible to set up such hotspots by shop owners and unemployed youths. Such a model will work much like a Public Call Office (PCO) with the advantage that the operator of the Wi-Fi hotspot will

not be serving the customer physically as all the transactions will happen electronically. ISPs will also be encouraged as there will be an increased consumption of data by the public. The model will also provide a boost to generation of employment in the country.

The objective of the Consultation Paper is to examine the need of encouraging public Wi-Fi networks in the country from a public policy point of view, discuss the issues in its proliferation and find out solutions for the same.

In this paper, “public Wi-Fi networks” has broader meaning and not limited to the Wi-Fi hotspot created by licensed TSP/ISP at public places. There could be small entrepreneurs or even a very small entity which would like to participate in common and shared Wi-Fi network for larger public use.

The Consultation Paper raised the issues of various regulatory/licensing or policy measures required to encourage ubiquitous city-wide Wi-Fi networks as well as expansion of Wi-Fi networks in remote or rural areas. The CP also touches upon interoperability between the Wi-Fi networks of different service providers as also between cellular and Wi-Fi networks, frequency bands, payment and authentication procedure to access Wi-Fi.

**(ix) Consultation Paper dated 28<sup>th</sup> July, 2016 on “Complaints/Grievance Redressal in Telecom Sector”**

TRAI issued a Consultation Paper on “Complaints/Grievance Redressal in Telecom Sector” on 28<sup>th</sup> July, 2016. The Consultation Paper revisits the issue of redressal of individual consumer complaints and grievances in the telecom sector so that consumer complaints are resolved in a timely, efficient and effective manner. An Open House Discussion (OHD) on the paper was conducted on 26<sup>th</sup> October 2016 at New Delhi. TRAI is currently in the process of finalizing its recommendations on the subject.

**(x) Consultation Paper dated 5<sup>th</sup> August, 2016 on “Review of Interconnect Usage Charges”**

An Interconnection Usage Charges (IUC) regime is an essential requirement to enable subscribers of one service provider to communicate with subscribers of another service provider. Providing interconnection entails costs for which service providers need to be fairly compensated. The IUC regime not only determines the revenue accruable to the service providers but also how this revenue is to be distributed among them. An efficient interconnection and charging regime is central to efficient and seamless connectivity between various networks.

The Authority specified IUC for the first time in 2003. Subsequently, these charges have been revised in 2006, 2009 and 2015. The prevailing termination charges are given in the following Table:

Type of call	Type of traffic	Termination charge
Local and national long distance call	Wireless to wireless	₹ 0.14 per minute
	Wireless to wireline	0 (Zero)
	Wireline to wireline	0 (Zero)
	Wireline to wireless	0 (Zero)
International call	International incoming call to wireless and wireline	₹ 0.53 per minute

The Authority undertook review exercise in view of the fact that several telecom services providers in the country have, in the recent past, built access networks using 4G mobile technology. A few of these TSPs may carry voice on Voice over LTE (VoLTE) technology in near future. Further, world-over, Internet Telephony (in which voice travels over public Internet) is beginning to emerge as a cost-effective mode of delivery of voice calls. Together, these developments require a review of the IUC regime in the country. The Consultation Paper, inter-alia, sought inputs of the stakeholders mainly on the following broad issues:

- (a) Approaches to be used for prescribing domestic termination charges (viz. mobile termination charges and fixed termination charges) for maximization of consumer welfare, adoption of more efficient technologies and overall growth of the telecommunication services sector; and
- (b) Approaches to be used for prescribing international termination charges and international settlement rates in the country for long-term sustainable growth of the International Long Distance (ILD) service segment.

**(xi) Consultation Paper dated 5<sup>th</sup> August, 2016 on “Review of network related Quality of Service Standards for Cellular Mobile Telephone Service”**

The performance of service providers on call drop is monitored for both 2G and 3G services through two parameters viz. “call drop rate /Circuit Switch Voice drop rate (benchmark  $\leq 2\%$ )” and “worst affected cells having more than 3% TCH drop/Circuit Switched Voice drop rate: CBBH (benchmark  $\leq 3\%$ ).”

The performance of service providers on Call drop is assessed for the service area as a whole. However, the areas/localities served by cells having substantial call drop is identified and their performance is captured by the parameter “worst affected cells having more than 3% TCH drop/Circuit Switched Voice drop rate: CBBH”.

TRAI issued Consultation Paper on Review of network related Quality of Service Standards for Cellular Mobile Telephone Service on 5<sup>th</sup> August 2016 for seeking the comments of stakeholders. This consultation paper describes the various parameters and respective benchmarks for assessment of Quality of Service of 2G & 3G networks. The views of the stakeholders are called for so as to bring about changes in these benchmarks and possibly add parameters, if required, to improve the Quality of Service experience by the customers. It is also envisaged to add relevant parameters for 4G/BWA services also, in view of their development in the network. The consultation paper seeks to know from the stakeholders as to what will be the appropriate way to calculate call drop rates through meta data analysis of CDRs. The mechanism of imposing financial disincentives in case of below the benchmark performance has also been raised in this consultation.

**(xii) Consultation Paper dated 21<sup>st</sup> September 2016 on “Infrastructure Sharing in Broadcasting TV Distribution Sector”**

TRAI, on 21<sup>st</sup> September 2016 released a Consultation Paper on “Infrastructure sharing in broadcasting TV distribution sector”. The objective of the consultation is, to issue recommendations to the Government of India to formulate a policy framework for enabling infrastructure sharing by DPOs so as to optimally utilize the infrastructure and to promote healthy competition among service providers and, to identify the changes required in the Cable TV Act and the Rules made there under, in the license/ registration conditions of the Broadcasters/DPOs in order to facilitate infrastructure sharing on voluntary basis.

**(xiii) Draft Telecommunication (Broadcasting and Cable Services) (Eighth) (Addressable Systems) Tariff Order, 2016 dated 10<sup>th</sup> October 2016- for Consultation**

Draft tariff order was released on 10<sup>th</sup> October 2016 seeking written comments from the stakeholders. The objective of the proposed tariff framework is to create an enabling environment for bringing in more transparency, equity and non-discrimination across the value chain while ensuring consumer protection and growth of the sector. In the draft Tariff Order, a new tariff framework has been proposed wherein customers have been provided with adequate choice to select channels of their choice while ensuring transparency in the entire value chain.

**(xiv) Draft “The Standards of Quality of Service and Consumer Protection (Digital Addressable Systems) Regulations, 2016” dated 10<sup>th</sup> October 2016- for Consultation**

Draft QoS Regulation was released on 10<sup>th</sup> October 2016 seeking written comments from the stakeholders. The objective of the proposed QoS

regulation is to formulate Common framework for standard of QoS and consumer protection across digital addressable platforms viz DTH, Cable TV, IPTV, HITS. In the proposed QoS Regulation, choice of subscription to a-la-carte channels and bouquets of channels by subscribers have been simplified.

**(xv) Draft Interconnection Regulations dated 14<sup>th</sup> October 2016 for TV broadcasting services provided through addressable systems-for Consultation**

Draft Interconnection Regulation was released on 14<sup>th</sup> October 2016 seeking written comments from the stakeholders. The objective of the proposed interconnection Regulation is to formulate common interconnection framework for all addressable systems namely DTH, HITS, DAS and IPTV.

**(xvi) Consultation Paper dated 18<sup>th</sup> October 2016 on “Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications”**

TRAI received a reference from Department of Telecommunications (DoT) on 5<sup>th</sup> January, 2016. Through the reference the DoT sought the recommendations of TRAI on three aspects related to M2M communications:

- a) M2M Spectrum Requirements
- b) M2M Roaming Requirements
- c) Quality of Service in M2M Services

M2M is the basis for automated information exchange between machines and can impact for various industry verticals like Smart City, Smart Grid, Smart Water, Smart Transportation, Smart Health etc. Government of India has recognized the potential of M2M and emphasized the same in the National Telecom Policy 2012.

While formulating this consultation paper on M2M issues, apart from the specific issues referred by DoT through the reference, the Authority realised that certain other regulatory aspects including policy and licensing framework for M2M service providers, various technical challenges in implementation, allocation and utilization of various network codes, data protection, and privacy issues also need to be deliberated. Therefore, these issues have also been included in the Consultation Paper.

**(xvii) Consultation Paper dated 21<sup>st</sup> October, 2016 on “Review of the Regulatory Framework for Interconnection”**

The telecommunication service sector in the country has witnessed several economic and technological changes since 2002. These developments have altered the nature and economics of telecommunication services sector as

well as the strategy of market players and have, in several ways, influenced the scale and choice of investments in different types of technologies and services. Many of these developments impinge upon the matter of interconnection between TSPs. Regulator is required to mandate a framework for interconnection, it has not only to ensure that the framework is efficient but also that the framework is able to adapt to the changing circumstances as outdated regulation run the risk of stifling market growth and innovation.

Through this Consultation Paper, the Authority is undertaking a review of the existing regulatory framework for interconnection with the ultimate objective of facilitating effective and expeditious interconnection between TSPs in a consultative manner.

**(xviii) Consultation Paper dated 28<sup>th</sup> October 2016 on “Captive VSAT CUG Policy issues”**

TRAI received a reference from the Department of Telecommunications (DoT) on dated 16<sup>th</sup> March, 2016. Through the reference DoT sought the recommendations of TRAI on minimum License Fee in respect of 2<sup>nd</sup> Hub in Captive VSAT CUG network and terms and conditions of Captive VSAT CUG License.

After receiving the reference, the Authority consulted some of the Captive VSAT licensees, who brought out some additional issues related to applicability of Royalty charges and delay in approvals in augmentation of bandwidth for Captive VSAT. The Authority decided to include these issues also for the consultation of the stakeholders, so as to provide comprehensive recommendations on issues concerning captive VSAT licensees.

Accordingly, a Consultation Paper on ‘Captive VSAT CUG Policy issues’ was uploaded on the TRAI’s website [www.trai.gov.in](http://www.trai.gov.in) on 28<sup>th</sup> October 2016 seeking comments of the stakeholders.

**(xix) Consultation Paper dated 30<sup>th</sup> November 2016 on “Issues related to closure of Access Services”**

Due to the changes in policy for assignment of licence, spectrum trading and licences expiry from time to time, there is possibility of discontinuity of services to the subscribers by an access service provider. Recently there have been cases where due to licence expiry, trading of spectrum and upgradation of technology there has been discontinuity of services to the subscribers. Certain issues arose due to these events. Therefore, the Authority decided, suo-motu, to come out with a consultation paper on the issue.

Accordingly, a Consultation Paper on ‘Issues related to closure of Access Services’ was placed on TRAI’s website [www.trai.gov.in](http://www.trai.gov.in) on 30<sup>th</sup> November 2016 seeking comments of the stakeholders.

## **PRE - CONSULTATIONS**

### **(i) Pre-Consultation Paper dated 4<sup>th</sup> April 2016 on “Set Top Box Interoperability”**

TRAI on 4<sup>th</sup> April 2016, released a Pre-Consultation Paper on “Set Top Box Interoperability”. TRAI has taken up the issue relating to development of interoperable STBs in Digital Television Broadcasting sector that must be compatible across all operators using the same platform. STB interoperability would empower consumers to change his cable TV (or DTH) service provider whenever required, without changing his STBs and with no major cost implications. This will also shift the focus of the sector towards providing better quality of services to the consumers at competitive prices. Implementation of STB inter-operability, may also lead to making STBs available in the open market while reducing costs and also addressing the challenge of e-waste resulting due to discarded set-top-boxes. Availability of set-top-boxes in open market will reduce capital expenditure of service providers and improve the cash flow position of the industry.

The pre-consultation paper seeks to identify various issues related to interoperability of STBs, challenges, identifying concerns of the industry and suggest a possible solution towards achieving technical interoperability of STBs.

### **(ii) Pre-Consultation Paper dated 30<sup>th</sup> May 2016 on “Net Neutrality”**

TRAI issued Pre-Consultation Paper on 30<sup>th</sup> May 2016 on Net Neutrality for seeking the comments of the stakeholders. Pre-consultation paper is an attempt to identify the relevant issues in these areas, which will help TRAI in formulating its views on the way forward for policy or regulatory interventions on the issue of net neutrality.

## **Guidelines on tariff recharges/payments through Third Party Apps/Websites**

In the recent past in Indian telecom service sector, tariff recharges/payment of bills through third party Apps/websites recharges (hereinafter referred as Channel Partner) have been increasingly recognised as a convenient mode of transaction. However, there exists a possibility of time gap in updating the information on websites/applications on the day of tariff product launch/revision between the Telecom Service Provider (TSP) and the Channel Partner(s), which may cause inconsistency and subscribers may not get perceived benefits. Considering the process involved and magnitude of growing transactions, the Authority, with an objective to ensure transparency, uniformity and protection to the subscribers in the process of tariff recharges/payments through Channel Partner or sub Channel Partners issued following Guidelines on 14<sup>th</sup> October 2016:

- (i) There should not be any difference in the features of tariff products and benefits available on the TSP's website and Channel Partner's / sub Channel Partner's website(s)/app(s). A mechanism should be introduced by the TSP(s) where a new tariff product or any change in any tariff product is updated concurrently on Channel Partner(s) App(s)/website(s).
- (ii) Since Channel Partner(s)/sub Channel Partner(s) are non-licensed entities and appointed by TSP(s) based on mutually agreed terms and conditions between TSP and Channel Partner(s)/sub Channel Partner(s), all responsibilities for ensuring compliance of terms and conditions of the license agreement and other regulatory guidelines shall remain with the TSP.
- (iii) Any new tariff product or change in existing tariff product to be made live only at midnight (between 00:00 Hrs and 02:00 Hrs) on the date of the launch or change in tariff product.

## **Aadhaar based E-KYC service**

### **Communication dated 6<sup>th</sup> January 2016 regarding adoption of Aadhaar based e-KYC service**

In order to make subscriber verification system more secure and robust, it is important that the entire process should be completely (end-to-end) technology driven, digital and paperless. Aadhaar linked e-KYC service, provided by the Unique Identification Authority of India (UIDAI) is a fool-proof mechanism to verify the identity of the person electronically, instantaneously from the source itself. E-KYC verification will not only reduce the risk of identity fraud and document forgery but it will also make the entire process of subscriber verification paperless.

Keeping in view of above, through letter dated 6<sup>th</sup> January 2016 the Authority recommended to the DoT for acceptance and adoption of Aadhaar based e-KYC service along with Aadhaar based e-sign as a valid alternative process to the existing process for digitally signed, biometric based verification of the new mobile subscribers.

## **Other Issues (Telecom Sector)**

### **(i) Publication of Technology Digest**

New technology is constantly being developed and finds its applications in the technical systems that make up a telecommunications networks. However, keeping pace with advances in telecom technology becomes difficult

for most telecom professionals. To identify and share new technology trends with industry, TRAI is publishing a technology bulletin called 'Technology Digest' which focuses on one technology aspect in every issue, preparation of Technology Digest on Molecular Communication is in progress.

**(ii) Study Paper dated 8<sup>th</sup> September 2016 On “Shareholding Pattern, Financing Pattern and Capital Structure of Indian Private Telecom Access Service Providers”**

The study paper was released on 8<sup>th</sup> September 2016. This study paper attempts to provide an overview of the capital structure (deployment of funds in the form of owners' equity and borrowed / loan fund) of 24 private telecom access service provider companies. The information is compiled from annual accounts of these companies and other information furnished by them for three years from 2012-13 to 2014-15. The aim of this study is to provide insight into the capital structure of the service providers, financing pattern, indebtedness, investment and profitability of aforementioned telecom companies in India. The key conclusions of the study report are:

- i. The share of Indian promoters in share capital has increased from 55% in 2012-13 to 71% in 2014-15 at the same time share of foreign promoters has gone down by 7%.
- ii. Total loans have increased from Rs. 196525 crore in 2012-13 to Rs. 258876 crore in 2014-15, however, the Debt-Equity ratio has declined from 2.05 times in 2012-13 to 1.68 times in 2014-15.
- iii. The infusion of funds in Fixed Assets (Gross Block including Capital work in Progress) of the telecom service sector (access services) has increased which is evident as the Fixed Assets have increased from Rs. 360590 crore in 2012-13 to Rs. 505934 crore in 2014-15.
- iv. The significant increase in the growth of data usage, stable MoU per subscriber, continuous positive growth in revenue, improvement in profitability indicators; all these indicate the step-up in the sector's financial performance in comparison to the period of year 2008 to 2012.

**(iii) Order dated 1<sup>st</sup> September 2016 to furnish information regarding Access Facilitation charges and Co-location charges at Cable Landing Station (OCLS)**

TRAI, vide its communications dated 12<sup>th</sup> July 2016 asked all Owners of Cable Landing stations (OCLS) to provide information pertaining to Cable Landing Stations in the prescribed format within twenty days.

BSNL provided the requisite information whereas remaining 5 OCLSs i.e. M/s Tata Communications Ltd., M/s Bharti, M/s Sify, M/s Reliance Jio &

M/s RCL did not provide the requisite information within time frame. TRAI, vide its communication dated 3<sup>rd</sup> August 2016, again requested remaining 5 OCLSs to furnish the requisite information without any further delay.

Since 5 OCLSs did not furnish the requisite information despite repeated request, the Authority in exercise of its powers under section 12 of TRAI Act, issued the Order to these 5 OCLSs (M/s TCL, M/s Bharti, M/s Sify, M/s Reliance Jio & M/s RCL) to furnish the information. The compliance of the Order has been obtained.

**(iv) Green Telecommunications**

TRAI is monitoring the implementation of DoT Direction on Green Technologies in Telecom Sector. In this regard, Carbon Footprint Reports of the NLDs/ILDs/ISPs and Access SPs upto H-1, 2015-16 have been received in TRAI.

**(v) MIS Project**

The MIS Project was launched on pilot basis on 1<sup>st</sup> January 2014. The portal will help in collection of various reports in electronic form and generation of all types of reports and dashboards for data analysis purpose. The service providers have started submitting various reports pertaining to their networks through MIS portal.

**(vi) Audit and Survey**

TRAI has engaged independent agencies for auditing and assessing the performance of service providers on quality of service and also for assessing customer perception of service through survey.

TRAI also publishes information about the quality of service performance by service providers, the results of Audit and assessment of Quality of Service under taken by Independent Agencies and the results of survey under taken by independent agencies about customer perception of service through its website for the information of stakeholders. The publishing of quality of service related information has also been forcing the service providers to improve the quality of service performance and also to address deficiencies in meeting the benchmarks. The audit work had been awarded on zonal basis to M/s C S Datamation for South Zone, M/s IMRB for West & East Zone and M/s PhiStream Consulting Private Limited for North Zone on 9<sup>th</sup> September 2015 for carrying out the work of Audit & Assessment of Quality of Service w.e.f. 1<sup>st</sup> October 2015. The audit work for the period October to December 2015 and March 2016, has been completed and the results of the same was uploaded on TRAI's website Further, the audit work for the period April to June & July to September 2016 has been was carried out and the reports of the same is under analysis.

The survey work for South Zone, for the period June to December 2015 was carried out by M/s Spectrum Planning Ltd. The reports of the same are rejected by the Authority.

**(vii) Show cause notice dated 27<sup>th</sup> September, 2016**

Show cause notices were issued to M/s Bharti Airtel Ltd, M/s Idea Cellular Ltd, M/s Vodafone India Ltd & M/s Reliance Jio Infocomm Ltd. for violation of the Standards of Quality Of Service Of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009 dated the 20<sup>th</sup> March, 2009 and the provisions of Unified License and Unified Access Service License.

**(viii) Seminar at Hyderabad on 24<sup>th</sup> October, 2016 on “Unsolicited Downloads and Background Exchanges when using the Internet”**

TRAI in academic partnership with the Indian Institute of Technology Hyderabad conducted a Seminar on “Unsolicited Downloads and Background Exchange when using the Internet”.

**(ix) Miscellaneous**

- (a) NCCP Portal: TRAI has launched the portal [www.nccptrai.gov.in](http://www.nccptrai.gov.in) to monitor the implementation of TCCCPR Regulations in 2010. The portal is being used for monitoring the UCC Complaints.
- (b) The implementation of the VAS Direction has drastically reduced the VAS complaints (to 0.21% of the total VAS activations).
- (c) An amount of Rs. 2.78 Crores has been received till date towards Penalty on Telemarketers.
- (d) Empanelment of Auditors for 2016-17 has been completed.

**Other Issues (Broadcasting Sector)**

**(i) Advisory dated 5<sup>th</sup> February 2016 on to Distribution Platform Operators (DTH /MSOs /LCOs / HITS / IPTV) for use of Electronic Customer Application Form (e-CAF)**

TRAI on 5<sup>th</sup> February 2016 issued an advisory for use of “Electronic Customer Application Form” (e-CAF) by the Distribution Platform Operators (DPOs) providing TV broadcast services namely DTH/MSOs/HITs/IPTV operators. This Advisory is a proactive measure taken by TRAI for enabling use of digital technologies towards enhanced efficiencies in providing and managing services to the subscribers. The CAF is required to be filled up

by customers before subscribing TV services. Information captured in the CAF is then transferred to the Subscriber Management System (SMS) of the DPO for managing the services availed by the subscriber. Presently use of CAF in paper format is prevalent and manual process is followed for updating information in the SMS. The processing of millions of physical CAFs and their storage creates operational difficulties. The e-CAF can be easily accessed and integrated with the SMS of the DPO eliminating the manual feeding of information. It will also provide customers a simpler method for subscribing to services; improve customer relationship, and management of their subscription and services. The e-CAF will bring efficiencies in the process of providing and managing services to the subscribers. It will also make easier storage of millions of CAFs resulting in lesser operational costs. The adoption of e-CAF is an environment friendly measure and it is likely to benefit all stakeholders.

**(ii) Advisory dated 17<sup>th</sup> August 2016 to Multi System Operators to provide signals of TV channels to LCOs only with written interconnection agreement”**

The Telecommunication (Broadcasting and cable services) Interconnection (Digital Addressable Cable Television Systems) Regulations, 2012 requires that no Multi System Operator shall make available signals of TV channels to any linked local cable operator without entering into a written interconnection agreement and MSO shall handover a copy of the interconnection agreement signed by the MSO & LCO to the respective LCO within 15 days and obtain an acknowledgement thereof.

TRAI has also notified formats of the Model Interconnection Agreement (MIA) and Standard Interconnection Agreement (SIA) to be signed between MSOs and LCOs, so that there is a level playing field and less disputes between MSOs and LCOs. While the MIA enables MSOs and LCOs to have a mutual agreement in a structured manner in line with the regulatory framework, the SIA provides standard terms and conditions prescribed by the regulation that can be adopted by MSOs & LCOs for retransmission of TV signal, if they fail to mutually agree on MIA.

It has been brought to the notice of TRAI that some MSOs are alluring LCOs to provide signal without entering into written interconnection agreement. Such arrangements are against the interconnection regulations and also may result in disputes.

Accordingly, on 17<sup>th</sup> August 2016, all MSOs are advised not to venture into such deals/arrangements which are liable to be punished under the TRAI Act.

**(iii) Letter to 48 Pay Broadcasters and 15 major MSOs in respect of re-transmission of signals of TV channels through Digital Addressable System (DAS) only in DAS notified areas**

It is mandatory for every cable operator to transmit or re-transmit programmes of any channel in an encrypted form through digital addressable system in such cities (areas) from such date as specified in the notification issued by Central Government under sub-section 1 of section 4A of the Cable Television Networks (Regulation) Act, 1995. As such, any transmission or retransmission of TV channels in analog mode in DAS notified areas is in contravention to the provisions of the Cable Television Networks (Regulation) Act, 1995. Accordingly, as soon as it was brought to the notice of TRAI that some multi system operators are still re-transmitting signals of TV channels in analog/un-encrypted mode in the areas notified by the Government of India for provisioning of cable TV services through digital addressable systems (DAS), 15 major MSOS have been directed to ensure provisioning of signals of TV channels only through digital addressable system in DAS notified areas wherever the cut-off date as provided in the relevant notification issued by Government of India under section 4A of the Cable Television Networks (Regulation) Act, 1995 is over. All the broadcasters of pay channels have also been directed not to provide signals of TV channels to such MSOs who are re-transmitting signals of TV channels in analog/un-encrypted mode in DAS notified areas without any authority of law and in contravention of the Cable Television Networks (Regulation) Act, 1995.

**(iv) Interaction with ‘Multi System Operator’ and ‘Local Cable Operators**

- (a) 1<sup>st</sup> interaction with ‘Multi System Operator’ and ‘Local Cable Operators’ was held on 15<sup>th</sup> June 2016 at Bangalore coordinated by Regional Office, Bangalore.
- (b) The 2<sup>nd</sup> interaction with ‘Multi System Operator’ and ‘Local Cable Operators’ was held on 27<sup>th</sup> July 2016 at Lucknow coordinated by Regional Office, Bhopal.
- (c) The 3<sup>rd</sup> interaction with ‘Multi System Operator’ and ‘Local Cable Operators’ was held on 12<sup>th</sup> August 2016 at Agra coordinated by Regional Office, Bhopal.

**(v) Miscellaneous**

- (a) Data relating to average duration per hour of advertisements (commercial & self promotional) during peak hours in News & pay Non-news Channels for the period 28<sup>th</sup> September 2015 to 27<sup>th</sup> December 2015 was uploaded on TRAI’s website on 3<sup>rd</sup> March 2016.
- (b) Data relating to average duration per hour of advertisements (commercial & self promotional) during peak hours in News & pay Non-news Channels for

the period 28<sup>th</sup> December 2015 to 27<sup>th</sup> March 2016 was uploaded on TRAI's website on 27<sup>th</sup> May 2016.

- (c) Data relating to Average duration per hour of Advertisements for Pay channels for the period 28<sup>th</sup> March 2016 to 26<sup>th</sup> June 2016 was uploaded on TRAI's website on 07<sup>th</sup> November 2016.
- (d) Open House Discussion (OHD) on the consultation paper on "Draft Model & Standard Interconnection agreements between MSO and LCO for offering cable TV services through Digital Addressable System (DAS) was held on 28<sup>th</sup> January, 2016 at New Delhi.
- (e) Open House Discussion (OHD) on the consultation paper on 'Issues related to Radio Audience Measurement and Ratings in India' was held on 18<sup>th</sup> May 2016 at New Delhi.
- (f) Open House Discussion on Consultation Paper on 'Tariff Issues related to TV Services' were held on 8<sup>th</sup> April 2016 at New Delhi and 21<sup>st</sup> April 2016 at Raipur Chhattisgarh.
- (g) Open House Discussion (OHD) on 'Register of Interconnection Agreements (Broadcasting and Cable Services' Regulations 2016 was held on 26<sup>th</sup> May 2016 at New Delhi.
- (h) Open House Discussion (OHD) on the consultation paper on 'Interconnection framework for Broadcasting TV Services distributed through Addressable Systems' was held on 13<sup>th</sup> July 2016.
- (i) Open House Discussion (OHD) on the consultation paper on 'Issues related to Quality of Services in Digital Addressable Systems and Consumer Protection' was held on 28<sup>th</sup> July 2016.
- (j) Open House Discussion (OHD) on the consultation paper on 'Issues related to Digital Terrestrial Broadcasting in India' was held on 19<sup>th</sup> October 2016.
- (k) An Open House Discussion (OHD) on the consultation paper on 'Infrastructure Sharing in Broadcasting TV Distribution System' was held on 19<sup>th</sup> December 2016.
- (l) C-DOT is working on technical interoperability of STBs. During the month of October 2016, C-DOT communicated that significant progress has been achieved by them in terms of implementation of a framework for interoperable STBs.

Therefore, a lab demonstration of framework for Interoperable STB based on Smart Card based approach in C-DOT Bangalore was organized on 24<sup>th</sup> December 2016 which was attended by Member TRAI and Principal Advisor (B&CS). Main purpose of this demo was to exhibit C-DOT's progress on development of Interoperable STB framework and practical feasibility of Smart card based approach of Interoperable STB.

## Annexure

**List of Places where Consumer Outreach Programmes/Workshops were conducted during the period from 1<sup>st</sup> January 2016 to 31<sup>st</sup> December 2016**

<b>S.No.</b>	<b>Place</b>
1	Shivpuri (Madhya Pradesh)
2	Kolkata(West Bengal)
3	Bhiwani (Haryana)
4	Guwahati (Assam)
5	Chidambaram (Tamil Nadu)
6	Indore (Madhya Pradesh)
7	Mandya (Karnataka)
8	Ghaziabad (Uttar Pradesh)
9	Tirupati (Andhera Pradesh)
10	Aurangabad (Maharashtra)
11	Baripada (Odisha)
12	Purullia (West Bengal)
13	Porbandar (Gujarat)
14	Pallakad (Kerala)
15	Manali (Himachal Pradesh)
16	Gonda (Uttar Pradesh)
17	Amritsar (Punjab)
18	Bijnor (Uttar Pradesh)
19	Bodhgaya (Bihar)
20	Sikar (Rajasthan)
21	Sivakashi (Tamil Nadu)

<b>S.No.</b>	<b>Place</b>
22	Gorakhpur (Uttar Pradesh)
23	Wayanad (Kerala)
24	Narnaul (Haryana)
25	Raipur (Chhattisgarh)
26	Jaisalmer (Rajasthan)
27	Aizawl (Mizoram)
28	Margao (Goa)
29	Nahan (Himachal Pradesh)
30	Gangtok (Sikkim)
31	Haridwar (Uttarakhand)
32	Anantapur (Andhra Pradesh)
33	Cunning (West Bengal)
34	Nainital (Utrakhan)
35	Tiruvannamalai (Arunchalam), Tamil Nadu
36	Moga (Punjab)
37	Dalhausie (Himachal Pradesh)
38	Nagaon (Assam)
39	Sangli(Maharashtra)
40	Adhilabad (Telangana)
41	Deoghar (Jharkhand)
42	Dhar (Madhya Pradesh)
43	Anand (Gujarat)
44	Dharwad (Karnataka)
45	Faridabad (Haryana)

<b>S.No.</b>	<b>Place</b>
46	Sambhalpur (Odisha)
47	Bidar (Karnataka)
48	Bagalkot (Karnataka)
49	Nanded (Maharashtra)
50	Ratnagiri (Maharashtra)
51	Godag (Karnataka)
52	Wardha (Maharashtra)
53	Yayatmal (Maharashtra)
54	Lalitpur (UP)
55	Jaunpur (UP)
56	Rajnandgaon (CG)
57	Mandla (MP)
58	Saharanpur (UP)
59	Etawah (UP)
60	Dehradun (Uttarakhand)
61	Solan (HP)
62	Palampur (HP)
63	Siddipet (Telangana)
64	Ongole (AP)
65	Hosur (TN)
66	Balangir (Odisha)
67	Tiruvallur (TN)
68	Puri (odisha)
69	Panipat (Haryana)

<b>S.No.</b>	<b>Place</b>
70	Dausa (Rajasthan)
71	Gurdaspur (Punjab)
72	Godhra (Gujarat)
73	Phalodi, Jodhpur (Rajasthan)
74	Jhajjar (Haryana)
75	Tinsukia (Assam)
76	Raigung (WB)
77	Bolpur (WB)
78	Agartala (Tripura)
79	Islampur (WB)
80	Jamshedpur (Jharkhand)
81	Chennai (Tamilnadu)
82	Rajgir (Bihar)
83	Bilaspur (Himachal Pradesh)
84	Mohali (Punjab)
85	PhootoLao, Jaipur (Rajasthan)
86	Raisen (Madhya Pradesh)

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# TRAI

**Telecom Regulatory Authority of India**  
Mahanagar Doorsanchar Bhawan, Jawahar Lal Nehru Marg,  
(Old Minto Road), New Delhi - 110 002  
Telephone: +91-11-23236308  
Fax: +91-11-23213294  
E-mail: [ap@trai.gov.in](mailto:ap@trai.gov.in)  
Website: <http://www.trai.gov.in>