Volume 26 I Issue 4 I October 2022

# NEWSLETTER

## TELECOMMUNICATION ENGINEERING CENTRE

## MESSAGE

From the desk of....

**Sr. DDG & Head, TEC**

Dear Readers,

It is a matter of great pleasure to release the July-September, 2022 issue of the TEC Newsletter.

I believe that this newsletter will serve as a window through which the complete profile of TEC and its achievements, progress made and co-curricular activities during the stipulated period is being showcased.

We at TEC are committed to provide 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.

Best Wishes and Warm Regards,

Ritu Ranjan Mittar

## CONTENTS

# HON'BLE PM SHRI NARENDRA MODI LAUNCHED 5G SERVICES IN COUNTRY DURING INAUGURATION OF 6TH INDIA MOBILE CONGRESS ON 01 OCTOBER, 2022



KEY HIGHLIGHTS:

- PM inaugurates 6th edition of India Mobile Congress on 1st October 2022.
- "New India will not remain a mere consumer of technology, but India will play an active role in the development and implementation of new technologies.
- "With 5G, India is setting a global standard in telecom technology for the first time".
- "5G technology will not be limited to speedy internet access, but it has the capability to change lives".
- "Digital India has given a platform to small traders, small entrepreneurs, local artists and artisans".

# TEC AT INDIAN MOBILE CONGRESS 2022

TEC STALL AT IMC

Shri Ashwini Vaishnaw, Hon'ble MOC, inaugurates TEC stall in Atma Nirbhar Bharat Pavillion at IMC, Pragati Maidan,New Delhi on 01 October 2022


Sr DDG TEC as panelist speaking on topic "Facilitation by TEC for Atma Nirbhar Bharat" to startups and MSMEs at IMC on 02.10.2022.

Secretary (Telecom) visited TEC stall on 03.10.2022 at IMC 2022 and encouraged TEC to be an enabler.

Union Secretary of Higher Education visited TEC stall at IMC on 2.10.2022

Member (S) Digital Communications Commission visited TEC stall at IMC on 02.10.2022

Chairman DRDO and Secretary DDR&D visited TEC stall at IMC on 2nd October.

Member (T), Member (F) DCC and Director (F) BSNL at IMC, TEC stall on 1.10.2022.

Member (Services) DCC with officers of TEC at IMC 2022

# TECHNOLOGY

## I. QUANTUM KEY DISTRIBUTION SYSTEM

As the world embraced digitalization, information became by far the most important and valuable global resource in the modern world. Various types of data need to be protected from hackers and malicious activities; the importance of information technology security thus continues to increase with more organizations looking to the cloud to manage everyday operations and store sensitive data.

Advancements in Quantum Computing pose a great threat to the present-day crypto-systems. Many key generation and distribution algorithms today work on complex mathematical functions (like finding prime factors of a very large integer). In classical computers, for large values, this would take trillions of years, and it is this difficulty that gives us the assurance we need that our key exchanges and authentication steps are safe. That assurance goes away with the advent of quantum computers.

The exponential increase in computational power and availability of suitable algorithms makes it possible for Quantum Computers to easily break such mathematical functions, resulting in the secrecy of the key being compromised. As a specific example, it would take 300 trillion years to break an RSA-2048 encryption key for a classical machine, but merely some hours for a quantum computer. Thus, a great risk is posed to the present-day communication infrastructure by the advancements in Quantum Computing. The solution to this problem is provided by Quantum Communications – in the form of Quantum Key Distribution (QKD), which can generate and distribute keys based on fundamental laws of Physics using qubits (quantum bits) representing a polarization state of the photon.

### Introduction to QKD Systems:

Quantum Key Distribution is a secure communication method that implements a cryptographic protocol involving components of quantum mechanics. It enables two parties to produce a shared random secret key known only to them, which can then be used to encrypt and decrypt messages.

An important and unique property of quantum key distribution is the ability of the two communicating users to detect the presence of any third party trying to gain knowledge of the key. This results from a fundamental aspect of quantum mechanics: the process of measuring a quantum system, in general, disturbs the system. A third party trying to eavesdrop on the key must in some way measure it, thus introducing detectable anomalies. The key generated by the QKD can then be used with any chosen encryption algorithm to encrypt (and decrypt) a message, which can then be transmitted over a standard communication channel.

The basic elements of a point-to-point QKD system are a transmitter (QKD-Tx) and a receiver (QKD-Rx), each of which is referred to as a QKD module. A QKD link connects the QKD modules directly or with the help of a quantum relay point. The keys are shared through the QKD link. The QKD link usually consists of a quantum channel and a classical channel. The quantum channel is reserved for quantum signals, such as a single-photon-level coherent state of light, to transmit random bit strings (quantum bits). The classical channel is reserved for synchronization and data exchange between the QKD modules.

The figure below depicts a QKD system to secure a point-to-point application link. QKD modules generate keys and supply them to the applications. The application link where encrypted data is transmitted

can be any communication link in a conventional or a future network.

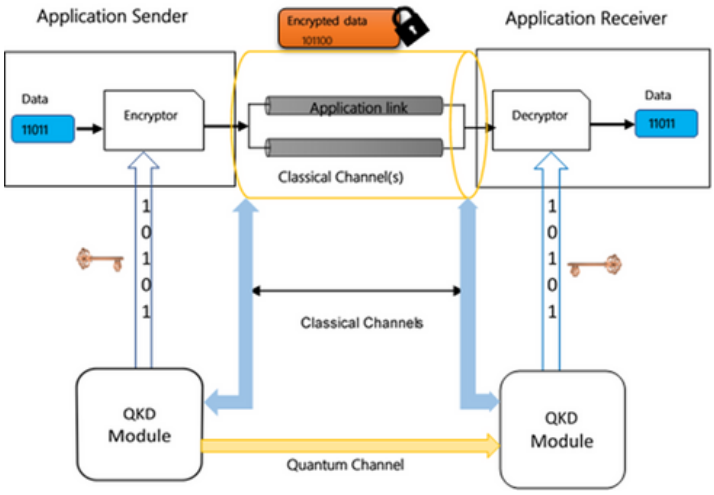



Figure: Point-to-Point QKD System

## Key Functionalities of QKD System:

Key functionalities of QKD system may include:

- Interface from/to users/ appliation interface
- Key shifting, error estimation/ correction and privcy amplification
- key management
- performance monitoring, system configuration and administration, auto-calibration, system health parameters, etc.

## Developments in India:

Indian companies like QNu Labs, Taqbit and DoT R&D institute C-DOT have developed deployable QKD systems for a distance of up to 100km for optical fiber-based terrestrial communication links. Many universities like IITs, IISc, and research institutions such as Raman Research Institute, Physical Research Lab and ISRO, CDOT, TEC, etc. are the leading contributors to the Quantum Mission.

## Initiatives by TEC:

Telecommunication Engineering Centre (TEC), Department of Telecommunications has come out with a standard for testing and certification of the Quantum Key Distribution system. This framework has been prepared in collaboration with experts from academia, R&D institutions, Defense establishments, government bodies & industries.

## Key Technical Specifications of QKD System:

| | | |
|---|---|---|
| 1 | Secure Key Rate | >2Kbps for DPS (Different Phase Shift) protocol |
| 2 | QBER (Quantum Bit Error Rate) | >1kbps for COW (Coherent One Way) protocol |
| 3 | Synchronization | Over Classical Channel |
| 4 | Key Transfer Interface | UART/ USB/ Ethernet |

This framework will provide a leg up to Indian industries and enable fulfillment of the Hon'ble Prime Minister's vision for Atmanirbhar Bharat and open an avenue for export. This standard would facilitate in establishing a secure end-to-end communication infrastructure, fulfilling the vision of "Secure India" as envisaged in National Digital Communications Policy.

**Release of TEC standard document on QKD system by Hon'ble Minister of Communications, Shri Ashwini Vaishnaw along with Hon'ble Minister of State External Affairs, Smt. Meenakshi Lekhi.**


(6G Technology Division)

## 2. DIGITAL RIGHTS MANAGEMENT SYSTEM (DRMS)

**A technology for secured delivery of digital content through the internet:**

With technological advancements, Internet Protocol (IP)-based services have entered into TV broadcasting services also. Streaming and progressive download of the content to Personal Computers/ Mobiles through public internet are increasingly popular all over the world. However, advancement in modern technology also brings new issues like digital data piracy, leading to substantial revenue losses to content providers and governments. These need a system to safeguard the content of IP-based services such as IP linear TV and IP VoD, and supply copy management across the media devices within premises like TV, PCs, mobile phones, laptops, etc. to protect or shield revenue. Digital Rights Management System (DRMS) technology is designed to protect the content from unauthorized access based on device authentication. Its objective is to ensure the legitimate use through the life cycle of digital content, protect the intellectual property rights of digital content, protect the trade channel of digital content, protect the interests of authors, publishers, distributors and also the legitimate rights of end-users.

**Basic Principle of DRM Technology:**

The principle of DRM technology is to use technical means of digital products, distribution, transmission, and implementation of all regulatory features to make digital products only for authorized use. Digital copyright protection technology is mainly of two kinds;

1. Digital watermarking technology, and
2. Data encryption-based mechanism with anti-copying DRM technology as the core.

DRM technology is an important integral mechanism that describes, defines, monitors,and protects the rights of the stakeholders involved in the process of making, broadcasting, and playing digital content.

**The Architecture of the DRM system**

Digital Rights Management (DRM) is the chain of software and hardware technologies and services that manages the authorized use of digital content and all the consequences and outcomes of its use throughout the life cycle of the content. Figure below shows the architecture of the Digital Rights Management System required for content delivery by cable platforms.

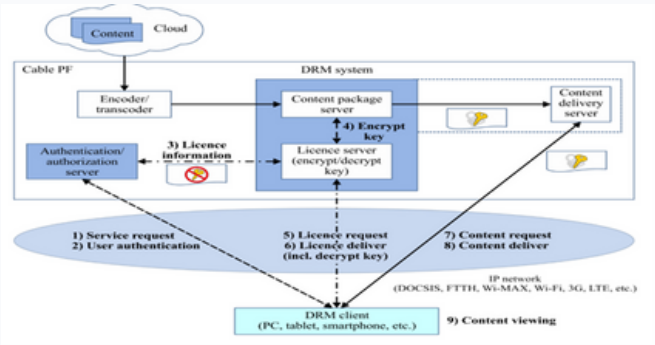



Figure: Model of general DRM system and expected signal flow (Source ITU J.1005(08/2015))

The DRM system is usually deployed at the cable platform. The raw content, collected from different broadcasters and different resources that are outside of the cable platform, is encoded or transcoded which is further forwarded to the DRM system for encryption upon receiving the request from the DRM client (installed at the user end terminal device). The DRM system encrypts the content and sends the encrypted content

along with the license of authorized access and decryption key (required to decrypt the content at the client side) to the DRM client with the help of the content delivery server.

**Components and flow**

The process flow in DRM system explaining the delivery of the content at the client end's device is as shown in Figure below:-

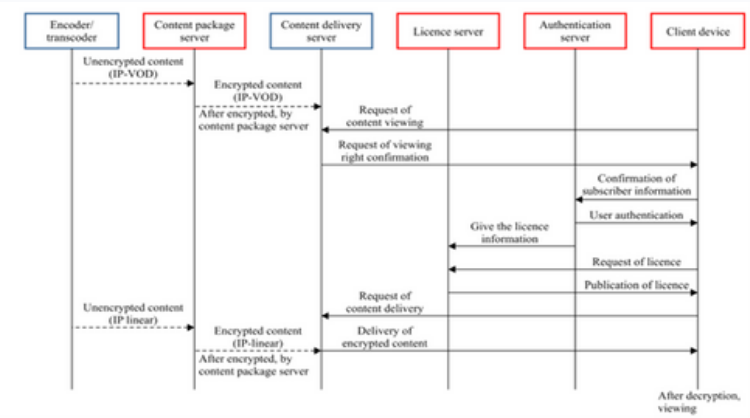
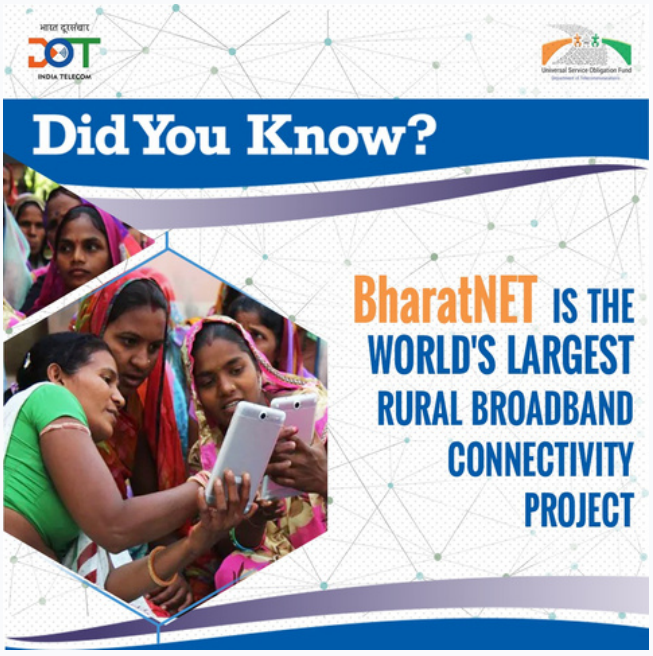



Figure: Example of DRM processing flow

**Use Cases of DRM and Global Best Practices:**

- Limit access to files –Apple iTunes Store uses DRM software to limit the number of devices that can access the purchased audio files. In the case of a downloaded song from an iTunes music store, the store collects data of users such as purchase details, usage function, the device used, etc. to limit playing iTunes music on any other unauthorized devices.
- Keep digital work unaltered –Browsing through premium stock images, or playing video or audio is allowed only if one has usage rights and licensing.
- Prevent software tampering –Microsoft software, like Windows or Office applications, contains a DRM system referred to as Play Ready. This program prevents Windows from running on a personal computer device when another software is already in use and hence, it prevents any unauthorized user or bot from crawling the contents of its software.
- Produce content safely - In the case of running marketing campaigns, DRM software can collect and manage contracts and agreements to induce better information in terms of use and to create content without having to deal with legal issues.
- Prevent leaking of confidential information - DRM also helps in safeguarding important and crucial documents from getting leaked.
- Malaysia, Morocco, Philippines, Canada, Indonesia, China, France, North America, and South Korea are among a few countries that have successfully implemented IPTV using Digital Rights Management (DRM) System as the security and content protection mechanism to protect content from unauthorized access via the internet.

(C & B Division)



# STANDARDIZATION

## STANDARDS RELEASED

- Standard (New)- GR for Band Pass Filter for C-Band Satellite Earth Receivers in 3700-4200 Mhz with 30 MHz Guard [No. TEC 57030:2022]. This Standard is for Generic Requirements for a Band pass Filter to reduce or eliminate any potential interference that may be caused by the 5G cellular system in the C-band Satellite Earth Receivers, generally used for television broadcasting. The standard takes into account the frequency allocation for 5G in India. This standard was prepared based on requirement from the Broadcast industry.

- Standard (New)- GR for Converged Multi Service Application Access Equipment [No. TEC 71120:2022]. This document describes the generic requirements and specifications for network architectures based on Multi Service Application equipment for Access Platform that could be services like PON, Layer-2/Layer-3 ethernet, xDSL, access transport DWDM etc. according to their respective standards like IEEE, ITU-T for use in Indian telecom network

- Standard (Revised)-Interface Requirements for Communication and Broadcast Networks for FSS/ BSS + Addendum (Mandatory Technical Requirements [No. TEC 42012:2022]. The revision includes issue of Addendum that prescribes the Interface Requirements for land based Mobile Earth Stations which communicate with geostationary satellites. The Addendum has been prepared with wide stakeholders consultation and is in line with the advancements in technology in this field. This standard will aid in deployment of high throughput commercial VSAT networks on land based mobile earth stations; and will pave way for introduction of satellite connectivity on moving platforms in sectors like logistics, railways, disaster management etc. This standard was prepared as per requirements of industry and has been issued as part of Satellite Communication Reforms 2022.

- Standard (Revised)- Energy Consumption Rating and Energy Passport for Telecommunications Products,Equipment and Network/ Services [No. TEC 74046:2022]. It will facilitate service providers and consumers in the comprehensive evaluation of telecom products, equipment, and networks or services with respect to energy planning and in adding energy efficiency to their purchase criteria.

- Standard (Revision): GR for Aerial Drop Optical Fibre Cable for Last Mile Applications (Short Span) [No: TEC 85220:2022]. This document pertains to Standard for GR Aerial Drop Optical Fibre Cable for Last Mile Applications (Short Span). This cable is envisaged to be utilized for extending last mile connectivity to FTTH customers on the Aerial route up to 30 meters of span length

- Standard (New): National Plan for Distribution of Indian Standard Time to Licensed Service Providers of Department of Telecommunications [No. TEC 49189:2022]. As per the licensing conditions, LSPs are obliged to have a traceability facility to uniquely identify the users at any point in time. In order to do so, all network elements of all LSPs in the telecom infrastructure must trace back to a single timing source. This document is a plan for distributing Indian Standard Time to Licensed Service Providers in the Indian Telecom Network.

- Test Guide (New)- GR of Router for MPLS based Transport Network [No. TEC 48051:2022].

Note: TEC standards are available free of cost at TEC website https://tec.gov.in

# STANDARDIZATION

## STANDARDS FOR COMMON DUCT

TEC in consultation with concerned stakeholders (Ministry of Power, Ministry of JalShakti, Ministry of Petroleum and Natural Gas, MoHUA, NHAI, CEA, COAI, DIPA, NDMC, GIFT City Gandhinagar etc.) prepared draft on *"Design and Standard for Common Duct and Post infrastructure along Highways and public pathways"*. Utilities running through common duct are – electric power cables, telecom data cables, optical fibre cables, water pipeline, gas pipeline and future utilities.

A presentation on this draft standard was made to Hon'ble MoC and Secretary (Telecom), DoT.

The Draft Standard being prepared by a high level committee headed by DDG (FN), TEC has been sent to States/ UTs/ Ministries for consultation and further comments.

DoT issued an Office Memorandum (OM) in July 2022 to all the ministries of Government of India, DRDO, and Telecom Service Providers with the request for wider circulation of TEC Technical Report on Code of practice for Securing Consumer IoT to large related stakeholders (IoT device manufacturers, IoT service providers, System Integrators, Application developers etc.) for voluntary adoption of this document and provide input/ comments if any.

## STANDARD ADOPTION

1. oneM2M Release 3 specifications (24 Technical Specifications), transposed by TSDSI, were adopted as National Standards by TEC. These specifications will enable the development of standardized ecosystem for IoT domain including smart cities. Work is in progress on numbering and labelling of these standards.

2. Adoption of Security Standards - Transposed from 3GPP Release 15 & 16 as National Standard.

3. Adoption process 'has been initiated for adopting 3GPP Release 17 into National Standard.

Note: Adoption Policy and adopted standards are available at https://tec.gov.in/standards-adoption-policy

## Key International & regional ICT standards development organizations:

1. International Telecommunication Union (ITU).

2. International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC).

3. Internet Engineering Task Force (IETF).

4. The European Telecommunications Standards Institute (ETSI)

5. The 3rd Generation Partnership Project (3GPP).

6. Institute of Electrical and Electronics Engineers (IEEE).

# STANDARDIZATION

## CONTRIBUTIONS TO ITU

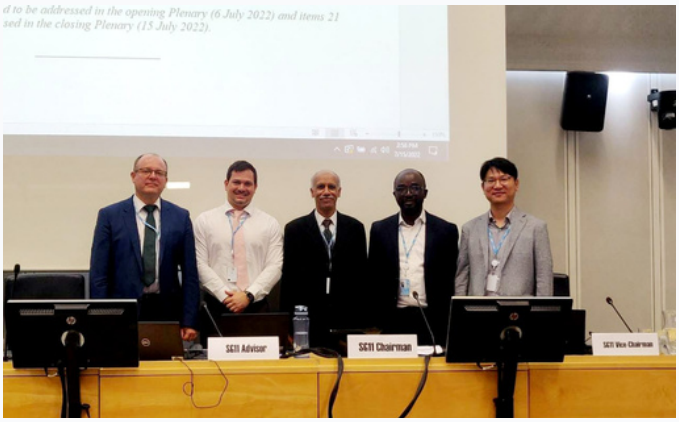
### ITU-T SG9:

- The SG9 meeting held during 6-14 Sept, 2022. was attended online by the Indian delegation headed by NWG-9 Chairman Sh. Avinash Agarwal, DDG (C&B), TEC.
- The SG9 meeting agreed to start work on the following four new work items in respect of NWG-9 contributions:
  - Secondary distribution of digital television and audiovisual content to portable devices using Wi-Fi.
  - Factual subscriber base reporting and protected content delivery in conditional access system (CAS) - Requirements
  - Technical report on factual subscriber base reporting and protected content delivery in conditional access system.
  - Technical report on Technical advances, challenges, and best practices in live captioning.

<u>Indian Nominations to SG9</u>

- Sh. Avinash Agarwal, DDG (C&B) was nominated as Rapporteur for Q 11/9 and Associate Rapporteur for Q 3/9.
- Sh. Rakesh S. Desai, Director (C&B-II) was nominated as Rapporteur for Q 8/9.

Sh Ritu Ranjan Mittar, Sr. DDG, TEC charing the meeting of ITU-T SG11 at Geneva as Chairman of SG11




Sh Ritu Ranjan Mittar, Sr. DDG, TEC and Chairman of SG11 with management team of SG11 during SG11 meeting at Geneva

### ITU-T SG11:

- A contribution on Proposal for baseline text of work item Q. TSRT_IoT “Test specifications for remote testing of Internet of Things using the probes” against Q12/11 was presented and accepted in ITU-T SG-11 meeting held during 06-15 July, 2022.
- The contribution was incorporated in new base text of work item Q. TSRT_IoT under Q12/11 and accordingly output TD204/GEN was prepared. Smt. Divya Sharma, ADG(TC) and Sh Anshul Kumar Gupta, AD(CA) were assigned the role of Editor of draft ITU-T Rec Q.TSRT_IoT.

### ITU-T SG12:

- Shri. Abdul Kayum, DDG(6G) was assigned editor of the Rec. E.MVS- “Mapping and visualization strategies for the assessment of connectivity and QoS” and contributed to the three meetings of SG 12 conducted during July – Sept 2022. The contribution provides the framework for a rating of Buildings as needed in the implementation of the TRAI recommendation on “Rating of Buildings”.

# STANDARDIZATION

## CONTRIBUTIONS TO ITU

### ITU-T SG13:

- Two interim meetings of Q16/13 held at the end of August 2022 and from 28-30 Sept 2022 were attended with the updated contributions on “Draft new Rec. ITU-T Y.Trust-Registry - Trust Registry for Devices and Applications: requirements, architectural framework”.
- One interim meeting of Q20/13 held from 28-30 Sept 2022 was attended with updated contribution on Y.ML-IMT2020-MLFO “Architecture framework for MLFO in future networks including IMT-2020”.

### ITU-T SG15

Following two contributions from India were presented to the SG-15 in its meeting held from 19-30 Sept 2022 at Geneva-

- Proposal to include new Appendix V to the Draft new Rec. L.ncip “Requirement for passive optical nodes: nodes for customer indoor premises”
- “Proposal for new draft ITU Rec. L.oehc”. This contribution proposes to include an application scenario of optical electrical hybrid cable (oehc) with application of “Deployment of Hybrid Cables and centralised power backup to provide backhaul as well as electrical power for faster rollout of 5G small cells and other similar applications”.


Sh Rajmohan Meena, ADG (FN) presented contributions during SG15 meeting at Geneva

Outcome: Above two Contributions from India (presented by TEC , STL) were accepted by SG15 and incorporated in respective ITU Rec. L.109.1 (ex L.oehc) and L.210 (ex L.ncip).

### ITU-T SG17

- X.sc.dlt: Security controls on Distributed Ledger Technology: The contribution was presented in SG-17 meeting held in Geneva, which was accepted as TD 636.
- X.arch-design: Design principles and best practices for security architectures: The contribution was presented in SG-17 meeting in Geneva, which was accepted as TD 609.

### ITU-T SG20:

Mr. Sushil Kumar, DDG (IoT) and Ms. Namrata Singh, ADG (IoT) attended ITU-T SG-20 meeting, Geneva, in-person from 18-22 July and further remotely. Other officers of IoT division as well as the NWG-20 members from IDEMIA, TCS, and MASHMARI participated remotely.

Two contributions were presented and discussed in this meeting as detailed below:

- Proposed revision of work item Y. SRC “IoT and ICT Requirements for deployment of smart services in rural communities"- This work item is expected to be approved as ITU Recommendation in the next meeting of SG-20. DDG (IoT) is an editor in this work item.
- Contribution on the ongoing work item Y.IIoT-infra-SM-fr “Requirements and framework of Industrial IoT (IIoT) infrastructure for smart manufacturing”.

# STANDARDIZATION

## CONTRIBUTIONS TO ITU

Outcome: Both the contributions have been accepted with minor modifications and included in the main document.

Important achievements of the Indian delegation in ITU-T SG-20, July meeting:

- Mr. Sushil Kumar, DDG (IoT) got the position of Vice-chairman in ITU-T SG-20 WP2/20.
- On behalf of India, Mr. Sushil Kumar, DDG (IoT), highlighted the need of ITU-T SG-20 Regional Group for Asia and Oceania countries in the ITU-T SG-20 opening plenary meeting, for which contribution is planned for the next SG20 meeting. It was agreed and recorded in ITU-T SG20 meeting report.


Mr. Sushil Kumar, Vice Chair WP2/20 ITU-T SG-20 with Mr. Harinderpal Singh Grewal, Co-chairman WP2/20 and Ms. Cristina Bueti, ITU SG-20 Counseller


Mr. Sushil Kumar, DDG (IoT) and Ms. Namrata Singh, ADG (IoT) participating in ITU-T SG-20 meeting, July 2022

### ITU-T FG-AI4A:

Officers of IoT division participated in the third meeting of ITU-T SG-20 Focus Group on 'Artificial Intelligence (AI) and Internet of Things (IoT) for Digital Agriculture (FG-AI4A)', 24-26 August 2022, in which one contribution on 'Use cases for digital agriculture' was submitted and presented virtually. It was also attended by academia members from VIT, Chennai.

### ITU Plenipotentiary Conference:

The Plenipotentiary Conference is the highest policy-making body of the International Telecommunication Union (ITU). Held every four years, it is the key event at which ITU Member States decide on the future role of the organization, thereby determining the organization's ability to influence and affect the development of information and communication technologies (ICTs) worldwide.

The Conference:

- sets the Union's general policies;
- adopts four-year strategic and financial plans; and
- elects the senior management team of the organization, the Member States of the Council, and the members of the Radio Regulations Board.

The PP-22 was held in Bucharest, Romania, from 26 September to 14 October 2022.

# STANDARDIZATION

## NATIONAL WORKING/ STUDY GROUPS MEETINGS/ UPDATES

### Corresponding to ITU Study Groups

NWG-2: One meeting was held on 10 October for finalization of contribution to SG2 RGM.

NWG5: One meting was held on 26 September for finalizing Indian contribution to SG5 meeting.

NSG5: One meeting was held on 19 September for finalizing Indian contributions to ITU-R WP 5D 42nd meeting.

NWG-9: Two meetings were held on 13 July and 16 August 2022.

NWG-11: One meetings was held on 10 October.

NWG-12: 4th meeting was conducted on 28 September to discuss contributions.

NWG-15: Third meeting was held on 14 October.

NWG-16: Two meetings were held on 20 July and 23 August.

NWG-17: One meeting was held on 06 July.

NWG-20: One meeting was held on 20 September.

For more details about National Working Groups (NWGs) corresponding to ITU-T SGs kindly visit our Standards Coordination Portal

## UPCOMING ITU MEETINGS/ EVENTS:

| S.N. | ITU-T SG | Meeting Date |
|---|---|---|
| 1. | SG-02 | 13-22 MAR 2023 |
| 2. | SG-12 | 18-26 JAN 2023 |
| 3. | SG-15 | 17-28 APR 2023 |
| 4. | SG-16 | 17-28 OCT2022 |
| 5. | SG-17 | 21 FEB-3 MAR 2023 |
| 6. | SG-20 | 30 JAN-10 FEB 2023 |

## TECHNICAL REPORTS/ STUDY PAPERS

### Digital Right Management System (DRMS)

A Study Paper on Digital Rights Management (DRM) System was released by Convergence & Broadcasting Division, TEC.

Digital Rights Management (DRM) is a technology designed to protect the IP content (IP VOD, IP Linear, etc.) from unauthorized access based on device authentication. DRM is the chain of software and hardware technologies and services that manages the authorized use of digital content and all the consequences and outcomes of its use throughout the life cycle of the content.

### 5G Infra Action Plan of DoT:

A *"Template for utilization of DISCOM Infrastructure by Telecom Service Providers for deploying 5G small cells"*, was prepared by FN Division, TEC in consultation with CEA, COAI and DIPA.

The template was prepared by FN division, TEC under 5G infra action plan of DoT and submitted to DoT.

### Global traffic management practices and impact of Network slicing on Net Neutrality:

A report of Global traffic management practices and impact of Network slicing on Net Neutrality was submitted to Department of Telecommunications.

# TESTING AND CERTIFICATION

## MANDATORY TESTING (MTCTE)

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.

a) Certificates issued:

- Quarter Q2 = 68
- Total = 288

b) Status of OEM registration:

- Indian OEM = 07 (Total=91 till date)
- Foreign OEM = 14 (Total=133 till date)

More details about MTCTE are available at https://www.mtcte.tec.gov.in/

## CAB DESIGNATION ISSUED

CAB designations issued -

- New = 06
- Renewed = 07

Total Designanted CABs = 60
(as on 30.09.2022)

- For Safety Testing = 42
- EMI/EMC Testing = 31
- SAR Testing = 04
- Environmental Testing = 23
- O.F. Single Mode =02
- O.F. Cable =01
- Wi-Fi Interface =07
- Radio Safety =04

## VOLUNTARY TESTING

- Certificate issued in Q2 = 05 (02 Type Approval Certificates (TAC), 03 Technology Approval)
- Total certificate issued till 30.09.2022 = 25 (14 TAC, 07 IAC, 01 Certificate of Approval (CoA) and 03 Technology Approval)

## UPDATES

- Stakeholder consultation meeting for products proposed to be covered under Phase-V MTCTE" was held on 07.09.2022.
- Testing of 4G Core Network elements developed by CDoT (indigenously developed) as BSNL POC is under progress in control lab.
- 6G Technology initiatives: The officials from '6G Technologies Division' visited academic institutions, industries, and Research organizations to have exposure of the works and research activities being carried out in the emerging areas of Beyond 5G and Quantum Technologies. It is being done as a part of the initiative from TEC to collaborate and develop synergy among the stakeholders from academia, industries, startups, and R&D institutions for facilitating Indian ecosystem work in emerging technologies to mature into standards in line with Global Developments. The following visits were made as part of the initiative:
  - Academic Institutions (IIT Madras, IIT Hyderabad, IISc Bengaluru);
  - Research Institutions (SETS Chennai, SAMEER Chennai, C-DOT Bengaluru, RRI Bengaluru, CR lab of BEL, PRL, ISRO-SAC Ahmedabad);
  - Industries (Samsung, Qualcomm, Tejas network, Tech Mahindra Test lab at Noida);
  - Start-ups (QNu Lab, QPiAi, TAQBIT Labs, Signaltron, Signalchip)
- 6 reports submitted under 6G Task Force (6G).

# KNOWLEDGE DISSEMINATION

## IMPORTANT MEETINGS & ACTIVITIES

- An *Open House session* was organised by C&B Division on 04.08.2022 under the chairmanship of Sr. DDG TEC with labs, multiple system operators (MSO), broadcasters, concerned Government departments, TRAI, BIS, MIB and other stakeholders for consultation and discussion on finalisation of process for accreditation of labs and setting of labs for testing of CAS and SMS. This session received very good response and around 100 participants attended and furnished their inputs / suggestions.

- CA Division of TEC organised a Webinar on *"Development of 5G Testing Capabilities in Country"* for all designated Laboratories of TEC on 09.09.2022. The prominent suppliers for 5G Testing instruments/ solutions like Keysight Technologies, Spirent and Anritsu gave presentations about the test instruments/ solutions available with them for 5G Testing.

- The Consultation Meeting on *"Framework for Fairness Certification of Artificial Intelligence (AI)/ Machine Learning (ML) Systems"* was organized by C&B Division on 1st September, 2022 wherein industries, academia, R&D, Government organisations and other stakeholders were invited. This meeting received a very good response and inputs/ suggestions were received from participants. As a consequence, TEC constituted a Working Group of members from Industry, Academia, Researchers, subject experts from Govt departments, etc for preparing the initial draft of the proposed Standard for assessing fairness of AI Systems.

- DDG (IoT) delivered a talk in a panel discussion on 'Unleashing the power of 5G & smart digital networks: Ecosystems, infrastructure, devices, technologies and services.' in a CII conference on 19 Sept 2022.

- Lt Gen Rajesh Pant (retd), National Cyber Security Coordinator, along with Member (Services), DCC and Sr. DDG & Head TEC visited IoT experience center at TEC New Delhi on 25th July 2022. He was briefed about the working of IoT devices on various communication technologies in the IoT experience center.

**Visit of Lt Gen Rajesh Pant (retd), National Cyber Security Coordinator to IoT experience center, TEC, new Dlehi**

- DDG (IoT) chaired the 21st meeting of BIS Sectional Committee, LITD 27 on 'Internet of Things and Related Technologies' on 29th August 2022. This meeting was attended by several industry members including ADG (IoT) TEC.

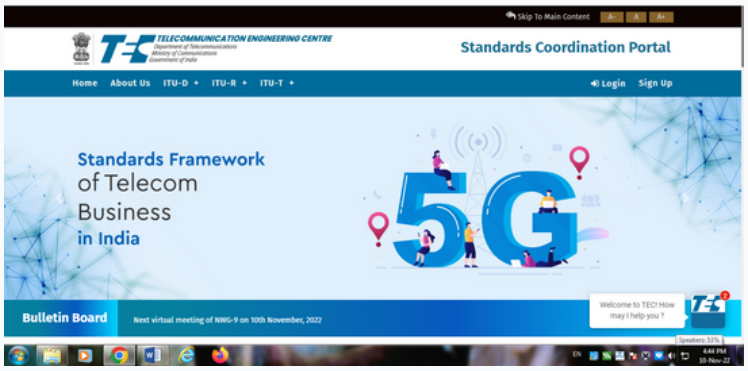
- DDG (IoT) participated in Cyber Manthan along with other experts from industry and Government, organized by India future foundation in association with Microsoft in July 2022. In addition to a number of issues related to cyber security/ vulnerabilities, importance of TEC TR on Code of practice for securing consumer IoT and Framework of National Trust Center were also discussed and highlighted.

- DDG (IoT) delivered a talk in a panel discussion on 'Smart Cities & Intelligent Mobility India 2022' in a conference organized by Bharat exhibition on 5th August 2022.

# KNOWLEDGE DISSEMINATION

## STANDARDS COORDINATION PORTAL:

TEC is developing the Standards Coordination Portal on the lines of ITU-T portal to facilitate Indian contributions to various global standardisation organisations. This portal will act as a platform to share the information and collaborate on the standards development activities. DDG (C&B), TEC demonstrated the functions and features of the Standards Coordination Portal in a meeting held on 23rd September 2022. Demonstration of the portal was made to Member (S), Member (T), Advisor (F), Joint Wireless Advisor-JWA, DDG (IC) and Director (IR) in the Commission Room, DoT HQ on 28.09.2022. Members of National Working Groups (NWGs) constituted by TEC/ DoT corresponding to ITU-T SGs can create account on the portal for accessing the details and uploading contributions for respective SGs.




For Login/ Sign Up click here

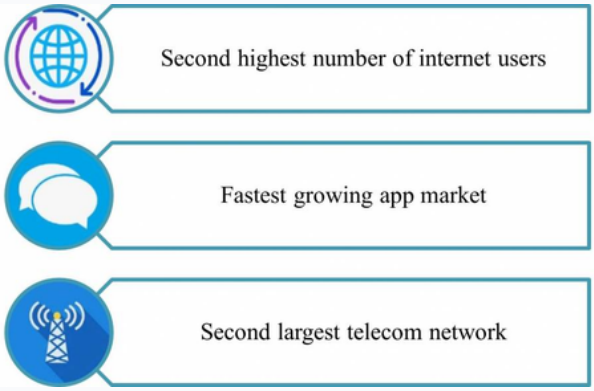
| | | |
|---|---|---|
| NWG-2 @ITU-T SG2 | NWG-3 @ITU-T SG3 | NWG-5 @ITU-T SG5 |
| NSG-5 @ITU-R SG5 | NWG-9 @ITU-T SG9 | NWG-11 @ITU-T SG11 |
| NWG-12 @ITU-T SG12 | NWG-13 @ITU-T SG13 | NWG-15 @ITU-T SG15 |
| NWG-16 @ITU-T SG16 | NWG- 17 @ITU-T SG17 | NWG-20 @ITU-T SG20 |

## TRAINING/WORKSHOP

- Preetika Singh (ADG-TS) attended the introductory phase of training under Competency Development Program (CDP) on Network Security.
- CA division organized a one-day interactive workshop on evaluation of test reports under MTCTE involving officers of RTEC, MTCTE division and other divisions of TEC on 07.07.2022 at Manak Bhawan, TEC. The workshop was inaugurated by Sr. DDG, TEC. Mr. Praveen Rao. Mr. Srinath Ramaraju from C-PRAV and Dr. Lenin Raja from AAEMT, Gurugram shared their inputs on evaluation of test reports under MTCTE.
- Technical component of Mid-Carrear Training Programme (MCTP) of ITS Group A (Phase -II/ Batch-09) from 11-15 July 2022 was attended by following officers from TEC-
  - Sh Anand Katoch, Director (TC)
  - Sh Ashish Tayal, Directr (Radio)
  - Sh Piyush Chetiya, Director (FN)

### DID YOU KNOW ??

The market size of India in the telecom sector at the global level




For more details visit:
https://www.investindia.gov.in/team-india-blogs/telecom-industry-india-crosses-milestone

# HR ACTIVITIES

## TEC WELCOMES ON NEW JOINING🙏

- Shri Nitin Jain, DDG(CA)
- Shri Arun Agarwal, DDG(R)
- Shri Md. Aftab Alam, ADG(C&B)

## CONGRATULATIONS ON PROMOTION💐

- Shri Mahender Kumar, Sr. PPS to PSO
- Shri J.K. Meena, PA to PS
- Smt. Raj Kumari, Stenographer 'D' to Stenographer 'C'

## TEC BIDS FAREWELL ON TRANSFER💐

- Ms. Rekha Singh, DDG transfer to PHP-1, DOT
- Shri Balwant Rai, ADG transfer to Ambala HR LSA
- Shri Manish Ranjan, ADG transfer to Shillong NE LSA
- Shri Rajesh Tripathi, ADG transfer to Meerut, UPW LSA

## HAPPY RETIREMENTS 💐

TEC bids farewell on superannuation from services to the following officers -

- Shri Hanumanth Rao, DDG(SR), RTEC (Retired on September 30, 2022)
- Smt. Kamla Pargai, ADG(Tx) (Retired on September 30, 2022)

## FROM RETIREMENT FUNCTION

## IMC 2020 GLIMPSE

# हिंदी गतिविधियाँ

## हिंदी पखवाड़ा-2022

हिंदी पखवाड़ा : दूरसंचार अभियांत्रिकी केंद्र, नई दिल्ली में 14 से 29 सितंबर, 2022 तक हिंदी पखवाड़े का आयोजन सफलतापूर्वक एवं उत्साहपूर्वक किया गया ।

हिंदी पखवाड़े का शुभारंभ दिनांक 14 सितंबर, 2022 को वरिष्ठ उप महानिदेशक टीईसी द्वारा दीप प्रज्वलित कर किया गया । इस अवसर पर माननीय गृह मंत्री जी का संदेश पढ़कर सुनाया ।

हिंदी पखवाड़े के दौरान कुल 08 प्रतियोगिताओं का आयोजन किया गया । पखवाड़े के दौरान आयोजित प्रतियोगिताओं में अधिकारियों/ कर्मचारियों ने बढ़-चढ़कर भाग लिया ।

हिंदी पखवाड़े का समापन समारोह दिनांक 29 सितंबर, 2022 को श्री ऋतु रंजन मित्तर, वरिष्ठ उप महानिदेशक की अध्यक्षता में सम्पन्न हुआ जिसमें सभी विजेताओं को प्रमाण-पत्र प्रदान किए गए ।

वरिष्ठ उपमहानिदेशक, टी.ई.सी द्वारा हिंदी पखवाड़े मे द्वीप प्रज्वलन

हिंदी पखवाड़े के विजेताओं को पुरस्कृत करते हुए


वरिष्ठ उपमहानिदेशक, टी.ई.सी. हिंदी पखवाड़े के समापन पर सम्बोधन करते हुए

हिंदी पखवाड़े में उपस्थित अधिकारी एवं कर्मचारी गण

## हिंदी कार्यशाला

दूरसंचार अभियांत्रिकी केंद्र में दिनांक 22.09.2022 को एक हिंदी कार्यशाला का आयोजन किया गया । इस कार्यशाला के अतिथि वक्ता श्री केवल कृष्ण, सेवानिवृत्त वरिष्ठ तकनीकी निदेशक (राजभाषा विभाग) द्वारा कंप्यूटर पर हिंदी में कार्य करने हेतु यूनिकोड सक्रिय करने, यूनिकोड से हिंदी में कार्य करने, गूगल वॉइस टाइपिंग, गूगल-ट्रांसलेशन आदि के बारे में विस्तार से बताया गया एवं अभ्यास कराया गया ।

राजभाषा कार्यान्वयन समिति की तिमाही बैठक : कार्यालय में दिनांक 06-09-2022 को राजभाषा कार्यान्वयन समिति की तिमाही बैठक का आयोजन किया गया एवं कार्यवृत्त जारी किया गया ।

हिंदी कार्यशाला में उपस्थित अधिकारी एवं कर्मचारी गण

# UPDATES

## INDIAN TELECOMMUNICATION BILL 2022

The Ministry of Communications, Government of India had initiated a public consultative process to develop a modern and future-ready legal framework in telecommunications. In July 2022, a Consultation Paper on 'Need for a new legal framework governing Telecommunication in India' was published and comments were invited. Based on the consultations and deliberations, the Ministry has now prepared the draft Indian Telecommunication Bill, 2022.


## FIELD OFFICERS CONFERENCE

Shri Ashwini Vaishnaw addressed conference of DoT field officers. He highlighted the need for change in mindset from regulatory to developmental to ensure quality telecom connectivity & universal digital inclusion & stressed the need for future ready telecom legislation.


On the second day of "Field Officers' Conference" at Vigyan Bhawan, New Delhi; Shri Ritu Ranjan Mittar, Sr DDG, TEC delivered lecture on Compliance, Testing and Assessment of Telecom Equipment to be introduced in Indian Telecommunication Networks.


## SOCIAL MEDIA ACCOUNT OF TEC

Telecommunication Engineering Centre (TEC), New Delhi launched its twitter handle account i.e. @TEC_DoT_India on 13-09-2022 for social media presence.

A Social Media Cell headed by Sh P. K. Panda, Director (TC-IV) has also been constituted.


Link: https://twitter.com/TEC_DoT_India

# ABOUT TEC

- 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) used in broadcasting sector as per TRAI notification.
- Designated Authority (DA) for Voluntary Schemes such as Type Approvals/Interface Approvals/Technology Approvals/Certificate of Approvals.
- 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 on technology/policy matters to DoT and other Govt. Departments/Regulator.
- Nodal agency for all ITU-T Study Group Activities and ITU-R SG5 activities.
- 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, BIS, CII, TEMA, CMAI, FICCI, etc.
- In addition:
  - 5G Pilot Trials- Test Guide finalised in consultation with stakeholders.
  - BSNL 4G Proof of Concept (PoC)- Committee for monitoring of PoC trial being chaired by TEC.
  - oneM2M and 3GPP 5G standards of TSDSI- Adoption as National standards.

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

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