

# NEWSLETTER

## TELECOMMUNICATION ENGINEERING CENTRE

July-September 2021

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### MESSAGE



From the desk of....

**Sr. DDG & Head, TEC**

Dear Readers,

It is a matter of great pleasure to release the October 2021 issue of the TEC Newsletter.

I sincerely hope that you will enjoy reading it.

I believe that this newsletter will serve as a window through which the complete profile of the TEC and co-curricular activities, achievements and progress made during the stipulated period (July- September 2021) can be showcased.

We at TEC are committed to creating an ambience to standardize new telecom technologies and products and strengthen country's testing and certification infrastructure.

We look forward to your continued support and suggestions to further improve the Newsletter.

Congratulations to my entire team in TEC for their sincere efforts..

TEC wishes good health to all its readers ; stay safe ....stay healthy.

Best Wishes and Warm Regards,

**Deepa Tyagi**

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## TEC WELCOMES NEW SECRETARY (T) & CHAIRMAN DCC, DOT



TEC welcomes Shri K. Rajaraman as the new Secretary (T) & Chairman Digital Communication Commission (DCC), Department of Telecommunications (DoT).



Sh. K. Rajaraman,  
Secretary (T), DoT



## TEC WELCOMES NEW MEMBER (S) & MEMBER (T), DCC, DOT



TEC welcomes Sh. Deepak Chaturvedi as Director General ( Telecom) & Member(S) and Sh. A. K. Tiwari as Member(T), Department of Telecommunications (DoT)



Sh. Deepak Chaturvedi  
DG(T) & Member(S), DoT



Sh. A. K. Tiwari  
Member (T), DoT

## 1. ARTIFICIAL INTELLIGENCE & INTELLECTUAL PROPERTY RIGHTS

Artificial intelligence (AI) is a discipline of computer science, aimed at developing machines and systems that can carry out tasks, which are considered to require human intelligence, with limited or no human intervention. AI is increasingly driving important technological and business developments around the world and being deployed across various sectors with impact on almost every aspect of the creation/innovation. With more sophisticated technologies being incorporated in the AI systems for the creation/innovation purpose, the Intellectual property (IP) industry is the most noteworthy market where AI could have a profound effect. AI generated creative works and innovations raises the question of whether or not such work can be afforded any special status/ rights under IP laws, like any other form of work produced by an identifiable human source, which is afforded protection under IP laws. It challenges not only traditional notions of concepts such as patents and copyrights, but also leads to the emergence of questions related to the regulation of such creations amidst others.

The relationship between AI and IP is mutual:

- IP as a legal system for the protection of AI generated work;
- AI as a technology that may assist in the management of IPR

IP relates to intangible assets, including inventions, brands, new technologies and artistic works etc. More specifically, IP pertains to patents, copyrights, industrial designs and trademarks.

The fundamental goals of the IP system have always been to protect and encourage new technologies and creative works, and to create a sustainable economic basis for invention and creation. Principle of IPR law is to encourage the disclosure of ideas, to broaden the common general knowledge base.

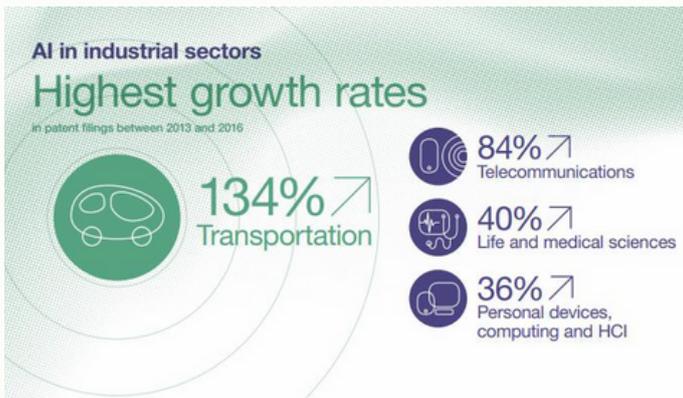
The discussion on IP and AI is attracting attention at international fora. The World Intellectual Property Organization (WIPO) - the global forum for intellectual property services, policy, information and cooperation, is leading a conversation on IP and AI, bringing together Member States and other stakeholders to discuss the impact of AI on IP and vice versa.

### IP TRENDS IN AI:

AI is revolutionizing every aspect of life and work. Naturally, as investment in AI-related R&D related work has surged in the past few years, so has the number of patent applications being filed for inventions in this area. According to the 2019 WIPO Technology Trends on AI, more than 340,000 AI-related applications have been received by IP offices since AI first emerged. The top five applicants in AI patenting are IBM (US), Microsoft (US), Toshiba (Japan), Samsung (South Korea) and NEC (Japan).

Machine learning (ML) is the dominant AI technology disclosed in patents and is included in more than one-third of all identified inventions.

The ML techniques, which are revolutionizing AI, are deep learning and neural networks, and these are the fastest growing AI techniques in terms of patent filings. 42% of all AI-related patents have been filed in telecommunications, transportation or life and medical sciences. Within telecommunications, the most growth was seen by computer networks/Internet and radio and television broadcasting. However, the increased pace of patent applications is confronted with a number of legal uncertainties.



## AI & IPR: ISSUES AND CHALLENGES:

In recent years, there have been several reported cases of applications for patent protection in which the applicant has named an AI application as the inventor. With this, many challenges arise, like-

- Ownership and Inventor-ship
- Disclosure challenge
- Liability challenges
- Issues related to legislation & Policy
- Issues related to Data

## CONCLUSION:

Development, deployment and applications of AI technologies and the growth of the global data economy make it necessary to address significant technical, social, economic, ethical and legal issues in a variety of policy areas, including IPRs and their impact on these policy areas.

The WIPO conversations and its efforts are significant in bringing out members countries on a single platform to discuss and deliberate upon the issues and offers to streamline the IP laws with the complex nature of AI based inventions.

Keeping in view the above developments, TEC has released a study paper on AI & IPR, which seeks to provide insight into the expanding scope of IPR laws and AI, along with the inevitable challenges it brings from a worldwide lens on the matter and initiatives on it by WIPO and other stakeholders.

- by FN Division



India ranks eighth in terms of Artificial Intelligence (AI) patent filing and fourth in terms of AI research papers.

## 2. C- V2X TECHNOLOGY FOR INTELLIGENT TRANSPORT SYSTEM

The rapidly increasing vehicle population in India puts a heavy demand on traffic management in metropolitan cities and other towns. Intelligent Transportation System is an established route to address this and minimize traffic problems. Use of IoT / ICT technology may resolve various issues related to automotive sector and M2M enabled transportation system include telematics and all types of communications in vehicles and also Vehicle to Vehicle (V2V), Vehicle to Pedestrian (V2P), Vehicle to Infrastructure (V2I) and Vehicle to Network/ Application (V2N), generally termed as V2X (Vehicle to anything). Specifically, C-V2X or Cellular V2X refers to the communication technology based on 3GPP specifications. Some of the important use cases are Vehicle tracking, e-call (911 in USA and 112 in Europe, India), Traffic control, Navigation, Infotainment, Fleet management, Asset tracking, Smart Parking, School bus tracking etc. Communication technology plays an important role as the data is required to be transmitted and received in time, so that the same may be processed and action taken as appropriate. Eg. RFID based Electronic Toll Collection devices, M2M SIM (e-SIM), Smart Over-the-Air (OTA) Updates etc.

In this regard, TEC has released a Technical Report on Communication Technologies in M2M/ IoT domain covering cellular and non- cellular communication technologies and related use cases. It has also released a Technical report (TR) V2V/ V2I Communication and Embedded SIM.

TEC specifications on Embedded SIM have been incorporated by Ministry of Road Transport & Highways (MoRTH) in AIS140 in Vehicle tracking device for Commercial passenger vehicles to ensure that the vehicles will always remain connected in view of passenger safety. Same has also been included in BIS standard IS168333.

There are two main technologies for V2X applications namely DSRC and C-V2X.

- **Dedicated Short Range Communications (DSRC):** DSRC technology is a two way short to medium range wireless communication capability based on IEEE 802.11p standards, called as Wireless Access in Vehicular Environment (WAVE). DSRC supports low latency, V2V and V2I communication. This technology is already in use in USA, Canada, Europe, Japan, Korea etc. This technology is expected to be replaced by C-V2X in future.

- **Cellular V2X (Vehicle to everything):** LTE C-V2X specifications released in 3GPP Release 14 in 2017 establishes the foundation for safety use cases. C-V2X provides not only the direct communication (which DSRC provides) but also the network based communication V2N which can be used to provide network assistance for safety related features.

3GPP Rel 15 provides further improvement in C-V2X safety, range and reliability. 3GPP Rel-16 (published in 2020) provides specifications for 5G and NR based C-V2X, with continuing evolution path for future releases. 5G NR C-V2x will have backward compatibility with 3GPP Rel 14 C-V2X.

With respect to frequency, ITS 5.9 GHz spectrum has been assigned by FCC (USA) and in EU (Europe) for V2X. Both DSRC and C-V2X are designed to use this spectrum. In the case of C-V2X, V2V, V2I and V2P applications use this band while V2N applications operate through the cellular network.

**CONCLUSION:** As the intelligent transport system is an important requirement in India and no technology has been deployed in the past, it will be better to adopt C-V2X technology based on 3GPP specifications. 5.9 GHz spectrum band also needs to be allocated on priority for C-V2X applications.

-by IoT Division

## STANDARDS RELEASED

1. ER (New) - Optical Fibre Cable (No. TEC70022110 )
2. GR (New) - 10G-EPON for FTTx Broadband Access Applications (No. TEC 71090:2021)
3. GR (New) - Nx25G-EPON (25G-EPON and 50G-EPON) for FTTx Broadband Access Applications (No. TEC 71080:2021)
4. GR (Revised) - ISDN NT1 (No. TEC58010 :2021)
5. GR (Revised) - ISDN HT (No. TEC 58050 :2021)
6. GR (Revised) - ISDN PT (No. TEC 58060 :2021)

\* ER- Essential Requirement; GR- Generic Requirement

## STATUS OF STANDARD ADOPTION

### ADOPTION OF TSDSI TRANSPOSED STANDARDS

#### 1. 5G Standards (3GPP Rel 15 and TSDSI's 5Gi):

Consultative Committee (CC) constituted and Public comments referred to CC for discussion and deliberations; discussions in CC meetings are going on since Aug 31, 2021.

#### 2. OneM2M Release 3 standards:

Consultative Committee (CC) constituted and Public comments referred to CC for discussion and deliberations; discussions in CC meetings are going on since Aug 12, 2021.

The previously adopted OneM2M Rel-2 standards and U4SSC KPIs have been referred by NITI Aayog to MoHUA for Smart Cities. MoHUA released an advisory in July 2021 to Smart City SPVs.

The previously adopted 3GPP standards (3GPP Release 10-14) are now available at [www.tec.gov.in](http://www.tec.gov.in)

## CONTRIBUTIONS TO ITU

**1. ITU-T SG-13:** A contribution by NWG-13 proposing significant changes to existing work item *"Architectural framework for Machine Learning Sandbox in future networks including IMT-2020"* (Y.ML-IMT2020-SANDBOX) was presented to ITU-T SG13 in July 2021.

The contribution stands accepted as TD 836/WP1.

**2. ITU-T SG-12:** A Contribution on work item *E.AIQ (Indexing & Rating of AI algorithm)* has been submitted to ITU-T SG12 by NWG-12.

**3. ITU-T SG-20:** Contribution on *"Requirements for deployment of smart services in rural communities"* (Y. SRC) was finalized by NWG-20 and submitted to ITU SG20.

**4. ITU-R WP-5D:** Contributions on following were submitted to ITU-R WP-5D:

- *RR 21.5*
- *Timelines for development of IMT-2030*
- *Revision of ITU-R Recommendation M.1036*
- *HIBS (HAPS as IMT Base Stations)*

## SIGNIFICANT OUTCOME-

### Work item initiated by NWG 13 now a ITU-T Recommendation Y.3257:

A contribution on "End-to-end fault and performance management framework of network services in inter-cloud" resulted in to new Recommendation ITU-T Y.3527 *"End-to-end fault and performance management framework of network services in inter-cloud"*, which provides framework and functional requirements of end-to-end fault and performance management of network services in inter-cloud.

DDG(MT), Sh. A.S.Verma worked as one of the Editors for this work item.

## NATIONAL WORKING GROUPS (NWG)

- **National Working Group-12 Meeting:** The 5th meeting of National Working Group (NWG-12) corresponding to ITU-T Study Group-12, for the current study period was held on 21-09-2021 as online. Discussion on the status of TD-E.AIQ under SG12 was the the main agenda point among others.
- **National Study Group-5 Meetings:** Three meetings of the NSG-5- Terrestrial Services corresponding to ITU-R Study Group-5 were held under the Chairpersonship of Sr. DDG(TEC) and coordinated by Radio Division during July to Sep, 2021.
- **National Working Group (NWG-20)** e-meeting was held on 22nd Sept 2021 for finalizing contributions for ITU-T SG-20 meeting, 11-21 Oct 2021. Contribution Y. SRC "Requirements for deployment of smart services in rural communities" was finalized and submitted for ITU meeting.

## IEEE/ ISO/ IEC/ BIS

- **Subscription of IEEE Xplore Digital library for TEC-** TEC's present subscription plan of IEEE i.e. Enterprise Level 1 subscription entitles TEC to download 350 articles and standards select lease for download of 10 standards got renewed for a period of one year i.e. from 17th July 2021 to 16th July 2022.
- A workshop namely- Inspiring Innovation at "Telecommunication Engineering Centre" with IEEE Publication & eLearning Library was organised on Jul 6, 2021
- **ISO 9001:2015 Certification** of TEC continued for another one year till August, 2022 by the Certification Body accredited by NABCD, QCI.

## TECHNICAL REPORTS RELEASED

1. A Standard Operating Procedure for personalisation of SIM cards **having** remote provisioning facility has been finalised in TEC and sent to DoT for notification in August 2021. (AS wing DOT earlier notified the "SOP of Provisioning of SIM **not having** remote provisioning facility" in July 2021 for implementation.)
2. '**Code of Practice for Securing Consumer Internet of Things (IoT)**' (No- TEC 31318:2021) released by IoT division, TEC in August 2021 (available at <https://tec.gov.in/M2M-IoT-technical-reports>). This Code of Practice defines baseline requirements in the form of 13 principles, for securing consumer IoT.

## STANDARDS WITHDRAWAN

14 numbers of very old standards for GR/ IR of different obsolete telecom products have been withdrawn by TEC in Q2.



### MOBILE EDGE COMPUTING:

It provides an IT service environment and cloud-computing capabilities at the edge of the mobile network, within the Radio Access Network (RAN) and in close proximity to mobile subscribers. The aim is to reduce latency, ensure highly efficient network operation and service delivery, and offer an improved user experience.

Highlights of Telecom Subscription Data as on 31st July, 2021			
Particulars	Wireless	Wireline	Total
Total Telephone Subscribers (Million)	1186.84	22.61	1209.45
Overall Tele-density (%)	86.85%	1.65%	88.51%
Broadband Subscribers (Million)	784.59	24.01	808.60

Source: TRAI

## MANDATORY TESTING (MTCTE)

### PHASE III & IV:

Notified on 22.09.2021, covering over 150 Telecom products against 47 ERs

**Ph III-** Mandatory w.e.f. 01.07.2022.

**Ph IV-** Mandatory for EMI/EMC and Safety w.e.f. 01.02.2022; mandatory for other ER parameters w.e.f. 01.07.2022.

\*Indian Telegraph (Amendment) Rules, 2017 provides that telecom equipment are to be mandatorily tested and certified against EMI/EMC, Safety, Technical, Security and other requirements like SAR, IPv6 etc before its sale, import or use in India. *More details at <https://www.mtcte.tec.gov.in/>*

### OEM REGISTRATION STATUS:

Indian OEM=48, Foreign OEM=80

### CERTIFICATES ISSUES

Certificates issued in Q2 = 19

Total Certificates issued till date = 145

## VOLUNTARY TESTING

### CERTIFICATES ISSUED

- Certificates issued in Q2 = 3 (2 TAC; 1 IAC)
- Total certificates issues since April 01, 2021 = 05 (2 Technology Approval, 2 TAC, 1 IAC)

\*TAC= Type Approval Certificate;  
IAC- Interface Approval Certificate

### CERTIFICATION PROCEDURE REVISED

Voluntary Certification procedure revised after consultation with concerned stakeholders and released vide document No. TEC 05019:2021 .

It adds more clarity in the testing process, includes coverage of more organizations including Start-ups, R&D institutions etc.

## CAB DESIGNATION ISSUED BY TEC

New CAB Designation Certificate-

- Issued = 03
- Renewed = 03

Total Designated CABs as on 30.09.2021 = 62

- For Safety Testing = 47
- For EMI/EMC Testing = 29
- For SAR Testing = 03
- for Environmental Testing = 22

## TEC AS TESTING & CERTIFICATION AGENCY FOR CAS AND SMS

Telecom Regulatory Authority of India on Sept 20, 2021 designated the TEC as Testing and Certification Agency for the operationalisation and oversight of a framework for technical compliance of the **Conditional Access System (CAS)** and **Subscriber Management System (SMS)**, notified for the **broadcasting and cable sector** recently.

Accordingly, the TEC will carry out the overall administration, coordination and execution of testing and certification of the CAS and SMS.

TEC will also notify and maintain test schedules and test procedures, empanel and declare the list of accredited testing laboratories that fulfil the requirements for carrying out the testing, provide certification for all products tested and certified by the accredited testing laboratories, and maintain the version and deployment details of the CAS and SMS deployed in India.

## TRUSTED TELECOM PORTAL

TS division TEC is evaluating the Telecom Products on Trusted Telecom Portal and completed evaluation of **81 products** till 30.09.21.

## STUDY PAPERS RELEASED BY TEC

- 1. 5G Security** - Focuses on comprehensive security architecture and capabilities in 5G as per 3GPP architecture, security challenges along with proposed countermeasures to handle to those security threats. *(September 2021- TS Division)*
- 2. AI & IPR-** Provide insight into the expanding scope of IPR laws and AI systems for the creation/ innovation purpose, along with the inevitable challenges it brings from a worldwide lens on the matter. *(September 2021 FN Division)*

## TALKS & MEETINGS

### WEBINARS-

- 1. Green ICT: an overview on eco-environmental concepts;** Date - 19.07.2021; Speaker- Chairman, ETSI Technical Committee "Environmental Engg".
- 2. Smart Water;** Date- 20.07.2021; Speakers- M/s Xylem
- 3. Zero Trust Security with Active Defense for Next-Gen Telecom Infrastructure;** Date- 28.07.2021; Speaker(s) - M/s Zscaler
- 4. AI in Telecom & Related ICT Sector;** Date -03.08.2021; Speakers- M/s Qualcomm, M/s Samsung & DoT.



- 5. Fiberisation;** Date- 17.08.2021; Speakers- M/s Sterlite, M/s Corning and M/s Birla Furukawa.
- 6. Conformance testing in Telecom Sector;** Date- 07.09.2021; Speakers-M/s CNLABS & M/s Bharat IPv6 Forum.
- 7. 5G based IoT use cases and Virtual tour of 5G Use cases lab;** Date- 16.09.2021; Speaker- M/s Capgemini.

## IMPORTANT MEETINGS AND ACTIVITIES -

- TEC website was revamped & launched by Sh. B.K. Jog, then Member(S) on July 14, 2021
- Sr. DDG TEC delivered the key note address on Need for a *National Standard for IoT ecosystem in India*, in the inaugural session in a conference on IoT standards and Smart Cities - Indian perspective organized by C-DOT, 5-8 July 2021.
- DDG(IoT) delivered a talk on TEC initiative in IoT standardization on 6th July 2021 and also moderated the session on *IoT standards and Smart Cities- Security, privacy and trust* on 7th July 2021 in the conference organized by C-DOT, 5-8 July 2021.
- Site visit conducted by TEC for CAB designation for following labs:
  - M/s Bharat Test House, Sonipat, Haryana
  - M/s HCL, Chennai, Tamilnadu
  - M/s Delhi Test House, Sonipat, Haryana
  - M/s ACE Test Lab, Sonipat, Haryana
  - M/s React Laboratories, Bangalore
- DDG(IoT) delivered the special address on Role of IoT- Getting Back to Normal, in the virtual conference organized by CII on 20 July 2021.
- DDG(IoT) delivered a talk at a knowledge sharing session for Invest India on *World of Standards and Emerging Technologies* on 10th August 2021 organised by SESEI.
- DDG(IoT) delivered a talk on *IoT-technology and policy perspective* for the outreach programme of TRAI Bangalore.
- Consultation with MAIT and concerned stakeholders was held on 31.08.2021 to clarify on MTCTE related queries.
- DoT's Apex committee meeting for *single window clearance of satellite communications license applications* was attended by DDG (R).

## TEC WELCOMES ON JOINING TEC 🙏

- Smt. Ghazala Faisal, DDG (FA)
- Sh. Piyush Chetiya, Director (FN)
- Sh. Ravinder Kumar, Director
- Sh. R. Anil Kumar, Director (SR)
- Ms. Jyoti Roat, ADET (MT)

## TEC CONGRATULATES ON PROMOTION 🌸

- Sh. Ashwani Salwan, DDG(Tx) on promotion from SAG to HAG
- Sh. Abdul Kayum, Director (FA) on promotion from JAG to SAG
- Sh. Avinash Agarwal, Director (IT) on promotion from JAG to SAG
- Sh. Shouvik Kumar Das, Director (ER) on promotion from JAG to SAG

## TEC BIDS FAREWELL ON TRANSFER 🌸

- Sh. Ashwani Salwan, Sr. DDG relieved for further reporting to LSA Mumbai
- Sh. Alok Jaimal DDG relieved for further reporting to BSNL



## TEC BIDS FAREWELL ON RETIREMENT 🌸

- Sh. Tajinder Kumar, DDG; Retired on July 31, 2021
- Sh. Lalit Kumar Gangal, DDG; Retired on September 30, 2021



Sh. Tajinder Kumar



Sh. Lalit Kr Gangal



कार्यालय मे हिन्दी दिवस की झलकिया

## हिन्दी गतिविधियाँ

- हिन्दी तिमाही रिपोर्ट मुख्यालय दूरसंचार विभाग और राजभाषा विभाग को भेजी गयी ।
- राजभाषा कर््याव्हान की तिमाही बैठक का आयोजन किया गया एवं कार्यवृत्त जारी किया
- हिन्दी पखवाड़ा का आयोजन किया गया ।



हिन्दी पखवाड़ा प्रतियोगिताओ मे पुरुष्करत विजेताओ के साथ व.उ.म.नि. एवं सीनियर अधिकारीगण

## Establishing of IMP & TEP Division:

A separate division namely **Indigenous Manufacturing Promotion & TBT Enquiry Point (IMP & TEP)** has been established in TEC, by renaming of existing TC-II division to implement the schemes like Make in India, AtmaNirbhar Bharat for promoting domestic manufacturing in India in right spirit and to give focused thrust for enabling and promotional policies/ schemes for boosting local manufacturing of telecom & related ICT equipment in India.

## 5G LAB/ TESTBED

### • 5G TESTBED:

DoT is funding a large scale 5G testbed project to encourage Indian startups and the industry to take an early lead in 5G. The goal of the project is to build a test bed that closely resembles a real-world 5G deployment.

This project aims to create a 5G prototype and testing platform under the guidance of IIT-M faculty, comprising of 5G BS and UE nodes that support enhanced mobile broadband (eMBB), Ultra low latency communication (URLLC), and massive MTC including NB IoT services, for both sub 6 GHz and mmWave frequencies.

### • 5G USE CASES LAB:

Located in Mumbai, Capgemini's lab is designed to help organisations to pivot their business to be ready to take advantage of the 5G and edge digital revolution, driving their data-driven transformation towards Intelligent Industry.

Four dedicated areas of specialism based on sector requirement and proven use cases have been developed namely- Smart Factory, Smart Utility, Smart Cities and Smart Retail.

5G Lab offers live demos for several use cases-

- Autonomous Intralogistics AIV
- Smart Helth
- Smart Surveillance for worker safety etc.

## RELEASE OF NTIPRIT LOGO

A three days workshop on "Leadership Program" for Senior DoT Officers, conducted by NTIPRIT from 26-28 July 2021, and the Logo of NTIPRIT was also released on 26 July 2021 by Member (Service), Digital Communication Commission, DoT.



## TRAINING ON 5G & CYBER SECURITY



In consonance with Digital India Initiatives and to create awareness among officers of various ministries and departments of Central Government about ways and means to leverage the power of 5G and to develop a culture of cyber security, NTIPRIT organized a one-day training programme on '5G and Cyber Security' on 27th Aug 2021 for senior officers of the Government of India. The Training programme was inaugurated by Secretary (T), Sh. Anshu Prakash. Sh. Deepak Chaturvedi, Member (S), and Sh. UK Srivastava, Sr. DDG NTIPRIT also spoke on the occasion describing the role of 5G in various Government initiatives. The Programme was attended by over 65 participants of the level of Joint Secretary and above from more than 25 Central Government Ministries.

## TELECOM REFORMS

Cabinet in September 2021 approves major Reforms in Telecom Sector to boost employment, growth, to address Liquidity needs of TSPs, competition and consumer interests etc-

- Contactless, Customer Centric, Paperless & Secured KYC
- Rationalization of Adjusted Gross Revenue
- Moratorium/Deferment of upto four-year on payment of statutory dues by telecom companies, both AGR and spectrum charges
- Spectrum Tenure: from 20 to 30 years.
- To encourage investment, 100% FDI under automatic route permitted in Telecom Sector

- Telecommunication Engineering Centre (TEC) is an ISO 9001:2015 Organization.
- Standards Setting organization (SSO) for telecom & related ICT sector
- Designated Authority (DA) for implementation of Mandatory Testing & Certification of Telecom Equipment (MTCTE) and designation of Conformance Assessment Bodies (CAB) & Certifying Bodies (CBs)
- Designated Authority (DA) for Testing and certification of Conditional Access System (CAS)/ Subscriber Management System (SMS) in broadcasting sector as per TRAI notification
- Designated Authority (DA) for Voluntary Scheme such as Type Approvals/Interface Approvals/Technology Approvals
- Designated National Enquiry point for WTO –TBT (Technical Barrier to Trade) for telecom sector
- Complaint resolution Authority for local content under PPP-MII (Public Procurement Preference to Make in India) Policy
- Technical arm/attached office of DoT, responsible for technical inputs to DoT and other Govt. Departments/Regulator on all technology/policy matters
- Nodal point for all ITU-T Study group Activities and ITU-R SG 5.
- TEC coordinates and participates in the meetings of standards development organizations, viz., ITU, APT, WRC, 3GPP, ETSI, IEEE etc. TEC also interacts with stakeholders and associations, viz., COAI, AUSPI, ISPAI, SAI, TEMA, CMAI, FICCI, CII, etc
- In addition:
  - 5G Pilot Trials- Test Guide finalised by in consultation with stakeholders
  - BSNL 4G Proof of Concept (PoC)- committee for monitoring of PoC trial being chaired by TEC
  - 5G standards of 3GPP and TSDSI currently under discussion for adoption as National standards

**YOU ARE BORN WITH THE WINGS  
DONT CRAWL  
LEARN TO USE THEM  
TO FLY AND FLY**

---- DR. A.P.J. ABDUL KALAM



**TEC wishes all its reader.... Happy Navratri, Dussehra and Diwali**

**SUGGESTIONS/ FEEDBACK ARE  
WELCOME AND MAY BE SENT AT-**

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1. Sh Rajeev Kumar Tyagi, DDG (NGS)
2. Ms Divya Sharma, ADG (Tx)
3. Ms Ranjana Sivaram, ADG (MT)
4. Sh Rajmohan Meena, ADG (FN)
5. Ms Bhoomika Gaur, ADET (R)
6. Sh Vimal Kumar, AD (NR)

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