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Quarterly: July 2017- September 2017



सत्यमेव जयते

Department of Telecommunications
Ministry of Communications
Government of India
New Delhi

Quarterly Newsletter



India is now one of the fast growing telecom markets in the world with its unprecedented increase in tele-density and sharp decline in tariffs. Such vibrancy in the telecom market plays a significant role in the country's economic growth.

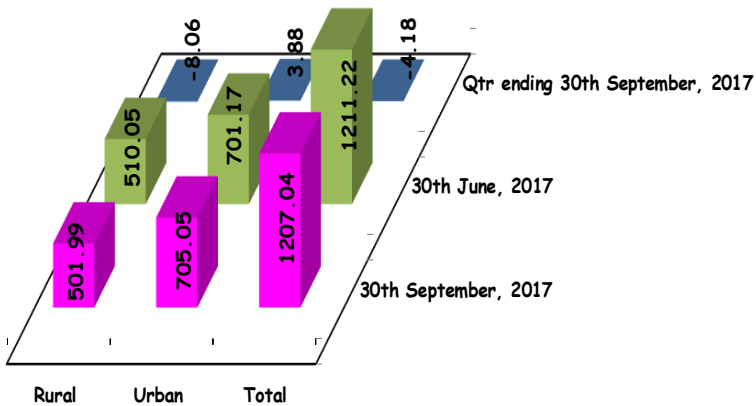
Highlights of major developments in the Telecom sector as well as initiatives by the DoT, during the quarter ending **September, 2017**, are given in the following sections.

I. TELEPHONE CONNECTIONS AND TELEDENSITY

(i) Indian Telecom Scenario

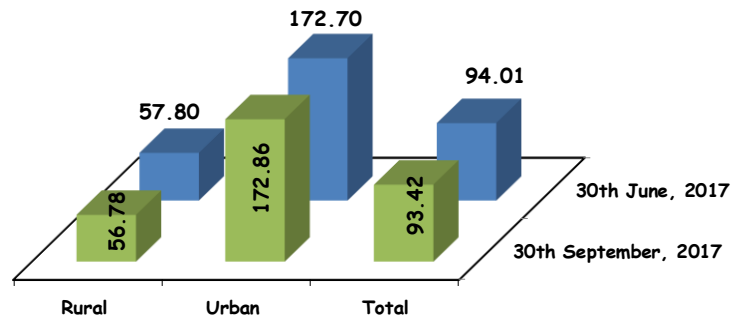
The number of telephones stood at 1207.04 million as on 30th September, 2017 as compared to 1211.22 million on 30th June, 2017, registering a decrease of 4.18 million during the period. This decline is attributed to decrease in number of telephones in the private sector by 5.38 million during the period.

Telephones



The tele-density, which was 94.01% in the beginning of the quarter decreased to 93.42% by the end of the September 2017.

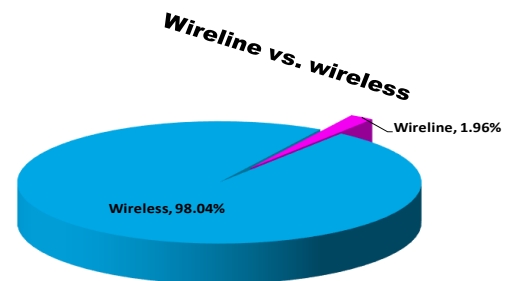
Tele-density



(ii) Compositional Changes

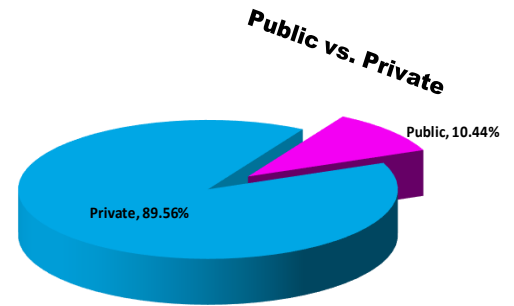
Wire line & Wireless

The preference for use of wireless is reflected in the rising share of wireless phones, which reached 98.04% (1183.37 million) as on 30th September, 2017. On the other hand, the share of wire line was 1.96% (23.67 million) as on 30th September, 2017.



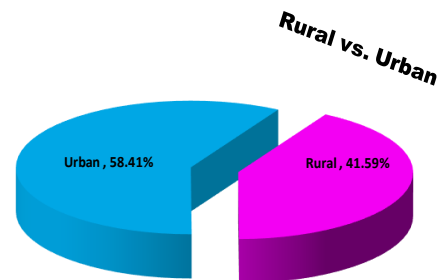
Public & Private

In public sector, there was an increase of 1.20 million phones during the quarter ending September,2017. However, in private sector there was a decrease of 5.37 million phones during the same period, as the total telephones in the country decreased by 4.18 million. The public sector having 126.00 million (10.44%) phones as against 1081.04 lakh (89.56%) phones of the private sector as on 30th September, 2017.



Rural & Urban

As on 30th September, 2017, the share of Urban areas in the total connections was 58.41% (705.05 million) compared to 41.59%(501.99 million) of rural areas. The Rural tele-density stood at 56.78% as compared to the Urban tele-density of 172.86% as on 30th September, 2017.

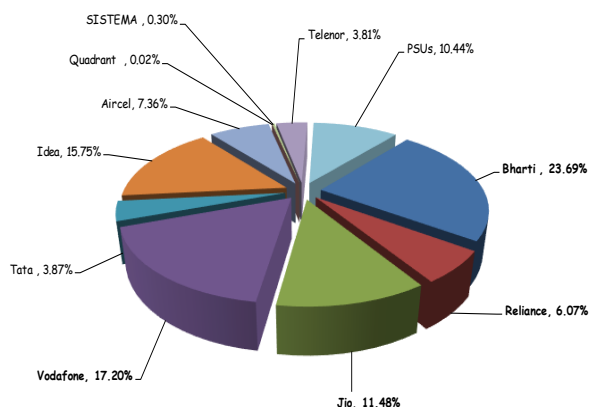


It may be mentioned that the private sector had a deeper reach in rural areas than urban areas. Its share in rural areas stood at 92.49% whereas its share in urban areas stood at 87.47%. However, Public sector performed better in Urban areas with a 12.53% connections as compared to 7.51% in rural areas (as on 30.09.2017)

Rural-Urban & Public-Private (%)		
	Rural	Urban
Public	7.51%	12.53%
Private	92.49%	87.47%

Operator wise performance

The operator-wise analysis indicates that PSUs' still have a share of 68.44% in the wire line segment and 9.28% in wireless segment. Private operators, on the other hand, have a share of 90.72% in the wireless segment and 31.56% in wireline segment. Bharti has the highest share of 23.69% in the total telephones, followed by Vodafone (17.20%), Idea (15.75%), Jio (11.48%) and PSUs (10.44%).



Operator wise detail

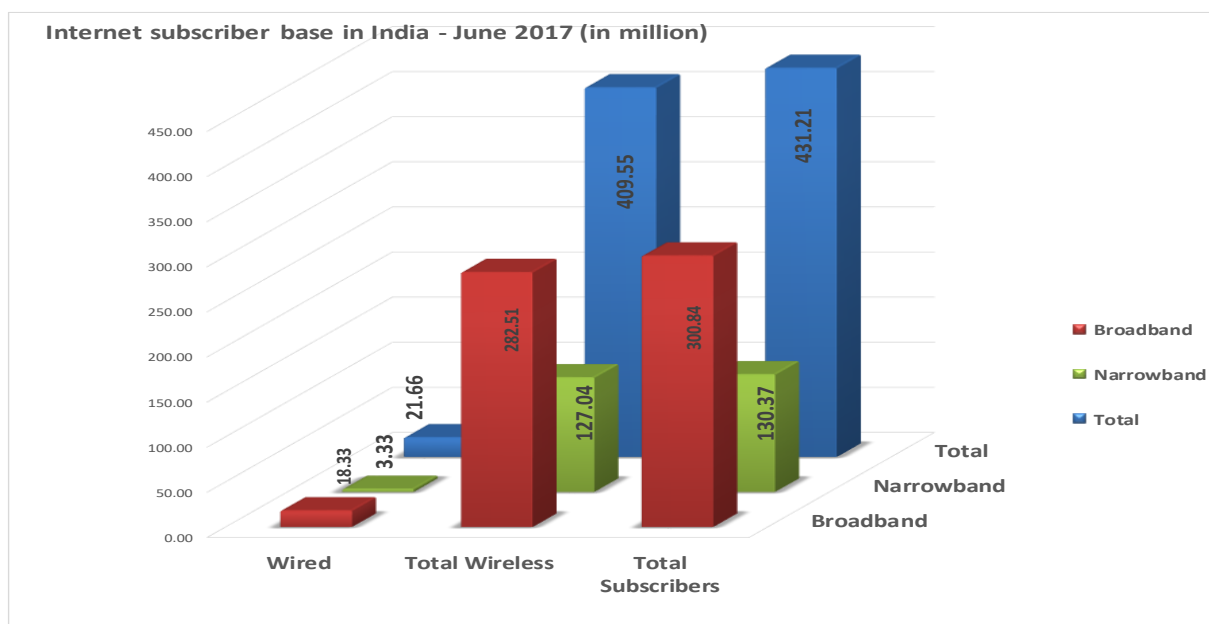
(iii) Internet Penetration

Internet usage in the country is on the increase. The number of Internet subscribers (both broadband and narrowband put together) which was 342.65 million at the end of March'16 has increased to 431.21 million by the end of June, 2017. Total internet subscriptions showed a growth of 2.14% over previous quarter.

Trends of Internet Subscribers (in million)						
Total Internet Subscribers (Includes wired, fixed Wireless and Mobile Wireless)	Mar.'16	June'16	Sept.'16	December'16	March'17	June'17
		342.65	350.48	367.48	391.50	422.18
Quarterly Growth (in %age)	3.32	2.29	4.85	6.54	7.84	2.14

The number of subscribers accessing internet via wireless phones etc. was 409.55 million while there were 21.66 million wired internet subscribers at the end of June, 2017. Wireless internet subscribers now constitute 94.98% of the total internet subscribers.

The number of Broadband subscribers, which was 300.84 million at the end of 30th June'17, increased to 316.48 million as on 31st August '17 with an increase of 15.64 million.



(iv) Foreign Direct Investment (FDI) Inflows

FDI in telecom sector has helped the expansion of telecom services in the country to a large extent. Cumulative FDI inflow in telecom sector "April 2000 to June 2017" is of the order of US\$ 24,034 million (Rs. 1,30,729 crore). During the period April 2017 - June 2017, Telecommunications Sector attracted FDI Equity inflows of US\$ 88 million (Rs. 565 crore) out of total FDI Equity inflows of US\$ 10,408 million (Rs. 67,086 crore).

FDI Equity Inflows	(US\$ in million)		Share of Telecom in Total
	India	Telecom Sector	
2011-12	36,504	1,997	5.47
2012-13	22,423	304	1.36
2013-14	24,299	1,307	5.38
2014-15	30,931	2,895	9.36
2015-16	40,001	1,324	3.31
2016-17	43,478	5,564	12.80
2017-18 (April-June'17)#	10,408	88	0.85

Figures are provisional, subject to reconciliation with RBI.

(II) TELECOMMUNICATIONS CONSULTANTS INDIA LIMITED

During July – September 2017, Company has secured orders of over Rs. 100.97 crs. Major orders booked during the period included:

a) Work awarded in KSA:

- Supply of Expert Manpower to Ericsson and small value works of Unified Contract for Laying of Cable, Saudi Electricity Company, valued at Rs. 14.77 crs.
- NBB Project under Government of Saudi Arabia ITC Project, Expert Manpower supply to Ericsson, OSP works with Ericsson STC, valued at Rs. 20.56 crs.

b) Work awarded for construction of Phase A works for Navodaya Vidhalaya Samiti at JNV, valued at Rs. 52.48 crs.

c) NIB-II P-3 project maintenance work for three years valued at Rs. 98.9 crs was concluded with PNC of BSNL.

Turnover:

The company has achieved Turnover of Rs. 276.80 crs during the quarter and cumulative Turnover of Rs. 488 crs for 2017-18 upto Sept. 17.

Other Events:

a) TCIL participated in 4th meeting of India-Japan joint working group (JWG) under India Japan ICT comprehensive frame work held between 11th July to 15th July 2017 to explore possibility of tie up for Smart City and Cyber Security Technology with Japanese Companies for jointly executing projects in India and other countries.

b) TCIL participated in 3rd meeting of BRICS Ministers of Communications between 26th – 28th July 2017 in Hangzhou, China to explore possibility in development of Telecom Infrastructure for participating in Telecom Infrastructure projects in BRICS Countries particularly in South Africa and Brazil and presented TCIL capabilities and projects executed by TCIL around the globe in Business Round Table.

c) CMD TCIL met Honorable Chief Minister, Smt. Mehbooba Mufti and Minister of State, Power, Mr. Syed Farooq Ahmed Andrabi for empanelment of TCIL as PIA/PMC for Transmission Lines, OPGW, SCADA and ICT related works under various Government Schemes.

d) CMD TCIL met Dy. Prime Minister and Minister for External affairs, Secretary IT & other officers in Nepal about the activities being carried out by TCIL and the Hulaki Information Highway project to be processed by the Nepal Govt.



CMD, TCIL delivering key note address in Business Round Table Conference from India side in BRICS Communications Ministers' Meet at Hangawu, China.

(III) SKILL DEVELOPMENT

A skill development awareness meeting was conducted in BRBRAITT (Bharat Ratna Bhim Rao Ambedkar Institute of Telecom Training) Jabalpur on 2nd August 2017 and a skill development awareness meeting was also conducted with the team members of Telecom Quality Assurance circle.





To see the working of the bharatnet in the villages, an inspection visit was also done to a nearby village called Kukrikheda. Meeting with people was conducted on the awareness for 'Pandit Deendayal Upadhyaya Sanchar Kaushal Vikas Pratisthans' Pilot Scheme.



A meeting with Indian Cellular Association on “Mobile handset related skill sets” was held on 28th August 2017. It was chaired by Sr DDG (SD). It was decided to hold in-depth discussions on various aspects of skill development related to Mobile Handset Industry.



On 30th August 2017, a meeting with Mr Chen Shouhua, Director, South East Asia Learning Service dept of Huawei was held under the chairmanship of Sr DDG (SD). Huawei appraised DoT regarding their training capacities across the world. A presentation on ‘Pandit Deendayal Upadhyaya Sanchar Kaushal Vikas Pratisthans’ Pilot Scheme was made on the occasion.



A meeting was convened by Skill Development unit of DOT with members of the Indian Cellular Association on 7th September 2017

to understand and examine the various skill needs relating to Mobile Handset manufacturing industry.

It was brought to the notice of DoT that the mobile and components manufacturing activity is getting developed in clusters such as in Noida / Greater Noida, Tirupati, Sri City etc. Therefore, the training institutions to be created for this subsector especially to train on job roles related to manufacturing must be kept in alignment with manufacturing geographies.

Discussion was also held regarding establishment of robust design and R&D ecosystem in India for the smooth growth of mobile handset industry.

(IV) INDIA MOBILE CONGRESS-2017:

The India Mobile Congress-2017 was held in New Delhi during 27-29th September, 2017. The IMC provided opportunity to meet key decision makers from the industry & Government. The theme of IMC 2017 was 'Connecting the Next Billion' where various panels and discussion forums would be addressing several topics around the same under four general categories of Technology, Business, Policy & Digital Life.



Minister of State (Independent Charge) Communications, Shri Manoj Sinha, inaugurated the three-day India Mobile Congress. Secretary (Telecom) Ms. Aruna Sundararajan and top executives from the telecom industry also graced the occasion.



(V) MAJOR ACHIEVEMENTS, ACTIVITIES AND PERFORMANCE OF TRAI

During the second quarter of financial year 2017-18 i.e. July - September 2017, the TRAI has given Recommendations, which are as follows:

(i) Recommendations dated 18th July, 2017 on “Captive VSAT CUG Policy issues”.

Department of Telecommunications vide its letter dated 17th March, 2016 requested the Authority to furnish its recommendations on applicability of DoT order dated 29th August, 1997 on license fee for 2nd Hub in Captive VSAT CUG network and also on the terms and conditions of Captive VSAT CUG License. The Authority in consultations with various stakeholders and internal analysis formulated its recommendations and forwarded the same to Government on 18th July 2017. The salient points of the recommendations are as under:

- Levy of separate licence fee for 2nd hub for Captive VSAT should be done away with.
- Present annual license fee at @ Rs. 10,000/- per VSAT terminal for VSAT terminals connected to first Hub shall be maintained for both the first and the second Hub and without levy of any minimum licence fee.
- The Entry Fee for Captive VSAT license may be reduced by 50% i.e. from Rs. 30 Lakh to Rs. 15 Lakh.
- FBG equivalent to License Fee for two quarters may be charged from Captive VSAT licensee.
- Royalty charge for Captive VSAT terminals should be calculated in line with the formula prescribed vide circular dated 22nd March 2012 issued by DoT. In the formula for calculation of Royalty charge, annual royalty factor needs to be multiplied by bandwidth factor and number of carriers assigned only.
- There is no justification for charging additional 25% amount as reuse factor for number of VSATs more than the number of carriers. These charges should be eliminated for calculation of Royalty charges.
- In case delay in allotment of corresponding ground segment frequency by WPC extend beyond 3 months from the date of allotment of space segment by DoS, the space segment charges payable by licensee to DoS may be borne by DoT till the time allocations/ clearances by WPC/ DoT/ NOC Care completed.

- Validity of WOL for Captive VSAT licensee should be for a period of 5 years at a time, instead of annual at present.
- The restriction/Cap of 512Kbps/2Mbps per VSAT as maximum data rates for Captive VSAT should be revised upwardly.

(ii) Recommendations dated 31st July 2017 on “Issues related to Closure of Access Service”.

Due to adoption of market based spectrum management, the continuance of access service is now no longer assured. Recently, there have been cases where due to reasons such as licensee failing to re-acquire its spectrum holding in a band on expiry of its license validity period; change of technology deployed by licensee; sale of entire spectrum holding through spectrum trading; roaming arrangement coming to an end; etc., there has been closure of access services being provided by the licensee. As a result subscribers had to face lot of inconveniences.

In order to ensure that subscribers are not put to undue hardships due to closure of access services, the Authority, suo-motu, sent its Recommendations to DoT after due consultation process on 'Issues related to closure of Access Services'.

Some of the main recommendations are:

- A Unified Access Service (UAS) licensee should be permitted to discontinue any of the services, permitted under the scope of licence without the need to surrender the licence.
- If a UAS licensee decides to close down its wireless access services, which were being provided through the administratively assigned spectrum, it must surrender such spectrum immediately upon closure of wireless access services.
- In case of closure of access services through any technology in the entire service area or a part of it, the TSP should be mandated to give a 60 days notice to the Licensor and TRAI and 30 days notice to its effected subscribers, clearly stating the options available to the subscribers, including that of MNP facility.
- The Authority has recommended various time-lines to be followed by DoT/WPC and the Licensee in the spectrum trading process. These timelines will bring greater clarity and certainty in the entire process of spectrum trading. If a subscriber wants to switch from one

technology to other, within the same TSP, the same should not come under the definition of Mobile Number Portability.

(iii) Recommendations dated 16th August 2017 On “Cloud Services”.

The Department of Telecommunications (DoT) on 31st December 2012 and 22nd June 2015 sought recommendations from TRAI on Cloud Computing based services. The Authority, after due consultation process formulated its Recommendation and sent Government on 16th August 2017.

Some of the main features of recommendations are:

- Light touch regulatory approach may adopted to regulate cloud services.
- DoT shall prescribe a framework for registration of Cloud Service Providers (CSPs) industry bodies, which are not for profit. All CSPs above the threshold to be notified by the Government have to become member of one of such industry body.
- Industry body will prescribe Code of Conduct (CoC) for its functioning which has to be followed by their members. In addition to CoC there will be a governance structure of the industry body aimed to support effective and transparent implementation, management and evolution of the CoC. Industry body may charge fee from its members, which is fair, reasonable and non-discriminatory.
- Industry body will also have a disclosure mechanism to promote transparency regarding interoperability, billing, data security and other related matters.
- A Cloud Service Advisory Group (CSAG) to be created to function as oversight body to periodically review the progress of Cloud Services and suggest actions, if any, to the Government.
- Telecommunication Standard Development Society of India (TSDSI) has been tasked to develop standards for ensuring interoperability for cloud services.
- Government may consider enacting an overarching and comprehensive data protection law covering all sectors.
- Government shall draw a robust Mutual Legal Assistance Treaty (MLAT) to address the jurisdictional issues and amend existing MLATs to include lawful interception or access to data on the cloud.

- Government shall continue its policy to promote cloud services through cloud infrastructure projects. Ministry of MSME may also continue to promote adoption of ICT in the sector including providing subsidies as being done at present.

Adoption of these recommendations will unleash the Potential of Cloud Computing in India to a next level by boosting cloud adoption and strengthening the trust in the Cloud.

(iv) Recommendations dated 5th September 2017 on “Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications”.

The Department of Telecommunications (DoT) through on 5th January, 2016 sought the recommendations of TRAI on three aspects related to M2Mcommunications: a) M2MSpectrum Requirements b) M2MRoaming Requirements c) Quality of Service in M2MServices. After due consultation process, the Authority finalised its recommendations on "Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications" and forwarded to DoT on 5th September 2017. The salient features of the recommendations are:-

I. Licensing and Spectrum related aspects:

- All access service providers' viz. CMTS, UASL, UL (AS) and UL holders using licensed access spectrum shall be allowed to provide M2M connectivity within the area of their existing authorizations. Also, all Basic Services licensees and ISP licensees shall be allowed to provide M2M connectivity, including on unlicensed band, within the area of their existing authorizations, barring M2M cellular services. DoT may suitably amend the license conditions in respective licenses.
- All UL (VNO) holders shall also accordingly be allowed to provide M2M connectivity as authorized in their existing authorizations. DoT may suitably amend the license condition of UL (VNO).
- Connectivity provider using LPWAN technologies operating in unlicensed spectrum should be covered under licensing through a new authorization under UL namely UL (M2M). Such licensees shall be allowed to bid for licensed spectrum to provide exclusively M2M services.

- UL (M2M) authorization shall comprise of three categories i.e. UL (M2M) Category-A- National area, UL (M2M) Category-B -Telecom Circle/Metro area, UL (M2M) Category -C- SSA/ District area.
- Amount payable in the form of Entry Fee, PBG, FBG for obtaining authorizations under UL (M2M) Category 'A' for National area, UL (M2M) Category 'B' for Telecom circle/ Metro area and UL (M2M) Category 'C' for SSA area, should be at par with the existing provisions in UL for ISP category.
- Government, through DoT, should identify critical services M2M sector and these services should be mandated to be provided only by connectivity providers using licensed spectrum.
- Regulatory authorities whose sectors will get impacted by M2M communications like TRAI, Central Drug Standards Control Organization, National Highways Authority of India, Inland Waterways Authority of India, Central Electricity Regulatory Commission, etc. and Ministry of Law & Justice should also be members in M2M apex body formed by DoT.
- M2M Service Providers (MSPs) should register with DoT as M2M service provider. This registration will be exclusive for the MSP and not part of existing OSP registration.
- A National Trust Centre (NTC), under the aegis of TEC, should be created for the certification of M2M devices and applications (hardware and software).
- Spectrum allocation should be technology and service neutral. No separate spectrum band is to be allocated exclusively for M2M services.
- Requirement of additional licensed spectrum for access services to meet the projected influx of connected devices due to M2M communication will be revisited by the Authority after WRC-19.
- In order to facilitate smooth roll out of M2M services utilizing the license exempt spectrum, 1 MHz of spectrum at 868 MHz (867-868) and a chunk of 6 MHz of spectrum at 915-935 MHz is recommended to be delicensed. Delicensing the V-band (57-64 GHz) as recommended by the Authority on various occasions may be done on priority.

II. SIM and Roaming related aspects:

- Devices with pre-fitted embedded Universal Integrated Circuit Card (eUICC) should be allowed to be imported only if it has the ability to get reconfigured 'Over the air' (OTA) with

local subscription. GSMA approved guidelines shall be followed for provisioning of new profile remotely with OTA mechanism.

- Devices fitted with eUICC shall be allowed in operation in roaming for maximum three years from the date of activation of roaming in the network of Indian TSP and mandatorily converted into Indian TSPs SIM within the stipulate period or on change of ownership of the device, whichever is earlier.
- International roaming in M2M shall be allowed under the well-recognized framework of GSMA 'M2M Annex' to keep uniformity of the parameters and processes.
- In order to boost the M2M/ IoT manufacturing in India, the government may consider feasibility of allowing extra-terrestrial usage of IMSI ranges with suitable framework on the basis of country specific bilateral agreements.

III. QoS, Security and Privacy related aspects:

- Quality of Service (QoS) is in the exclusive domain of TRAI. Therefore, once the M2M sector develops, the authority will put in place comprehensive regulations on QoS parameters in M2M communication, as per service requirements.
- At present stage of deployment of M2M devices and services, a duty cycle of 10% both at device level and network level would suffice to meet the requirements.
- On the issues related to data security and privacy in M2M, the Authority will issue comprehensive recommendations going through the consultation process on "Privacy, Security and ownership of Data in telecom sector".

(v) Recommendations dated 8th September, 2017 on "Introduction of UL (VNO) for Access Service authorization for category B license with districts of a State as a service area".

The Department of Telecommunications (DoT) on 11th July, 2016 had sought recommendations from TRAI for Access Service authorization for category 'B' license with districts of a State as a service area for Virtual Network Operators (VNOs). After due consultation process, the Authority finalized and forwarded its recommendations on 8th September 2017 on "Introduction of UL (VNO) for Access Service authorization for category B license with districts of a State as a service area". The salient features of the recommendations are:-

- A new category of authorization may be introduced under Unified License (VNO), for Access Service as Category 'B' license with districts as a Service Area on non-exclusive basis. To continue their services, existing DID franchisees should migrate to UL (VNO) category 'B'.
- New license should not be restricted only to existing DID franchisees and should be open to all entities intending to offer such services.
- Scope of proposed UL(VNO) Cat 'B' license should be to provide only wireline access services within a district. Wireless access services shall not be a part of the scope of UL VNO Cat B.
- Duration of UL (VNO) Cat 'B' license shall remain consistent with UL (VNO) policy.
- Entry Fee of Rs.1,65,000 for 10 years of duration of license shall be applicable to the UL (VNO) Cat 'B' licensee.
- FBG of Rs.1,00,000 shall be applicable to UL (VNO) Cat 'B' licensee.
- UL (VNO) Cat 'B' licenses shall possess a minimum net worth of more than Rs.5 lakhs per authorization.
- In order to promote fixed line Broadband, DoT should implement TRAI recommendations dated 17th April, 2015 on 'Delivering Broadband Quickly: What do we need to do?' wherein it was recommended that the license fee on the revenue earned from fixed line Broadband should be exempted for at least 5 years.
- The amount of maximum penalty on UL (VNO) Category 'B' licensee should be same as provisioned for ISP Cat C in UL (VNO) policy.
- In order to meet the requirement of connectivity UL (VNO) Cat 'B' licensees may be allowed to have arrangement for connectivity at different locations with different TSPs/NSOs in its licensed area of operation i.e. within the geography of a district, only in case of provision of wireline access services through EPABX.
- UL (VNO) (Access service) license may be amended to enable the provision of allowing parenting with multiple NSOs by a VNO for a wireline network at different locations of the LSA only in case of provision of wireline access services through EPABX.
- The arrangements for allowing connectivity from more than one TSP/NSO at same EPABX can be allowed only after suitable examination and approval by TEC/ DoT with desired specifications.

- The provider TSP/NSO shall mandatorily enter into Service Level Agreement (SLA) with UL (VNO) Cat 'B' licensee.
- As per Authority's understanding of present Access service licenses, Internet Telephony service is un-tethered from the underlying access Network.
- The UL (VNO) licensee with access service authorization should also be allowed to provide un-tethered Internet Telephony in the designated service area.
- Internet Telephony calls originated by International out roamers from International locations should be handed over at the International gateway of licensed ILDOs and International termination charges should be paid to the terminating access service provider. In case the Access provider is not able to ensure that Internet Telephony call originated outside of the country is coming through ILDO gateway, International out-roaming to Internet Telephony subscribers of the access provider should not be allowed.
- The mobile numbering series should be used for providing Internet Telephony by a service provider. TSPs should be allowed to allocate same number to the subscriber both for Cellular Mobile service and Internet Telephony service.
- The SDCA linked numbering series may also be used for providing Internet Telephony by a service provider. However, in this case, mobility should be limited to consumer premises.
- The access service licensee should use private ENUM in its network for Telephone number mapping from E.164 to SIP/ H.323 addresses and vice-versa.
- In case of provision of Internet Telephony by VNO with access service authorization, the numbering resource allocation should be done by the parent NSO.
- The access service providers providing Internet Telephony service may be encouraged to facilitate access to emergency number calls using location services; however, they may not be mandated to provide such services at present. The subscribers may be informed about the limitations of providing access to emergency services to Internet Telephony subscribers in unambiguous terms.
- QoS on Internet Telephony may be left to the market forces. The service providers must inform QoS parameters supported by them for Internet Telephony so that the subscribers

can take an informed decision. The Authority shall review the decision regarding mandating QoS to Internet Telephony service providers at appropriate time.

Regulations

(i) The Telecom Regulatory Authority of India (Officers and Staff Appointment) Regulation, 2017(Twelfth Amendment) dated 28th July 2017.

In exercise of the powers conferred by section 36, read with sub-section (1) of section 10, of the Telecom Regulatory Authority of India Act, 1997, the Authority made the amendments to the Telecom Regulatory Authority of India (Officers and Staff Appointment) Regulation, 2001. Through this amendment regulation called the Telecom Regulatory Authority of India (Officers and Staff Appointment) (Twelfth Amendment) Regulation, 2017, the Authority has made certain amendments in the mode of recruitment and requisite qualification etc. in some grades.

(ii) The Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service (Fifth Amendment) Regulations, 2017 dated 18th August 2017.

In exercise of its functions under TRAI Act, the Authority notified the “Regulations on Quality of Services (QoS) of Basic and Cellular Mobile Telephone Services, 2000” on 5th July 2000. These regulations were subsequently reviewed and TRAI issued the revised QoS standards for these services in July 2005. The regulations issued in 2005 were further reviewed in 2008-09 and TRAI issued “The Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009” in March 2009. The Authority on 18th August 2017 issued The Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service (Fifth Amendment) Regulations, 2017. Some of the key highlights of the amendment to the QoS Regulations are as under:

- Revised methodology for assessment of Drop Call Rate (DCR) will be on percentile basis instead of existing methodology of average of call drop of all BTSs. It will remove the anomaly arising due to average of DCR of bad performing Cells in the network with good or excellent performing cells. The revised methodology will have measures for Spatial Distribution of DCR and Temporal Distribution of DCR. It will capture cross sectional view of

DCR, as spatial measure for DCR will reflect area-to-area variations in DCR and Temporal measure for DCR will reflect day-to-day variations in DCR observed in a network.

- Revised approach for DCR will give better insight into the network performance of service provider and will help to identify local areas where Cell(s) have not performed well for many days and also to identify Day(s) on which many cells in the network have not performed well. It will also help to highlight the specific areas and specific days when network performance was excellent, good or poor.
- With new parameter for DCR Network_QSD (90,90), to be known as DCR spatial distribution measure, networks meeting benchmark of 2% will give confidence that at-least 90% of Cells in the network performed better than specified 2% benchmark on at-least 90% of days.
- Similarly, with another new parameter for DCR Network_QTD (97, 90), to be known as DCR temporal distribution measure, networks meeting benchmark of 3% will give confidence that on at-least 90% of Days, network performed better than specified 3% benchmark for at-least 97% of the Cells.
- Revision of assessment methodology has taken a step towards the technology agnostic performance measurement and now DCR benchmark assessment is to be done for all technologies GSM, CDMA, CDMA, LTE etc. as a whole.
- Network QoS parameters and benchmarks for VoLTE services have been defined on the similar lines as of Circuit Switch Voice services.
- Graded financial disincentives in case service providers fail to meet the DCR benchmarks have been introduced, in which amount payable may depend upon the extent of deviation from the DCR benchmarks. For not meeting DCR benchmark, service provider may be liable to pay by way of financial disincentive amount upto Rs.5 lakhs against one parameter depending upon extent of deviation of performance from the benchmark. In case of consecutive contravention of the benchmarks for two quarters, financial disincentive may be upto one and half times and in case of consecutive contravention of benchmarks for more than two quarters, it may be twice the amount.
- Earlier, it came to the notice that some of the service providers in some areas have configured Radio Link Timeout (RLT) value on higher side. Inappropriate high values of RLT

may affect DCR statistics and the calls which were supposed to be registered as call dropped by the network may be registered as call released by the user as user will initiate release of call because of poor QoS. In revised regulation measures have been specified for any inappropriate use of RLT parameter values, Service providers have to keep record of all BTS exceeding the specified RLT high value.

(iii) The Telecommunication Interconnection Usage Charges (Thirteenth Amendment) Regulations, 2017 dated 19th September 2017.

In exercise of the powers conferred upon it under the TRAI Act, 1997, the Authority made the amendments to the Telecommunication Interconnection Usage Charges Regulation, 2003. These regulations called the Telecommunication Interconnection Usage Charges (Thirteenth Amendment) Regulations, 2017 came into force with effect from the 1st October, 2017. Through this amendment, an STV has been permitted to offer data only benefits with maximum one year validity instead of maximum 90 days. The STVs must satisfy all conditions of a STV as specified in TCPR 2012 including that these shall not be offered in denomination of Rupees 10 or multiples thereof.
