Department of Telecommunications
Ministry of Communications
Government of India
New Delhi

Quarterly Newsletter
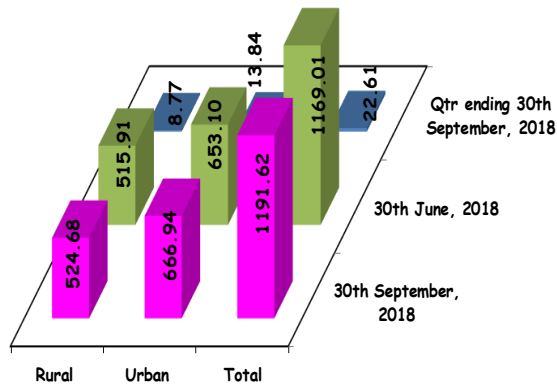# (July – September 2018)

Highlights of major developments in the Telecom sector as well as initiatives by the DoT, during the quarter ending **September 2018**, are given in the following sections.

I.   TELEPHONE CONNECTIONS AND TELEDENSITY

(i) The number of telephones stood at1191.62million as on 30th September, 2018 from 1169.01millionon 30th June, 2018. This implies an increase of 22.61million connections during the period, attributed mainly to an increase in number of telephones in the private sector by 22.89 million during the period. The tele-density, which was 89.73% in the beginning of the quarter increased to 91.22% by the end of the September 2018.

Telephones

Tele-density
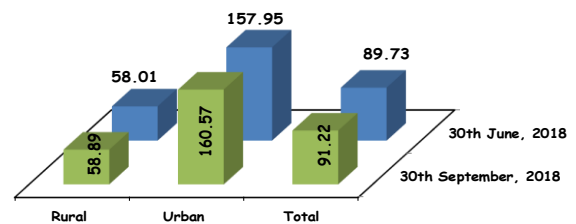
(ii) The preference for use of wireless is reflected in the share of wireless phones, which reached 98.14% (1169.51million) as on30th September, 2018. On the other hand, the share of wire line connection was 1.86% (22.11million) as on 30th September, 2018.

(iii) In public sector, there was a slight fall of 0.28 million phones during the quarter ending september,2018. However, in private sector there was an increase of 22.89 million phones during the same period. The public sector had 131.68 million (11.05%) phones as against 1059.94 million (88.95%)phones of the private sector as on 30th September, 2018.

(iv) As on30th September, 2018, the share of urban was 55.97% (666.94 million) compared to 44.03% (524.68million) of rural areas. The rural tele-density stands at 58.89% as compared to the urban tele-density of 160.57% as on 30thSeptember, 2018.

II. INTERNET PENETRATION

(i) Internet usage in the country is on a steady growth path. The number of Internet subscribers (both broadband and narrowband put together) which was 422.18 million at the end of March'17 has increased to 512.27million by the end of June, 2018, registering a quarterly growth of 3.71%.

(ii) The number of subscribers accessing internet via wireless phones etc. was 491.10million and there were 21.17million wired internet subscribers at the end of June, 2018. Wireless internet subscribers constitute 95.70%of the total internet subscribers.

(iii) The number of Broadband subscribers, which was 447.12million at the end of 30th June'18, increased to 481.70 million as on 30th September '18 with an increase of 34.58million.

III. ACTIVITIES OF DoT

(i) The Cabinet approved the National Digital Communications Policy-2018 on 26th September 2018 to connect, propel and secure India Universal broadband connectivity at 50 Mbps to every citizen, provide 1 Gbps connectivity to all Gram Panchayats, ensure connectivity to all uncovered areas, and attract investments of USD 100 Billion in the Digital Communications Sector.
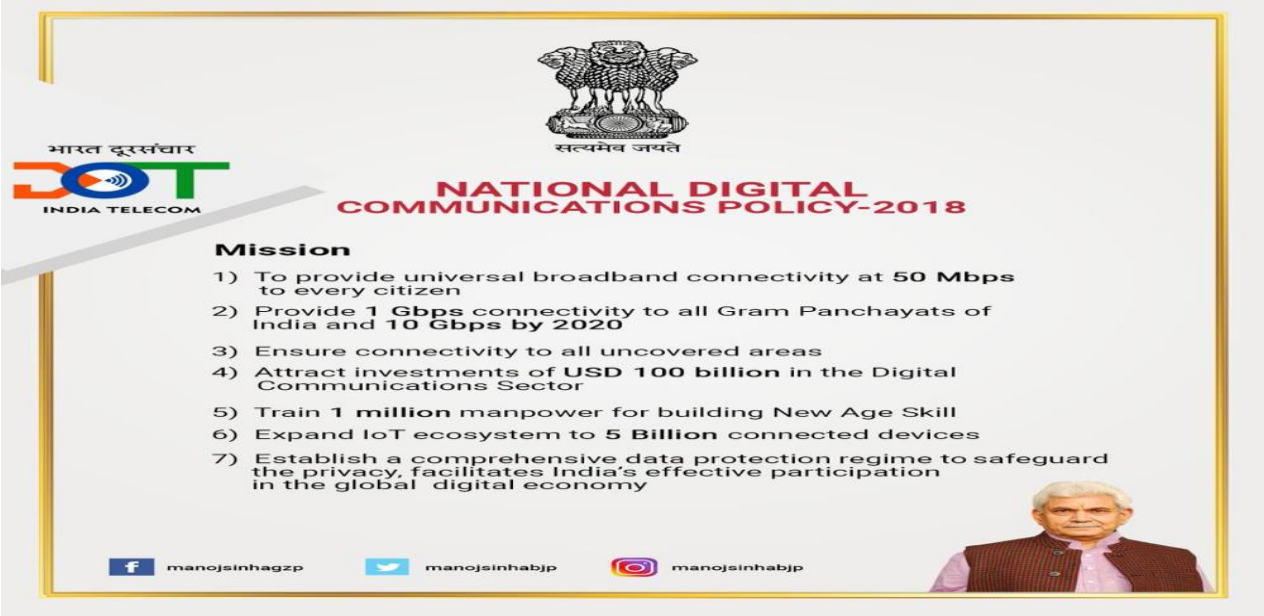
The NDCP-2018 envisions supporting India's transition to a digitally empowered economy and society by fulfilling the information and Communications needs of citizens and enterprises by establishment of a ubiquitous, resilient and affordable Digital Communications Infrastructure and Services. The key objectives of the policy are provisioning of Broadband for all; creating 4 Million additional jobs in the Digital Communications sector; enhancing the contribution of the Digital Communications sector to 8% of India's GDP from ~ 6% in 2017; propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017; enhancing India's contribution to Global Value Chains; and ensuring Digital Sovereignty. These objectives are to be achieved by 2022.

The policy, inter-alia, aims to provide universal broadband connectivity at 50Mbps to every citizen; provide 1 Gbps connectivity to all Gram Panchayats of India by 2020 and 10 Gbps by 2022; ensure connectivity to all uncovered areas; attract investments of USD 100 Billion in the Digital Communications Sector; train 1 Million manpower for building New Age Skill; expand IoT ecosystem to 5 Billion connected devices; establish a comprehensive data protection regime for digital communications that safeguards the privacy, autonomy and choice of individuals and facilitates India's effective participation in the global digital economy; and Enforce accountability through appropriate institutional mechanisms to assure citizens of safe and secure digital communications infrastructure and services.

The policy further advocates for establishment of a National Digital Grid by creating a National Fibre Authority; establishing Common Service Ducts and utility corridors in all new city and highway road projects; creating a collaborative institutional mechanism between Centre, States and Local Bodies for Common Rights of Way, standardization of costs and timelines; removal of barriers to approvals; and facilitating development of Open Access Next Generation Networks.

Background:

- The present world has entered the era of modern technological advancements in the telecom Sector such as 5G, IoT, M2M etc., a need was being felt to introduce a 'customer focused' and 'application driven' policy for the Indian Telecom Sector which can form the main pillar of Digital India by addressing emerging opportunities for expanding not only the availability of Telecom services but also Telecom based services.

- Accordingly, the new National Digital Communications Policy -2018 has been formulated, in place of the existing National Telecom Policy-2012, to cater to the modern needs of the digital Communications Sector of India.

(ii)   BharatNet

BharatNet project is being implemented in a phased manner for providing Broadband connectivity to all Gram Panchayats (GPs) (approx. 2,50,000) in the country. Phase I of BharatNet for connecting

1 lakh GPs has been completed in December 2017. The remaining GPs are targeted to be implemented by March 2019 under Phase II.

As part of BharatNet project, the last mile connectivity, through Wi-Fi or any other suitable broadband technology is being provided at all the GPs in the country. At each GP, on an average, five Access Points (APs) are to be provided, three APs for Government institutions and two APs for public places.

As on 30th September 2018 1,19,593 Gram Panchayats have been connected on Optical Fibre Cable(OFC) by laying 2,89,446 Km of OFC with 1,15,324 service ready GPs.

(iii) Public Procurement (Preference to Make in India) Order, 2017- Notification of telecom Products, Services and Works. A gazette notification on Public Procurement (Preference to Make in India) Order, 2017-Notification of telecom Products, Services and Works was notified on 29.08.2018 and circulated to all Ministries/ Department/organizations to give preference to domestic telecom manufacturers/suppliers in public procurements.

(iv) Hon'ble MOSC(I/C) inaugurated interactive session on Infrastructure Providers 2.0 : Making India Digitally Ready" organised by Tower and Infrastructure Providers Association TAIPA in New Delhi. Chairman ,TRAI and SS (T),DoT were also present.

(v) The final report from the 5G HLF to the Government of India, identifying 5G deployment roadmap for India was released on 23rd August, 2018. It is available for public viewing at: http://www.dot.gov.in

(vi) ITI Startup Tech Expo 2018 was inaugurated by Member (S) and Member (T) at Bangalore on 1st September 2018. Hon'ble Minister, Secretary and Member(S) visited the Tech Expo & valedictory function of 2days Start-up Tech EXPO on 2sept at ITI Bangalore campus.

(vii) Hon'ble MOSC(I/C) released 1st edition of Compendium of circulars issued by DoT on Telecom Service Compliance, Technology, Security, administration & Rural matters. On this occasion Secretary(T), Member(T), DG(T), officers and staff of DoT and media persons were present.
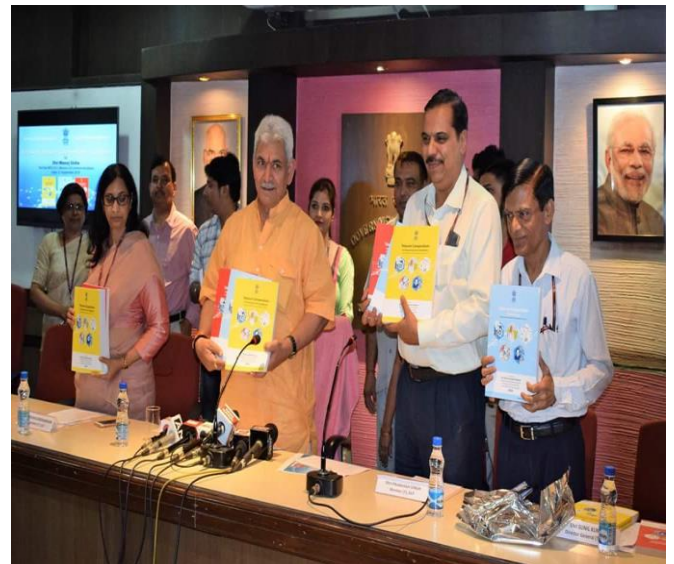
(viii) NITI Aayog in collaboration with DoT_India and ITU launch India's first Online Course on Digital Payments targeted at Middle Management.

(ix) <u>C-DOT</u>

> Centre for Development of Telematics (C-DOT), the premier Telecom R&D centre of the Govt. of India, celebrated its 35th Foundation Day on August28-29, 2018. This year too, in continuation of its tradition, C-DOT held a technical conference as part of "GB Meemamsi Lecture Series 2018", wherein several telecom veterans and academicians from around the world including some distinguished professors from universities of UK, USA and IITs shared their experiences and discussed innovative ways to address the numerous issues and challenges faced by various stakeholders in the fast-changing Telecom Industry, in India and worldwide. The inaugural session was attended by Smt. Aruna Sundararajan, Secretary, Department of Telecom and Chairman, Telecom Commission, and other Members of Telecom Commission. The event also witnessed the official launch of C-DOT's latest innovations - "**DWDM - 80Channel**" and "**KYM - Know Your Mobile**" app as well as the "**5G India Website**".

- Mr. Vipin Tyagi, Executive Director, C-DOT was recently honoured with "**Technologist of the Year 2018**" award; a highly prestigious award given by IEEE Bangalore for exemplary work in the area of Optical Fiber Networks, and for contribution to India's flagship program, BharatNet.

- C-DOT received two prestigious awards in the Strategic Electronics Summit organized by ELCINA and held at The Lalit Ashok, Bengaluru on 5th and 6th July, 2018. ELCINA "**defennovation Awards**" are organized each year to celebrate and honour exemplary contributions in the field of Strategic and Space Electronics. C-DOT was awarded First Prize in the "**Excellence in R&D**" category and Second Prize in the "**Excellence in Indigenization**" category.

- **Stephen P Welby**, Executive Director and Chief Operating Officer, IEEE along with **Harish Mysore**, Sr. Director – India Operations, IEEE visited C-DOT campus in Delhi, where they were introduced to C-DOT products like GPON, Gyan Setu and many more.

➤ A conference named "**My India WiFi India**" was organized by DigiAnalysis on 6th September 2018 at Imperial Hotel, New Delhi. C-DOT was conferred with three awards. The first award was "**Best Make in India WiFi Company**", the second being "**Best WiFi Innovation**" which was given to Balloon WiFi.,

➤ C-DOT participated in **4th BRICS Communication Ministers Meeting** on 13-15th September in **Durban, South Africa**. This 3-day programme had Business Dialogue, B2B Meetings and related discussions. C-DOT, being a pioneer R&D organization of DoT, MoC played an important role in contributing to the delegation and sought possible collaboration with its BRICS counterparts.

➤ C-DOT participated in **India ASEAN ICT Expo 2018** organised by Ministry of Information & Communication, Vietnam and Telecom Equipment & Services Export Promotion Council (TEPC) at Hanoi, Vietnam during September 27-28, 2018. The theme of the event was "**Digital Connectivity in the Industrial Revolution 4.0**". C-DOT demonstrated its indigenous Telecom solutions and also participated in the plenary sessions and B2B meetings with ASEAN counterparts.

(x) <u>Telecommunications Consultants India (TCIL)</u>

➢ TCIL is a Schedule-A Miniratna CPSE in Telecom Infrastructure Development and Consultancy service sector, under the administrative control of Department of Telecommunications under Ministry of Communications with 100% shareholding by the Government of India. Its registered and corporate office is at New Delhi.

➢ During July – September 2018, Company has secured orders of over Rs. 1397.26 crs. The major orders booked during the period are as under:

1. Work awarded by BSNL for the selection of Project Implementing Agency (PIA) for BharatNet Phase-II Project in the state of Madhya Pradesh in the section of MP-III for Rs. 924.81 Crores

2. An advance Purchase Order awarded by Bharat Broadband Network Limited for Supply Installation Commissioning and Maintenance of Satellite based Broadband Network and Solar Power equipment for the value of Rs. 249.01 Crores.

3. Work awarded by Chhattisgarh Tourism Board for Illumination of central and state owned monuments in Chhattisgarh for the approximate value of Rs. 40.00 Crores.

4. Work awarded in KSA by Saudi Telecom Company for the implementation of National Broad Band Phase II Project on turnkey basis for the value of Rs. 36.3 Crores.

5. Work awarded by BOCW Welfare Board Uttarakhand for assessment and facilitation of collection of revenue for BOCW Welfare Board, Uttarakhand for approximately 1000 sq km in four districts of Dehradun, Haridwar, Udham Singh Nagar and Nainital for the value of Rs. 14.17 Crores.

6. Work awarded in Kuwait by IMCO Engineering and Construction Company and misc. clients for Civil and OF works for the total value of Rs. 4.85 Crores.

7. In Uttrakhand NOFN project Pkg. IV declared as L-1 after reverse bidding value of work is approx. Rs 769 crs.

8. Declared L-3 in Telangana Fibre work and work is to be divided among 3 lowest bidders. Expected to be awarded work of over Rs 1000crs.

> Company has achieved Provisional Turnover of Rs. 330 crs during the quarter and cumulative Turnover of Rs. 630 crs for 2018-19 upto Sept. 18.

> TCIL signed an agreement with Ministry of External Affairs (MEA), Govt. of India, on 10th September 2018, for the implementation of e-VBAB (e-VidyaBharati and e-AarogyaBharati) Network Project, as extended Phase-2 of PAN Africa e-Network Project (PAeNP), for a value of Rs. 865 Crores.

(xi) Public Grievances

> The volume of complaints received and disposed during the quarter are as under:

Duration/Period	Opening Balance of complaints	No. of complaints received	Total	No. of complaints Disposed Off	Pending
July- September 2018	2852	17930	20782	18224	2558

(xii) Major Achievements, Activities and Performance of TRAI

During July - September 2018, TRAI made several Recommendations, Regulations and Directions and has also taken policy initiatives to protect the interests of the consumers which are discussed in the following paragraphs:

A. **RECOMMENDATIONS**

> **Recommendations dated 9th July 2018 on "Making ICT accessible for Persons with Disabilities"**
Telecommunication today provides the underlying infrastructure over which several services like banking, education, healthcare and public services are delivered. However, Persons with Disabilities (PwDs) are not able to fully access these ICT services mainly due to lack of necessary accessibility features or unaffordable prices of the equipment or due to unavailability of required services. For having an inclusive society and in view of growing focus on digitalization, it is necessary that the benefits of ICT technology are passed on to every person in the society including PwDs. Accordingly, after due consultation process, the Authority formulated its recommendations

on "Making ICT Accessible for Persons with Disabilities" and forwarded the same to the Government on 9th July 2018. Majort features of the recommendations are as follows:

- o Disabilities as specified in Rights of Persons with Disabilities Act (RPwD), 2016 are comprehensive and do not require any modification for formulating policies for enabling ICT access to PwDs.
- o A Steering Committee under the aegis of Department of Empowerment of Persons with Disabilities be setup with Members from Department of Telecom (DoT), Ministry of Information & Broadcasting (MIB), Ministry of Electronics & IT (MeitY). Ministry of Corporate Affairs and Ministry of Finance with a mandate to Review from time to time accessibility of ICT to PwDs.
- o Collaborate with state Governments for proper coordination and harmonisation of the activities to be undertaken.
- o The Measures suggested by International Telecommunication Union (ITU) viz. (i) ensuring availability and affordability of accessible equipment & assistive tools (ii) PwD specific products, tariff plans & accessible customer care services (iii) Making services and interfaces like television and internet accessible to PwDs through closed captioning and audio description etc. (iv) undertaking awareness campaigns on availability of accessible content and tools, should be adopted in India.
- o Government should mandate the device manufacturers/importers not to curtail the accessibility features available in popular operating systems in any manner from their devices (manufactured or imported in India). An undertaking to this effect may be taken from manufacturers/importers while lab certification.
- o TSPs to identify and register PwDs under special category and necessary changes in Customer Acquisition Forms (CAF) should be made to this effect.
- o TSPs, MSOs and DTH operators to have a special desk in their call centres/customer support centres to handle calls from PwDs using assistive technologies.
- o To facilitate accessibility of emergency services by PwDs, separate desks in each Pubic Safety Answering Point [to be setup following earlier recommendations made by the Authority on 07.04.2015 regarding "Integrated Emergency Communication and Response System (IECRS)"] to be setup where attendant executive should accept calls/SMS/Social Media calls from PwDs and provide them assistance. The desk would also have Relay Centre to cater to requests from deaf and speech impaired people.
- o TSPs, MSOs/DTH and PSAP operators to provide sensitivity training to their executives to deal with issues of PwDs.
- o Specific essential accessibility standards for mobile phones, landline phones and set top boxes have been identified and prescribed.
- o Percentages of channel content to be developed in accessible format for PwDs with audio and visual impairment have been prescribed; with 50% of the channels to be developed in accessible format by next five years.

- o By the end of 2020, all mobile handset manufacturers producing 5 or more different models to produce at least one mobile handset satisfying accessibility criteria for PwDs.
- o Set Top Box (STB) manufacturers/importers should make/import at least one model in different variants of STBs in accessible format by 2020.
- o Government creating and maintaining a database of devices and ancillary equipment satisfying prescribed accessibility standards.
- o Government to mandate that ICT products (Computer Hardware, Mobile Phones, STBs) procured by Government agencies should be accessible to PwDs and should have associated support documentation and services in accessible format.
- o All Government websites to be accessibility compliant to the PwDs.
- o Department of Telecom (DoT) and Ministry of Information and Broadcasting (MIB) to instruct TSPs and DTH/MSOs to conduct awareness campaigns regarding accessibility issues, design, affordability, availability of assistive tools and products and about various Government policies/schemes pertaining to accessible ICT that can be availed by PwDs.

➢ **Recommendations dated 16ᵗʰ July 2018 on "Privacy, Security and Ownership of the Data in the Telecom Sector"**
The Authority after due consultation process forwarded its Recommendations on "Privacy, Security and Ownership of Data in the Telecom Sector" to the Government on 16ᵗʰ July 2018. The salient features of the recommendations are as follows:
- • Each user owns his/ her personal information/ data collected by/ stored with the entities in the digital ecosystem. The entities, controlling and processing such data, are mere custodians and do not have primary rights over this data.
- • A study should be undertaken to formulate the standards for annonymisation/ de-identification of personal data generated and collected in the digital eco-system.
- • All entities in the digital ecosystem, which control or process the data, should be restrained from using Meta-data to identify the individual users.
- • The existing framework for protection of the personal information/ data of telecom consumers is not sufficient. To protect telecom consumers against the misuse of their personal data by the broad range of data controllers and processors in the digital ecosystem, all entities in the digital ecosystem, which control or process their personal data should be brought under a data protection framework.
- • Till such time a general data protection law is notified by the Government, the existing Rules/ license conditions applicable to TSPs for protection of users' privacy be made applicable to all the entities in the digital ecosystem. For this purpose, the Government should notify the policy framework for regulation of Devices, Operating Systems, Browsers, and Applications.
- • (f)   Privacy by design principle coupled with data minimization should be made applicable to all the entities in the digital ecosystem viz, Service providers, Devices,

Browsers, Operating Systems, Applications etc.The Right to Choice, Notice, Consent, Data Portability, and Right to be forgotten should be conferred upon the telecommunication consumers. In order to ensure sufficient choices to the users of digital services, granularities in the consent mechanism should be built-in by the service providers.For the benefit of telecommunication users, a framework, on the basis of the Electronic Consent Framework developed by MeitY and the master direction for data fiduciary (account aggregator) issued by Reserve Bank of India, should be notified for telecommunication sector also. It should have provisions for revoking the consent, at a later date, by users.The Right to Data Portability and Right to be Forgotten are restricted rights, and the same should be subjected to applicable restrictions due to prevalent laws in this regard. Multilingual, easy to understand, unbiased, short templates of agreements/ terms and conditions be made mandatory for all the entities in the digital eco-system for the benefit of consumers.

- Consumer awareness programs be undertaken to spread awareness about data protection and privacy issues so that the users can take well informed decisions about their personal data.

- Data Controllers should be prohibited from using "pre-ticked boxes" to gain users consent. Clauses for data collection and purpose limitation should be incorporated in the agreements.

- Devices should disclose the terms and conditions of use in advance, before sale of the device.

- It should be made mandatory for the devices to incorporate provisions so that user can delete pre-installed applications if he/she so decides. Also, the user should be able to download the certified applications at his/ her own will and the devices should in no manner restrict such actions by the users.

- Department of Telecommunication should re-examine the encryption standards, stipulated in the license conditions for the TSPs, to align them with the requirements of other sector regulators.

- To ensure the privacy of users, National Policy for encryption of personal data, generated and collected in the digital eco-system, should be notified by the Government at the earliest.

- For ensuring the security of the personal data and privacy of telecommunication consumers, personal data ' of telecommunication consumers should be encrypted during the motion as well as during the storage in the digital ecosystem. Decryption should be permitted on a need basis by authorized entities in accordance to consent of the consumer or as per requirement of the law.

- All entities in the digital ecosystem including Telecom Service Providers should be encouraged to share the information relating to vulnerabilities, threats etc in the digital ecosystem/ networks to mitigate the losses and prevent recurrence of such events.

- All entities in the digital ecosystem including Telecom Service Providers should

transparently disclose the information about the privacy breaches on their websites along with the actions taken for mitigation, and preventing such breaches in future.

- A common platform should be created for sharing of information relating to data security breach incidences by all entities in the digital ecosystem including Telecom service providers. It should be made mandatory for all entities in the digital ecosystem including all such service providers to be a part of this platform.
- Data security breaches may take place in-spite of adoption of best practices/ necessary measures taken by the data controllers and processors. Sharing of information concerning to data security breaches should be encouraged and incentivized to prevent/ mitigate such occurrences in future.

➢ **Recommendations dated 20th July 2018 on "Method of allocation of spectrum for Public Mobile Radio Trunking Service (PMRTS) including auction, as a transparent mechanism"**

The Department of Telecommunications (DoT) vide its letter dated 13th July, 2017, requested TRAI to provide its recommendations on 'Method of allocation of spectrum for Public Mobile Radio Trunking Service (PMRTS) including auction, as a transparent mechanism' with applicable reserve price, and other associated conditions for auction of spectrum for PMRTS under the terms of clause 11 (1) (a) of TRAI Act, 1997 (as amended).

TRAI on 20th July 2018 forwarded to DoT its recommendations on "Method of allocation of spectrum for Public Mobile Radio Trunking Service (PMRTS), including auction, as a transparent mechanism".

PMRTS is a well proven niche market service having its unique capability of communication instantly within the closed user group (CUG). The service has found its growing prominence in all critical infrastructure sectors such as Manufacturing, Oil & Gas, Mining, Construction, Courier, Emergency Medical Services, Utilities, Transportation (Road, Airports, Harbours), Energy & Communication apart from the utility for rescue and relief during emergency situation.

In this context, TRAI had issued a consultation paper on 8th February 2018, which, inter-alia, included the aspects of methodology of allocation of spectrum, duration of license, assignment of spectrum (throughout the license area or city wise), preferable frequency bands for PMRTS, block size, reserve price, spectrum cap etc. Written comments/inputs on the issues raised in the Consultation Paper were invited from the stake holders by 22nd March, 2018 and counter-comments by 5th April, 2018. An Open House Discussion (OHD) was convened on 16th May, 2018.

After considering the comments received from the stakeholders and further analysis, the Authority finalized its recommendations on "Method of allocation of spectrum for Public Mobile Radio TrunkingService (PMRTS), including auction, as a transparent mechanism". The salient features of the recommendations are given below:

- The existing Licensed Service Area (LSA) based authorization criteria for a period of 20 years for PMRTS license should continue.
- Taking into consideration factors viz. PMRTS market conditions; spectrum demand and supply; the assignment of spectrum for PMRTS should be made administratively on the basis of demand.
- In order to promote efficient use of spectrum, the existing cap on the number of PMRTS handsets per channel that can be imported, should be removed.
- Carrier size for assignment to PMRTS licensee (both for analog or digital) shall be 6.25 KHz and multiples of 6.25 KHz.
- Carriers (frequency pairs) of 25 KHz already assigned to the service providers should be allowed to be retained by the service providers and additional assignment of carriers for the existing analogue system shall continue @ carrier size of 25 KHz (counted as 4 carriers of 6.25 KHz each).
- Assignment in new cities / Service Areas shall be made for digital systems only.
- Initially for each city, twelve carriers (frequency pairs) of carrier size 6.25 KHz in metro licensed service area and eight carriers (frequency pairs) in non-metro license service area shall be assigned for PMRTS (Digital system) depending on the availability.
- The Royalty charges for the PMRTS on an yearly payment option shall be Rs.1200/ - per year per 6.25 KHz channel for link distance upto 30 Km and Rs.2400 / - per year per 6.25 KHz channel for link distance upto 60 Km.
- The PMRTS providers shall also have an option of onetime upfront payment of Royalty charges.
- The Spectrum Usage Charge (SUC) for the spectrum allocated to PMRTS provider shall be levied @ 1% of AGR and while determining the AGR for the purpose of levy of license fee and SUC, the revenue from sale of handsets (the cost of which is separately identifiable) shall be allowed as deduction from the GR of PMRTS for the purpose of levy of licence fee. The Authority is however not making any specific recommendation on license fee of PMRT Service.
- An overall combined spectrum cap of 35% in a LSA on the spectrum identified and available for assignment to PMRT Services, as per provision of NFAP-2011, shall be applicable to PMRT licensee.
- In order to make the spectrum available for Broadband-Public Protection Disaster Relief (BB-PPDR) networks, existing PMRTS assignments in the band 814-819/859-864 MHz should berefarmed and further accommodated in the 811-814/856-859 MHz band. The refarming process should be completed within a period of two years.
- The agencies handling PPDR networks who have been operating in the band 806-824 MHz paired with 851-869 MHz should be confined to and accommodated in the proposed PPDR network for which the assignment of spectrum is proposed in 814-824/859-869 MHz sub-band.

- Upon refarming the bands mentioned above, the sub-band 806811/851-856 MHz should be made available both for PMRTS and CMRTS on need and justification basis.
- Allocations of the frequencies in the sub-band 338-340/348-350 MHz shall be predominantly considered for PMRTS. Provisions for allocation in sub-band 351-358/361-368 MHz and 380-389.9/390399.9 MHz shall remain unchanged.

> **Recommendations dated 1st August 2018 on "Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz Bands"**
> TRAI on 1st August 2018 released recommendations on "Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz Bands". Department of Telecommunications (DoT) vide its letter No. dated 19th April, 2017 requested TRAI to provide applicable reserve price, quantum of spectrum to be auctioned and associated conditions for auction of spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz Bands for all the LSAs under the terms of clause 11 (1) (a) of TRAI Act, 1997 (as amended).
> TRAI, vide its letter dated 15th May 2017 sought additional information/clarifications on some of the issues from DoT. However, to speed up the process, based on the available information, TRAI issued the Consultation Paper (CP) on 28th August 2017 seeking comments of stakeholders. An Open House Discussion (OHD) was conducted on 18th January 2018 at New Delhi. Subsequent to the issue of CP, DoT provided additional/updated information vide its letters dated 7th September 2017 and 23rd July 2018, as sought by TRAI. Based on the comments/inputs received from the stakeholders and further analysis, the Authority has finalized its recommendations on "Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz Bands".
> The salient features of the recommendations are given below:
> - Entire available spectrum should be put to auction in the forthcoming auction.
> - Barring the specific locations or districts where ISRO is using the 25 MHz (3400 MHz - 3425 MHz) of spectrum, the entire spectrum from 3300 MHz to 3600 MHz should be made available for access services and should be included in the forthcoming auction.
> - 3300-3600 MHz should be auctioned as a single band and TDD based frequency arrangement should be adopted for this band.
> - Spectrum in 3300-3600 MHz band should be put to auction in the block size of 20 MHz. To avoid monopolization of this band, there should be limit of 100 MHz per bidder. Since the TSPs are allowed to trade their partial or complete spectrum holding to another TSP, the limit of 100 MHz spectrum in 3300-3600 MHz band, shall also apply for spectrum trading. In case a TSP acquires more than one block,

the entire spectrum should be assigned to it in contiguous form.

- No roll out obligations should be mandated for spectrum in 3300-3600 MHz band. However, to avoid any misuse of not mandating any roll-out obligations, the lock-in period for spectrum in this band for becoming eligible for spectrum trading should be 5 years instead of 2 years.
- The revised provisions of spectrum cap (i.e. 35% Overall cap and a Cap of 50% on the combined spectrum holding in the sub-1 GHz bands) should be extended to 3300-3600 MHz band also. Additionally, in 3300-3600 MHz band, there should be a spectrum holding cap of 100 MHz per licensee.
- There is an urgent need of audit for all allocated spectrum both commercial as well as spectrum allocated to various PSUs/ Government organizations. This should be done by an independent agency on a regular basis.

➢ **Recommendations dated 3rd August, 2018 on "Promoting Local Telecom Equipment Manufacturing"**

TRAI on 3rd August 2018 issued its Recommendations on "Promoting Local Telecom Equipment Manufacturing". The Authority had suo-moto issued a Consultation Paper on "Promoting Local Telecom Equipment Manufacturing" on 18th September, 2017 with the objective of realistically assessing India's true potential in equipment manufacturing and to arrive at the recommendations to the Government that would enable Indian telecom equipment manufacturing sector to transition from an import-dependent sector to a global hub of indigenous manufacturing.

Comments and counter-comments received from the stakeholders were published on TRAI's website. An Open House Discussion was also conducted in New Delhi on 14.03.2018. Comments and counter-comments received from the stakeholders along with the additional inputs received during the Open House Discussion were considered by the Authority before formulating its recommendations.

Some of the recommendations made by the Authority are as follows:

- The progress of indigenous telecommunication equipment manufacturing in the country should be monitored in Department of Telecommunications (DoT) at least at the level of Member, Telecom Commission. A dedicated unit in DoT should be made responsible for facilitation and monitoring oftelecommunication equipment design, development, and manufacturing in the country.
- India should aim to achieve the objective of net zero imports of telecommunication equipments' by 2022. For this purpose, Telecom Equipment Manufacturing Council (TEMC), should identify and recommend specific areas of priorities.
- For promoting research, innovation, standardization, design, testing, certification and manufacturing indigenous telecom equipment, Telecom Research and Development Fund (TRDF), with initial corpus of Rs. 1000 Crore, should be created. Subsequently,

setting up of Telecom Entrepreneurship Promotion Fund (TEPF) and Telecom Manufacturing Promotion Fund(TMPF) should also be considered.

- A Telecommunication Equipment Development Board (TEDB) should be constituted in the DoT, under the Telecom Engineering 'Centre (TEC), for faster and coordinated decisions relating to funding of and incentives for design, development, and manufacturing of telecommunication equipment in the country. It should be responsible for facilitating innovation, R&D(Research and Development), testing and certification, and manufacturing in the telecom sector in the country.

- Universities/ technical institutes offering specialization in telecommunication technologies and system design should be setup/ identified near the Telecom Products Development clusters.

- Telecommunication Technology and Systems Design Labs should be setup in these Universities/ technical institutes in collaboration with Telecom Equipment Manufacturers and Telecom Service Providers.

- Participation of indigenous research institutions, telecom service providers, and telecom equipment manufacturing companies in deliberations at international organizations like IEEE, 3GPP, One M2M, ITU, and ETSI etc. should be encouraged.

- Permissions for trials of new technologies/ products and running pilot projects should be simplified.

- Alternate Dispute Resolution Framework for time bound resolution of patent licensing disputes should be institutionalized in the country.

- A common portal should be developed for self declaration of Standard Essential Patents (SEP) by the patent holders in the telecom products. The portal should have the facility for listing of registered telecom product design, manufacturing, marketing, and System Integration (SI) companies along with their designs/ products so that development of the complete ecosystem in the country can be facilitated.

- To expand understanding about patent filing policies and procedures, the patent information cells should be created in leading Universities/ technical institutions to be identified for promoting research, innovation, and development of telecom technology and systems designs.

- Telecom Engineering Centre should be made responsible for regulation and accreditation of telecom products testing and certification agencies in the country.

- Mandatory testing and certification of the telecom equipments in the country should be started at the earliest.

- To expedite setting up of testing and infrastructure facilities in the country, the Government should incentivize setting up of such facilities by private entities. These facilities should be accredited by the Telecom Engineering Centre.

- All telecom products meant for use in the telecommunication network or by consumer and marketed in the country should be classified as either fully finished

imported products or Indigenous products. Indigenous products should be further classified into Made in India Products, Designed in India Products or Designed and Made in India Products.

- DoT should immediately review its PMA policy, issued in October 2012, so that the products specified under the Policy as well as the norms of the value addition specified in the Policy can be aligned with the present day's local market realities.
- PMA policy should be made applicable for all public telecom networks to address the national security concerns.
- Telecom Service Providers should be incentivized for deploying indigenous telecom products, beyond the quantities to be mandated under the PMA, by giving them graded incentives.

The recommendations have been placed on TRAI's website www.trai.gov.in.

B.   REGULATIONS

➢ **The Telecommunication Interconnection (Amendment) Regulations, 2018 dated 5th July 2018**
  TRAI on 5th July 2018 issued "The Telecommunication Interconnection(Amendment) Regulations, 2018" which prescribes amendment in Regulations 6, 8 & 9 of the "Telecommunication Interconnection Regulations, 2018" issued by TRAI on 01.01.2018. The main amendments in the Regulations are as follows:

a) A service provider may request the other service provider for additional ports at a POI, if the projected utilisation of the capacity of such POI at the end of sixty days from the date of placing the request, is likely to be more than eighty-five percent and such projected utilization of the capacity of POI shall be determined on the basis of the daily traffic for the preceding sixty days at the POI during busy hour: Provided that the service provider shall request for such number of additional ports which is likely to bring the utilization of the capacity of such POI, at the end ofsixty days from the date of making request, to less than seventy-five percent.

b) The time-frame for provisioning of ports for initial interconnection and augmentation of ports at POIs is increased to 42 working days.

c) Every service provider shall provide to the interconnecting service provider, at interval of every six months, its forecast of busy hour outgoing traffic, for the succeeding six months, at each POI and the first such forecast shall be provided within sixty days of the commencement of the Telecommunication Interconnection (Amendment) Regulations, 2018 and thereafter on the 1st April and 1st October every year.

➢ **Telecommunication Consumers Education and Protection Fund (Fourth Amendment) Regulations, 2018 dated 18th July 2018**
  TRAI on 18th July 2018 notified Telecommunication Consumers Education and Protection

Fund (Fourth Amendment) Regulations, 2018**.** The Regulation is available on TRAI website at http://www.trai.gov.in/release-publication/regulation.

TRAI had notified the Telecommunication Consumers Education and Protection Fund Regulations, 2007 (6 of 2007) on 15th June 2007. In terms of the Regulations, a fund titled "Telecommunication Consumers Education and Protection Fund" (TCEPF) has been created. Any amount charged in excess of the notified rates by telecom service providers, which they are not able to refund to the concerned subscribers, are credited into the fund. The income from the Fund is utilized to undertake programmes and activities relating to consumer education and protection as are approved by the Authority based on the recommendations of a committee namely `*Committee for Utilization of Telecommunication Consumers Education and Protection Fund (CUTCEF)* headed by Secretary, TRAI.

The current CUTCEF composition includes five members from service providers' Associations including two members from the `Association of Unified Telecom Service Providers of India (AUSPI)'. As AUSPI has now ceased to exist, its name is required to be deleted from the CUTCEF composition. The composition of CUTCEF has accordingly been modified through the Amendment.

Further suitable changes in the provisions relating to timelines for submission of annual budget estimates (for ensuing Financial year) for approval of the Authority have been effected through the amendment so that details of expenditure incurred from the fund on various consumer centric activities in the ongoing Financial Year are available for consideration by the Authority. Consequential changes due to reorganization of some Divisions in TRAI have also been effected through the amendment. The rationale for the changes made has been fully explained in the `Explanatory Memorandum' to the Amendment. Prior to the present notification of the TCEPF (Fourth Amendment) regulation 2018, the regulation in draft form had been placed on TRAI website on 27.06.2018 for stakeholders comments. Last date for receipt of comments was 10.07.2018. In the comments received from the stakeholders, they concurred with the proposed amendments in the Regulation. Accordingly, the amended Regulation has been notified today.

➢ **The Telecom Commercial Communication Customer Preference Regulation, 2018 dated 19th July 2018**

TRAI on 19th July 2018 notified Telecom Commercial Communication Customer Preference Regulation, 2018 that is proposed to curb the problem of Unsolicited Commercial Communication (UCC).

TRAI had initiated public consultation by releasing a consultation paper on 14/09/2017. After considering the written submissions and the inputs received during the Open House Discussion held on 15/12/2017, draft regulations were notified on 29/05/2018 for further comments of the stakeholders. TRAI received 24 comments on the draft. All the stakeholders' responses were examined while formulating the final Regulation.

The earlier regulation on this subject was notified in 2010. Since then action has been continually taken against entities violating the rules and it has led to disconnection of as many as 1.4 million telephone numbers, besides other penalties. However, the problem of unwanted and unsolicited commercial communication (popularly called spam) has continued to resist the onslaught. Meanwhile, the menace of fraudulent calls and messages has also emerged in a big way and this issue has been red-flagged by other sectoral regulators, like SEBI (Securities and Exchange Board of India) and RBI (Reserve Bank of India), who have sought TRAI's assistance in controlling these activities.

Both imposters and fraudsters have taken advantage of loopholes in verification of identities by putting distance between themselves and the Telecom Service Providers through multiple intermediaries controlled by weak and unverifiable agreements. Further, with the adoption of newer technologies, such as automated calling, the spammers have acquired the ability to reach ever larger target groups.

In this backdrop a complete overhaul of the regulation had become unavoidable. The objective of the regulation notified today is to effectively deal with the nuisance of spam experienced by the subscribers. The regulations provide for:

a. Registration of senders (businesses and telemarketers)

Through an easy registration processes, the business will be able assert their identity and build trust of the clients. This diminishes the ability of unknown entities reaching their customers with calls and messages that are fraudulent or otherwise of dubious nature.

b. Registration of Headers

Using headers intelligently to segregate different types of messages, businesses shall be able to help their clients manage, delete or store communications related to OTP's, balance enquires, flight alerts, special offers, etc.

c. Registration of subscribers' consent

Unscrupulous telemarketers today override the stated preference of the subscriber by claiming consent that may have been surreptitiously obtained. New regulations provide the subscriber with complete control over their consent and the ability to revoke the consent already granted, at their option. A major abuse of the current regulations would thus be stopped.

d. Message template

The concept of registered templates for both SMS and voice communication has been introduced to prevent deliberate mixing of promotional messages into the transactional stream. This will give relief to subscribers who feel targeted by unwanted communication today.

e. Fine-grained control over preferences

New regulations provide for fine grained control over preferences, including such options as the time window in which to allow specific types of unsolicited communication.

The salient features of the regulation are:

    a)   Adoption of Distributed Ledger Technology (or blockchain) as the RegTech to ensure regulatory compliance while allowing innovation in the market.

    b)   Co-regulation where Telecom Service Providers/ Access Providers establish and arrange the framework, which is legally backed by regulation.

    c)   Enabling compliance through innovation in technology solutions that are demonstrated in a regulatory sandbox.

    d)   Enhanced controls and new options for all entities to perform their functions and to carry on their businesses efficiently.

TRAI has already explored, with encouraging results, the use of machine learning technologies to classify messages in its DND 2.0 App. These regulations would enable development of newer tools based on Artificial Intelligence or other technologies for an easier subscriber experience in setting preferences, governing consent and reporting violations. As a result of the platform approach espoused by TRAI, where functions are unbundled and access to information controlled based on permissions, all such solutions would henceforth be possible for third-parties to develop. And they would be able to demonstrate-the efficacy and security of their solutions in the controlled environment of the Regulatory Sandbox, before products are released for wider use.

➢ **The Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service (Sixth Amendment) Regulations, 2018 dated 31st July 2018**

TRAI on 31st July 2018 notified the Standards of Quality of Service amendment to the Quality of Service (QoS) of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service (Sixth Amendment) Regulations 2018 that is proposed to specify parameters and benchmarks for packets dropped or lost in cases of Voice over LTE (VoLTE) Calls. It is available on TRAI website. These regulations would come into force on 1st October 2018.

TRAI had initiated public consultation by releasing a consultation paper on 26/02/2018. After considering the written submissions received (12 comments) and the inputs received during the Open House Discussion held on 23/04/2018, these regulations are being notified.

Where service providers have launched LTE networks and are providing Voice over LTE (VoLTE), it was observed that instances of pauses or mute of voice were being experienced by the users during conversation while voice call continued. Such instances of mute were mainly due to drop or loss of voice packets in the networks. It was found that in case of LTE networks, it is appropriate to observe drop or loss of packets in terms of Packet Data Convergence Protocol (PDCP) Service Data Units (SDUs). Packet drops may be observed on downlink as well as on uplink. It was decided to specify two additional parameters namely QoS Downlink PDCP SDUs Drop Rate (DL-PDR) and Uplink PDCP SDUs Drop Rate (UL-PDR). Less than equal to 2% is

set as benchmarks for both the parameters. These parameters are to be reported as part of QoS Periodic Monthly Report from the quarter starting from 1st October 2018.

- **Telecommunication Tariff (Sixty Fourth Amendment) Order, 2018 dated 25th September2018**

TRAI today issued Telecommunication Tariff (64th Amendment) Order, 2018 on "Purging of Infructuous/Redundant provisions of Telecommunication Tariff Order" (TTO).

TRAI had issued a draft Telecommunication Tariff (64th Amendment) Order, 2018 on Purging of Infructuous/Redundant provisions of Telecommunication Tariff Order' (TTO) for comments and counter comments of the stakeholders. TRAI received two comments on the draft. Responses received from the stakeholders were examined while formulating the final TTO (64th Amendment).

The initial TTO was notified in 1999 and several amendments were made to incorporate new provisions. Some of the provisions of TTO, 1999 had become infructuous and redundant due to passage of time and several subsequent amendments of the TTO. The committee set up by TRAI consisting of representatives from TRAI, Telecom Service Providers, and Industry Associations made recommendations suggesting purging/ modifying of several provisions of existing regulations. The recommendations of the Committee, inter-alia, included proposal to delete, purge or modify various provisions of WO. The Authority considered these recommendations and decided to bring out an amendment to the tariff order to give effect to the recommendations made by the Committee.

Some of the existing Schedules to the TTO relating to Radio Paging Service, Telex and Telegraph Services, Global Mobile Personal Communication by Satellite (GMPCS) etc. which were part of the original TTO, 1999 has become infructuous as these services have lost their relevance in the modern time. Such Schedules are removed from the TTO through this Amendment to the TTO. Provision relating to `Deposits' has been modified to clarify that the ceiling specified shall not apply to ISD and International Roaming Services.

B. DIRECTIONS

- **Direction dated 31st July 2018 issued to all access service providers regarding maintenance of Key Performance Indicator (KPI) Call Setup Delay to monitor Quality of Service in case of Circuit Switched Fall Back (CSFB) for voice calls**

The Authority undertook a public consultation by releasing a consultation paper on

"Voice Services to LTE users (including VoLTE and CS Fallback)" on 26th of February 2018 seeking comments of stakeholders by 16th March 2018. The Authority, in the consultation paper, mentioned the concerns related to call set up delay in case, voice calls for users camped on LTE networks is established via Circuit Switched Fall Back (CSFB) option.

TRAI, after consultation with the stakeholders, is of view that measurements which are required to assess the performance of network for delay in setting up the call may not be captured directly from the network parameter counters available in the support systems of the networks. It may require conducting field measurements with special tools to capture delay. Typical maximum time which should be set as a benchmark would be known only after collecting data in different scenarios at different locations and over a period of time. Therefore, the Authority decided that TSPs may be asked to conduct such field measurements in the service areas where LTE networks have been launched but Voice over LTE (VoLTE) services are yet to be launched and submit reports to the Authority on regular basis. Such measurements may be conducted on sample basis limited to few cities or districts in the service area.

The Authority, in exercise of the powers conferred upon it under section 13, read with sub-clauses (i) and (v) of clause (b) of sub-section (1) of section 11 of the Telecom Regulatory Authority of India Act 1997 directed all Access Service Providers to test and report the average call set up time in case of CSFB in each Licensed Service Area.

> **Direction dated 7th September 2018 regarding posting of information pertaining to USO related activities on the website by the service provider**

TRAI on 7th September 2018 issued a direction to all access service providers and M/s BSNL regarding posting of information pertaining to USO related activities on the website by the service provider.

TRAI vide its Direction dated 28th October 2005 directed all Universal Access Service Providers (UASPs) and M/s Bharat Sanchar Nigam Ltd. (BSNL) to furnish a report, on a monthly basis, to the administrator, USOF, Department of Telecommunications (DoT) on various activities relating to Village Public Telephones (VDTs), Rural Community Phones (RCPs), Rural Direct Exchange Lines (RDELs) etc. and also post this information/data on the company's website;

A Committee was formed comprising officers of TRAI and representatives of telecom service providers and associations, to identify infructuous/ redundant regulations and amendments and it was observed that the Direction dated 28th October 2005 is no longer required;

TRAI in exercise of powers conferred upon it under Section 13 read with sub-clause (ix) of clause (b) of sub-section (1) of section 11 of the TRAI Act, 1997, withdrew the Direction No. 101-17/2005-MN dated 28th October 2005.

- **Direction dated 7th September 2018 on certificate of compliance in respect of various directions issued by TRAI**

  TRAI vide its Direction dated 21st August 2006, directed all Telecom Service Providers to furnish a certificate of compliance to the Authority by 31st July of every year in respect of the following:

  (i)   Direction dated 28th October 2005 to all UASPs and BSNL regarding posting of information pertaining to USO related activities on their website;

  (ii)   Direction dated 6th January 2005 to all service providers on opening of allotted codes;

  (iii)   Direction dated 16th June 2004 to all CMSPs on auto roaming services to all Pre-paid subscribers; and

  (iv)   Direction dated 11th July 2002 to all CMSPs to include standard terms and conditions in all tariff plans for pre-paid cards;

  A committee was formed, comprising officers of TRAI and representatives of telecom service providers and associations, to identify infructuous/redundant regulations and amendments and it was observed that reporting of compliance by the service providers in respect of above cited Directions is no longer required;

  TRAI in exercise of powers conferred upon it under Section 13 read with sub-clause (i), (iii), (v)and (ix)of clause (b) of sub-section (1) of section 11 of the of the TRAI Act, 1997, withdrew Direction No. 101-41/2006-MN dated 21st August 2006.

C.   CONSUMER PROTECTION AND EMPOWERMENT

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 also constantly working for enhancing consumer awareness about their rights and service related issues through educational/publicity material including media campaigns in the print and electronic media.

Media Campaigns

TRAI has undertaken media campaigns on several important issues of consumer interest for creating awareness among the consumers. Taking forward its media campaign, advertisements have been published on issues like '*DND 2.0 App*', '*Tower Fraud*' and '*Myspeed App*' in leading newspapers in different languages across the Country. This apart, Radio spots/Jingles on "*Mycall App*" has been aired on FM Radio in several cities in different regional languages.

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 interests of the consumers. Regional Offices of TRAI are interacting with the CAGs, coordinating their activities and helping them to sort out consumer related issues with the Service Providers. CAGs are actively participating in the CoPs and workshops organized in their respective areas. As on June 2018, 55 CAGs are registered with TRAI.

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