MINISTRY OF COMMUNICATIONS

DEPARTMENT

OF

TELECOMMUNICATIONS

INDUCTION NOTE

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INDEX

Executive Summary

The telecom services have been recognized the world-over as an important tool for socio economic development for a nation. The rapid expansion of Telecommunications infrastructure, especially in the recent years, has been instrumental in connecting India, bridging the rural urban divide and facilitating Socio Economic development of the country. In this regard, DoT is inter-alia responsible for Telecom Policy; Licensing and Coordination matters relating to telegraph, telephones, telecom wireless data; international cooperation in matters connected with telecommunications, promotion of standardization, R&D in telecommunications; and promotion of private investment in the sector. DoT is also responsible for frequency management in the field of radio communication including satellite orbital resources in close coordination with the international bodies. DoT enforces wireless regulatory measures by monitoring wireless transmission of all users in the country.

1. Digital Communications Commission (DCC)

In order to promote rapid development in all aspects of telecommunications including technology, the Government of India considered it necessary to the set up Telecom Commission (TC) vide Resolution dated April, 11, 1989 to deal with various aspects of telecommunications. The Commission is entrusted with responsibility in the entire field of telecommunications. The Government, vide Resolution dated 22nd October, 2018, has re-designated the 'Telecom Commission' as the 'Digital Communications Commission' (DCC). DCC consists of a Chairman and four full time Members, who are ex-officio Secretaries to the Government of India in the DoT and four part time Members who are the Secretaries of the Government of India of the Concerned Departments.

The Secretary to the Government of India in the Department of Telecommunications is the ex-officio Chairperson of the DCC. The full-time Members of the DCC are Member (Finance), Member (Production), Member (Services) & Member (Technology). The part-time Members are Chief Executive Officer, NITI (National Institution for Transforming India) Aayog, Secretary (Department of Economic Affairs), Secretary (Ministry of Electronics &

Information Technology) and Secretary (Department for Promotion of Industry and Internal Trade). The Chairman and the Full time members of the Commission, at present, are as under: -

Composition of Digital Communication Commission

Chairperson (Ex-officio)	Secretary(Telecom)
Members(Full time)	Member(Finance)
	Member(Services)
	Member(Technology)
Members(Part time)	CEO, NITI Aayog
	Secretary , Department of Economic Affairs
	Secretary, Ministry of Electronics & Information Technology
	Secretary, Department for Promotion of Industry and Internal Trade

The Chairperson, in his/her capacity as Secretary to the Government of India in the DoT, is responsible under the Minister of Communications for arriving at decisions on technical questions and advising Government on policy and allied matters of telecommunications. The Commission is responsible for:

a) Formulating the policy of Department of Telecommunications for approval of the Government.
b) Preparing the budget for the Department of Telecommunications for each financial year and getting it approved by the Government.
c) Implementation of Government's policy in all matters concerning telecommunications.

2. Functions of Department of Telecommunications (DoT)

A copy of the **Allocation of the Business Rules** with regard to subject allotted to DoT is placed at **Annexure-I.** Currently, the **main functions** of DoT are policy formulation, licensing and coordination matters relating to Telecommunications, radio spectrum management, administration of the Indian Telegraph Act, 1885, Indian Wireless Telegraphy Act, 1933 and Telecom Regulatory Authority of India Act, 1997 and operationalization of Universal Service Obligation (USO) Fund. There are 39 DoT Field Units in all the 22 Licensed Service Areas located across the country which are under the administrative control of Director General Telecom. There are 28 Controller of Communication Accounts

(CCA) offices located across the country which are under the control of Controller General of Communication Accounts (CGCA). For radio spectrum monitoring and management, there are 28 field units of WMO, DoT in various States across the country along with 05 Regional Licensing Offices (RLOs) of WPC Wing, DoT which are under the administrative control of Wireless Advisor, Govt of India. DoT is responsible for matters relating to its PSUs namely Bharat Sanchar Nigam Limited (BSNL), Mahanagar Telephone Nigam Limited (MTNL), Telecommunications Consultants India Limited (TCIL), ITI Limited , Bharat Broadband Network Ltd (BBNL) and Centre for Development of Telematics (C-DOT), an autonomous body. DoT is also responsible for promotion of international cooperation, private investment and standardization and research in the field of Telecommunications.

The Telecommunications Engineering Centre (TEC) is a technical body under the Department, while the Universal Service Obligation (USO) Fund is administered by the office of the Administrator, USO fund. Both TEC and USO Fund are attached offices of the Department. Apart from TEC & USOF, there are also two other attached offices ,i.e., Director General of Telecommunications [DG (Telecom)] and Controller General of Communication Accounts (CGCA).The two statutory bodies i.e. the Telecom Regulatory Authority of India (TRAI) and Telecom Disputes Settlement and Appellate Tribunal (TDSAT) are also under the administrative control of the Department.

3. **Organizational Chart**

The Organization chart of the Department of Telecom is at **Annexure-II** . The chart showing organizational structure of Public Sector undertakings, Regulatory bodies and autonomous body under this Department is at **Annexure-III**.

4. **Work Allocation:**

Within DOT, work distribution amongst the full time Members of the Digital Communication Commission and the Additional Secretary is as follows:

4.1 **Member (Technology)** is a full time Member in the Digital Communications Commission (DCC) and ex-officio Secretary to the Government of India. He is overall in-charge of matters of policy & regulation relating to Wireless Planning and Coordination (WPC) Wing, Network Operations & Control Centre (NOCC), international relations, Satellite Communication, Emerging Technologies in Telecom Sector such as Internet of Things, 5G mobile communication etc. He also deals with technological matters related to International Telecommunication Union (ITU), Asia Pacific Tele-community (APT) & other international bodies, development of R&D schemes, programs and facilitating pilots, Testing Labs, Use-case labs especially in emerging & Next Generation Technologies.

Member (Technology) is responsible for Licensing of Telecom Services, policy changes related to telecom licenses, promoting 'Ease of Doing Business' by reducing compliance burden and for harmonious growth of the Telecom Sector. Interaction with TRAI, examining their recommendations and guiding the DCC for a final decision on the TRAI recommendations is an important and integral part of this responsibility. The licenses range from Access Services, ILD, NLD, ISP GMPCS, VSAT CUG, PMRTS etc.

He is also responsible for disaster management, compliance of Standard Operating Procedures by Telecom Service Providers for telecommunication services for responding to disasters as it is an important aspect for disaster management. Issues related to EMF radiation from mobile towers, matters relating to Spectrum Planning, Spectrum Allocation, Spectrum Management and Regulation are also dealt by him.

All matters pertaining to Digital Communications Technology (DCT) Standardization roadmap, National R&D framework by fostering domestic R&D, Local Innovation through continuous engagement with DCT stakeholders (including start-ups, SMEs, Academia) & maintaining repository for the same, compilation of technical policy research reports, developing position w.r.t technical contributions for International platforms. Development of R&D schemes, programs and facilitating pilots, Testing Labs, Use-case labs especially in emerging,

Next Generation Technologies while ensuring timely facilitation of spectrum for R&D, Testing & Manufacturing.

4.2 **Member (Services)** is a permanent member of the Digital Communication Commission and ex-officio Secretary to the Government of India, overall in-charge of matters related to telecommunication services, Information & Communication Technologies (ICT), telecommunications/network security, Internet security, Internet governance, human resources, capacity building, training, skill development, public grievances as well as matters relating to staff unions and federations of all organizations/Public Sector Units (PSUs) under DoT and erstwhile Department of Telecommunication Services (DTS) and Department of Telecommunication Operations (DTO). Member (Services) is the cadre controlling authority for the officers belonging to Indian Telecommunications Service (ITS) Group 'A', Indian Post & Telegraph Building Works Service (IPTBWS) Group 'A' and Telecommunication Engineering Service Group 'B'.

Member (Services) is overall in-charge of the country-wide Centralized Monitoring System (CMS) and Internet Monitoring System (IMS), which have been set up to supplement the needs of Law Enforcement Authorities (LEAs) and the Designated Authorities of central/state governments and Union Territories (UTs).

Member (Services) controls several organizations of DoT, carrying out work in the fields of policy, R&D, standardization, accreditation, testing, certification, telecom security, capacity-building &innovation, namely, Telecom Engineering Centre (TEC), Centre for Development of Telematics (C-DoT), National Centre for Communication Security (NCCS), and the National Telecommunications Institute for Policy Research, Innovation & Training (NTIPRIT).

Member (Services) is in-charge of affairs of PSUs of DoT, namely, M/S ITI Limited & M/S Telecommunications Consultants India Limited (TCIL), which are primarily involved in indigenous manufacturing, telecom consultancy and project execution. Member (Services) resolves the residual matters of three companies- M/S HTL Limited, in which Government of India has 26% stake, M/S Tata Communications Ltd. (erstwhile VSNL), which has been completely disinvested in March, 2021 and M/S Hemisphere Properties India Limited (HPIL).

4.3 **Member (Finance)**is the ex-officio Secretary to the Government of India in the DCC, previously known as Telecom Commission and representing Ministry of Finance while exercising the power for Govt. of India for incurring expenditure subject to the general budgetary approval of the Parliament through the Minister. Member (F) deals with the work of mobilization of resources, licensing and spectrum policy, revenue assessment, revenue collection and spectrum auction. Member(F)is also responsible for the Foreign Investment Promotion in Telecom Sector by approval of proposals seeking FDI in the Telecom Sector as per the extant FDI policy. Member (F) is thus, responsible for overseeing the work of Finance, Budget, PSU Finance, Establishment and Training, Licensing Finance policy, Wireless Planning Finance and Foreign Investment Policy and Promotion divisions of DoT. The accounting and auditing function of Department of Telecom are also being overseen by Member (F). The work of field offices of DoT viz. Controller of Communications Accounts (CCAs) is being monitored by Member (F) through Controller General of Communications Accounts (CGCA). Member (F) is also entrusted with the cadre control of Indian Post & Telecommunication Accounts and Finance Service (IP&TAFS) Gr. 'A' and Gr. 'B'.

4.4 **Special Secretary/Additional Secretary** who is also the Secretary, Digital Communications Commission is responsible for Telecom Policy formulation and its implementation, investment promotion in telecom manufacturing, WTO matters, matters relating to policy frame work and finalization of target on key policy issues of the Department, telecom development in remote and North Eastern regions, administration of Indian Telegraph Act and cadre control of Indian Radio Regulatory service (IRRS). He is also responsible for administrative matters relating to Bharat Sanchar Nigam Ltd (BSNL), Mahanagar Telecom Nigam Ltd (MTNL), Bharat Broadband Network Ltd (BBNL), Telecom Regulatory Authority of India (TRAI) and Telecom Disputes Settlement & Appellate Tribunal (TDSAT) and general administration of the Department. All trade and economic matters relating to Telecommunications in bilateral and multilateral for a, matters relating to WTO Negotiations, policy matters on telecommunication standards including all TSDSI matters, promotion of start-ups, policy matters relating to 5G and all functions of IT in the department including procurement of computers and peripherals etc. are allocated to Additional Secretary.

4.5 The detailed work allocation amongst Members/JSs/DDGs is at pages 108-165.

5.0 National Telecom Policy

5.1 In 1994 Government announced the **National Telecom Policy - NTP 1994.** The important objectives envisaged telephone on demand, provision of world class services at reasonable prices, ensuring India's emergence as a major manufacturing/export based on telecom equipment and universal availability of basic telecom services to all villages. It also recognized that funds required would not be available out of Government sources and involvement of private sector was required to bridge the resource gap.

5.2 Accordingly, Government invited private sector participation in a phased manner from the early nineties. The **National Telecom Policy 1999 (NTP-1999)** was necessitated inter-alia due to non-fulfillment of certain objectives of NTP 1994 and also due to the fact the far reaching developments had taken place in the telecom and allied sectors. The main objectives of NTP 1999 included availability of affordable and effective communications for citizens, Telecommunications development in remote, hilly and tribal areas of the country, creation of modern and efficient Telecommunication infrastructure taking into account the convergence of IT, media, Telecom and consumer electronics. It also included transformation in a time bound manner of the Telecommunication sector to a greater competitive environment providing equal opportunities and level playing field for all players, strengthening of Research & Development efforts, providing impetus to build world class manufacturing capabilities, achieving efficiency and transparency in spectrum management etc. Most of the quantified targets for NTP 1999 were achieved. In pursuance of NTP 1999 service provision function of DoT was hived off to a new corporate entity BSNL.

5.3 Since the objectives of NTP-1999 were achieved, the National Telecom Policy-2012 (NTP-2012) was issued with a primary objective of maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy was

on the multiplier effect and transformational impact of such services in furthering the national development agenda while enhancing equity and inclusiveness.

5.4 Keeping in view the modern technological advancements in the telecom sector such as 5G, Internet of Things (IoT), Machine to Machine (M2M) interface etc., a need was felt to introduce a 'customer focused' and 'application driven' policy for the Indian telecom sector which can form the main pillar of Digital India by addressing emerging opportunities for expanding not only the availability of telecom services but also telecom based services. Accordingly, a new National Telecom Policy (re-christened as National Digital Communications Policy – 2018) was announced in the year 2017.

6. **National Digital Communications Policy-2018 (NDCP-2018)**

6.1. National Digital Communications Policy – 2018 (NDCP-2018) was formulated after several rounds of stakeholder consultations. As part of the consultative process, National level consultations with all stakeholders were held, including industry and academia. Inputs were also obtained from TRAI. Thereafter, draft NDCP – 2018 was prepared and released in public domain for wider consultations and a month's time was given for receiving the public comments.

6.2. To take inputs of State/UTs a one day interactive session on draft NDCP-2018 was held on 11th May, 2018 under the chairmanship of Hon'ble Minister for Communications. Several inputs/views/comments were also received from this session. A meeting of the Consultative Committee of Parliament on "National Digital Communications Policy, 2018" was held on 30th May, 2018 under the Chairmanship of Hon'ble Minister of State. Several inputs/views were also received in this session.

6.3. A large number of responses were received from public on online portal, email, letters and inputs from various Ministries concerned. Based on the analysis of feedbacks received from various stakeholders, the draft NDCP-2018 was finalized and placed before the Telecom Commission. After the Telecom Commission recommendation the draft NDCP-2018, was approved by the Union Cabinet and notified on 22nd October, 2018.

6.4. NDCP-2018 envisions to fulfil the information and communication needs of citizens and enterprises through the establishment of a ubiquitous, resilient, secure, accessible and affordable digital communications infrastructure and services; and in the process, support India's transition to a digitally empowered economy and society. The key objectives of the policy, to be achieved by 2022, are provisioning of Broadband for all; creating 4 Million additional jobs in the Digital Communications sector; enhancing the contribution of the Digital Communications sector to 8% of India's GDP from ~ 6% in 2017; propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017; enhancing India's contribution to Global Value Chains; and ensuring Digital Sovereignty. In pursuit of accomplishing these objectives by year 2022, the National Digital Communications Policy, 2018 envisages three Missions:

(i) **Connect India:** Creating Robust Digital Communications Infrastructure to promote Broadband for all as a tool for socio-economic development, while ensuring service quality and environmental sustainability. This mission shall be accomplished by achieving following goals;

a) Provide Universal broadband connectivity at 50Mbps to every citizen
b) Provide 1 Gbps connectivity to all Gram Panchayats of India by 2020 and Gbps by 2022
c) Enable100 Mbps broadband on demand to all key development institutions including all educational institutions
d) Enable fixed line broadband access to 50% of households
e) Achieve 'unique mobile subscriber density' of 55 by 2020 and 65 by 2022

(ii) **Propel India:** Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation, to harness the power of emerging digital technologies, including 5G, AI, IoT, Cloud and Big Data to enable provision of future ready products and services; and to catalyse the fourth industrial revolution (Industry 4.0) by promoting Investments, Innovation and IPR. This mission shall be accomplished by achieving following goals:

a) Attract investments of USD 100 Billion in the Digital Communications Sector
b) Increase India's contribution to Global Value Chains

c) Creation of innovation led Start-ups in Digital Communications sector

d) Creation of Globally recognized IPRs in India

e) Development of Standard Essential Patents (SEPs) in the field of digital communication technologies

f) Train/ Re-skill 1 Million manpower for building New Age Skills

g) Expand IoT ecosystem to 5 Billion connected devices

h) Accelerate transition to Industry 4.0

(iii) **Secure India:** Ensuring Sovereignty, Safety and Security of Digital Communications to secure the interests of citizens and safeguard the digital sovereignty of India with a focus on ensuring individual autonomy and choice, data ownership, privacy and security while recognizing data as a crucial economic resource. This mission shall be accomplished by achieving following goals:

a) Establish a comprehensive data protection regime for digital communications that safeguards the privacy, autonomy and choice of individuals and facilitates India's effective participation in the global digital economy

b) Ensure that net neutrality principles are upheld and aligned with service requirements, bandwidth availability and network capabilities including next generation access technologies

c) Develop and deploy robust digital communication network security frameworks

d) Build capacity for security testing and establish appropriate security standards

e) Address security issues relating to encryption and security clearances

f) Enforce accountability through appropriate institutional mechanisms to assure citizens of safe and secure digital communications infrastructure and services

6A. **National Broadband Mission:**

National Broadband Mission(NBM) was launched on 17th December 2019 with a vision to fast track growth of digital communications infrastructure, bridge the digital divide, facilitate digital empowerment and inclusion, and provide affordable and universal access of broadband for all. Some of the objectives of the Mission which is structured with strong emphasis on the three principles of universality, affordability and quality are:

- Broadband access to all villages by 2022
- Facilitate universal and equitable access to broadband services for across the country and especially in rural and remote areas
- Laying of incremental 30 lakhs route km of Optical Fiber Cable and increase in tower density from 0.42 to 1.0 tower per thousand of population by 2024
- Significantly improve quality of services for mobile and internet
- Develop innovative implementation models for Right of Way (RoW) and to work with States/UTs for having consistent policies pertaining to expansion of digital infrastructure including for RoW approvals required for laying of OFC
- Develop a Broadband Readiness Index (BRI) to measure the availability of digital communications infrastructure and conducive policy ecosystem within a State/UT.
- Creation of a digital fiber map of the Digital Communications network and infrastructure, including Optical Fiber Cables and Towers, across the country
- Investment from stakeholders of USD 100 billion (Rs 7 Lakh Crore) including Rs70,000 crore from Universal Service Obligation Fund (USOF)
- Address policy and regulatory changes required to accelerate the expansion and creation of digital infrastructure and services
- Work with all stakeholders including the concerned Ministries / Departments/Agencies, and Ministry of Finance, for enabling investments for the Mission

The updated status of actions taken for effective implementation of the National Broadband Mission is as under:-

a) The first meeting of the Governing Council for Broadband, constituted to oversee the mission, has been held on 24th November 2020 to review the progress of implementation of the National Broadband Mission. As decided during the meeting, an Empowered Task Force (ETF) has been constituted under the chairpersonship of Additional Secretary (Telecom) to make recommendations to develop a common Right of Way framework in line with the IT RoW Rules 2016 for smooth rollout of the digital communications infrastructure. The first meeting of the ETF has been held on 8th January 2021.

b) The first meeting of the Broadband Steering Committee, constituted to facilitate implementation of mission activities, was held under the Chairmanship of Secretary (Telecom) on 26th June, 2020. The broad objectives of the Mission and ways along-with timelines to achieve them were discussed during the meeting. Hurdles coming in the way of the Mission were also discussed.

c) Under the Mission, the States are mandated to constitute their State Broadband Committees for effective implementation of the mission and proliferation of broadband in the States. Majority of States/Union Territories have formed their State Broadband Committee. These committees have started functioning and addressing the issues related to the Mission through meetings.

d) Joint Secretary (T) held 4 meetings with the representatives of all States/UTs in the first round to discuss the ways out for effective and smooth implementation of the Mission. In the second round, 3 meetings with the representatives of all States/UTs have been held under the chairpersonship of Joint Secretary (T) on 21st, 22nd and 23rd December, 2020 for fast tracking the implementation of the mission.

7. Other Important Initiatives

7.1 Achievements during last five years

The telecom sector has witnessed significant growth over the last five years as a result of key reforms and initiatives undertaken by the Government. These initiatives have facilitated inclusive social and economic growth of all citizens,

improve rural digital connectivity, achieve universal coverage of telecom services and make available adequate spectrum.

The telecom sector is the backbone for achieving various pillars of Digital India programme. This is being made possible with (a) more than 1.20 billion (as per TRAI) telephone connections registering growth of around 26 % during last five years, (b) increase in overall teledensity to 88.17%, (c) increase in internet connections from 251.58 million in 2014 to 778.09 million in 2021, and (d) significant reduction in cost of data, enabling affordable internet access to millions of citizens.

Communication infrastructure and services are key enablers and critical determinants of a country's growth and well-being, in which India has seen rapid development. During last five years, the number of mobile base transceiver stations (BTS) has increased from 7.9 lakh to 22.4 lakh (March 2021) and length of Optical Fibre Cable (OFC) laid has doubled from 7 lakh km to 14 lakh km.

For providing high bandwidth capacity, expansion of mobile services and broadband connectivity in rural and remote areas, a number of schemes have been taken up with funding from USOF, and the major achievements are as follows:

(a) Under BharatNet project to provide broadband connectivity to all the 2.5 lakh Gram Panchayats (GPs) in a phased manner, 1.67 lakh GPs have already been made Service Ready, Wi-Fi hotspots have been installed in 1,04,310 GPs and 5,10,559 FFTH connections have been provided.

(b) 2355 mobile towers have been installed and providing mobile services in 10 Left Wing Extremism (LWE) affected States and is shortly going to start work on adding further 2542 mobile towers in these states.

(c) Under Comprehensive Telecom Development Plan (CTDP) for North East Region, 1246 villages and 283 Highway Sites have been provided mobile connectivity by installing 1358 towers.

(d) Under a scheme for Border areas and other priority areas for 354 uncovered Villages, 129 villages have been provided mobile services.

(e) Under Comprehensive Telecom Development Plan (CTDP) for Islands,Submarine OFC connectivity by laying 2312 km cable has been commissioned between Chennai and Andaman Nicobar Islands (CANI).

(f) Public Wi-Fi hotspots have been installed at about 24,000BSNL's rural telephone exchanges.

For greater transparency and for ease of doing business (a) allocation of spectrum has been carried out through an online auction process (b) spectrum sharing, trading and harmonization has been allowed leading to efficient use of spectrum and, (c) a web-based portal, "SARAL SANCHAR" (Simplified Application for Registration and Licenses) for issuing of various types of Licenses and Registration Certificates has been launched.

The fifth generation of mobile network communication technology- known as 5G, holds the promise of applications with high social and economic value, leading to a 'hyper-connected society' in which technology will play an even more important role in people's lives. 5G will not only facilitate but also add a new dimension to the missions like 'Digital India' and 'Smart Cities'. The Government had constituted a multi- disciplinary High Level Forum (HLF) to suggest vision, mission and goals for 5G India 2020 along with action plan and roadmap. Based on the report of the HLF the work has already been initiated.

In order to support furtherance of research and study in 5G, Government has approved financial grant of 224.01 Cr for the multi-institute collaborative project to set up 'Indigenous 5G Test Bed' (Building an end to end 5G Test Bed) in India in collaboration with IIT Madras, IIT Delhi, IIT Hyderabad, IIT Bombay, IIT Kanpur, IISc Bangalore, Society for Applied Microwave Electronics Engineering & Research (SAMEER) and Centre of Excellence in Wireless Technology (CEWiT). The project is the first step of a collaborative effort of a Pan-Indian multi-institutional team which will enhance national capability in telecom technology, develop indigenous IP and give fillip to Indian telecom manufacturers.

7.2 **Licensing Reforms**

In order to enable rapid growth of the telecom sector, increased competition to benefit the customers and for ensuring affordable & quality service the following policy initiatives have been taken by the Department:-

a) Unified Licensing regime is stabilized after implementation in 2013 and spectrum for access services now delinked from licenses.

b) Consolidation in telecom industry is happening very rapidly with only four mobile operators remain in most of the licensing areas, namely, BSNL, Bharti Airtel, Vodafone-Idea and Reliance Jio.

c) Unified License (Virtual Network Operators) started for companies to provide telecom services without owning spectrum or network infrastructure - within a licensing framework and allow them to offer voice, data and video services. Virtual Network Operators (VNOs) rely on the network of other telecom companies to provide services to consumers. Typically, a VNO buys bulk talk time and bandwidth from an operator and then sells it to the users. It can provide any or all the services that are being provided by the network operator. Guidelines for VNO have been announced on 31st May 2016.

d) VNO category B for wireline based Access Services in district of State have been introduced in the Unified Licences (VNO).

e) Flight and Maritime Connectivity Rules, 2018 have been published in Gazette of India on 14.12.2018, to provide voice or data or both type of services, on the hitherto unconnected ships within Indian Territorial waters and on aircraft in Indian airspace.Maritime connectivity services have already been launched on 13.09.2019. Although, In-flight connectivity is yet to be started in domestic flights by the airlines, however, it is being provided in most of the international flights in Indian Airspace.

f) In order to utilise resources efficiently, interconnection of networks at Internet Protocol (IP level) has been enabled.

g) Active infrastructure sharing has been enabled so that the infrastructure can be utilised efficiently between the telecom licensees.

h) For ease of doing business, the requirement of prior approval before launching of services has been done away with and only prior intimation is required for launching of services.

i) Internet Telephony: Telephony networks have in the course of time undergone major evolutionary changes, driven essentially by technological progress in various fields (switching, transmission, access and maintenance). The end purpose of a telephone network was always associated with the provision of a universal communication service with a certain quality. This has several implications for the technologies used and the mode of interconnection between sub- networks. In this context clarifications with respect to internet telephony have been issued such that the service can be provided by Access Service provider to the customers using internet of other service providers.

j) Norms for network testing before launch of commercial services have been issued thereby streamlining the testing of services before commercial launch. Amendments have been made in Access Service Licenses, related closure of Wireless services, Change of Technology, Spectrum Trading, etc. so as to bring the clause in line with the changing trends.

k) With the advent of 5G technology in the near future, India will have a much greater reliance on Telecom networks which will be used in areas such as Internet of Things (IoT), Machine to Machine (M2M) communications and Robotics. The dependence of 5G on software, multiple connectivity of devices, multiplicity of third-party applications, cloud computing and Network Function Virtualization will make the Telecom networks very vulnerable to cyber-attacks. Thus, in order to address these challenges and to enable security of Telecom networks in India,on 16.12.2020, the Cabinet Committee on Security (CCS) approved a framework for implementation of "National Security Directive on Telecom Sector". Based on the said directive, the Department of Telecommunications has issued amendment in Telecom Licenses on 10.03.2021. National Cyber Security Coordinator (NCSC) is the Designated Authority for notifying the Trusted Sources along with the associated Telecommunication Equipment (Trusted Products). With effect from 15.06.2021, Telecom Services Providers are required to connect only Trusted Products in their networks.

7.2.1 Spectrum reforms:

a) In pursuit of the policy provision of NDCP-2018, the experimental and Technology trial license involving radio spectrum has been made simpler, online based with fast-track approval;

b) A substantial chunk of spectrum (605 MHz) has been opened-up for license exempt use of low power applications including WiFi applications in the 5 GHz band in 2018; License-exempt use of very low power Ultra Wide-band (UWB) devices has been notified by the Government in 2018;

c) Most of the spectrum licenses administered by WPC Wing/ WMO have been made online/ migrated to saralsanchar portal, the unified licensing portal of DoT;

d) The grant of Equipment Type Approval (ETA) certificate, issued to RF devices operating in the notified license-exempted frequency bands, has been made simpler, end-to-end paperless and on the basis of self-declaration from themanufacturer/ importer for a certain category of equipments which are free from Import licensing requirement of Director General of Foreign Trade (DGFT);

e) Procedure to grant Import License/ Clearance to the original telecom equipment manufacturer in Domestic Tariff Area has been made simpler based on self-declaration only;

7.3 Investment Policy

The Government has increased FDI limit for telecom services upto100%. Foreign Direct Investment (FDI) upto 49% is permitted under automatic route and proposals for FDI beyond 49% upto 100% is under Government approval route in Telecom Service Sector. Foreign Investment Policy and Promotion (FIPP) wing of the Department of Telecom under DDG (FIPP) is responsible for handing and approval of the FDI proposal received through FIFP portal (fifp.gov.in) on case to case basis. 100% FDI is permitted for Telecom Equipment Manufacturing under automatic route.

7.4 Universal Service Obligation Fund (USOF) Initiatives–

AN OVERVIEW OF THE UNIVERSAL SERVICE OBLIGATION FUND

7.4.1. Organizational Structure and Functions & Objectives of USOF

i. Organizational Structure

The Universal Service Obligation Fund, created by an Amendment Act of Parliament, is headed by the Administrator USO Fund, appointed by the Central Government, for the administration of the Fund. It is an attached office of the Department of Telecom, Ministry of Communications.

ii. Amendment to Indian Telegraph Act, 1885 for creation/ administration of USO Fund:

The Universal Service Support Policy for provision of telecom facilities in rural and remote areas of the country came into effect from 01.04.2002. The guidelines for universal service support policy were issued by DoT and were placed on the DoT website on 27th March 2002. Subsequently, the Indian Telegraph Act, 1885 was amended in December 2003 vide the Indian Telegraph (Amendment) Act, 2003 (thereby creating Universal Service Obligation Fund (USOF). The USO Fund was established with the fundamental objective of providing fund support for access to 'Basic' telegraph services to people in the rural and remote areas at affordable and reasonable prices. Subsequently the Indian Telegraph Act was amended on 29.12.2006 to repeal the term "basic" wherein the scope of USO Fund was widened to provide access to various telegraph services (including mobile services, broadband connectivity and creation of infrastructure like OFC) in rural and remote areas.

iii. Rules for administration of USOF

The Rules for administration of the Fund, known as Indian Telegraph (Amendment) Rules, were initially notified on 26.03.2004. The Rules were subsequently amended as Indian Telegraph (Amendment) Rules 2006 in

order to enable support for mobile services and broadband connectivity in rural and remote areas of the country and the same were published in Gazette on 17.11.2006. Thereafter, the Rules have been amended from time to time.

iv. Functions & objectives of USOF

The USO Fund was established with the fundamental objective of providing fund support for access to 'basic' telecom services to people in the rural and remote areas at affordable and reasonable prices. Subsequently the scope was widened to provide subsidy support for enabling access to various types of telecom services, including mobile services, broadband connectivity and creation of infrastructure like OFC in rural and remote areas.

The implementation of the USO related activities is carried out by the "eligible operators", i.e. the entities having valid license or registration or authorization from Central Government/ Department of Telecommunication for providing telecom services or infrastructure or any other entities as specified by the Central Government from time to time.

The resources for implementation of USO are raised by way of collecting a Universal Access Levy (UAL) from all the Licences of Department of Telecommunications, which is 5% of the Adjusted Gross Revenue (AGR) of Telecom Licences. It is a non-lapsable Fund. Levied amount is a credited to Consolidated Fund of India. Fund is made available to USOF through budgetary provision after due appropriation by the Parliament.

v. As per the Rules, the following services to be supported by USOF:

These services have been categorised in the form of streams viz as under:

(i) **Stream-I:** Provision of Public Telecom and Information Services

(ii) **Stream-II**: Provision of household telephones in rural and remote areas as determined by the Central Government from time to time

(iii) **Stream-III:** Creation of infrastructure for provision of Mobile Services in rural and remote areas

(iv) **Stream-IV:** Provision of Broadband connectivity to villages in a phased manner

(v) **Stream-V:** Creation of general infrastructure in rural and remote areas for development of telecommunication facilities

(vi) **Stream-VI:** Induction of new technological developments in the telecom sector in rural and remote areas

Table: Statement of USO Fund collected and disbursed as on 31.05.2021

[All figures Rs. in crore]

Financial Year	UAL collections (Booked figures as per DOT A/cs)	Funds disbursed	Balance
2002-03	1653.61	300.00	1353.61
2003-04	2143.22	200.00	3296.83
2004-05	3457.73	1314.59	5439.97
2005-06	3215.13	1766.85	6888.25
2006-07	3940.73	1500.00	9328.98
2007-08	5405.80	1290.00	13444.78
2008-09	5515.14	8548.64	10411.28
2009-10	5778.00	2400.00	13789.28
2010-11	6114.56	3100.00	16803.84
2011-12	6723.57	1687.96	21839.45

Financial Year	UAL collections (Booked figures as per DOT A/cs)	Funds disbursed	Balance
2012-13	6735.47	625.00	27949.92
2013-14	7896.39	2163.45	33682.86
2014-15	7537.88	2086.98	39133.76
2015-16	9835.70	3100.00	45869.46
2016-17	9763.87	7227.03	48406.30
2017-18	7019.22	6998.76	48426.76
2018-19	6911.50	4788.22	50550.04
2019-20	7961.51	2926.00	55585.55
2020-21	9471.23	7200.00	57856.78
2021-22	**372.79**	**145.71**	**58083.86**
Total	**117453.05**	**59369.19**	**58083.86**

7.4.2. BharatNet Project

For providing high bandwidth capacity, expansion of mobile services and broadband connectivity in rural and remote areas, a number of schemes have been taken up with funding from USOF. BharatNet, one of the biggest rural telecom projects of the world, is being implemented in a phased manner to provide broadband connectivity to all Gram Panchayats (approx. 2, 50,000) in the country.

7.4.2.1 BharatNet Phase-I:

(i) The Union Cabinet on 25.10.2011 approved the project for creation of National Optical Fibre Network (NOFN/now BharatNet) to provide Broadband

connectivity for connecting Block Headquarters (BHQs) to Gram Panchayats (GPs) by using existing fibre of Central Public Sector Undertakings (CPSUs) – Bharat Sanchar Nigam Limited (BSNL), RailTel Corporation of India Limited (RailTel) and Power Grid Corporation of India Limited (PGCIL) and laying incremental fibre to bridge the connectivity gap up to the GPs. The incremental Optical Fibre Cable (OFC) so laid was to be owned by the Government and the ownership of the existing fibre was to be continued to be vested with the existing owners. **Bharat Broadband Network Limited (BBNL)** was incorporated on February 25, 2012 as a Special Purpose Vehicle for the execution, management and operations of NOFN. This was considered as Phase-I of BharatNet.

(ii) The Phase-I was completed in December 2017 with the implementation of over 1 lakh GPs. Subsequently, the scope of Phase-I was expanded to 1.25 lakh GPs (Revised Work-front Phase-I) as per the Cabinet approval of July 19, 2017.

(iii) Implementation and Status of the BharatNet Phase-I:

The work of 1,25,000 GPs (revised work front) under Phase-I had been allocated to 3 CPSUs: BSNL, RailTel and PGCIL for implementation. The work front for Phase-I was revised to 1,20,392 as about 3,000 GPs of North East, which were earlier being implemented by RailTel have been proposed under PPP model and in some GPs work is in progress. As on 02.07.2021, a total of 1,20,775 GPs have been connected by laying 3,07,734 km underground OFC. Out of these OFC connected GPs, 1,18,645 GPs have been made Service Ready. The detail of progress is given below:

Table: Status of the BharatNet Phase-I (as on 02.07.2021)

CPSU	Phase-I Districts	Phase-I Blocks	Phase-I GPs	OFC laid (km)	Service Ready GPs
BSNL	403	2473	101947	250481	100723
RailTel	63	316	7987	25673	7705
PGCIL	39	512	10398	31534	10204

CPSU	Phase-I Districts	Phase-I Blocks	Phase-I GPs	OFC laid (km)	Service Ready GPs
BBNL (diverted from [illegible])	3	6	60	46	13
Total	**508**	**3307**	**120392**	**307734**	**118645**

7.4.2.2 BharatNet Phase-II:

The Cabinet approved a modified strategy for BharatNet on July 19, 2017, which integrates the implementation experience of Phase-I of the project and aligns it with the vision of Digital India. The comparative chart of salient features of Phase-I vs Phase-II, are as follows:

Comparison between BharatNet Phase-I and Phase-II

S. No.	Item	Phase-I	Phase-II
1	No. of GPs	1,00,000 (Work front increased to about 1,25,000 GPs by Telecom Commission on 30.04.2017)	1,50,000
2	Implementing Agencies	Three CPSUs (BSNL, RailTel& PGCIL)	BBNL, States and States' agencies, CPSUs and Private Sector
3	Media	Underground OFC	Underground OFC, Aerial OFC on existing electricity poles and Radio & Satellite
4	Fiber used in Network	BSNL Fibre upto FPOI and fresh OFC thereafter	Fresh OFC from Block to GP
5	No. of Fibres (Core)	24	48 & above (underground), 24 & above (Aerial)

S. No.	Item	Phase-I	Phase-II
6	Last Mile Architecture	Not envisaged	Yes, for all 2.5 lakh GPs, Wi-Fi hotspot or any other suitable broadband technology
7	Network technology	GPON Linear Architecture	GPON Linear Architecture except for Chhattisgarh on IP MPLS/Ring, States under State-led model given flexibility of enhanced architecture using their own funds.

The total funding of the BharatNet, approved by the Cabinet, is Rs. 42,068 crore (exclusive of GST, octroi and local taxes).

The Phase-II is under implementation and the details are as follows:

Table: Status of BharatNet Phase-II Project (as on 02.07.2021)

Implementation Model		Phase-II GPs	Phase-II Total OFC Target km	Service Ready GPs	OFC Laid	Balance Work GPs
State Led		71313	320895	20660	141428	50,653 (5852 UKD)
BSNL Led		27406	91051	6640	55214	20,766 (2699 J&K+2169 UPW)
BBNL Led		7381	22853	7357	22723	24
Satellite Projects	**By BBNL (incl 422 J&K)**	4096	-	2917	-	1179=797+ 422 J&K
	By BSNL	1407	-	1164	-	243
Total		**1,11,604**	**4,34,799**	**38,738**	**2,19,365**	**72,868**

7.4.2.3 Overall achievement of BharatNet Project:

As on 02.07.2021, a total of 5,29,338 Kms OFC has been laid, connecting 1,70,131 GPs. Out of these 1,70,131 OFC connected GPs, 1,53,302 GPs have been made service ready. Further, 4,081GPs have been made service ready on Satellite. In total 1,57,383 GPs have been made service ready. Since, March, 2020 pursuant to lockdown and movement restrictions due to COVID-19 in the country, the progress of project is adversely affected, but, with phased unlock all efforts are being made to speed up the project implementation.

7.4.2.4 Utilisation of BharatNet network:

The Last Mile Connectivity, with USO funding, is being provided through Wi-Fi to access broadband /internet services at Public places, and Fibre to the Home (FTTH) to provide broadband connectivity Government Institutions such as school, hospital, post offices, Aanganwadi, customer service centres, police station, etc. The details are as follows:

- In the 1.23 lakh GPs (approx.) of BharatNet Phase-I, the provisioning of Wi-Fi Services in about 1.10 lakh GPs has been assigned to CSC e-Governance Services India Limited (a Special Purpose Vehicle under Ministry of Electronics & Information Technology), and in about 10, 000 GPs to Government of Rajasthan/Raj COMP Info Services Ltd. (RISL), etc.
- Out of around 1.10 lakh GPs assigned to CSC e-Governance Services Limited (CSC-SPV) for providing Wi-Fi services across India, it is also providing FTTH connections to 5 Government Institutions in 77,000 (approx.) GPs. With the involvement of Village Level Entrepreneurs (VLEs) through CSC-SPV at about 1.10 lakh GPs, huge employment is expected to be generated at village level. So far, the utilization is as follows:

- Fibre to the Home (FTTH) connections on BharatNet:
  - FTTH connections installed: 5,10,559
  - SWAN connections: 13,755 GPs

- GPs with Wi-Fi hotspots:
  - GPs where Wi-Fi hotspots installed: 1,04,310
  - GPs where Wi-Fi hotspots service provided: 64,722
  - Total Data used per month: 2,737 TB
- Leased Bandwidth : 4,015 Gbps
- Dark Fibre : 27,592 km

7.4.2.5 Challenges in BharatNet Project:

BharatNet is a challenging project of mega nature and the Gram Panchayats (GPs) are widely dispersed across the country in rural and remote areas. The implementation of Phase-II is being done under State-led and CPSU-led model. The delay in the implementation of the BharatNet phase-II is mainly on account of:

(i) Slow progress being made by State Governments under State-led model. About 65,000 GPs in 8 States are under implementation under State-led model.

(ii) Under CPSU-led model, BSNL's work was also delayed due to its precarious financial condition.

(iii) In March 2020, pursuant to Lockdown and movement restrictions due to COVID-19 in the country, the project progress is affected. However, with the beginning of unlock phase, all efforts are being made to expedite the project implementation.

7.4.2.6 Revised implementation strategy of BharatNet to connect 6 lakh villages:

A Committee (chaired by CEO, NITI Aayog and comprising Secretaries of Department of Economic Affairs, MeitY and DoT) in its report on 06.05.2019 identified the following key challenges in BharatNet:

i. Poor maintenance of infrastructure due to which network uptime is not guaranteed / upto the levels as desired for a telecom network

ii. Extremely low utilisation by service providers and State Governments

iii. Poor progress of Phase-II

iv. Lack of clarity on business / utilisation model

The recommendations of the said Committeeinter alia, included assignment of the work of creating, maintaining and utilising the BharatNet network on a long-term basis to a single entity (Private Sector Partners - PSPs) under Public-Private Partnership (PPP) Model through Concession Fee/ Viability Gap Funding (VGF). The DCC approved all the recommendations of the said Committee on 13.06.2019 and a detailed State-wise PPP strategy for BharatNet on 20.12.2019.

i. As announced by the Hon'ble Prime Minister on 15th August 2020, the mandate of BharatNet has also been expanded to connect about 6 lakh inhabited villages on optical fiber across the country, expanding the scope from 2.5 lakh Gram Panchayats. On 30.06.2021, Union Cabinet accorded approval for revised implementation strategy of BharatNet through Public Private Partnership mode in 16 States of the country. BharatNet will now be extended upto all inhabited villages beyond GPs in the said States. The revised strategy also includes creation, upgradation, operation, maintenance and utilization of BharatNet by the concessionaire, who will be selected by a competitive international bidding process. The estimated maximum viability gap funding approved for the above PPP model is Rs. 19,041 crores.

ii. The States covered under the Cabinet approval are Kerala, Karnataka, Rajasthan, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, West Bengal, Assam, Meghalaya, Manipur, Mizoram, Tripura, Nagaland and Arunachal Pradesh. An estimated 3.61 lakh villages including GPs will be covered.

iii. The Cabinet also accorded in principle approval for extending BharatNet to cover all inhabited villages in the remaining States and UTs.

iv. The target for completion of BharatNet connectivity to all the six Lakh villages (approx.) including all Gram Panchayats is August, 2023.

7.4.3 Comprehensive Telecom Development Plan (CTDP) for the North-Eastern Region

On 10.09.2014, the Union Cabinet approved a proposal to implement Comprehensive Telecom Development Plan for the North-Eastern Region. The Project envisaged to provide 2G mobile coverage to 8621 identified uncovered villages, installation of 321 mobile tower sites along National Highways and strengthening of transmission network in the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Subsequently, due to change in technology and coverage of villages by the TSPs, approval has been taken for revised schemes. The current schemes details are as follows:

7.4.3.1 Mobile Services in Uncovered villages in Assam, Manipur, Mizoram, Nagaland, Tripura, Sikkim, and Arunachal Pradesh (National Highways only) of NER and seamless coverage along National Highway:

Under this scheme, Mobile connectivity is to be provided by setting up 2004 towers in the uncovered villages and along National Highways of Assam, Manipur, Mizoram, Nagaland, Tripura, Sikkim, and Arunachal Pradesh (National Highways only) of North-East region. The Agreements were signed with Bharti Airtel Ltd. and Bharti Hexacom Ltd. on 08.12.2017 for implementation of the project and 1,358 sites are already providing services. The State-wise details are as follows:

Table: State wise Progress of the scheme

State	No. of Towers targeted	No. of Towers installed and providing mobile services
Assam	983	439
Sikkim	20	8
Manipur	437	404
Mizoram	246	214
Nagaland	160	152

State	No. of Towers targeted	No. of Towers installed and providing mobile services
Tripura	9	3
Arunachal Pradesh (NH)	149	138
Total	**2004**	**1358**

Note: About 270 towers have not been installed due pre-existence of mobile coverage.

7.4.3.2 Mobile Services in Uncovered villages of Meghalaya and seamless coverage along National Highway:

The project was approved by the Cabinet on 23.05.2018 and as per approval of Digital Communications Commission (DCC), the work has been awarded for 1,164 uncovered villages and 11 sites along National Highways in Meghalaya on 04.09.2020 for provisioning of 4G mobile services. Project is targeted to be completed in 18 months from the award of work.

7.4.3.3 Mobile Services in Uncovered Villages of Arunachal Pradesh and 2 Districts of Assam:

As per the Cabinet approval of 09.12.2020, provision of 4G mobile services in 2374 uncovered villages in Arunachal Pradesh and two Districts of Assam (Karbi Anglong & Dima Hasao) has been approved at an estimated cost of Rs. 2028.80 Cr. The tender has been floated and opened on 02.06.2021 and the same is under evaluation for selection of Implementing Agency.

7.4.4. Implementation of Comprehensive Telecom Development Plan for Islands

Telecom Commission in its meeting held on 07.11.2014 approved, in principle, an Integrated and Comprehensive Telecom Development Plan for Andaman & Nicobar Islands and Lakshadweep in accordance with TRAI recommendations dated 22.07.2014 for 'Improving Telecom Services in Andaman & Nicobar Islands and Lakshadweep'. The plan consists of the following schemes:

7.4.4.1 Andaman & Nicobar Islands: -

(i) Submarine OFC Connectivity between Mainland India (Chennai) and Andaman & Nicobar Islands:

Cabinet in its meeting held on 21.09.2016 approved a dedicated submarine OFC link from Mainland India [Chennai] to Port Blair & 5 other Islands viz. Car Nicobar, Little Andaman, Havelock (SwarajDweep), Kamorta and Great Nicobar Island. Subsequently submarine OFC connectivity of Rangat Island via Long Island from Havelock Island (SwarajDweep) was approved in addition to 6 Islands. 2313 km four pair Submarine Optical Fibre Cable has been laid, out of which one fibre pair has been shared with Ministry of Defence exclusively. Hon'ble Prime Minister inaugurated and dedicated to nation the Chennai -Andaman Nicobar Islands (CANI) Project on 10.08.2020 at a cost of Rs. 1,224 Crore. All segments of CANI submarine cable project are commissioned. 200 Gbps Bandwidth is available between Chennai to Port Blair while 100 Gbps bandwidth is available within Islands. A Tripartite Agreement for Operation & Maintenance has also been signed between USOF, BSNL & U.T. Administration of Andaman & Nicobar Islands on 13.11.2020. Present utilization of bandwidth is 43.09 Gbps.

(ii) Satellite Bandwidth Augmentation for Andaman & Nicobar Islands:

Work of augmentation of satellite bandwidth from 2 Gbps to 4 Gbps in Andaman & Nicobar Islands is being executed by BSNL on nomination basis in accordance with DCC approval. The CAPEX of Rs. 36.39 Crore plus applicable taxes is being funded by USO Fund while OPEX (Transponder charges) is to be funded by MHA / UT Administration of Andaman & Nicobar Islands. Present satellite bandwidth is 3.49 Gbps, which is targeted to be augmented to 4 Gbps by September 2021.

(iii) Provision of 4G Mobile Coverage in Uncovered Villages and seamless 4G Mobile coverage of National Highway in Andaman & Nicobar Islands:

DCC in its meeting held on 20.12.2019 approved a project for setting up of 82 towers to provide mobile services on 4G Technology in identified 85 uncovered villages (with population of 10 or more), and 42 towers for providing 4G mobile services to bridge the gaps in mobile connectivity along uncovered NH-4 (earlier NH-223). The CAPEX & OPEX for 5 years are to be funded by USOF through VGF

Model [Total: Rs 129.58 Crore (excluding taxes)]. The target for completion of project is twelve (12) months from the date of signing of the agreement, i.e. by March 2022. However, as per request of M/s RJIL, extension of three months has been granted for field survey/ implementation of the project under Force Majeure situation due to prevailing restrictions imposed by Andaman & Nicobar UT Administration owing to 2nd wave of COVID-19.

7.4.4.2 Lakshadweep Islands:

(i) Submarine OFC Connectivity between Mainland India (Kochi) and Lakshadweep Islands:

Cabinet in its meeting held on 09.12.2020 approved a proposal for Provision of Submarine Optical Fibre Cable Connectivity between Mainland (Kochi) and Lakshadweep Islands (KLI Project) comprising of Kavarati and ten other Islands, namely, Kalpeni, Agatti, Amini, Androth, Minicoy, Bangaram, Bitra, Chetlat, Kiltan and Kadmat. The total estimated Route length is about 1,772 km and the total Financial Implication is about Rs. 1,072 Crore (excluding taxes). The project is targeted to be implemented by May 2023 i.e. within 1000 days from the date of announcement by Hon'ble Prime Minister on 15th August 2020.

BSNL, the Project Execution Agency, floated tender on 10.03.2021 for implementation of 6 fibre pairs submarine cable system (1.6 Tbps/fp) on turnkey basis on 10.03.2021. The Pre-Bid Conference was held on 25.03.2021. Initially the last date for Online submission of Tender Bid was 13.04.2021 and Online opening of Tender Bid was 14.04.2021. The amendments and clarifications to the prospective bidders were issued by BSNL on 31.05.2021, 17.06.2021 and 03.07.2021. The last date for submission of Bids was extended to 15.07.2021 while the bid(s) received against the tender were opened on 16.07.2021 and are under evaluation.

TCIL, the Technical Consultant, has already finalized the Tender for selection of agency for obtaining Statutory clearances including Environmental Impact Assessment/ Coastal Regulation Zone (EIA/CRZ), Forest, Wildlife clearance etc. and purchase order has been issued by TCIL to M/s EQMS India Private Limited, the successful bidder on 19.07.2021.

Tender for Selection of Independent Monitoring Agency (IMA) was floated by TCIL on 18.05.2021. Last date for submission of Bids was 16.07.2021. The tender was opened on 19.07.2021 and is under evaluation.

Gazette Notification for amendments in Rule 525 & 526 of Indian Telegraph Rules (ITR), 1951 for nomination of BSNL as the Project Execution Agency for KLI project has been published on 27.07.2021

(ii) Satellite Bandwidth Augmentation for Lakshadweep Islands:

Work of augmentation of satellite bandwidth from 318 Mbps to 1.71 Gbps utilizing GSAT-11 & 19 capacities in Lakshadweep Islands is being executed by BSNL on nomination basis in accordance with DCC approval. The CAPEX of Rs. 28.26 Crore plus applicable taxes is being funded by USO Fund while OPEX (Transponder charges) is to be funded by MHA / UT Administration of Lakshadweep Islands. Present satellite bandwidth is 1.15 Gbps, which is targeted to be augmented to 1.71 Gbps by September 2021.

DCC has approved another proposal on 13.04.2021 for further enhancement of satellite bandwidth from 1.71 Gbps to 3.46 Gbps i.e. by 1.75 Gbps through ISRO/NewSpace India Limited (NSIL) and BSNL on nomination basis using Ku-Band transponders of GSAT-31 satellite. CAPEX of Rs. 30.75 Crore (excluding taxes) is being funded by USO Fund while OPEX of Rs. 98.75 Crore per annum (excluding taxes) is being funded by MHA. The project is expected to be completed by April 2022 to provide much needed relief to the Islands.

7.4.5. Re-provisioning of Digital Satellite Phone Terminals (DSPTs) provided to MHA agencies (CAPFs), MoD agencies (Army, BRO) and other agencies using VSAT connectivity under BharatNet Project

BSNL was providing DSPTs services to MHA agencies (CAPFs), MoD agencies (Army, BRO) and other agencies. These DSPTs were provided in remote, rural, far-flung, difficult terrain areas where no coverage from any other operator is available. The DSPTs were working on NSS-6 satellite. However, due to closure of NSS-6 satellite, the services of all the 1409 DSPTs provided to MHA Agency/ Armed/ Paramilitary Forces etc. under subsidy support from USO Fund were disrupted with effect from 13.05.2019.

As a short-term measure, INMARSAT terminals were provided to MHA agencies (CRPF, BSF, ITBP& SSB) and MoD agencies (Indian Army & BRO) to meet their critical communication need. DCC in its meeting held on 20.12.2019 approved the proposal for re-provisioning of Digital Satellite Phone Terminals (DSPT) provided to MHA agencies (CAPFs), MoD agencies (Army, BRO) and other agencies through the ongoing tender of VSAT connectivity under BharatNet Project. Further, approval was also accorded for providing VSATs in Ladakh Autonomous Hill Development Council (LAHDC). The approval was conveyed to BBNL for provision of DSPTs. Out of total 1409 VSATs to be provided, 1241 sites have been operationalized as on 05.07.2021.The details are as follows:

Table: Agency Wise Status of DSPT re-provisioning (as on 05.07.2021)

Agency	Total Sites	Delivered		Installed
		VSAT	SPV	
ARMY	207	207	207	196
BRO	75	75	75	69
BSF	336	336	336	328
CRPF	326	326	326	324
ITBP	207	207	207	203
SSB	103	103	103	103
LAHDC	18	18	18	18
Total	**1272**	**1272**	**1272**	**1241**

7.4.6. Mobile Service in Uncovered Villages:

Government has prioritized to reach remote areas of the country such as North-Eastern States, Islands, Himalayan States, Western Border States and more importantly the Left Wing Extremism affected areas in the first phase.

7.4.6.1 Scheme for Border areas and other priority areas:

An Agreement has been signed on 28.04.2020 with the implementing agency i.e. M/s Reliance Jio Infocomm Ltd. for provision of mobile service in 354 uncovered

villages of Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttar Pradesh, Bihar, Rajasthan, Gujarat, Uttarakhand, Border areas and other priority areas at a cost of Rs. 337 Crore. The project progress is as follows:

Table: State-wise progress of Border areas and other priority areas scheme

S. No	State Name	No. of targeted villages	No. of villages where mobile services provided
1.	Bihar & West Bengal	9	9
2.	Karnataka	3	3
3.	Madhya Pradesh	1	0
4.	Rajasthan	31	26
5.	Uttar Pradesh &Uttarakhand	37	21
6.	Gujarat	70	22
7.	Himachal Pradesh	59	7
8.	J&K and Ladakh	144	41
Total		**354**	**129**

The project is likely to be completed by October, 2021.

7.4.6.2 Aspirational Districts Scheme:

(i) 502 Aspirational District villages (MP, UP, Rajasthan, Bihar):

A Scheme for **502 uncovered villages of Aspirational District over four States** (namely Uttar Pradesh, Bihar, Madhya Pradesh & Rajasthan) for provisioning of 4G based Mobile services has been finalized. Agreement has been signed and work is under progress.

(ii) Remaining 7,287 Aspirational District villages (Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra and Odisha):

A scheme for **7,287 uncovered villages** is under Cabinet approval for provisioning of 4G based Mobile services in 44 Aspirational Districts of 5 States of

Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra and Odisha at an estimated cost of Rs. 6,466 Crore. The scheme is in the process of approval.

7.4.7 Scheme for Mobile Communication Services in Left Wing Extremism (LWE) Affected Areas:

7.4.7.1 LWE Phase-I:

On 20.08.2014, the Cabinet approved the implementation of the project in LWE areas at a cost of Rs. 3567.58 crore to provide Mobile Services on 2G technology in the 10 affected States of Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh, Odisha, Telangana, Uttar Pradesh and West Bengal. The project has been completed and the State-wise details are as follows:

Tower Sites in LWE Phase-I

S. No.	Name of the State	LWE Phase-I	
		Total LWE Districts	Towers functional
1	Andhra Pradesh	8	62
2	Bihar	22	250
3	Chhattisgarh	16	525
4	Jharkhand	21	816
5	Madhya Pradesh	1	22
6	Maharashtra	4	65
7	Odisha	19	256
8	Telangana	8	173
9	Uttar Pradesh	3	78
10	West Bengal	4	96

S. No.	Name of the State	LWE Phase-I	
		Total LWE Districts	**Towers functional**
	Total	**106**	**2343**

4G Upgradation of existing LWE-I sites is under consideration for the sites which are not yet covered by 4G.

7.4.7.2 LWE Phase II:

The Cabinet approved on 23.05.2018 a proposal for Phase II of the project in LWE affected areas with a subsidy support of Rs. 7330 crore. Due to revision in the requirements, the project has been subsequently approved for 2,542 towers to provide 4G mobile services at an estimated cost of Rs. 2,288 Cr. The Digital Communications Commission (DCC) approval for the same has been obtained on 01.12.2020.

Table: State-wise list of mobile towers in LWE Phase II:

S No.	State	No of Districts	No. of Mobile Towers
1	Andhra Pradesh	9	346
2	Bihar	7	16
3	Chhattisgarh	15	971
4	Jharkhand	21	450
5	Madhya Pradesh	2	23
6	Maharashtra	3	125
7	Odisha	5	483
8	Telangana	12	53
9	Uttar Pradesh	1	42
10	West Bengal	5	33
Total		**80**	**2542**

For implementation of the project, tender has been floated and finalized. The financial approval for award of work is under submission.

7.5 **Absorption of Group 'A' officers from DOT to MTNL/BSNL –**

a) Consequent upon formation of MTNL in April, 1986 and BSNL in October, 2000, Group 'A', 'B', 'C' and 'D' employees of Department of Telecommunications were transferred to these PSUs on 'as is where is' basis along with their posts on deemed deputation. The process of absorption of Group 'B', 'C' and 'D' employees was completed during 1998-2004.

b) The process of absorption of Group 'A' officers including ITS officers in BSNL/MTNL was initiated by the department of Telecommunications in March 2005 with the issue of the option letter dated 24th March 2005, as per terms and conditions of absorption approved by the Cabinet. The response of Group 'A' officers towards absorption was very poor. Group 'A' officers were again given offers of absorption followed by option letters on 04.10.2005, 26.08.2008 and 22.09.2011, incorporating the revised terms and conditions of absorption. The response of Group 'A' ITS officers, towards absorption still remained poor.

c) The process of absorption of Group 'A' officers in BSNL/MTNL has since been concluded. Absorption Cell under Joint Secretary(A) deals with residual issues relating to absorption process including court cases.

7.6 **Cadre Review of the organized cadre services belonging to DoT**

(a) **Indian Telecommunication Service (ITS), Group 'A' Service:**

Last Cadre Review of ITS Group 'A' has been completed with the approval of Union Cabinet on 21st December, 2016 after a long gap of 28 years. Post restructuring of the field units of DoT notified on 23rd February, 2017 an integrated setup –headed by an Advisor (Telecom)/Sr. DDG (Telecom) – has been created in each of 22 Licensed Service Areas (LSAs). These field units at the LSA level are reporting to the Director General Telecom, which is an apex scale post reporting to the Secretary (Telecom). These units represent the licensor/telegraph authority in the field. The

next cadre review of ITS Group 'A' has become due now and the process for the same is underway.

(b) **Indian Post & Telecommunication Accounts and Finance Service (IP&TA&FS):**

The first cadre review of Indian Post & Telecommunications Accounts and Finance Service (IP&TA&FS) Group 'A' has been completed in 2016 In pursuance of the implementation of first cadre review of IP&TAFS Gr. 'A', an apex level post, namely, Controller General of Communications Account (CGCA) has been operationalized. Further, all the DoT field units viz. the Pr. CCA, CCA and Jt. CCA (respective Head of Department) offices are reporting to the CGCA. The field units of DoT viz. the Pr. CCA and CCA offices are responsible for dealing with the licensees as per license agreement. The second cadre review of the IP&TA&FS Gr. 'A' is under process as per cadre review guidelines of DoPT.

c) **Indian Radio Regulatory Service (IRRS):**

The cadre of Indian Radio Regulatory Service (IRRS)Group 'A' of Wireless Planning & Coordination Wing (WPC Wing) with its field organisation Wireless Monitoring Organisation (WMO), bestowed upon the responsibility of radio spectrum management as well as management of satellite orbits and spectrum monitoring of the country. WPC Wing, national nodal agency at the International Telecommunication Union –Radio communication (ITU-R) in the matter of radio spectrum/ satellite orbits, was established in 1952. However, the cadre was conferred 'organised' status only recently in 2013. The first cadre review took place in 2013 itself, immediately after the conferment of organised status. Due to ever increasing demand of spectrum and since the task of spectrum management/ monitoring being a very complex and specialised work, the strengthening of the organisation has become a necessity and this has also been echoed by Telecom Regulatory Authority of India (TRAI).

Accordingly, the proposal for second cadre review for the IRRS Group 'A' is under process.The Committee of Secretaries (CoS) headed by Cabinet Secretary had a meeting in this regard recently and additional input/ information has been sought from the department.

d) **Indian P&T Building Works Service (IP&TBWS):**

Cadre Review of the Posts and Telegraphs Building Works Service(Group 'A') has been completed with the approval of Union Cabinet on 6th November, 2019.

7.7 **Security**

a) National Centre for Communication Security (NCCS), a centre under Department of Telecommunications has been established with headquarters at Bengaluru, for the purpose of establishing security testing and certification framework within the country.

b) DOT has undertaken a project for implementation of Central Equipment Identity Register (CEIR) for addressing security, theft and other concerns including reprogramming of mobile handsets. This project is being executed with the help of C-DOT. Operationalisation of ICDR (Indian Counterfeit Device Registry) for exercising control over devices having an IMEI being imported is also being undertaken by DoT.

c) Project of Computer Emergency Response Team- Telecom (CERT-T) is also being undertaken in Department for telecom network incident management. Three main areas of work identified under this project are :-

(i) Development of tools for network security for which C-DOT has been given the responsibility.

(ii) Capacity building for officers of the Security Wing.

(iii) Setting up of institutional framework for incident management

d) The Centralised Monitoring System (CMS) with its twenty one Regional Monitoring Centres (RMC) and one Centralised Monitoring Centre at New Delhi and its Disaster Recovery Centre at Bengaluru has been made operational. The Central LEAs and the state LEAs are gradually migrating to

the CMS. The CMS project makes use of indigenously developed solution to provide for automatic lawful implementation of telecommunications.

e) The Internet Monitoring System (IMS) with the objective of lawful interception and monitoring of the entire internet data of the country is gradually being rolled out. There are currently 124 Internet Service Provider's (ISP) gateways with which the IMS node has been deployed. There are technical and commercial proposals being examined for integrating the CMS and IMS so that there is a single Lawful Interception & Monitoring system in the country.

7.8 SAMPANN (System for Accounting and Management of Pension)

New software for direct disbursement of Pension to BSNL and DoT retirees is developed as SAMPANN-CPMS (comprehensive pension management system). This Comprehensive Pension Management System was inaugurated by Hon'ble Prime Minister on 29th December, 2018 at Varanasi.

Thus, SAMPANN integrates the processing, sanctioning, authorization and payment units under a common platform, facilitating direct credit of pension to the accounts of pensioners.

SAMPANN has been rolled out on CPMS at 12 CCAs viz., U.P. (East), UP (West), Gujarat, Kerala, Rajasthan, Bihar, Madhya Pradesh, Andhra Pradesh, Tamilnadu, West Bengal, J&K and Delhi. Rest of the CCA offices are likely to be migrated in due course.

SAMPANN will provide the following benefits to the pensioners-

(i) A single window system for complete pension process, avoiding the complexities.

(ii) Pensioners provided with a login, for tracking the pension status and ongoing related processes.

(iii) Ensures direct disbursement of pension on timely basis without the intervention of 3rd party.

(iv) Effective & Quick process of pension arrears & pension revision cases.

Till now, 101462 Pensioners are benefited and amount of ₹11,662.91 crores has been disbursed as pension. Bank data migration to CPMS of old pensioners is under process.

7.9 NTRP (Non-Tax Receipt Portal)

The Electronic Receipt (e-receipt) system for accounting of DoT revenue, has been enabled 100 % in DoT HQ. All the CCA offices w.e.f. 1st January, 2017 through NTRP, which is a single window, online payment portal for payment of Revenue of Government of India.

7.10 SWR (State of Work Report)

The older version of SWR 1.0 is a web based platform developed to ensure accuracy, transparency, accountability and prompt reporting by CCA offices to DoT HQ. Due to some of the shortcomings in the older version, a new enhance version of SWR 2.0 has been developed including the shortfalls and roll out was completed in June, 2019 in all the CCAs.

7.11 Digital Payments Mission

For promotion of Digital Financial Mission in the country, Department of Telecom, being a technology centric sector with a 1.2 billion strong subscriber base, is playing a key role by encouraging the subscriber to initiate the transaction in Digital Mode i.e. Credit Card/Debit Card/Digital Wallet etc. over physical mode. For the promotion of Digital Payment in 100 Smart Cities in Campaign Mode, Department of Telecom has organized "Digital Payment Melas" in 81 Smart Cities with a huge success. Implementation of GPF direct payment system for BSNL employees by the CCAs which reduced the delay in GPF payment for PSU employees.

7.12 Revenue Management System (SARAS) for online payment, verification and assessment

a) A landmark new revenue management system – **SARAS(System for Assessment of License Fee Revenue and Spectrum Usage Charges)** – has been implemented to ease, standardise and digitize the hitherto

manual and varying processes of payment, deduction verification, Licensee Fee (LF)/Spectrum Usage Charges (SUC) assessment and reporting of telecom revenue and related ancillary processes, along with achieving end to end computerisation of all licensing and spectrum compliance related requirements over life cycle of a licensee. The system has been partially operational since Q-III 2019 and has attained full functionality since January 2021.

b) SARAS is a **multi-stakeholder, scalable and customizable cloud based application** which is future proof with capability to handle increasing number of licensees. It has been developed in a collaborative manner by involving all stakeholders in the design, development and testing processes, including LFA/LFP/WPF divisions of DoT HQ, O/o CGCA, field units (CCAs) and major Access operators, with all the complex business processes/logics involved in online verifications and assessments now being digitized and built into the system.

c) All TSPs have now become a stakeholder in the new system, with facility to make online payments, digitally file deduction claims, submit AGR statements and related documents, submit bank guarantee details, submit online grievances/representations and respond to all departmental notices regarding assessment related matters. Also, SARAS enables departmental users, including all field units (CCAs), to conduct online deduction verification, online assessment of LF and SUC, web issuance of demands and other communications to TSPs, management of bank guarantees, handle grievances and representations etc. Overall, SARAS will help **standardise** deduction verification, LF/SUC assessment and related processes, enhance **transparency** and accountability of verification/assessment authorities, increase **efficiency** of structure/processes, and make the process more **participative** and hence reduce industry-department litigations.

d) The system has been thoroughly tested and LF/SUC payments, including payments related to AGR case, of approx INR 50000 cr have been received

through the system. The system has started to be used for issuing LF & SUC assessments as well as carrying out deduction verifications of all licensees. Access operators have been intensively engaged since design and development of SARAS and are using the system for making payments since October 2019 and also for submitting AGR Statements, deduction claims and other compliance related documents. All standalone operators, roughly 2000 in number, across India have also been onboarded and oriented by CCAs for smooth adoption of SARAS across the country and are also using the system for all license finance compliance in regular course.

7.13 Indian Telegraph Right of Way Rules, 2016

To alleviate Right of Way (RoW) related difficulties associated with creation of both underground (optical fibre cables) and over ground infrastructure (telecom towers, wi-fi access points), it was needed to formulate appropriate rules using the provisions contained in various sections and sub-sections of the Indian Telegraph Act, 1885, which was enacted in 1885 to deal with the laws relating to telegraphs in India. In exercise of the powers conferred by sub-section (1) and clause (e) of sub-section (2) of section 7 read with sections 10, 12 and 15 of the Indian Telegraph Act, 1885(13 of 1885), the Central Government has formulated the Indian Telegraph Right of Way Rules, 2016 to regulate underground infrastructure (optical fibre) and over ground infrastructure (mobile towers) and notified in the Gazette of India on 15th November, 2016. The notification has been made available on the departmental website www.DoT.gov.in/Home/Gazette Notifications.

Further, an amendment in sub-rule (2) of rule 14 in the Indian Telegraph Right of Way Rules, 2016 has been notified in the Gazette of India, Extraordinary as the Indian Telegraph Right of Way (Amendment) Rules, 2017 vide G.S.R. 407(E) dated 21st April, 2017 for deleting the expression "within a period of sixty days from the date of coming into force of these rules". In pursuance of rule 14 of the Indian Telegraph Right of Way Rules, 2016 Dispute Resolution Officers in respect of all the States/Union Territories have been notified in the Gazette of India.

7.14 **PPP-MII {Public Procurement (Preference to make in India)} Order, 2017**

In line with DIPP's Public Procurement (Preference to Make in India), Order 2017, DoT has notified the Public Procurement (Preference to Make in India) Order, 2017 for telecom products, services and works for telecom sector on 29.08.2018. In all 36 telecom products and services have been identified with respective PMI and local content for which the local suppliers will get market access in Government procurements. PMI will make available market access to domestic companies and huge domestic market will enable them scaling up their production and also being competitive.

7.15 Social Media Cell of DoT:

Social Media Cell was established in DoT in 2016 which is responsible for the following activities in DoT:-

a) Covering the important events carried out by DoT and its units and thereafter posting on various Social Media platforms of DoT such as Twitter, Face book, YouTube, Koo etc.

b) Posting other important information related to policies/activities/ initiatives related to Telecom matters on Social Media Platforms of DoT after liasoning with various Division/wings and PSUs of DOT.

c) Running DoT Twitter Seva launched by Hon'ble MOSC(I/C) through which various queries/complaints/feedback coming on Twitter handles of Hon'ble MOSC(I/C) and DoT are resolved. Twitter Seva is a web based tool on which all the TSPs , important ISPs and various DoT divisions are on boarded.

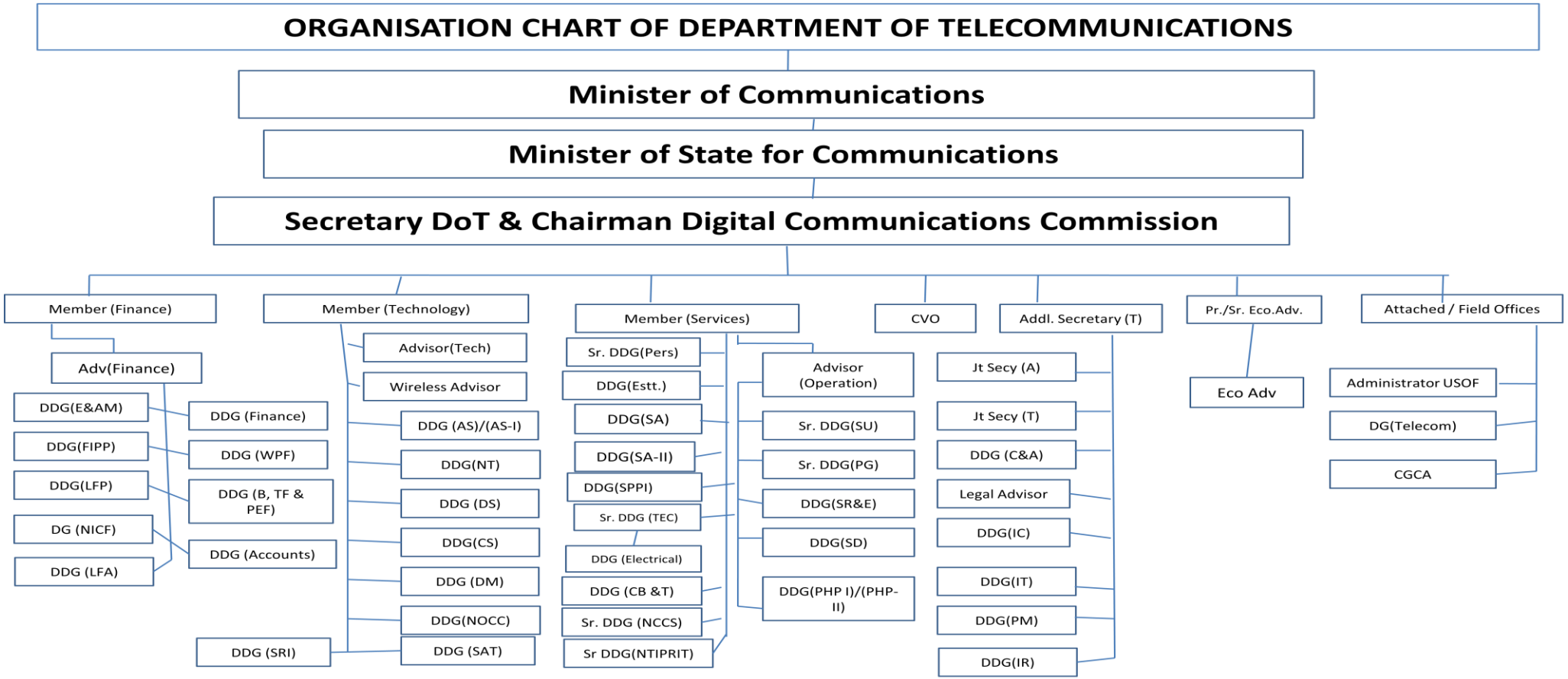
Annexure-I

Second Schedule to the Allocation of Business (AoB) concerning Department of Telecom

Item No. of AoB	Entries
1.	Policy, Licensing and Coordination matters relating to telegraphs, telephones, wireless data, facsimile and telematics services and other like forms of communications
2.	International cooperation in matters connected with telecommunications including matters relating to all international bodies dealing with telecommunications such as International Telecommunication Union (ITU), its Radio Regulation Board (RRB), Radio Communication Sector (ITU-R), Telecommunication Standardization Sector (ITU-T), Development Sector (ITU-D), International Telecommunication Satellite Organization (INTELSAT), International Mobile Satellite Organization (INMARSAT), Asia Pacific Telecommunication (APT).
3.	Promotion of standardization, research and development in telecommunications
4.	Promotion of private investment in Telecommunications
5.	Financial assistance for the furtherance of research and study in telecommunications technology and for building up adequately trained manpower for telecom programme, including – (a) assistance to institutions, assistance to scientific institutions and to universities for advanced scientific study and research; and (b) grant of scholarships to students in educational institutions and other forms of financial aid to individuals including those going abroad for studies in the field of telecommunications.
6.	Procurement of stores and equipment required by the Department of

	Telecommunications.
7.	Digital Communication Commission.
8.	Telecom Regulatory Authority of India.
9.	Telecom Disputes Settlement and Appellate Tribunal
10.	Administration of laws with respect to any of the matters specified in this list, namely :- (a) The Indian Telegraph Act, 1885 (13 of 1885) ; (b) The Indian Wireless Telegraphy Act, 1933 (17 of 1933); and (c) The Telecom Regulatory Authority of India Act, 1997 (24 of 1997).
11.	ITI Limited
12.	Post disinvestment matters relating to M/s. HTL Ltd.
13.	Bharat Sanchar Nigam Limited (BSNL)
14.	Mahanagar Telephone Nigam Limited (MTNL)
15.	Videsh Sanchar Nigam Limited and Telecommunications Consultants (India) Limited.
16.	All matters relating to Centre for Development of Telematics (C-DOT).
17.	Residual work relating to the erstwhile Department of Telecom Services and Department of Telecom Operations, including matters relating to – (a) cadre control functions of Group 'A' and other categories of personnel till their absorption in Bharat Sanchar Nigam Limited. (b) administration and payment of terminal benefits.
18.	Execution of works, purchase and acquisition of land debitable to the capital Budget pertaining to telecommunications.

Annexure-II



LEGEND

DCC: Digital Communications Commission
DDG: Deputy Director General
WPF: Wireless Planning & Finance
LFP: Licensing Finance Policy
LFA: Licensing Finance Assessment
AM: Asset Management
E&T: Establishment & Training
B&PEF: Budget & Public Enterprise Finance
FIPP: Foreign Investment Policy & Promotion
NICF: National Institute of Communication Finance

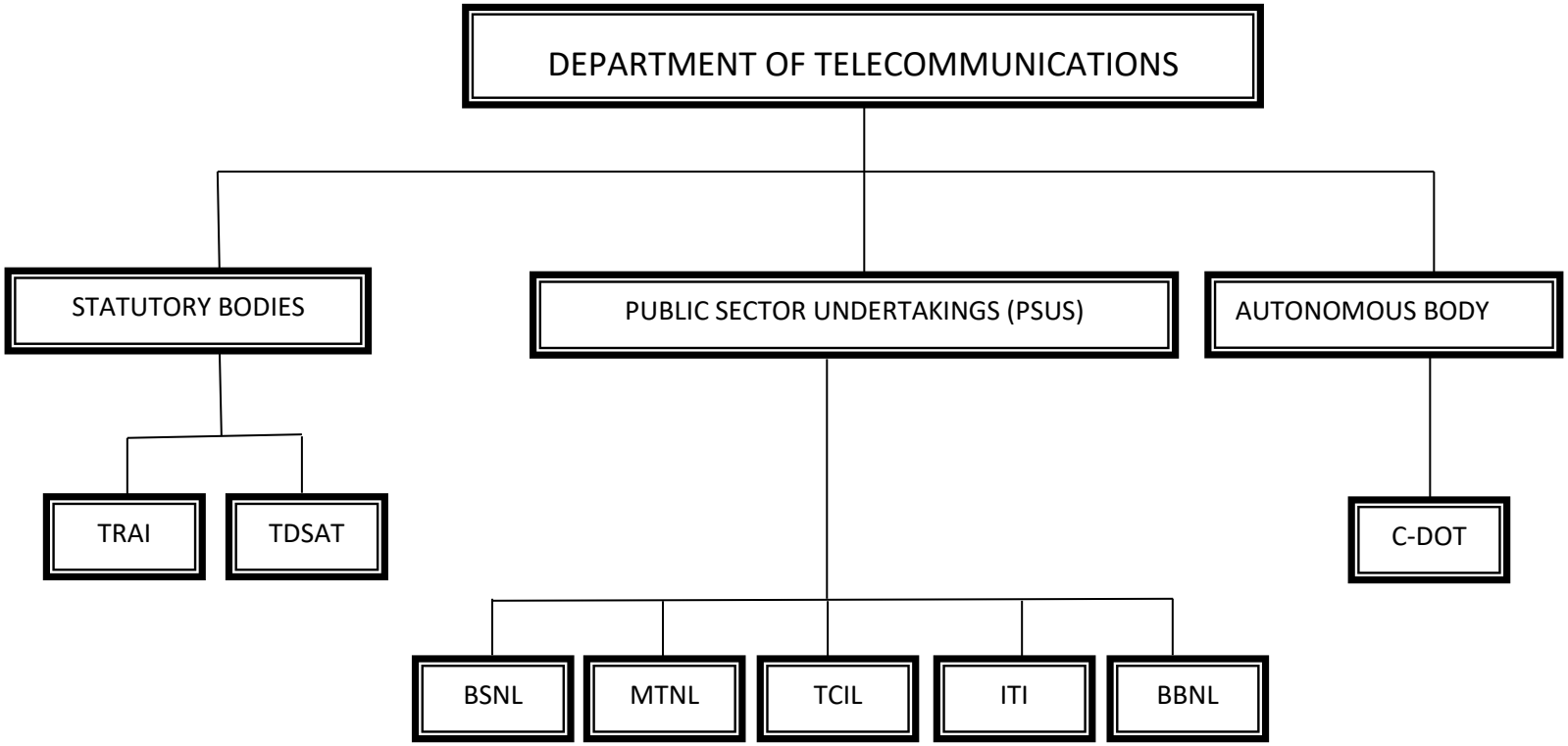
AS: Access Services
CS: Carrier Services
DS: Data Services
NT: Network & Technologies
IR: International Relations
DM: Disaster Management
NOCC: National Operations Control Centre
SAT: Satellite
SRI: Standardization, R&D and Innovation
Estt: Establishment
Pers: Personnel
SA: Security (Assurance)
PG: Public Grievances

SD: Skill Development
SU: Service Unit
PHP: Phone Priority
SPPI: Security (Policy Planning & Intelligence)
SR&E: Service Relations & Estate
CB&T: Capacity Building & Training
NCCS: National Centre for Communication Security
TEC: Telecom Engineering Centre
NTIPRIT: National Telecom Institute for Policy Research, Innovation and Training
Eco: Economic
ERU: Economic Research Unit

Jt Secy: Joint Secretary
A: Administration
T: Telecom
C&A: Coordination & Administration
IC: International Coordination
PM: Project Management
IT: Information Technology
USOF: Universal Services Obligation Fund
CGCA: Controller General of Communication Accounts
Tech: Technology

Annexure-III

Public Sector Units, Statutory bodies and Autonomous Organisations under DOT



ATTACHED OFFICES

1. **Telecommunications Engineering Centre (TEC)**
2. **Universal Service Obligation Fund (USOF)**
3. **Director General (Telecom) Head Quarter**
4. **Controller General of Communication Accounts (CGCA)**

1. Telecommunications Engineering Centre (TEC)

Telecommunication Engineering Centre (TEC) was first established as Telecommunications Research Centre (TRC) in the Posts and Telegraph Department directly under the control of the P&T Board of the Ministry of Communications in year 1956 with main function of Research and Development (R&D) and advising the government on technical matters. It was also entrusted with all technical functions related to design, development, research, standardization, testing and certification of all telecommunication systems and equipment in the country. Subsequently, Centre for Development of Telematics (C-DoT) was constituted as an autonomous society in 1984 to design digital switching systems suitable for Indian environment. TRC was bifurcated in 1988 into two entities namely TRC Society – subsequently merged with C-DOT; and Telecommunication Engineering Centre (TEC). TEC continued to carry out rest of the functions viz. standardization, testing, certification and advising the Government in technical matters.

Over the years, keeping pace with the changing roles and policies of the Government, Telecommunications Engineering Centre has evolved into a knowledge hub, advisory body and think tank in the telecommunications and Information & Communication Technologies (ICT) sector to provide technical expertise to the Governments and industry for sustainable, harmonized and rapid growth of communication infrastructure in the country.

With changing scenario of telecommunication services across the world, the telecom ecosystem is becoming important pillars for industrial development, economic growth and nation building. Consequently, the role of Telecommunications Engineering Centre (TEC) has expanded so as to ensure interoperability through standards/specification and ensuring security/safety through testing/certification of telecommunications and ICT systems in the country. To realize the vision of Atmanirbhar Bharat, proper eco-system of standardization, quality, accreditation, testing and certification is necessary. It emphasizes the prominent role of TEC in this ecosystem for indigenous

manufacturing in ICT sector. In the convergence era, the need of standards/ specifications is not only increasing in the core telecom sector but also horizontal use of ICT in the different sectors is necessitating the need of cross-sector standardization at the enlarged scale. At present, Telecommunication Engineering Centre is carrying out following functions related to standardization, testing, certification, accreditation etc. as given below:

a) Formulation of Standards, Specifications {Generic requirements (GR), Interface requirement (IR), Service requirements (SR)} and technical regulation {Essential Requirements (ER)} in the field of telecom and related ICT sector.

b) Administering Mandatory Testing & Certification of Telecom Equipment (MTCTE) framework as Telegraph Authority

c) Testing & Certification of Telecommunication Equipment/ Interfaces/ Services against TEC Standards;

d) Granting Certificate of Approval (CoA) against vendor specifications;

e) Technology Approval for C-DoT and other R&D Organizations

f) Policy initiatives for promoting standardization in telecom & related IT sector

g) Conducting field trials and validation of Technology/ Product developed by C-DoT

h) Administering and Coordinating National Working Groups (NWGs) constituted corresponding to ITU-T Study Groups in various ICT domains. These NWGs comprises members from Industry, Academia, Service Providers, R&D Organizations, Scientific Bodies, Subject Experts and Government departments/ organizations (DoS, MoI&B, MoD, MHA, MoRTH, MeitY, CSIR, NPL, BIS, etc.)

i) Advanced Test Labs viz. Next Generation Network (NGN) test lab and IPv6 Ready Logo lab for testing of telecom products

j) Designation Authority for domestic Conformance Assessment Bodies (CAB) and Certification Bodies (CB).

k) National Enquiry Point for WTO –TBT (Technical Barrier to Trade) agreement for telecom sector

l) TEC nominee is on IEEE-SA's Standards Board (SASB) as part of the IEEE initiative under Government Engagement Program for Standards (GEPS)

m) Complaint resolution for local content under PPP-MII (Public Procurement Preference to Make in India) of Department

n) Providing technical advice/ inputs for implementation of Production Linked Incentive Scheme of DoT

o) Providing technical support to DoT and other government organizations viz. TRAI, TDSAT, WPC, USOF etc.

p) Preparing study papers/white papers on the standards, facilities and features of the telecom equipment, systems and services to keep abreast with the latest technological developments.

q) Conducting knowledge sharing sessions/ workshops with relevant stakeholders in the field of telecom technology, policy, technology roll out, standardization and processes.

r) Adoption of standards of other national/ international Standard Development Organisations (SDOs) through a well-defined consultation process.

s) Participation in the international pre-standardization/ standardization activities of international Standardization Organizations, viz. ITU, APT, WRC, IETF, ETSI 3GPP, OneM2M etc.

Aforementioned activities are carried out through various specialized divisions such as Mobile Technology, Radio-communications, Future Networks, Telecom Security, Internet of Things (IoT), Smart Network, Next Generation Switching, Information Technology, Transmission, Fixed Access, Telecom Certification,

Standardization, MRA, Lab Divisions etc. In addition, four zonal Regional Centres at Delhi, Mumbai, Bengaluru and Kolkata, carries out testing and certification activities for telecom products and services for conformance to the standards/ specification. Every division is headed by a SAG level officer designated as DDG and TEC is headed by a HAG level officer designated as Sr.DDG& Head TEC.

TEC formulates standards through a well-established comprehensive multi-tier consultation process involving diverse stakeholders viz. industry, service providers, business/ industry associations/ consortiums, academia, R&D organizations, scientific bodies, subject experts, consumer representatives and Government departments/ organizations. It has formulated more than 600 standards/ specifications as on date in the field of telecom & related ICT domain.

To develop domestic testing ecosystem, TEC has deployed and validated NGN transport lab, IPv6 Ready Logo lab, Control Lab (meant for testing 4G & IP Multimedia systems) and Green Passport Lab (meant for energy efficiency testing). Many other labs are such as EMI/EMC Lab, Security Lab, Access Lab, CPE&TL and Safety lab are in various stages of planning. In addition, for developing the testing capacity in public/ private sector in India and in MRA partner countries, TEC has notified Scheme for Designating Domestic Testing and Certification Bodies for Conformity Assessment of Telecommunication Equipment Scheme for Recognising Foreign Testing and Certification Bodies for Conformity Assessment of Telecommunication Equipment.

TEC is also responsible for administration and coordination of National Working Groups (NWGs) constituted corresponding to ITU-T Study Groups in various ICT domainsRegular meetings of NWGs are convened in TEC, and are attended by telecom service providers, equipment manufacturers, telecom solution providers, members of academia and representatives of Government departments/ ministries. All draft technical papers, called 'Contributions', are discussed, edited and ratified in these NWGs, before submission to ITU. These NWGs are technical bodies which are headed by respective Divisional Heads who have relevant technical competence.

Internet of Things (IoT) Experience Centre

The Internet of Things (IoT) has revolutionized the way businesses, industry, government and consumers interact with the physical world. To get familiar with amazing IOT technologies, an IoT Experience Centre has been established in TEC, which demonstrates working of different IoT related technologies in real time with various use cases such as Smart Home Solution, Women Safety Device, Smart Light and Lighting Controller, Vehicle Tracking device, Asset Tracking, Car Parking Sensor, Smart Plug solution with gesture based lighting, Customer Feedback Device, Motions and environmental sensor, Temperature and Humidity monitoring device etc.

Indian Telegraph (Amendment) Rules, 2017

TEC initiated policy of mandatory testing has been notified as Indian Telegraph (Amendment) Rules, 2017 in Gazette of India Extraordinary vide G.S.R. 1131(E) dated 5th September 2017 adding "Part XI - TESTING AND CERTIFICATION OF TELEGRAPH", which inter alia prescribes for mandatory testing and certification of all telecom equipment before its sale, import or use in India.

Procedure for Mandatory Testing and Certification of Telecom Equipment (MTCTE)

TEC is implementing aforesaid policy of mandatory testing and has formulated "Procedure for Mandatory Testing and Certification of Telecom Equipment (MTCTE)" document. The main objectives of MTCTE framework is to ensure that any telecom equipment does not degrade the performance of existing network; safety of the end–users; RF emissions from equipment is within safe limits; and telecom equipment complies with the relevant national and international regulatory standards &regulations. Technical Regulations in the form of Essential Requirements (ERs), which are mandatory to be complied under MTCTE framework, has been formulated for various telecom and related IT equipment. Essential requirements (ERs) are modular and comprises of EMI/EMC, Safety, Technical, Security and Other Requirements like Specific Absorption Rate (SAR), IPv6 etc. Testing under this framework is envisaged through TEC labs, TEC

designated domestic Conformity Assessment Bodies (CABs) or TEC recognized foreign CABs of MRA partner countries.

MTCTE Portal

In order to facilitate, Ease of Doing Business (EoDB) for stakeholders and to bring in efficiency & transparency in the implementation/administration of MTCTE framework, an online MTCTE web-portal https://www.mtcte.tec.gov.in/ has been developed. The whole process of application, test report upload/ evaluation and certificate issuance has been made online by bringing in all stakeholders i.e. applicant, manufacturers, test labs, evaluators and certificate issuer on the same platform.

Testing Labs in TEC

In its endeavour of making India AtmaNirbhar in telecom testing capacity, apart from designating private test labs as Designated CABs, TEC has also set up state of art labs for various advanced testing domains. These advanced test systems can also be made available to domestic start-ups, SMEs, incubators, developers, R&D organization, manufacturers, academia and research scholars for experimentations and to boost their indigenization efforts.

(i) NGN Control Lab: NGN Control Lab (also commonly known as Mobile Core Testing Lab) has been set up in TEC, which can test different elements of the Core Networks by simulating all the surrounding elements. The elements could be tested in isolation or in any combination. The testing capabilities of the lab are;

- Wireless Core testing comprising of complete LTE Core Network testing or testing of individual elements within the Core Network i.e. Mobility Management Entity (MME), Serving Gateway (SGW), PDN Gateway (PGW), Policy and Charging Rules Function (PCRF) and other related nodes.
- Complete IMS Network testing or testing of individual elements within the IMS Network (E.g: P-CSCF, S-CSCF, I-CSCF, SBC, HSS, Media GW, Tr GW and other related nodes;)
- End-to-End testing includingwireless core + IMS testing;
- Testing of services such as Data, Video, VoLTE, SIP session for Wi-Fi Calling;

- Diameter testing: The test solution also ensures testing of diameter based interfaces.

(ii) Green Passport (GP) Lab: Setting up state-of-art Green Passport (GP) Lab in TEC is achievement of a significant step in Government's endeavour for Green Telecom and reducing carbon footprint in the sector. Government accepted recommendations of TRAI and issued instructions on "Approach towards Sustainable Telecommunications" vide DoT CS wing circular No. 16-06/2011-CS-III dated 7th January 2019, inter alia entrusting TEC with the work of (i) Setting up the model lab facility for certification of telecom equipment and service on the basis of ECR ratings (ii) Finalisation of 'Energy Consumption Rating (ECR) document' and thereafter (iii) Making testing and certification of all telecom equipment and services as mandatory for Green Passport. TEC has finalized standard for Energy Consumption Rating (ECR), which describes guidelines on measurement metrics and measurement methodology and also established Green Passport Lab, which will be used for energy efficiency testing and award of Green Passport certification.

(iii) IPv6 Ready logo lab: TEC has established IPv6 Ready logo test bed, which is unique in India and one among seven in the whole world; other six are in USA, Japan, China, Taiwan, France and Korea. Lab is accredited by IPv6 Ready Logo Committee under IPv6 Forum which is an International body. The lab has the capability of conducting Conformance as well as Inter-operability testing of software/ equipment which have implemented IPv6 stack. TEC IPV6 lab is playing catalytic role in faster uptake of IPv6 implementation in India and development of indigenous products implementing IPv6 stack.

(iv) NGN Transport lab: TEC has established NGN Transport lab having capability of testing network equipment for conformance, performance, functionality, regression, stability, analysis/debugging etc. related to IP protocol and Layer 2-7 testing of network components in NGN environment. The salient features of the lab are:

- Testing capability for IPv6 Core Protocols, IPsec, Internet Key Exchange (IKEv2), Network Mobility (NEMO), Mobile Internet Protocol version 6

(MIPv6), Dynamic Host Configuration Protocol for IPv6 (DHCPv6), Session Initiation Protocol (SIP) functionalities

- Capability for testing Layer 2 and Layer 3 protocols in NGN environment for the Data networking/switching equipment's such as routers, Firewalls, LAN switches etc,
- Capability for testing Session Border Controller functionalities and features such as QoS management, Signalling protocol interworking, NAT, Firewall, Protocol translation, codec support and negotiation. Media Gateway, PABX and Media Gateway Controller/ Soft-switch for various protocols/features.
- Can operate in Multi User and Multi Test Case environment and has the capability of performing remote testing of DUTs.

2. Universal Service Obligation Fund (USOF)

- Universal Service Obligation Fund (USOF), formed by an Act of Parliament, was established w.e.f. 01.04.2002 under the Indian Telegraph (Amendment) Act 2003 (further amended in 2006), to provide financial support for the provision of telecom services in commercially unviable rural and remote areas of the country. It is an attached office of the Department of Telecom, and is headed by the Administrator, USO Fund, appointed by the Central Government.

- The resources for implementation of USO are raised by way of collecting a Universal Service Levy (USL), which is 5% of the Adjusted Gross Revenue (AGR) of Telecom Service Providers. It is a non-lapsable Fund. Levy amount is credited to Consolidated Fund of India. Fund is made available to USOF after due appropriation by the Parliament

- The USO Fund was established with the fundamental objective of providing access to 'basic' telecom services to people in the rural and remote areas at affordable and reasonable prices. Subsequently the scope was widened to provide subsidy support for enabling access to all types of telecom services, including mobile services, broadband connectivity and creation of infrastructure like OFC in rural and remote areas. As per the Rules, the following services shall be supported by the Fund:-

- The implementation of the USO related activities is carried out by the "eligible operators", i.e. the entities having valid license or registration or authorization from Central Government/ Department of Telecommunication for providing telecom services or infrastructure or any other entities as specified by the Central Government from time to time. The implementation status of the activities, being undertaken by the USO Fund, is available on USOF website (www.usof.gov.in).

- As per the Rules, the following shall be supported by the Fund:

    (i) Stream-I: Provision of Public Telecom and Information Services

(ii) Stream-II: Provision of household telephones in rural and remote areas as determined by the Central Government from time to time

(iii) Stream-III: Creation of infrastructure for provision of Mobile Services in rural and remote areas

(iv) Stream-IV: Provision of Broadband connectivity to villages in a phased manner

(v) Stream-V: Creation of general infrastructure in rural and remote areas for development of telecommunication facilities

(vi) Stream-VI: Induction of new technological developments in the telecom sector in rural and remote areas

- Some of the schemes, being implemented by USOF include BharatNet Project; Provision of mobile services in Left Wing Extremism (LWE) affected areas; Mobile coverage of uncovered villages; Comprehensive Telecom Development Plan (CTDP) for Andaman & Nicobar Islands, Mainland (Kochi) and Lakshadweep Islands including Submarine OFC Connectivity between Mainland India and these Islands; Comprehensive Telecom Development Plan (CTDP) for the North-Eastern Region, etc.

3. Director General of Telecommunications, Head Quarter

The office of **Director General of Telecommunications (DGT)** is an attached office of the Department of Telecommunications (DoT) and is headed by an Apex level officer. The post of DGT was created as a result of the latest cadre review of ITS. Director General Telecommunications (DGT) is the head of 39 DoT Field Units in 22 Licensed Service Areas located across all over the country. Headquarters of Director General Telecommunications (DGT-HQ) is located in New Delhi.

Genesis of TERM Cells: With the increasing number of telecom operators in the country, the Government felt the need for presence of Telegraph Authority in the field at all the License Service Areas and Large Telecom Districts of the country, in order to ensure that service providers adhere to the license conditions and for taking care of telecom network security issues. With the growth of private telecom and internet services, an increase in illegal / clandestine telecom operations was also observed. To address these issues, the Government created initially four Vigilance Telecom Monitoring cells (VTM) initially in Nov.2004 at Delhi, Mumbai, Hyderabad and Chennai. Nine more VTM Cells were created later during 2006 in telecom circles of Punjab, Rajasthan, Gujarat, Kerala, Karnataka, Maharashtra, Tamil Nadu, West Bengal and UP (E) and fifteen VTM Cells were subsequently added in Jan 2007 for Andhra Pradesh, Bihar, Madhya Pradesh, Haryana, UP (West), Andaman & Nicobar, Assam, Chhattisgarh, Jammu & Kashmir, Jharkhand, Himachal Pradesh, North East-I, North East-II, Orissa and Uttaranchal. Six more VTM Cells were added in March, 2007 for Kolkata, Ahmedabad, Bangalore, Pune, Jaipur and Lucknow, taking the total number of VTM Cells to 34.

Since formation of Vigilance & Telecom Monitoring (VTM) Cells in the DOT, the role and functions of VTM Cells have increased many-fold. With a view to reflect the entire gamut of functions assigned to the Cells and to distinguish their role vis-a-vis staff-vigilance activities, the name of VTM Cells has been changed to Telecom Enforcement, Resource and Monitoring (TERM) Cells w.e.f. 5th August 2008.

In May 2013, three new units namely Security, New Technology and PG were also created with existing LSA to cater to the various functions in the Field. In February 2017, 34 TERM Cells of Department of Telecommunications were restructured and a unified structure including TERM, Security, PG and NT was created in each LSA headed by Advisor/Sr DDG in all the 22 LSA field units spread in 39 field units all over the country.

- **<u>The mandates of the DGT-HQ</u>**

  - Monitoring the work performed by 22 LSAs headed by HAG+/HAG Level offices.
  - Administrative and Establishment inspection of LSA offices.
  - Conducting regional and All India meeting for review and functioning of LSAs.
  - Implementation and monitoring of various licensing conditions of all licenses issued by DoT.
  - Maintenance of TARANGSANCHAR Portal to provide Electromagnetic Radiation (EMR) Information for general Public.
  - Giving telecom policy related Inputs to AS/CS/DS wing of DoT.
  - Development, Implementation, operationalization and monitoring of different projects/schemes approved by DoT, like, Telecom Analysis and Fraud Management and Consumer Protection (TAFCON), Central Telecom Subscriber Database system (CTSDS), Grievance Redressal System named Safe Access of Telecom Resources without Harassment and Infringement (SATHI), MNP fraud prevention database system (MFPDS) and Calling line name identification System (CLNIS).
  - Monitoring of building infra related functions such as energy functions such as energy conservation and fire safety.
  - Ensuring Powering of telecom towers with renewable energy.

4. Controller General of Communication Accounts (CGCA)

The office of Controller General of Communication Accounts (CGCA) is an attached office of the Department of Telecommunications (DoT) and is headed by an Apex level officer. The post of CGCA was created as a result of the first cadre review of the IP&TAFS. The office of the CGCA presently functions from the NICF Campus at Ghitorni, New Delhi. The CGCA works under the overall supervision and control of Member (Finance), DCC.

- **The mandates of the CGCA**

  - Monitoring of the work performed by Pr. CsCA/CsCA/Jt. CsCA offices.
  - Internal Audit of all the field units of DoT.
  - Administrative and Establishment inspection of Pr. CsCA/CsCA / Jt. CsCA offices.
  - Conducting regional and All India meeting for review of functioning of all Pr. CsCA/CsCA /Jt. CsCA offices
  - Enhancement and maintenance of Pension Software "SAMPANN". This software is presently handling 1.5 lakh cases. All VRS, 2019 retirees of BSNL are being disbursed pension through this software.
  - Around 5 lakh legacy BSNL & MTNL pensioners are to be migrated on the SAMPANN platform, which thereby would cater close to 7 lakh pensioners, thus, making it one of the largest payment platforms serving the pensioners.
  - Cadre Controlling authority of Group 'C' and Group 'B' Non-Gazetted officials.
  - Recruitment of Group C (JA/LDC/MTS/Steno) staff for DoT.

- **Establishment of CGCA**

Presently, there are following five verticals under the CGCA, headed by Jt. CGCA an SAG level officer's under the overall supervision of Additional CGCA, an HAG+ level officer -:

I. Coordination & Administration
II. Revenue
III. Budget , Accounts & IT
IV. Internal Audit
V. Manual & Codification

- **<u>Functions of the O/o CGCA</u>**

- Management & processing of Bank Guarantees of Licensees & monitoring of decentralized licenses. Maintenance & monitoring of SARAS software for the BGs entered by CCAs.

- Processing the cases with CCAs/LSAs/WPC wing and AS/CS/DS wings for No Due Certificates in respect of licenses.

- Supervision of Status reports & Show cause cum Demand notice issued to access regarding assessment of decentralized licenses.

- Processing & disposal of appeals on agreement conditions and Rules/orders & DVR from licensees against the assessment done by CCAs.

- SUC assessment based on AGR finalized by LFA wing DoT, CAG reports, Special Audit Reports & Outstanding SUC dues in respect of Commercial VSAT and INSAT MSS-R operators.

- Review of FBG & Supervision of WPF module w.r.t reports received in e-Lekha with WPF module.

- Processing and disposal of all types of Pension, Revision of Pension, Family pension grievances received from President, PMO, DOTHQ, Pension Grievances in CPGRAMS and direct receipts form pensioners.

- Organization of Quarterly Pension Adalat, National Pension Adalat and adopting various other initiatives for providing safe, caring and friendly environment of assistance to the pensioners.

- Enhancement and maintenance of Pension Software "SAMPANN".

- Handling the issues related to various types of Banking arrangements in CCAs such as recovery of Penal interest on delayed remittances from Banks, recovery of excess Pension Payment, reconciliation of banking transactions& review of RBI Balances.

- Supervision of Pension Voucher Audit done by CCAs & Issues related to PVA software viz technical support etc.

- Handling the GPF Final Payments Cases & examination & Processing of payment of Interest on delayed payment of GPF.

- Systematic review of State of Work Report (SWR) & Expenditure w.r.t. allotment to have a clear picture of functioning of any CCA office.
- Development, maintenance & uploading of information on CGCA Website and providing links to homepage of field units, IT solutions and allied work.

- Formulate internal audit policy /methodology for DOT and Updating / Re-designing internal audit questionnaire.

- Framing of annual schedule of audit, conducting Internal audit of Pr. CCA /CCA offices and DOT field units NICF,TEC,TERM, C- DOT, NTIPRIT, RLOs, WMOs, WMS and WPC HQ & reviewing, monitoring and examining IA reports.

- Introduction of concept of performance audit In addition on the directions of DoT HQ, this wing takes up matter of special audit of occasional nature.

- USOF work of NOFN/BharatNet/c/w Audit and monitoring of recovery & Co-ordination with field units (Pr.CCA& CCA) in matter of USOF.

- Formulation, compilation and Updation of Telecom Accounts Manual, Compilation of circulars/notifications issued by DOT and CGCA and Collection & Updation of circulars/ notification / orders / OM's from Ministry of Finance, DOP & T and other various ministries etc.

- The CGCA shall monitor the functions delegated by the DoT HQ The CGCA will discharge the role of Cadre Management of Group 'C' officials posted in the field offices. The CGCA will be responsible for coordination, recruitment, recruitment rules etc. for the Group 'C' cadre. Conducting various examinations and DPC.

- Asset Management under DoT including approval of estimates for repair/renovation/addition/alternation to existing departmental building, repair and additions to rented buildings for civil and electrical work, monitoring of leased accommodations taken from BSNL, etc.

- Administrative and Establishment inspection of Pr. CsCA/CsCA/Jt. CsCA offices.

- Conducting regional and All India meeting for review of functioning of all Pr. CsCA/CsCA /Jt. CsCA offices.

- Monitoring of LIMBS for proper handling of court cases in various courts.

SUBORDINATE OFFICES

1. **Wireless Monitoring Organization (WMO) including its field offices of four (4) Regional Monitoring headquarters and 28 Wireless Monitoring Stations which includes one international satellite monitoring earth station – under WMO**

2. **National Telecommunications Institute for Policy Research, Innovation & Training (NTIPRIT)**

3. **National Centre for Communication Security (NCCS)**
4. **National Institute of Communication Finance (NICF)**

1. Wireless Monitoring Organisation (WMO)

Wireless Monitoring Organization (WMO) is the nodal agency for providing interference free spectrum to millions of end users in the country. Wireless monitoring is an integral part of the spectrum management. WMO, a subordinate office of the WPC Wing, carries out spectrum monitoring through a network of 1(one) International Satellite Monitoring Earth Station (ISMES), 5 International Monitoring Stations (IMSs), and 22 Wireless Monitoring Stations (WMSs), strategically located all over India. WMO is also equipped with 5 Radio Noise Survey Units, which undertake detailed and complicated measurements to aid in the spectrum management activity. As wireless monitoring for spectrum management is a specialized activity, Officers of Indian Radio Regulatory Services (IRRS) are posted in WMO for ensuring interference free spectrum for public telecom services and wireless users. WMO also runs its own Training and Development Centre (T&D Centre) at Ghitorni, New Delhi for spectrum monitoring & management related courses. In addition, WMO, with its 10 Inspection Units, carries out physical inspection of wireless installations.

(a) The major function of Wireless Monitoring Organisation

- Resolution of the harmful interference;
- Monitoring for identification of frequency sub-bands for introduction of new services and/or for additional allocation to existing services;
- Monitoring for spectrum recovery — unused/ under-used frequency authorizations;
- Monitoring for ensuring adherence to licensing conditions;
- Monitoring / measurements for sharing studies;
- Assistance to domestic wireless users;
- Assistance to foreign administrations;
- Conducts ASOC Examination for Radio Amateur licenses (HAM)
- Participation in special monitoring campaigns of the ITU;
- Issue of Dealer Possession Licence (DPL) for wireless apparatus under Indian Wireless Telegraphy Act, 1933;

- Measurements on radio emissions for the possible introduction of new radio communication networks, and for studying the EMC compatibility;
- Inspection of licensed installations; and
- Monitoring of space emissions to protect authorized satellite transmissions.
- Execution of national security related spectrum monitoring activity along the border areas by measurements of cellular signal spillage inside Indian territory from neighboring country.

(b) Special Achievements

- WMO undertook special drive to eradicate installation of illegal/ unauthorized signal booster/ repeaters of mobile signal at different cities of the country. A public notice has also been published on the departmental website for creation of public awareness on the unauthorized use of mobile signal boosters.
- The field offices of WMO carried out spectrum monitoring exercise at the international borders to resolve cross border radio frequency interference in various cellular mobile service spectrum bands.
- Resolved RF interference reported by International agencies on the Emergency Position Indicating Radio Beacon (EPIRB) frequency, which is a safety of life service, by identifying and eliminating the source of interference.
- Licenses issued by the field offices of WMO (DPL and NDPL) were made online through Saral Sanchar portal of DoT. Citizens can now apply for fresh/new Dealer possession licenses (DPL) and non-Dealer possession licenses (NDPL) by online filing of application on Saral Sanchar portal of DoT.
- WMO's Satellite Earth Station, ISMES Jalna finds place in Limca Book of Records for developing "Low Cost Satellite Spectrum Monitoring System" under an initiative named "Orbit Spectrum".
- WMO's ISMES Jalna, initiative "Orbit Spectrum"-ensuring violation free usage of Satellite spectrum has also been recognized and awarded by G File Governance Award.

(c) Organization Setup

- 22 Wireless Monitoring Stations (WMS), 5 International Monitoring stations (IMS) and 1 International Satellite Monitoring Earth Station (ISMES) at Jalna, strategically located all over the country;
- WMS and IMS stations carry out radio frequency signals monitoring in the entire MF, HF, VHF, UHF & Microwave Radio Frequency spectrum ranges;
- Training and Development Center, at Delhi, conducts training courses for fresh IRRS Officers/recruits inducted every year through Group "A" UPSC Engineering Services Examinations and other radio monitoring personals viz. Junior Wireless Officers (JWOs) inducted through SSC Examination. It also conducts specialized programs to prepare examiners for the RTR (Aero) examinations and the GMDSS GOC examinations, conducted by the Ministry from time to time as per the schedule.
- Radio Noise Survey Units, located at 4 metros and Hyderabad, are entrusted with carrying out measurements on radio emissions.
- 10 Inspection units, located in different parts of the country, carry out on-site inspection of wireless installations;
- RHQs in 4 metros provide logistic and strategic support to WMSs/ IMSs within their jurisdiction, besides carrying out supervisory function.
- As regards Satellite RF signals Monitoring, International Satellite Monitoring Earth Station (ISMES) at Jalna has facilities to monitor radio emissions originating from satellites in GSO arc of 20 deg. E to 140 deg. E to protect Indian Space Services from interferences caused by the emissions from other satellites of any foreign country or vice versa;

2. National Telecommunications Institute for Policy Research, Innovation & Training (NTIPRIT)

NTIPRIT was established in the year 2010 as National Telecom Academy, the telecom training institute of Department of Telecommunications. Subsequently, in year 2011, the mandate of institute was expanded by bringing into the activities related to Policy Research and Innovations under its ambit and the institute was rechristened as National Telecommunications Institute for Policy Research, Innovations & Training (NTIPRIT). Since then NTIPRIT has grown from strength to strength and the institute is now apex Telecom Training Institute in the country. Department of Personnel & Training has designated NTIPRIT as Central Training Institute (CTI). NTIPRIT is presently operating from the campus of Advanced Level Telecom Training Centre (ALTTC) of BSNL at Ghaziabad.

The institute is being headed by an HAG level officer i.e. Sr.DDG (NTIPRIT) assisted by six (6) SAG level officers (Dy. Director General) and twelve (12) JAG level officers (Director).

The institute is the focal point of training activities for all technical cadres in Ministry of Communications. It caters to the training needs of Indian Telecommunication Service (ITS) & BWS Group 'A' and Group 'B' officers, recruited through UPSC. Probationary officers of these services are imparted two years rigorous training in Telecom technologies, Telecom Enforcement & Resource Monitoring, Licensing, Standards development, Universal Service Obligation (USO) etc. to equip them with necessary knowledge and understanding of technology, management and administrative aspects of Telecom sector.

NTIPRIT is also entrusted with the responsibility of conducting Mid Carrier Training Program (MCTP) of junior, middle and senior management level officers to keep them abreast with the latest development in Telecom Technologies and related challenges arising in the area of Telecom, licensing, monitoring and enforcement. For improving the efficiency and effectiveness of senior officers, training on Team Building, Inter-personal Skills, Stress Management, Communication Skills, Leadership, etc. is also imparted.

During Corona pandemic, NTIPRIT conducted series of webinars on the various aspects of telecom landscape for creating awareness amongst the various stakeholders, including DoT officers, Industry, Academia, Regulators etc. During financial year FY 2020-21, thirty three (33) such webinars were conducted by NTIPRIT.

NTIPRIT regularly organizes in-service trainings, workshops, conference etc. for serving Group 'A' and Group 'B' officers on contemporary needs. NTIPRIT has also started to undertake courses in advanced ICT & Telecom technology areas such as 5G and its applications, AI, Block chain, IoT, Big Data Analytics and Green Energy, etc. Specialized courses on ICT in Disaster Management and Cyber & Telecom Network Security are also conducted. NTIPRIT intends to organize such relevant and useful capacity building programs for the officers of Central Govt., State Governments and other stake holders in Digital Communication space.

As apex training institution of the country in Telecom domain and a premium telecom training institution in the Asia Pacific region, NTIPRIT has also shouldered the responsibility of capacity building for developing countries by conducting several courses under India Trade and Economic Cooperation (ITEC) Programme of Ministry of External Affairs (MEA), Govt. of India. NTIPRIT has conducted nine (9) such courses attended by 144 participants from 53 different ITEC partner countries.

International commitments by Hon'ble Prime Minister & Telecom Minister for capacity building in Telecom domain is catered to by NTIPRIT. NTIPRIT in collaboration with Asia-Pacific Telecommunity (APT) has conducted two online courses in FY 2020-21 for 35 APT Participants from 17 countries and another course is scheduled in October 2021. Variety of courses in ICT and advance Telecom technologies for ASEAN member states are planned to be undertaken by NTIPRIT.

In line with government's drive to promote e-learning, NTIPRIT has conducted first of its kind certification course of 36 hours on 5G to train and certify Officers of Government of India. Another Certificate Course on **Network Security** is also being conducted for 52 Officers of Department of Telecommunications. Such Certification courses would later on be offered to other stakeholders also.

NTIPRIT has also recently taken several Policy Research initiatives to provide valuable inputs to DOT for fulfilling the goals and objectives of National Digital Communication Policy 2018 (NDCP 2018). A Policy Research group on Wi-Fi constituted by NTIPRIT has suggested a unique Centralized Architecture for Wi-Fi proliferation (CAWP), which will facilitate large scale proliferation of WiFi, especially in Rural areas. Patent has been filed by NTIPRIT for the proposed Architecture.

NTIPRIT contributed several Innovative projects during pandemic to effectively fight with the menace of Covid-19. Corona Quarantine Alert System (CQAS) and Bulk Migrant Tracking System (BMTS) were such Innovative ICT solutions offered by NTIPRIT, which were very extensively utilized by several State Governments. URL blocking Management System is another innovative initiative by NTIPRIT.

3 National Centre for Communication Security

National Centre for Communication Security (NCCS) – a centre under Department of Telecommunications is created, with headquarters at Bengaluru, for the purpose of establishing an eco-system of telecom security testing and certification within the country.

In order to make the telecom network more secure and less vulnerable from internal and external threats, Government envisaged a pilot Telecommunication Testing and Security Certification (TTSC) project for testing and validating each network element before its integration with the telecom network. The Security Assurance Standards Facility (SASF) of Department of Telecommunication at Bengaluru is an outcome of this pilot project and will be the national facility for coming up with the Security Assurance Requirements for Telecom equipment to be inducted into the Indian telecom networks.

This entire infrastructure was renamed as National Centre for Communication Security in Oct, 2018.

The objective of NCCS is to establish and operationalise telecom security testing and certification framework within the country under the overall scheme of the Mandatory Testing and Certification of Telecom Equipment (MTCTE). Presently, there are three verticals under NCCS as follows:-

(i) Security Assurance Standards (SAS) Division: Responsible for developing security standards and requirements for ICT equipments. The division is responsible for developing test processes, test suites, security test standards and recommending test tools; and notifying contemporary security features for various network elements of Telecom Network. The SAS unit will prepare the security requirements/ standards called Indian Telecom Security Assurance Requirement (ITSAR) for network elements (or a class of network elements) and notify them. Since its inception the division has prepared the ITSAR corresponding to Wi-Fi AP, Router, Common Security Requirements for ICT equipment, Mobility management Entity (MME), Mobile Device, Subscriber Identity Module (SIM), Serving Gateway (SGW), PDN Gateway (PGW) and Common cryptographic requirement for Telecom network.

(ii) Security Lab Recognition Division :- To create framework for establishing telecom security test labs in India in private and public sector and recognising the telecom security testing labs, notifying Telecom Security test lab recognition mechanism, and Conducting infrastructure assessment for recognition of security test labs.

(iii) Security Certification & Hqrs (SC & Hqrs) : Responsible for the framework of issuing security certificates for the successfully tested products. The work will include evaluation of the test results from Security labs and recommending issuing of Security certification based on the testing performed by recognised labs. SC division shall also be responsible for overall coordination amongst the three verticals and work of NCCS headquarters.

4. National Institute of Communication Finance

The National Institute of Communication Finance (NICF), established in 2000 (with different name and venue), is a Department of Personnel & Training (DoPT) recognized Central Training Institute (CTI) under the Department of Telecommunications. The NICF has been entrusted with the responsibility of imparting training to Indian Posts & Telecom Accounts and Finance Service(IP&TAFS) Group 'A', 'B' cadres, which includes Probationary Training of IP&TAFS Group 'A' officers recruited by the UPSC through Civil Services Examination as well as Induction Training of Group 'B' Officers. It also imparts induction training for Group 'C' recruits. Besides, the induction training, it also provides in-service training to officers and staff of Group 'A', 'B' & 'C' level working in DoT & DoP. In NICF, we also organize thematic national and international seminars and workshops. The NICF is headed by an HAG level officer, i.e., the Director General, who is assisted by two SAG level officers, i.e. Deputy Director Generals and two JAG level officers i.e. Directors.

The NICF caters to the training needs of officers in the Department of Telecom as well as Department of Post at varying levels of seniority. The IP&TAFS Probationers are imparted rigorous training for two years in order to equip them with professional knowledge of the workings of the Department. The officers at both middle and senior management level are also given Mid-Career Trainings (MCTs) to acquaint them with latest developments in the Telecom and Postal sector. The officers are trained in the areas of their core competencies such as licensing and regulatory policy in Telecom Sector including the revenue assessment and revenue collection, spectrum management, management of universal service obligation fund (USOF) including the responsibility assigned as DMA for various USOF projects, Technology Familiarization including regulatory/policy/financial impact of the prevalent technology, etc., Foreign Investment Promotion in Telecom Sector and FDI Policy, FEMA guidelines, Telecom Policy and other related regulations, Finance Advice Accounting, Auditing and Budgeting. They are also imparted training in soft skills such as Stress Management, Communication Skills, Leadership, Team Building, Interpersonal Skills, etc. in order to further enhance their managerial skills and leadership qualities.

As a training institute, the NICF strives to transcend the limitations of classroom training by organizing various workshops, conferences, symposia etc. to encourage participants to exchange best practices and ideas and learn about new trends in the Telecom and Postal Sector in a congenial environment. Of late, the NICF has also ventured into the newer areas in the Telecom Sector and a plethora of training activities have been organized ranging from Digital Payments to Digital Financial Services and Digital Inclusion. Moreover, the NICF has also emerged as a key training centre for Telecom Policies, Spectrum Management, Planning & Licensing, USO Regulation, and so on. Furthermore, to provide greater fillip to the goal of human capacity development in the field of Information & Communications Technology (ICT), the NICF regularly undertakes training of trainers, which creates a ripple effect in terms of human capacity building in the field units of the Department of Telecom and Department of Post located across different regions/places of the country.

NICF partners with other National Academies and Centre of excellence including, Reserve Bank of India Staff College, National Academy of Direct Taxes, Lal Bahadur Shastri National Academy of Administration, Dr. MCRHRD Institute Hyderabad, National Academy of Audit and Accounts, RAKNPA Ghaziabad, Indian Institute of Public Administration, IIT Bombay, ASCI Administrative Staff College of India, Indian Institute of Corporate Affairs, National Institute of Financial Management, Management Development Institute Gurgaon etc. along with other state organizations including Telecom Regulatory Authority of India. NICF also collaborates with International Telecommunication Union (ITU), the UN Specialized Agency for the ICT sector and has recently conducted several capacity building workshops in collaboration with Global Institutes like WHO, ITU etc.

Overall, the NICF seeks to stay abreast of new trends regarding the role of training institutes in a rapidly evolving and changing ICT environment. As the NICF plays a crucial role in the field of Human Resource Training, Training of Policy makers and Trainers' Training, it has emerged as a nodal institute that is central to human capacity development in the field of ICT in India. At present NICF is developing a multi-functional campus at Ghitorni which will enable it to emerge as true Centre of excellence in training & research.

FIELD OFFICES

1. **O/o Controller of Communication Accounts (CCAs) - under CGCA**

2. **(a) Licensed Service Areas (LSAs) – under DG (T), HQ**
   (b) Railway Electrifications Project Circle (REPC) – under Administrative control of LSA Delhi

3. **Network Operation & Control Centre (NOCC) Offices**

4. **Five (05) Regional Licensing Offices (RLOs)- under WPC Wing**

1. Controller of Communication Accounts (CCAs)

Under the overall umbrella of CGCA, there are 5 Pr. Controller of Communication Accounts (Pr. CCA) offices headed by HAG level officers as Zonal head, 23 Controller of Communications Accounts(CCA) offices headed by SAG level officers and 2 by JAG level officers. Apart from that most of the CCA offices have one or two sub offices within their jurisdiction for pension disbursement directly to the account of pensioners according to the "SAMPANN" project recently inaugurated by Hon'ble Prime Minister Sh. Narendra Modi from Varanasi on 29th December 2018.

Restructuring of the department and establishment of CCAs (Erstwhile DOT cell):

In the year 2000 after the formation of BSNL, DOT Cell came into existence as independent field offices of DOT for disbursing the pension and performing other residual executive and administrative functions of the Department. These offices entrusted with the other financial functions like collection of license fee (LF) and spectrum usage charges (SUC) after introduction of revenue share regime in the department in the year 2000.

The work of disbursement of USOF subsidies was delegated to the DOT cell in the year 2003 after the formation of Universal Service Obligation Fund as attached office of the Department for development of rural telephony and infrastructure. Similarly, the work of assessment and deduction verification were decentralized to the CCA offices and they were declared as HOD in the field for all the practical purposes.

After the journey of more than 18 years of establishment now these are the important functions discharged by the Pr. CCA/CCA offices as eldest field offices of the DOT:

1. Compliance of the terms and conditions of the license agreements.
2. Revenue Assessment, Revenue Collection and Maintenance of BGs
3. Pension Authorization, Revision & Disbursement
4. Preparation and Maintenance of proper Accounts

5. Promotion of Digital Payments
6. Monitoring of USoF schemes including the verification and disbursement of subsidy as Designated Monitoring Authority (DMA)
7. Imparting the necessary Training
8. Asset Management being the Estate officer in the field.
9. Handling of Legal Cases and updation on LIMBS.
10. Supervision and maintenance of Budget
11. DDO functions for Pr. CCA/CCA offices and other DoT field units.
12. Vigilance function as Vigilance officer in the field
13. General Administration and any other functions performed etc.

The Pr. CCA and CCA offices conduct various outreach activities like:

- Organizing Digital Payment Melas as part of Smart Cities Initiative of the government.
- Organizing Workshops on Goods & Services Tax (GST):
- Pension Adalats
- Investment Awareness Programs etc.

2.(a) DoT Field Offices in 22 Licensed Service Areas (LSA)

Under the DG (T) office of DoT HQ there are 22 LSA field level offices headed by HAG/HAG+ level officer. They represent Telegraph Authority in the field. Initially these offices were formed as Vigilance Telecom Monitoring (VTM) cell in 2004 to curb illegal/ clandestine telecom operations and to enforce various licensing conditions of licenses issued by DoT HQ. Since formation of VTM cells, its role has increased many-fold by virtue of its nature of functions. VTM cells had been renamed to Telecom Enforcement, Resources and Monitoring (TERM) cell in 2008. Recently TERM has been restructured in 2017 to form LSA units combining functions of TERM, Security, New Technology (NT) and Public Grievances (PG).
All these 22 LSA offices further have five functional verticals:

a. Service Compliance
b. Security
c. Technology
d. Rural Infrastructure
e. Administration

Duties and responsibilities of various functional verticals are as given under:

(a) **Service Compliance:**

- Ensuring compliance of terms and condition of license condition issued by DoT for Access Services, Cellular Mobile Telephony Services (CMTS), Unified Access Service License (UASL), etc. Ensuring compliance of various directors issued by DoT for all licenses.
- To ensure compliance of Electromagnetic Radiation (EMR) by base stations as per the limits prescribed by the DoT from time to time.
- Handling of requests for EMR measurement registered by Public on TARANG SANCHAR Portal.
- Monitoring of compliance to prescribed norms regarding acquisition of subscribers with the objective to ascertain that the mobile service operators are following the DoT guidelines for Subscriber verification before providing connections.

- Service Testing of various Licensed Service Providers for checking roll-out obligation as per license condition.
- Testing and certification of Mobile Number Portability (MNP) of various licensees and Handling complaint of public for MNP.
- Co-ordination with TSPs and concerned organisation for proper Implementation of Emergency Mechanism.
- Monitoring of commitments made by TSPs in improving Quality of Services, Call Drops, etc.
- Approval for Calling Line Identification Restriction (CLIR) facility of subscriber.
- Nodal unit to deal with the suspected mobile numbers reported by MHA portal and take necessary remedial action.
- Represent DoT in District Telecom Committee for installation of Telecom towers.
- Handling of Telecom Analysis and Fraud Management and Consumer Protection (TAFCON) to identify fraudulent connections, connections in Multiple Names, to detect MNP frauds, handling financial frauds and to handle Unsolicited Commercial Communications (UCC) Complaints.

(b) **Security:**

- Handling matters related to Security and Lawful Interception
- Act as technical interface between Security Agencies and Telecom Service Providers and carry out co-ordination between them through regular meetings and consultations.
- Operation and Monitoring of Centralised Monitoring System (CMS) and Internet Monitoring System (IMS) for lawful Interception.
- Testing of Lawful Interception setup of New Licensee for ensuring compliance of guidelines issued by DoT.
- Handling of Grey Market cases reported by General Public and curbing illegal activities, Control over clandestine / illegal operation of telecom networks. Also, to ensure that awareness messages are sent by all TSPs on regular interval to report grey market cases (by general public) to DoT.

- To file FIR against culprits, pursue the cases and issue notices indicating violation of conditions of various Acts and statute in force.
- Analysis of call, subscriber data and traffic data of various licensees.
- Security related Inspection of Internet Lease Line, International/ National Private Leased Circuit
- Detection and Analysis of Non-genuine IMEI cases
- Security Audit of Telecom Network of Service Provider.
- Coordination with LEA in various projects like Crime and Criminal Tracking Network & systems (CCTNS), Anchoring of CERTs of state Government etc.
- To analyse the suspected numbers involved in the cyber-crimes and take remedial steps to reduce the availability of telecom resources to the fraudsters.
- Enforcement and monitoring for the purpose of surveillance under Mandatory Testing and Certification of Telecommunication Equipment (MTCTE) to ensure Telecom Equipment sold or imported in India has undergone testing and certification under MTCTE.
- Ensuring compliance of blocking of the Websites/URLs/IPs/domain by all TSPs/ISPs as reported by DoT HQ.
- Sensitising all TSPs/ISPs about various malware reported by DoT HQ.
- Implementation of IMEI Registry Project.

(c) **Technology:**

- To carry out Inspections of Telecom Service Providers (Access Service, NLD, ILD, ISP, IP, VSAT, etc.) to ensure compliance of various License Terms and Conditions.
- Registration of Public Data Office Aggregator (PDOA) and App Providers under PM-WANI Scheme to provide Internet access to their subscribers through Wi-Fi.
- Ensuring and monitoring uninterrupted Telecommunication services in response to Disaster (Disaster Management).
- Matters related to NOC for selling of the global calling cards, international SIMs etc.

- Ensuring Time synchronization of Telecom Networks including the O&M of related equipment if required.
- Secured Dedicated Communication Network and Effective implementation of IPv6
- ISP Agreement signing is decentralised now and they are done at LSA by Technology Vertical.
- Matters related to NOC for ISP Bank Guarantee retrieval
- Verification of VLR data of TSPs for issue of new Number series to TSPs.

(d) **Rural:**

- Handling Right of Way (RoW) related issues of TSPs and Infrastructure Providers (IP) by coordinating with concerned Central and State Government's department and institutions, local bodies.
- Matters regarding Broadband Readiness Index (BRI) to increase penetration of Broadband in state through State Broadband committee consisting members from State Government, TSPs, TAIPA, etc. LSA head acts as Member convener of the committee.
- Dealing with tower permission cases received from Tower & Infrastructure Providers Association (TAIPA) and TSPs by coordinating with state government for quick resolution.
- Ensuring Network coverage/connectivity of villages for Direct Benefit Transfer (DBT) mission and of Banks in rural areas under Financial Inclusion Planning (FIP).
- Acts as Nodal for driving the National Broadband Mission to connect all villages by fiber to accelerate fiberisation.
- Increase fiberisation of telecom towers and Mapping fiber through GIS tool.
- Enhance connectivity and improve QoS by increasing tower density.
- Ensure Network coverage in Naxalites, Left Wing Extremist and Aspirational district areas through various USO funded projects.
- Design, Planning, Implementation of projects funded by DoT & USOF.

- Duties and responsibilities assigned by DoT & USOF generally/specifically.
- Implementation of Environmentally sustainable Technologies in rural areas.

(e) **Administration:**

- General Administration and Establishment of LSA office to ensure smooth working of office.
- Recruitment of Staff at appropriate level for LSA office.
- Handling Grievances of Public in respect of deficiencies by various operators.
- Responding to RTI queries of applicants and handling their appeals.
- Organising training and skill development programme.
- Holding workshops, conferences and presentations.
- To carry out Building works for LSA offices
- Giving inputs to Parliamentary matters
- Handling Court cases including engagement of legal counsel, Vigilance Cases, Pension etc
- To perform functions of DDO including management of overall budget of LSA.

2.(b) Railway Electrifications Project Circle (REPC) – under Administrative control of LSA Delhi

With large scale electrification of Railway tracks, construction of new electrified railway Routes, concerns were raised to protect telecom infrastructure from hazardous effect arising out of AC traction, the joint committee of P&T and Railways felt to have an organization under DOT to coordinate, regulate and enforce basic principles of Electromagnetic Compatibility compliance wherever Railway route is electrified or proposed for construction of new electrified Railway track for the safety of telecom infrastructure, maintenance personnel and a public at large. As a result, Railway Electrification Project Circle came in to existence in the year 1984 by DOT with a view to have a dispensation in place to provide a single window mechanism of clearance in lieu of multiple SSA's throughout India. At present, this organization is headed by DDG (RE) an officer of SAG level under administrative control of LSA Head, Delhi.

The Primary objective of RE Project is to ensure the enforcement and regulatory work related to Railway electrification by protection of telecom network, avoid degradation of telecom services, safety of maintenance personnel and general public at large from hazardous effects arising out of Electrification of existing and new railway routes by adopting various methods based on international practice to mitigate the effect of EMI on telecom services and their networks, before commissioning of Railway Routes. It is mandatory for Railways to take safety clearance certificate from this organisation, before electrification of any Railway Route / commission of new electrified Railway Routes. This organization is to co-ordinate with various agencies like CORE & its Chief Project Manager's Offices at Ambala, Lucknow, Kolkata, Hyderabad, Chennai, Jabalpur, Danapur, Mumbai & Bhubaneshwar etc., DMRC, BMRC, RVNL, IRCON, MMRDA, Different Private Metro Railway operators & Zonal Construction Wings of Indian Railways and co-ordination with Ministry of Railways, Commissioner of Railway Safety & telecom operators in related to protection of Telecom networks, Monitoring & inspection of protection works and also to sort out the problems with telecom operators and Railways.

3. Network Operation & Control Centre (NOCC) Offices

NOCC is headed by an HAG level officer who is assisted by one or more SAG level officers. The offices of NOCC are located in Delhi, Gurugram and Sikandrabad. Wireless related work is attributed to the Gurugram office while the Sikandrabad office works as monitoring station for telecom services.

NOCC performs function of online operational control, coordination regulation of space segment usage and monitoring of all the satellite based services (Like VSAT (Very Small Aperture Terminal) applications, broadcasting, DTH (Direct-To-Home), HITs (Head-end in the Sky), ISP (Internet service provider) etc.) in India on Indian and foreign satellites; resolving the RF (Radio frequency) interference, mandatory performance verification testing of antennae of satellite earth stations and DSNG (Digital Satellite News Gathering). NOCC monitors and controls parameters of carriers uplink from 1534 Satellite Earth Stations/Teleports/DSNG & more than 2,70,000 VSATs. NOCC has made endeavours to provide the interference free environment to the various satellite users in country and NOCC provides mandatory clearances within three working days to applicant agencies.

The Network Operations Control Center (NOCC) performs important functions of enforcement and regulatory. Broadly its functions are as follows:

- Online Operational control, coordination and Monitoring of all the satellite based services (Like VSAT applications, Broadcasting, DTH, ISP etc.) in India on Indian and foreign satellites.

- Handling Contingency Operations in case of failure of transponders/satellites.

- Providing RF Interference solutions and coordinating with different satellite administration for the resolution of the interference problem(s)

- Mandatory Performance Verifications Testing of all the ground segment satellite earth station antennae for conforming to latest ITU/TEC standards before permitting them to put in operations.

- Testing of ISP satellite Gateways & monitoring of transmissions from these gateways.

- Testing & clearance of Teleports of TV broadcaster(s) and Direct to Home (DTH) service providers

- Testing and clearance of Digital News gathering (DSNG) vans used for live gathering

- Testing of satellite transponder before accepting for operations

- Spot frequency allocations and carrier plan approval to all the INSAT users and foreign satellite users for broadcasting/ DTH/ DSNG, NLD and ILD services (VSAT).

- Verification/ Implementation of license conditions as and when called upon by Licencing cell of DoT

Regulation of space segment: NOCC has been performing regulatory function for usage of space segment by VSATs, NLD (National long distance services), ILD (International long distance services), Broadcasting, DTH (Direct-To-Home) and HITs (Headend in the Sky) services as per their allocation, presently on 35 Satellites Viz. INSAT- 3A, 3C, 48R, 4A, 4B, 4CR, GSAT-8 GSAT-10, GSAT-12, GSAT-14, GSAT-15, GSAT-16, GSAT-17, GSAT-18, Measat-3, 3A, 3B, SES-7, SES-8, SES-9, ST2, IS-17, IS-20, IS-902, IS-906, NSS-6, NSS-11, NSS-12, Asisasat-4, 5, 7, Chinasat-12, Thaicom-4, 5 and APSTAR-7. NOCC, in the year 2018-19 issued 179 uplinking permission and 103 frequency plan approvals to various applicant agencies.

NOCC, in year 2018-19, monitored and controlled various transmission parameters of carriers uplink from 1534 Satellite Earth Stations/Teleports/DSNG & more than 2,70,000 VSATs. NOCC also resolved the RF interference namely RF interference due to cross polar carriers, FM (Frequency modulation) Radio pick up, unauthorized pickup, DSNGs operations, other satellites from INSAT and other satellite administrators etc. identifying source of the suspected RF interference.

NOCC carries out the mandatory performance verification testing of antennae of satellite earth stations and DSNG, during year 2018-19, NOCC carried out mandatory performance verification testing tests of 95 antennae of different type of satellite earth stations and DSNG before inducting them into network.

In year 2018-19, NOCC has issued 74 nos. of uplink permissions for live telecast of events of national and international importance and NOCC played important role in interference free telecast.

4. REGIONAL LICENSING OFFICE (RLO):

Some licensing functions of WPC Wing was decentralized in the year 2007and delegated to 5 Regional Licensing Offices (RLOs) situated at New Delhi, Mumbai, Kolkata, Chennai & Guwahati. These field offices of WPC Wing are headed by JWA (except Guwahati, which is headed by Sr.DWA), work under the control of WPC HQ, New Delhi and deal with the issue and renewal of non-network licences such as Import Licence, Experimental Licence, Demonstration Licence, Short Range UHF Hand-held Radio Licence, Maritime Mobile Station Licence (for Ships), Aeronautical Mobile Station Licence (for Aircrafts), Certificate of Proficiency and Licence to Commercial Pilots (COP RTR), Certificate of Proficiency and licence to Marine Radio Officers (GMDSS), of the regions under them. Most of these licenses have been made 'online' through 'Saral Sanchar', the online unified licensing platform of DoT, as indicated in the summary below: -

- **Import Licence**: - This is issued to all telecom service providers, wireless users, importers and dealers of wireless equipment to facilitate the customs clearance while importing from outside India
- **Maritime Mobile Station Licence**: - This license is issued to all Indian ships to enable them to install the communication and safety equipment on board. This licence is being issued online through Saral Sanchar portal.
- **Aeronautical Mobile Station Licence**: - This license is issued to all aircrafts to enable them to install the communication and safety equipment on board. This licence is being issued online through Saral Sanchar portal.
- **Experimental Licence:** - This is issued for R&D and test purpose for conducting radiating as well as non-radiating experiments by Institutions, Corporates, and Laboratories etc. This licence is being issued online through Saral Sanchar portal.
- **Demonstration Licence**: - This is issued to all wireless dealers, exhibition organisers, sports events to conduct live demonstrations of different wireless equipment. This licence is being issued online through Saral Sanchar portal.

- **Short Range UHF Hand-Held Licence**.-This is a kind of walkie-talkies that can be used in industrial and commercial places to communicate in a one to one mode (peer to peer) without use of any base station/ fixed station. The frequency used are earmarked (pre-decided) and could be used in a limited range only. This licence is being issued online through Saral Sanchar portal.

- **Equipment Type Approval.** - This is a kind of authorisation issued to radio devices which are working in the de-licensed bands like blue tooth and Wi-Fi. When they are imported from abroad, such equipment needs to maintain the compatibility with Indian radio regulations as mandated for de-licensed devices. This certificate is being issued online through Saral Sanchar portal.

- License to operate & Certificate of Proficiency (CoP) for operating Global Maritime Distress & Safety System (GMDSS) equipment is issued to qualified candidates of the examination conducted for this purpose.

- License to operate and Certificate of Proficiency (CoP) for operating Radio Telephony equipment on board aircraft, is issued to the qualified candidates of the examination conducted for this purpose

PUBLIC SECTOR UNDERTAKINGS (PSUs)

1. **Bharat Sanchar Nigam Ltd. (BSNL)**

2. **Mahanagar Telephone Nigam Ltd. (MTNL)**

3. **ITI Ltd.**

4. **Telecommunications Consultants India Ltd. (TCIL)**

5. **Bharat Broadband Network Limited (BBNL)**

1. Bharat Sanchar Nigam Ltd. (BSNL)

Bharat Sanchar Nigam limited (BSNL) was formed on 1st October 2000 by Corporatization of the erstwhile Department of Telecom Services. BSNL operates the telecom services all over the country except Mumbai and Delhi, where MTNL operates. The strength of employees in the company is about 64,536 as on 31.03.2021.

BSNL is a 100% Government of India owned PSU with an authorized capital of Rs. 17,500 crores, paid up capital of Rs. 12,500 crores comprising of Rs. 5,000 crores of Equity and Rs. 7,500 crores of Preference shares capital.

The company has been in the forefront of technology with 100% digital new technology switching network. As on 30.11.2020, BSNL has a customer base of 1263 Lakh subscribers.

As on 31.03.2021, the market share of company is 32.85% in wired line and 10.05% in wireless segment. The 3G coverage of BSNL is available in 6,258 cities/towns. During the Financial year 2020-21, the Company has made loss of Rs.7441 crore.

BSNL is actively engaged in the nation building exercise with the Government of India. The following key projects of the Government are under implementation:-

(i) Bharat Net-II:- BSNL is partnering the Government of India in its ambitious programme with the objective of providing broadband connectivity to Gram Panchayats.

(ii) Network for Spectrum (NFS):- This is a Government funded project to be implemented on turn key basis for Defense Tri-services for releasing of spectrum utilized by Defence.

(iii) Left Wing Extremism affected areas (LWE):- BSNL is actively pursuing the government funded project of providing connectivity to the LWE affected areas, to strengthen the communication networks.

(iv) Development of communication networks of NE Region:- BSNL has completed Ashta Mangal Project Phase-I for improving the connectivity in North-East Region.

BSNL has formed a new company namely BSNL Tower Corporation Ltd. which is a wholly owned subsidiary company of BSNL. BSNL Tower Corporation Ltd. was incorporated on 4th January, 2018 in order to take over the Mobile Tower Business.

2. Mahanagar Telephone Nigam Ltd. (MTNL)

Mahanagar Telephone Nigam Limited (MTNL) was incorporated on February 28, 1986 under the Companies Act as a wholly owned Govt. Company and on April 01, 1986, assumed responsibility for the control, management, operation of the telecommunications services in the two Metropolitan Cities of Delhi and Mumbai. The jurisdiction of the Company comprises the city of Delhi and the areas falling under the Mumbai Municipal Corporation, New Mumbai Corporation and Thane Municipal Corporation for providing fixed line services. However, for Cellular services the company has the license to provide services in Delhi including NCR (towns of Ghaziabad, Faridabad, Noida and Gurgaon) and in Mumbai including Navi Mumbai, Kalyan & Dombivili.

The company has an authorized capital of Rs. 10,000 crores and paid up share capital of Rs. 630 crores. At present, 56.25% of the equity is held by Government, and the remaining equity is held by FIIs, Financial Institutions, Banks, and Mutual Funds and other including individual investors.

During financial year 2020-21, the company has made loss of Rs. 2462 crore. The company launched 3G services in Delhi in December, 2008 and in Mumbai in May, 2009. The company has the market share of 45.01% in wire line and 3.57% in wireless in Delhi and Mumbai. The strength of employee in the company is about 3,941 as on 31.03.2021.

3. ITI Ltd

ITI Limited (earlier Indian Telephone Industries Ltd) was established in 1948 with the vision of attaining self reliance in the field of telecommunication needs of the country. The company was set up at Bangalore (Karnataka) with Govt. of India holding majority equity stake in the Company. ITI has its Registered & Corporate Office located at Bangalore. The Company is a Schedule 'A' CPSE in Heavy and Medium Engineering Sector under the administrative control of Ministry of Communications.

With the Govt. of India's plans to meet the growing demand of expanding telecommunication network and to develop backward areas by providing employment to local populace, ITI over a period of time, widened its manufacturing bases in the State of J&K, UP and Kerala. ITI has provided livelihood to thousands of employees, directly and indirectly, all over the country. All the manufacturing plants are accredited with ISO 9001-2015 standards.

In addition to these manufacturing plants, ITI has a dedicated Network System Unit (NSU) for execution of turnkey projects covering installation and maintenance support activities. It has MSP (Marketing, Sales & Projects) Offices across the country and headquarters at Bangalore. It has executed several turnkey projects for BSNL, MTNL, Defence and State and Central Govt.

After liberalization of economy in early 1990s' and onset of competition, ITI started making losses from 1994-95. The Company recovered in 1997-98 and made small profits for a brief period between 1997-98 to 2001-02. However, from 2002-03 onwards it began to make heavy losses and had to be referred to BIFR and declared sick in 2004.

In February 2014, a Revival Plan of ITI Limited was approved by the Cabinet Committee on Economic Affairs (CCEA) with a financial package of Rs. 4156.79 crore. The financial package includes Rs. 2264 crore in the form of equity infusion for capital investments for implementation of several projects as part of Revival Plan and balance amount of Rs. 1892.79 Crore as grant-in-aid towards

clearing part of its liabilities. The Government, till date, has released Rs. 874 Crore to the Company for meeting its Capex requirements for implementing revival plan projects and Rs. 1978.19 Crore for clearing part of its other liabilities. The impact of revival efforts begun to become visible as the Company recorded a net profit of Rs. 102 Crore in 2017-18 after a gap of sixteen year and since then it is posting profit continuously. In 2018-19, 2019-20 and 2020-21, it recorded a net profit of Rs. 93 Crore, 147 Crore and 11.2 Crore respectively.

In the Union budget for FY 2021-22, Govt. has approved Rs. 80 Crore for capital investment for new projects to enable the Company to acquire new technologies and become competitive in Indian and international market.

The current initiatives of the Govt. like "Make in India", "Digital India", "Preferential Market Access policy" etc. have helped in giving fillip to ITI's efforts for absorption of new technologies for manufacturing and help in turning around the company.ITI continues to address strategic and secured Telecommunication needs of the Country. ITI has been a key player for the Defense communication and networking needs.

Department is currently in consultation with DIPAM on the ITI's proposal of bringing Follow on Public Offer (FPO) to achieve SEBI's Minimum 25% Public Share (MPS) holding.

4. Telecommunications Consultants India Ltd. (TCIL)

Telecommunications Consultants India (TCIL) was set up on 10.03.1978 with the main objective to provide world class technology in all fields of telecommunications and information technology to excel in its operations in overseas and in the domestic markets by developing proper marketing strategies, to acquire State of the Art technology on a continuing basis and maintain leadership. It also aims to diversify into Cyber Parks / Cyber Cities and upgrading legacy networks by focusing on Broadband Multimedia Convergent Service Networks, entering new areas of IT as systems integrator in Telecom billing customer care value added services; e-governance networks and Telecom fields by utilizing TCIL's expert technical manpower, Developing Telecom and IT training infrastructure in countries abroad and aggressively participating in SWAN projects in various States.

TCIL is a Schedule-A Miniratna CPSE in Industrial Development and Technical Consultancy service sector, under the administrative control of Department of Telecommunications under Ministry of Communications & IT with 100% shareholding by the Govt. of India. Its registered and corporate office is at New Delhi. The annual turnover of TCIL during FY 2020-21 is Rs.1734.91 crore (Provisional) as against Rs.1755.76 crore during FY 2019-20.

5. Bharat Broadband Network Limited (BBNL)

1. Bharat Broadband Network Limited (BBNL) is a Special Purpose Vehicle (SPV), set up by the Government of India under the Administrative control of Ministry of Communications, Department of Telecommunications, for the establishment, management and operation of BharatNet. BBNL was incorporated on 25.02.2012 as a Public Sector Undertaking (PSU) Company under the Companies Act, 1956 with an Authorised Share Capital of INR 1000 Cr.

2. BharatNet, one of the biggest rural telecom projects of the world, is being implemented in a phased manner to provide connectivity at all Gram Panchayats (approx. 2,50,000) with broadband in the country. The Phase-I has been completed in December 2017 with the implementation of over 1 lakh GPs, and the remaining Gram Panchayats are being connected under BharatNet Phase-II. As on 05.07.2021, total 5,29,338km Optical Fibre Cable has been laid, a total of 1,53,302 GPs are Service Ready on OFC . In addition, 4081GPs have been connected over satellite media. Total GPs service ready are 1,57,383 (1,53,302 on Fibre and 4081on Satellite). As part of this flagship project, the Last Mile connectivity, through Wi-Fi or any other suitable broadband technology to access broadband /internet services, is to be provided at all the GPs in the country. Wi-Fi hotspots have been installed at 1,04,310 GPs and 5,10,559 FTTH Connections have also been installed with a data usage, about 2737154 GB per month.

3. FinancialDetails

BharatNet Financial Progress at a Glance Rs. in Crores

Particulars	Cabinet Approval (excl. taxes)	Expenditure till 31.3.2019	Expenditure till 31.3.2020	Likely Expenditure for the FY 2020-21	Expenditure incurred during the FY 2020-21Till 15th March 2021	Expenditure till 15.03.20	Balance liability for FY 20-21
Phase I	11148	11291.24	12167.89	400	384	12551.89	16
Phase I Lossy Cable Repl.	2000						
Phase II	18792	5121.09	7646.25	3700	3209	11768.25	652
Last Mile Connectivity	4066	273.14	724*	350	189***		
O&M	6046	771.55	1892.41**	1050	740****	2632.41	310
TOTAL	**42068**	**17457.02**	**22430.55**	**5500**	**4522**	**26952.55**	**978**

*includes Rs. 370.5 crores paid by USOF to CSC directly.
** includes Rs. 87.56 crores paid by USOF to CSC directly.
*** includes Rs 189 crores paid USOF to CSC directly during FY 2020-21.
**** includes Rs 152.56 Crores paid by USOF directly during FY 2020-21

4. Challenges in BharatNet and NITI Aayog Committee recommendation:

a. A BharatNet Review meeting was held in Prime Minister's Office (PMO) on 19th March 2019 and a committee chaired by CEO, NITI Aayog and comprising of Secretaries of Department of Economic Affairs (DEA), Ministry of Electronics & IT (MeitY) and DoT has examined and explored all aspects of the BharatNet implementation which, inter-alia, include the roll out of the OFC installation as well as optimum utilization of the last mile infrastructure. The Committee has recommended PPP model as Way Forward.

b. It is mentioned that initially, the scope of BharatNet included broadband to about 2.50 lakh GPs in the country. In order to ensure the benefits of digital revolution to the entire country, the scope of BharatNet has been expanded beyond Gram Panchayats (GPs) to cover all 6 lakh inhabited villages in the country. Accordingly, the PPP model envisages broadband connectivity up to all inhabited villages. The DCC approved the Cost Estimate for 16 States, including draft Request for Proposal (RFP) draft Master Concessionaire Agreement (MCA) on 19.09.2020. Pursuant to the approval of DCC, a detailedproposal for PPP was appraised by PPP Appraisal Committee (PPP-AC) which after detailed evaluation including RFP and MCA, accorded its in-principle and final approval on 12.01.2021 and 25.02.2021. The State-

wise summary is as below:

States/UTs covered under PPP Model: 9 packages comprising 16 States namely Kerala, Karnataka, Rajasthan, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, West Bengal, Assam, Meghalaya, Manipur, Mizoram, Tripura, Nagaland and Arunachal Pradesh covering 3.6 lakh villages are proposed under PPP model.

Other States/UTs with alternate strategy:

- Bihar – an alternate model for extending connectivity from GPs up to villages level through CSC e-Governance Services India Limited (CSC-SPV).
- Eight States namely Maharashtra, Gujarat, Tamil Nadu, Andhra Pradesh, Telangana, Odisha, Jharkhand, and Chhattisgarh - utilization through states & integration of Phase-I.
- Union Territories of Jammu & Kashmir, Ladakh and State of Sikkim allocated to BSNL for strategic reasons and UTs of Andaman & Nicobar Islands, Lakshadweep, Dadra & Nagar Haveli, Daman & Diu, and Puducherry allocated to BSNL due to smaller number of strategic GPs.
- Uttarakhand is being taken up in State Model. Goa is being considered separately. Delhi has no rural area.

5. PPP Model and reaching to all inhabited Villages :

Hon'ble Prime Minister on 15th August, 2020 announced connecting over 6 lakhs inhabited villages with Optical Fibre Network within 1000 days.

The details for connecting 6 lakhs inhabited villages with Optical Fibre Network within 1000 days are as under :

- Under BharatNet project, as on 07-06-2021, total 1,56,223 Villages have been connected as part of BharatNet Project.
- Further, work for connecting 40,000 Villages (including GPs) has been given to CSC SPV, out of which 8963 GPs and about 28,000 villages i.e. total of 37,000 villages approximately have already been connected on fibre.

- For connecting the remaining villages and upgrading the Phase-I/Phase-II network, the strategy is as under:

  a. PPP Model has been envisaged for 16 States which will cover about 3.61 Lakh villages (including GPs).

  b. BSNL/BBNL is being allotted work for about 7,000 villages (including GPs) in UTs including J&K and Ladakh.

  c. In State led model, 2.21 lakh villages (including GPs) will be covered.

Accordingly, provision of connectivity to 6.6 lakhs villages(including GPs) is targeted by August 2023.

STATUTORY BODIES

1. **Telecom Regulatory Authority of India (TRAI)**

2. **Telecom Disputes Settlement and Appellate Tribunal (TDSAT)**

1. Telecom Regulatory Authority of India (TRAI)

With the entry of private sector in the provision of Telecommunication services a need was felt to have an independent regulatory body. The above requirement was indicated in the guidelines issued for entry of private sector in basic telecom service. Accordingly, Telecom Regulatory Authority of India (TRAI) was established in the year 1997 in pursuance of TRAI (Ordinance) 1997, which was later replaced by an Act of Parliament, to regulate the Telecommunication services.

The Authority consists of a Chairperson, not more than two whole-time members and not more than two part-time members to be appointed by the Central Government. TRAI is currently headed by Dr. P.D. Vaghela, the former Secretary in the Department of Pharmaceuticals, Government of India as Chairperson. Shri V. Raghunandan is the present Secretary TRAI who is being assisted by Advisor who report to the Secretary through Principal Advisors. Legal and Administrative Advisor report directly to Secretary TRAI.

Some of the major recommendatory, regulatory and tariff setting functions of TRAI are to make recommendations on the need and timing for introduction of new service providers, of the terms and conditions of license to a service provider, ensure compliance of terms and conditions of license, effective management of spectrum, lay down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct the periodical survey of such service provided by the service providers so as to protect interest of the consumers of Telecommunications service, ensure effective compliance of Universal Service Obligations, notify the rates at which Telecommunications services within India and outside India shall be provided under this Act etc.

2. Telecom Disputes Settlement and Appellate Tribunal (TDSAT)

Though the TRAI Act 1997 was envisaged to be comprehensive, certain issues had however emerged in its implementation which was hindering the growth of the telecom sector. The TRAI Act was amended in the year 2000 to remove the ambiguities and strengthen the regulatory framework. The amendments made inter-alia included the separation of disputes settlement functions of TRAI to a separate disputes redressal body known as the Telecom Disputes Settlement and Appellate Tribunal with wide adjudicatory powers. Appeals against the order of the TDSAT lie to the Supreme Court.

TDSAT performs following functions:

(a) adjudicate any dispute:
   (i) between a licensor and a licensee;
   (ii) between two or more service providers;
   (iii) between a service provider and a group of consumers;

(b) hear and dispose of appeal against any direction, decision or order of TRAI.

(c) exercise jurisdiction, powers and authority conferred on-
   (i) the Appellate Tribunal under the Information Technology Act, 2000
   (ii) the Appellate Tribunal under the Airports Economic Regulatory Authority of India Act, 2008.

Since its establishment TDSAT has adjudicated upon disputes on various matters on telecom including those matters pending before TRAI and transferred to it as a result of amendments made to TRAI Act.

The Tribunal exercises original as well as appellate jurisdiction over Telecom, Broadcasting, IT and Airport tariff matters under the TRAI Act, 1997 (as amended), the Information Technology Act, 2000 and the Airport Economic Regulatory Authority of India act, 2008. With regard to Cyber matters, the Tribunal exercises only the appellate jurisdiction.

The Tribunal consists of a Chairperson and not more than two Members appointed by the Central Government. Currently Mr. Justice (Retd.) Shiva Kirti Singh is the Chairperson of the Tribunal.

AUTONOMOUS BODY

Center for Development of Telematics (C-DOT)

Centre for Development of Telematics (C-DOT) is an autonomous telecom research & development body funded by the Department of Telecommunication. It was established under the Society Registration Act XXI in 1984 to design and develop indigenous switching technology. It has a three-tier management system. The Apex body is the Governing Council chaired by the Hon'ble Minister of Communications; a Steering Committee at the next level is chaired by Chairman, Digital Communication Commission and at the third level, a Project Board comprising of Executive Director & three Directors for looking after day-to-day working of the centre. Research Engineers and technical support personnel constitute majority of C-DOT staff.

C-DOT is research and development CMMI level-5 certified institution with its two R&D centres located at Delhi and Bangalore, with objectives as follows.

- Innovate and Create infrastructure for Next Generation Services
  - Concept to core technology creation
  - New technologies to meet current & future telecom needs
  - Fulfilling R&D gap in ecology of manufacturing base in India
  - Executing creative technology pilots with stakeholders
- Handle projects of national importance in
  - Strategic, Security & Rural Sectors
- Contribute to nation's economic growth and self-reliance
- Support service providers for
  - New services, New technology, Consulting

C-DOT develops state-of-the-art technologies and transfer these technologies to manufacturers for indigenous manufacturing.

C-DOT has a wide range of product portfolios in the following technology areas.

- Optical Technology – GPON, WDM PON, 100G DWDM system, etc.
- Switching Technology – VoIP-based packet technology, routers, IMS compliant NGN, etc.

- Wireless technology – Wi-Fi, Shared GSM radio, LTE, satellite, etc.
- Network Security – Centralized Monitoring System (CMS) for law enforcement agencies, Centralized Equipment Identity Register (CEIR), Secure and Dedicated Communication Network (SDCN), etc.
- Software Applications – M2M, NMS, Samvad app

WORK ALLOCATION INDOT HQ

TO

MEMBERS/ AS(T)/ Pr.Economic Advisor/

ADMINISTRAOR (USOF)/ CVO/DGT (HQ)

&

WING HEADS

(Advisers/Sr. DDGs/JSs/DDGs)

1.0 SPECIAL SECRETARY(T)/ADDITIONAL SECRETARY(T)

- JS (A)
- JS (T)
- DDG (C&A)
- LEGAL ADVISER
- DDG (IC)
- DDG (IT)
- DDG (PM)
- DDG (IR)

1.1 Joint Secretary (A)

(i) Establishment matters of members (Digital Communications Commission).

(ii) Cadre control of Indian Radio Regulatory Services Cadre (IRRS).

(iii) Board level appointments in all DoT CPSEs.

(iv) All Administrative and operational matters relating to BSNL, MTNL and BBNL.

(v) All policy and court matters relating to absorption of Group 'A' officers BSNL and MTNL.

(vi) Administration of Indian Telegraph Act, 1885 and Rules and all matters related there under.

(vii) Administration of TRAI Act and other administrative matters relating to TRAI and TDSAT.

1.2 Joint Secretary (T)

(i) Digital Communications Commission Secretariat.

(ii) All matters relating to implementation and co-ordination of National Digital Communications Policy-2018 including 5G.

(iii) National Broadband Mission

(iv) Indian Telegraph Right of Way Rules, 2016 and related issues.

(v) PM's Infrastructure Target Review Meeting

(vi) Monitoring of SGoS activities, NIP, NBM, Compliance burden, PMO – Biweekly report.

(vii) Matters related to Universal Service Obligation Fund (USOF)

(viii) Telecom development in remote areas, LWE affected areas and NER

(ix) Uncovered villages

(x) Rural Telephony

(xi) Islands related works including submarine cable.

(xii) Monitoring of all recommendations of the TRAI, its submission to the Standing Committee

(xiii) All matters regarding Standing Committee on Policy

(xiv) BharatNet/ NOFN

(xv) Mobile/ Internet/WiFi at tourist places

(xvi) Co-ordination in areas concerning Broadband and related VIP references

(xvii) Components/ Sub-components of Digital India Programme related to DoT

(xviii) Formulation of investment policies and procedures for the Telecom Sector.

(xix) Formulation of policies for development of telecom equipment manufacturing sector.

(xx) Providing assistance in formulation of Import and Export polices for the Telecom Sector.

(xxi) Export promotion of telecom equipment and services.

(xxii) Co-ordination of all matters relating to customs & excise duties and other direct and indirect taxes for telecom sector.

(xxiii) Preparation of telecom sector's proposals relating to Annual Budget

(xxiv) Interaction with Business Councils/Industries Associations regarding investment promotion.

(xxv) PMI policy in telecom sector.

(xxvi) Champion Services Sector Scheme

(xxvii) International arbitration under BIT/ BIPA

(xxviii) Coordination with various Ministries/Departments for their schemes such as Pradhan Mantri Adarsh Gram Yojana (PMAGY), Sansad Adarsh Gram Yojana (SAGY), Digital Village, NKN etc.

1.3 DDG (C&A)

(i) Establishment matters of officers under Central Staffing Scheme, Assistant Secretaries, CSS, CSCS, CSSS, OL Cadres, MTS, Staff Car Drivers and Canteen Staff.

(ii) General co-ordination within various DoT divisions, and with Ministries.

(iii) Loans and advances in DoT not under the control of Member of Digital Communications Commission.

(iv) Training both domestic and International.

(v) Matters relating to O&M procedures & maintenance of records.

(vi) Action taken on Cabinet/Cabinet Committees' decisions

(vii) RTI Act and functions under RTI Act.

(viii) Coordination related to Output Outcome Monitoring Framework (OOMF) dashboard of NITI Aayog & India Code Portal of M/o Law.

(ix) Reporting of important events of the department to Cabinet Secretariat

(x) Swachh Bharat Mission & related activities

(xi) Constitution of Internal Complaint Committee as per Sexual Harassment of Women at Workplace (PP&R) Act 2013

(xii) General Administration (G-I & G-II), Printing and Publicity.

(xiii) Parliament Section.

(xiv) Central Registry and Records, CP&PR, Security, Purchase and Maintenance of Staff Car etc.

(xv) Implementation of Official Language Act in DoT and its PSUs, Autonomous Bodies and Subordinate Offices.

(xvi) Sports, Welfare, Protocol, Library, Canteen

(xvii) Coordination of e-Samiksha/PRAGATI/AEBAS

(xviii) Social Media Cell

(xix) Financial approvals and sanctions of advances/withdrawals of GPF, Medical Claims for non-advances, Tour TA/DA Bills, Election Duty Bills.

1.4 DDG (IC)

(i) All matters relating to WTO Negotiations.

(ii) All trade and economic matters relating to Telecommunications in bilateral and multilateral fora.

(iii) Policy matters on telecommunication standards including all TSDSI matters

(iv) Startup promotion including Telecom Centres of Excellence matters.

(v) Telecom Exhibitions and Events.

(vi) All matters relating to 5G.

(vii) Matter relating to TEPC

1.5 DDG (IT)

(i) Procurement of computers, software, peripherals and other IT accessories
(ii) Inventory management of consumable and non-consumable IT assets
(iii) Design and Development of Integrated software for DoT i.e. Smart DoT Project
(iv) Budget and Audit coordination for IT wing
(v) CCTV surveillance deployment in DoT HQ
(vi) AMC and Maintenance of Computers and peripherals and VC equipments
(vii) Maintenance, updation and management of DoT website
(viii) Maintenance & Support for eOffice system of DoT HQ.
(ix) Management & Support for Sparrow/ePAR System of DoT
(x) Works related to Open Government Data Platform
(xi) Inter-ministerial Consultation/Coordination work on IT matters
(xii) Coordination work related to various Citizen Engagement platforms

1.6 DDG (Project Management - PM)

(i) Co-ordination with M/o Defence, TCIL, ITI Ltd, BSNL and various vendors for project Network for Spectrum (NFS)
(ii) Coordination work for other projects
(iii) Revival plan for BSNL and MTNL.

1.7 DDG (IR)

(i) Organization of High-level visits and deputation of officers abroad for International Conferences, training, study visits, workshops, seminars, etc. (however, processing of proposals related to Radio Communication Sector of ITU, APT will be dealt with WPC Wing)

(ii) All matters of International Cooperation of DoT/ Ministry of Communications relating to Bilateral activities in Telecom / ICTs including MoUs, Agreements, protocols, Manufacturing, Consultation,

Know how transfer, Joint Ventures, Coordination with other countries in the context of Make in India and Digital India programs

(iii) Telecom operation/ project coordination, developmental aspects of Telecom/ICTs with neighboring countries in SAARC region, ASEAN, Africa and others

(iv) All matters of International Cooperation of DoT relating to Multilateral cooperation and coordination with Multilateral / International / Regional Organizations, including, ESCAP, UNDP, UNIDO, ITU, APT, CTO, IMSO, ITSO, Inter sputnik, SAARC, BRICS, ASEAN, EU etc., for activities including Agreements, protocols, MoUs

(v) Coordination with MEA and Indian Missions abroad for coordination with other countries in the areas of telecommunications and for the visits of Indian official delegations from DoT

(vi) Coordination with MEA and our missions abroad for implementation of various programs, Capacity building programs and other under ITEC and other schemes of Govt of India

(vii) Coordination for establishment of hotlines with other countries wherever applicable with various stakeholders viz. PMO, MEA, DRDO, BSNL/MTNL etc.

(viii) Preparation of Annual Budget related to IR Division including BE, RE and various proposals for hosting of International events in India/abroad as well as for the visits of Indian delegations from DoT abroad.

(ix) Coordination for WSIS (World Summit on Information Society) meetings, Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs)

(x) Coordination and Comments / inputs to other Ministries / Departments / Organizations on matters related to Trade, Commerce, Investment, Technology, Policies, Standards, Cooperation in Telecom/ICTs from international perspective

(xi) Driving National Working Groups (NWG), involving members from both public and private sectors, for the Study Group activities of ITU-Development sector;

(xii) Preparation and coordination for technical, policy and strategy contributions for various* conferences and meetings of ITU, APT, CTO and other international and regional organization; Contribution for the Telecommunication Development Advisory Group (TDAG) activities

(* ITU Plenipotentiary, World Telecommunication Development Conference – WTDC, Council Meetings, Council Working Group meetings – CWG, Regional Developmental Forums – RDF, World Telecommunication Standardization Assembly – WTSA, World Conference on International Telecommunications – WCIT etc.)

(xiii) Activities related to establishment of ITU Area Office & Innovation Centre in India. Coordination with other Ministries, Departments in India and with ITU for establishment, operation, support, etc to the ITU Area Office & Innovation Centre in India.

(xiv) Coordination and contribution India as a member of ITU GCBI (Global Capacity Building Initiative) and Steering Committee of ITU Asia Pacific Centres of Excellence (ASPCoE)

(xv) Coordination for ICT indicators(with ERU division)

(xvi) Coordination with other Ministries, Departments in India and with ITU for Global Cybersecurity Index (GCI) related matters including submission of data, validation of data and consultation with different stakeholders.

(xvii) Domestic stakeholder coordination with Telecom / ICT Industry members, bodies, civil society, academic institutes on above matters as may be necessary

(xviii) Focal point for Multilateral / International/Regional Organizations, including, ITU, APT, ASEAN, CTO etc., and their related conferences, meetings and Study Groups

(xix) Coordination and organization of visits of foreign dignitaries and delegations and arranging meetings in DoT.

(xx) Organising and hosting of National and International events related to ITU, APT and other International Organizations

(xxi) Internet Governance and related coordination with Other Ministries

(xxii) Coordination with International organisations, other ministries and departments for proposals, implementation and execution of international projects, studies etc in ICT domain

(xxiii) [Clearance to set up liaison offices of private foreign companies in India]

(xxiv) Coordination for necessary clearances for hosting international events in India by the Industry, Associations etc.

1.8 Legal Adviser (LA)

LA renders legal advice on matters referred by the Department.

2.0 MEMBER (SERVICES)

- Adviser (Operations)
  - DDG (Skill Development)
  - Sr. DDG (Public Grievances)
  - Sr.DDG (SU)
  - DDG (Phone Priority)
  - DDG(Phone Priority II)
  - DDG (SR & Estate)
- DDG (Capacity Building & Training)
- Sr. DDG (Telecom Engineering Centre)
  - DDG(Electrical)
- Sr. DDG (NTIPRIT)
- Sr. DDG (Personnel)
- DDG (Establishment)
- DDG [Security-(Assurance)]
- DDG [Security-(Assurance – II)]
- DDG[Security –(Policy, Planning & Intelligence)]
- Sr. DDG(NCCS)

2.1 Adviser (Operation)

2.1.1 DDG (Skill Development)

(i) To put in place an ecosystem:

(a) To assess the manpower requirement at different skill and expertise levels by partnering with National Skill Development Corporation and industry to identify the relevant needs of the sector and prepare a roadmap.

(b) To advise and assist Ministry of HRD to periodically upgrade academic curriculum of telecommunication course.

(c) To create an enabling framework including funding mechanism to meet the demand for human resources in the sector in partnership with MHRD/Ministry of Skill Development and Entrepreneurship (MSDE).

(d) To form a high level Apex body (supported by advisory groups comprising representatives from industry, academia, PSUs etc.) to oversee and to act as guiding and enabling source for all aspects relating to skill development in telecom field.

(ii) To develop other training institutes under DoT and its organizations as national level telecom schools of excellence for imparting training to Government/PSU officials and other stakeholders.

(iii) To promote and augment vocational and non-formal training institutes in urban and rural areas to cater to the skill and training needs of telecom sector.

(iv) To encourage collaboration with premier educational institutes like IITs and telecom research organizations of excellence for directing research and development to field problems.

2.1.2 DDG (PG)

(i) Handling of Public Grievances through Centralized Public Grievance Redressal and Monitoring System (CPGRAMS).

(ii) Management of Telecom Consumer Grievance Helpline (Short Code-1063)

(iii) Dealing with complaints registered on telephone in the Call Centre

(iv) Physical receipt of public complaints/grievances

(v) Citizen's Charter for DoT

(vi) Parliament Questions, fulfillment of Assurances, Court Cases, RTI Matters, audit paras and administrative matters related to PG Cell

(vii) Handling of VIP references

(viii) Create awareness amongst the stakeholders, organize workshop/training and inspect subordinate office for better resolution of customer grievances

(ix) Coordinate with other Ministries/ Departments related to PG

(x) Arbitration matters

Legal Cell under DDG (PG):

(i) Co-ordination and monitoring of Court Cases.

(ii) Implementation of LIMBS (Legal Information Management and Briefing System) in DoT for online monitoring of Court Cases.

(iii) Issuance of instructions regarding handling of Court Cases.

(iv) Instruction relating to Court Cases received from D/o Legal Affairs, DoPT, Cabinet Secretariat, PMO etc. are circulated by Legal Cell to all wings/divisions in the Department for necessary action.

(v) References received from Circles/Field Units/Division of DoT (HQ) relating to Court cases pending before various High Courts/Tribunals including Supreme Court of India-such communications are examined and forwarded to concerned wing/divisions in the Department.

(vi) Miscellaneous court receipts/notices/documents received from various HCs/Tribunals including Supreme Court of India-such matters are examined and forwarded to concerned wings/divisions in DoT.

(vii) Coordinate meetings on pendency of court cases as and when required by higher up offices.

2.1.3 DDG(Service Unit)

(i) Nodal division in the ministry for all matters of M/S Telecommunications Consultants of India Limited (TCIL) & M/S ITI Limited (except Board level appointments).

(ii) Handles the residual matters of three companies- M/S HTL Limited, in which Government of India has 26% stake, M/S Tata Communications Ltd. (erstwhile VSNL), which has been completely disinvested in March, 2021 and M/S Hemisphere Properties India Limited (HPIL) which has been transferred to Ministry of Housing & Urban Affairs (MoHUA) on 3rd October 2018.

(iii) The matters of these companies being handled by SU Division include parliamentary matters, processing of Cabinet Notes, Digital Communication Commission (DCC) memos, activities related to setting up, review and evaluation of annual MoU targets, allotment of budgetary grants under ITI's revival plan, monitoring its progress, affirmative vote requests, special resolutions, annual general meeting resolutions, board agenda items, processing of legal cases/audit paras and PG/VIP cases, issues related to land assets, issues related to listing of PSUs in stock market, Further Public Offers (FPO) and disinvestment etc.

(iv) Implementation of '*Synergy Initiative'* among all PSUs and the organizations of the Department of Telecom for optimum utilization of their resources in building a robust & secure telecommunication and information infrastructure.

2.1.4DDG (Phone Priority)

i) All policy and allied matters relating to service telephone connections (both Residential Service Telephone connections and Office Service Telephone connections)

ii) Sanction of Service Telecom Facilities (RSTC and OSTC) to DoT employees.

iii) All policy & allied matters related to concessional telephones for serving and retired DoT employees.

iv) Sanction of Concessional Telephone facilities to serving DOT employees.

v) Sanction of RAX connections for DoT officers.

vi) PCOs & policy matter of publication of Directory Services.

2.1.4(a)DDG(Phone Priority – II)

i) Policy matter relating to Telephone Advisory Committee (TAC)

ii) Constitution of TAC

iii) Nomination of various TAC members (including Hon'ble Members of Parliament)

iv) RTI, Public Grievances (PG) cases and court cases relating to above subject.

2.1.5 DDG (Staff Relations & Estate)

(i) De-reservation cases received from Cadre Controlling Authorities of DoT.

(ii) Issue of Certificate of Liaison Officer before convening DPC/ notifying department vacancies.

(iii) Parliamentary Committee matters on SC/ST/OBC/PwD. Coordination of references received from NCSC, NCST, NCBC, Lok Sabha/ Rajya Sabha Secretariat references.

(iv) Action on complaints/ grievances received in respect of SC, ST, OBC & PwD employees of DoT including CPSEs and matters relating to SC/ST/OBC/physically handicapped in SCT Cell.

(v) Accessible India Campaign—Sugmya Bharat Abhiyan related matters under RPwD Act - implementation.

(vi) Coordination with Parliamentary Committee on Welfare of SCs/STs and OBCs respectively and periodic replies to questionnaire.

(vii) Periodic Inspection of Reservation Rosters in Department of Telecommunications.

(viii) Coordination of Ex-Servicemen representation in department.

(ix) Matters relating to recognition of Associations of DoT under CCS (RSA) Rules, 1993.

(x) Policy matters regarding recognition of Service Associations and scrutinizing of their constitutions.

(xi) Coordination between Various Wings in DoT for Resolution of memorandums submitted by Unions regarding Industrial Disputes / agitations or strikes.

(xii) Participate in conciliation meetings organized by Central Labour Commissioner in Industrial Dispute cases

(xiii) Processing of references received from Ministry of Labour on Staff relation matters.

(xiv) Processing of Compassionate Allowances cases.

(xv) Retention policy guidelines and residual matters relating to staff quarters and rented buildings of BSNL/MTNL.

(xvi) Coordination cases for issue of Presidential order and hiring of space for field units relating to land/building.

(xvii) Liaison with Director of Estates under MOUD matters relating to policy.

(xviii) Appointment of Arbitrator in respect of Land and Building cases pertaining to pre 2000 era.

(xix) Notices received u/s 80 of CPC regarding rented accommodation in field units.

(xx) Court cases where Estates (Formerly NBT) section comes into picture—routine cases.

(xxi) Compilation of annual statement for SR/SCT/Estates wing.

(xxii) VIP references received from MPs/MLAs/Cabinet Sectt. /President Secretariat /PMO/ Lok Sabha Sectt. / Rajya Sabha Sectt.

(xxiii) Grievances, court cases/legal issues, RTI matters, Parliament questions relating to above points.

(xxiv) Settlement of claims for Instant Compensation to the families of the victims.

2.2 DDG (Capacity Building & Training)

(i) Training Development Activities:

a. Development of comprehensive Cadre Training Plan

b) Development of Mid-Career Training Plan

c) Development of Training of Trainer programs

d) Development of customized training programs to bridge competency gaps

(ii) Training Coordination Activities:

a. Coordination for implementation of Annual Training Plans

b. Coordination for Mid Career Training Programmes

c. Coordination with NTIPRIT

d. Coordination with different wings of DoT and other Ministries/Organizations

e. Coordination with National/International Training Centres and Institutes

f. Any other related responsibilities as assigned from time to time

(iii) Training and knowledge Sharing Activities:

a. Identify and develop a pool of certified trainers on topics of interest from available pool of officers in DoT.

b. Develop Online and Web Based Training and Learning Management System.

c. Developing CIO Programmes focused on meeting telecom needs of State/UT & Central Line Ministries.

d. Knowledge management and sharing through workshops, development of case studies, sharing best practices and creation of repositories etc.

(iv) Capacity Building Activities:

a. MoUs with leading academic institutes in India and abroad for capacity development in the field of Telecom.

b. Leveraging the technological and managerial capacity building strength of various field units of DoT, PSUs/departments under DoT such as NTIPRIT, ALTTC, TEC, CDOT, TCIL etc. to present a unified and holistic view of DoT's capacity building capabilities.

c. Expanding capacity building activities to stakeholders outside DoT such as Central Line Ministries, State Governments, Union Territories, Industry Associations, International organizations such as ITU, United Nations, World bank, bilateral with other countries etc.

2.3Sr. DDG (TEC)

Sr. DDG(TEC) is Head of Telecommunication Centre (TEC) and responsible for various activities of TEC, which inter alia are:

(i) Formulation of Standards, Specifications {Generic requirements (GR), Interface requirement (IR), Service requirements (SR)} and technical regulation {Essential Requirements (ER)} in the field of telecom and related ICT sector

(ii) Implementing Mandatory Testing & Certification of Telecom Equipment (MTCTE) framework

(iii) Testing & Certification of Telecommunication Equipment/ Interfaces/ Services against TEC Standards

(iv) Granting Certificate of Approval (CoA) against vendor specifications

(v) Technology Approval for C-DoT and other R&D Organizations

(vi) Policy initiatives for promoting standardization in telecom & related IT sector

(vii) Conducting field trials and validation of Technology/ Product developed by C-DoT

(viii) Coordinating National Working Groups (NWGs) constituted corresponding to ITU-T Study Groups in various ICT domains.

(ix) Steering the ITU National Study Group (NSG-5) of ITU-R on Terrestrial Services, comprising of Systems and networks for fixed, mobile, radio-determination, amateur & amateur-satellite services and also includes 5G

(x) Advanced Test Labs viz. Next Generation Network (NGN) test lab and IPv6 Ready Logo lab for testing of telecom products

(xi) Designation Authority for domestic Conformance Assessment Bodies (CAB) and Certification Bodies (CB).

(xii) National Enquiry Point for WTO-TBT (Technical Barrier to Trade) agreement for telecom sector

(xiii) TEC nominee is on IEEE-SA's Standards Board (SASB) as part of the IEEE initiative under Government Engagement Program for Standards (GEPS)

(xiv) Complaint resolution for local content under PPP-MII (Public Procurement Preference to Make in India) of Department

(xv) Providing technical advice/ inputs for implementation of Production Linked Incentive Scheme of DoT

(xvi) Providing technical support to DoT and other government organizations viz. TRAI, TDSAT, WPC, USOF etc.

(xvii) Preparing study papers/white papers on the standards, facilities and features of the telecom equipment, systems and services to keep abreast with the latest technological developments.

(xviii) Conducting knowledge sharing sessions/ workshops with relevant stakeholders in the field of telecom technology, policy, technology roll out, standardization and processes.

(xix) Adoption of standards of other national/ international Standard Development Organizations (SDOs) through a well-defined consultation process.

(xx) Participation in the international pre-standardization/ standardization activities of international Standardization Organizations, viz. ITU, APT, WRC, IETF, ETSI 3GPP, OneM2M etc.

(xxi) General Administration, Establishment, Budgeting and Finance Management of TEC

2.3.1 DDG(Electrical)

(i) Electrical Inspection of substation and renewable energy installations under DoT /DoP.

(ii) Energy Conservation & Efficiency

(iii) Renewable/Green/ Hybrid Energy System for telecom sector

(iv) Technical scrutiny of estimates & participation in Works Committee of DoT HQ

(v) Parliament Questions relating to Renewable Energy & Carbon Emission

(vi) Coordination &Participation in BIS for revision of National Electric Code (NEC) and National Building Code (NBC)

(vii) Coordination with Ministry of Power & REC for electrification of Telecom towers

(viii) Participation in scrapping of Electromechanical assets

(ix) Court cases related to Energy & DG set in respect of TSPs/IPs

2.4Sr. DDG NTIPRIT

(i) Training of Indian Telecommunication Service (ITS) Group "A" and Group "B" officers in Telecom technologies, Telecom Enforcement & Resource monitoring, Licensing, Standards development and other office procedures. Training support to intelligence agencies & Law enforcing agencies on advancements in telecom & ICT

(ii) Commission in house Studies and Outsourced studies for specific areas of concern such as impact of policy implementations, economic and environmental benefits of technology, technology forecasts, security aspects etc.

(iii) To have joint collaboration with Telecom Technology management & security Authorities in India and other parts of World.

(iv) Policy research for providing inputs to DoT and other ministries in areas concerning telecom.

(v) Extend training support to intelligence agencies & Law enforcing agencies on advancements in telecom & ICT.

(vi) Promoting fundamental research in telecom sector through funding to and collaboration with educational institutions.

(vii) To harness the full potential of expertise available with existing universities, colleges, laboratories and institutions in India or abroad in order to network and complement infrastructural and faculty resources.

(viii) Study of international best practices in telecom security and be a think tank for working out India specific models & technical solutions for countering misuse of telecom in terrorism.

(ix) To actively participate/contribute in all spheres of telecom technology with similar other International organizations.

(x) To carry out the coordination role for synergizing the efforts made by various public and private bodies engaged in telecom & ICT research and innovation.

(xi) Facilitate development of core competence in telecom IPRs and facilitating government in decision making.

(xii) Promoting Green Technologies in Telecom.

(xiii) To undertake application research for sustainable growth of Indian Telecom.

(xiv) To carry out consultancy/project works from industry, academic institutions and government organizations within India and abroad in all matters concerning telecom technology planning and management.

(xv) To publish research/white papers and reports on research/analysis undertaken.

(xvi) Issue consultation papers to consolidate the views of different stakeholders and give recommendations to government bodies.

(xvii) To provide a platform for encouraging cross industry cooperation and information sharing.

2.5 Sr. DDG (Personnel)

(i) Service matters of Technical Telecom Cadres of Group 'A' and Group 'B'

(ii) Transfer, posting, promotion, financial upgradation and deputation of Technical Telecom Cadres (ITS, TTS, TFS, GCS, TES Group-B and JTO) of the Deptt.

(iii) Implementation of Sparrow and APAR Custodian

(iv) Engagement of Consultants

(v) Engineering Services Exam-Rules for ITS Group 'A' & JTO Group 'B'.

(vi) Matters related to appointment of ITS Group 'A' & JTO Group 'B' officers based on Engineering Services Examination

(vii) Probation /confirmation of DR/Promotee ITS Group 'A' officers and DR JTO Group 'B' officers

(viii) Matters related to commercial employment after retirement in respect of ITS/TTS/GCS Group 'A' officers

(ix) Matters related to Permanent Absorption of ITS/GCS Group 'A' officers and Group 'B' officers in BSNL/MTNL

(x) Issuing the seniority list of officers of Technical Telecom Cadres (ITS, TTS, TFS, GCS, TES Group-B and JTO) of the Deptt.

(xi) Maintenance of Blue Book of ITS Group 'A' officers.

(xii) Maintenance of Service Book of officers of Technical Telecom Cadres (ITS, TTS, TFS, GCS, TES Group-B and JTO) of the Deptt.

(xiii) Processing of Disciplinary cases of officers of Technical Telecom Cadres (ITS, TTS, TFS, GCS, TES Group-B and JTO) of the Deptt.

(xiv) Residual Service matters of BSNL/MTNL absorbed employees prior to their absorption

(xv) Processing of disciplinary cases of Group 'C' & 'D' officials (DoT Optee/unabsorbed in BSNL/MTNL)

(xvi) Cadre control functions in respect of unabsorbed employees of BSNL/MTNL belonging to Group 'C' and 'D' cadres.

(xvii) All residual matters relating to Telecom Factory

(xviii) Union representations and court cases related to Personnel Wing.

2.6 DDG (Establishment)

(i) Cadre Control and Establishment matters like creation, retention and diversion of posts of Technical Telecom Cadres (ITS, GCS, TES Group-B and JTO) of the Department.

(ii) Cadre Control and Service matters including posting and transfers of Civil, Electrical and Architectural Services of the Department.

(iii) Recruitment Rules of ITS, Telecom cadre posts and other posts in DoT field units.

(iv) Establishment matters related to DoT field units.

(v) Co-ordination with BSNL/MTNL and DoT Field Units on establishment matters.

(vi) Policy matters involving pay & allowances, medical facilities and reimbursement, CGEGIS, CGHS, advances, LTC, Income Tax and bonus etc.

(vii) Implementation of Pay Commission notifications and settlement of anomalies arising thereby.

(viii) Policy matters related to retirement benefits including issues arising out of absorption of DoT employees in BSNL and MTNL

(ix) All matters relating to clarification of pension and allied matters from various DoT units

(x) Circulation of DoP&PW orders to all concerned in DoT

(xi) Settlement of Pension/family pension, DCRG and commutation of pension cases of employees of all cadres retiring from DoT HQ, CDA retirees from BSNL HQ and Heads of DoT field units/CCA offices/ BSNL circles

(xii) Preparation of pensioners' Identity Card

(xiii) GPF final payment verification

(xiv) Issuing of service certificate for availing concessional telephone facility after retirement

(xv) Pension/family pension revision, restoration of pension cases

(xvi) Matters related to verification of service and issuing of Qualifying Service Certificate

(xvii) Matters related to interest on delayed payment of DCRG, Life Time Arrear cases , undrawn family pension, Ex-gratia cases etc.

(xviii) Ratification of pension cut cases of BSNL retirees

(xix) Sanction of Fixed Medical Allowance on one time option change

(xx) Matters related with discharge of pensionary liability of DoT for counting of past service

(xxi) Matters related to Pension Adalat, SCOVA Meeting etc

(xxii) Union representations and court cases related to Establishment Wing.

(xxiii) Member of different committees related to transfer, posting, DPC, confirmation etc.

2.7 DDG(Security – Policy, Planning & Intelligence)

i) Framing of Policies, Regulatory framework including Rules and Guidelines in respect of security of Telecom Networks.

ii) Drafting of Security requirements of Telecom Networks including license conditions and amendments thereto for addressing the security concerns of Telecom and Telecom networks.

iii) To initiate penal action process in case of non compliance of observation related to breach of security related license conditions.

iv) Coordinating the implementation of Security Projects pertaining to Lawful Interception and Secure Government Communication.

v) Matters related to Centralised Monitoring System.

vi) Matters pertaining to Secure Government Communications including Secured Digital Communication Network and Secure Mobile Communication network.

vii) Nodal unit for coordination with Ministry of Home Affairs, Department of defence and Security Agencies on the issues concerning national security related to Telecom.

vii) Bilateral and Multilateral discussions with foreign administration and participation in International Bodies including ITU, APT, SAARC and ASEAN on matters related to communication security.

viii) Issuing Security Clearance to TSPs for commercial launch of service.

ix) Facilitating Lawful interception and monitoring of Communication messages, capacity building in the country on Lawful Interception. Matters related to LBS.

xi) Matters pertaining to Clandestine telephone setups and telephone fraud.

x) Nodal unit pertaining to CDOT

2.8 DDG(Security Assurance)

(i) All matters pertaining to Security audit of networks. CISO for telecom sector. Keeping abreast of security audit needs in coordination with National Cyber Coordination Centre and National Critical Information Infrastructure Protection Centre.

(ii) To scrutinize Organisational policy of Telecom Service Providers' on security and security management of their networks, Network forensics, Network Hardening, Network penetration and Risk assessment,

(iii) Getting vulnerability Assessment Penetration testing on sample basis for critical network elements.

(iv) Matters related to Internet Governance and issues pertaining to Internet bodies like ICANNN, IFG including participation in Standing Committee on Internet Governance for ensuring a safe, secure and resilient internet.

(v) Vulnerability assessment of cyber threat landscape related to telecom networks.

(vi) Continuous assessment of cyber threat landscape related to telecom networks, maintaining database of Telecom incidents, analysis of trends and patterns of intruder activities, develop preventive strategy for telecom sector.

(vii) Nodal unit for coordination in matters pertaining to security of Telecom networks.

(viii) Matters pertaining to the National Cyber Security Coordinator.

(ix) Matters pertaining to R&D activities, capacity building in the country and security standards for security assurance of Telecom networks.

(x) Administration and operation of National User Device Registry

(xi) Policy framework regarding Telecom Security Testing

(xii) Coordinating the implementation of Security Projects pertaining to Security Assurance.

(xiii) Inter-ministerial coordination in respect of security/monitoring issues of Internet Services.

2.9 DDG(Security Assurance - II)

(i) Nodal Wing for Central for Developments of Telematics (C-DOT) regarding Administrative and Budgetary functions.

(ii) Nodal Wing for Centralized Monitoring Systems (CMS)

(iii) Nodal Wing Internet Monitoring System (IMS) and Inter Ministerial Group on IMS

(iv) Telecom Security Operations Centre (TSOC) project installation, operation and maintenance.

(v) Parliament Questions / Assurances, legal matters, VIP references and RTI applications related to above subjects.

2.10 Sr. DDG(NCCS)

i) Establish and operationalise framework of security testing and certification framework within the country.

ii) To bring out/adopt national security standards based on International standards and best practices keeping national security in view.

iii) Preparation of the Indian Telecom Security Assurance Requirements (ITSARs) for the network elements and notifying it.

iv) Expanding security-testing facilities in the country by setting up mechanisms to recognise/accredit labs from private and public sector for testing telecom products. Notifying lab recognition mechanism and conducting infrastructure assessment for recognition of security test labs.

v) Security certification of network elements based on the test results reported by the recognised test labs.

vi) capability building in the area of security testing, penetration testing, vulnerability analysis, code analysis and cryptographic modules.

vii) Increase meaningful participation in the security related works/activities of international Telecommunications Unit (ITU), Third Generation Partnership Project (3GPP), European Telecommunications Standards Institute (ETSI), Internet Governance Forum (IGF), Internet Engineering task Force (IETF),

Telecom Standards development Society of India (TSDSI) and other organisation.

3.0 MEMBER (TECHNOLOGY)

- Adviser (Technology)
    - DDG (National Operations Control Centre),
    - DDG (Networks and Technologies)
    - DDG (Access Services)
    - DDG (Access Services-I)
    - DDG (Carrier Services)
    - DDG (Data Services)
    - DDG (Satellite)
    - DDG (Disaster Management)
    - DDG (Standards-R&D-Innovation)

- Wireless Adviser(WPC Wing)

3.1 Adviser (Technology)

3.1.1 DDG (National Operations Control Centre)

(i) Online Operational control, coordination and Monitoring of all the satellite based services Like VSAT applications, Broadcasting, DTH, ISP etc.) in India on Indian and foreign satellites.

(ii) Handling Contingency Operations in case of failure of transponders/satellites.

(iii) Providing RF Interference solutions and coordinating with different satellite administration for the resolution of the interference problem(s).

(iv) Mandatory Performance Verifications Testing of all the ground segment satellite earth station antennas for conforming to latest ITU/TEC standards before permitting them to put in operations.

(v) Testing of ISP satellite Gateways & Monitoring of transmissions from these gateways.

(vi) Testing & Clearance of Teleports of TV broadcaster(s) and Direct to Home(DTH) service providers.

(vii) Testing and clearance of Digital News gathering (DSNG) vans used for live gathering.

(viii) Testing of satellite transponder before accepting for operations.

(ix) Spot frequency allocations and carrier plan approval to all the INSAT users and foreign satellite users for broadcasting/DTH/DSNG and ILD services.

(x) Verification/Implementation of license conditions as and when called upon by Licensing cell of DoT.

3.1.2 DDG (Networks and Technologies)

(i) Policy formulation and regulatory aspects related to Machine to Machine (M2M) communications including identification of critical M2M/IoT services.

(ii) Simplifying licensing activities of DoT by implementing paperless online license management system (SARAL SANCHAR) and integrating various functions related to license/registration across all field units of DoT.

(iii) Operation and management of online license management portal (SARAL SANCHAR) of DoT including coordination with field units of DoT.

(iv) Setting up of Indigenous 5G Test Bed in collaboration with premier academic institute for enabling Indian academia, industry and start-ups to validate their products/prototypes.

(v) Policy formulation, facilitation and review of transition to the Next Generation Internet Protocol i.e. IPv6 in a phased and time bound manner across all stakeholders.

(vi) To examine the impact of OTT Services and initiate policy guidelines on need basis for orderly growth of OTT domain.

(vii) Handling of Court cases, Parliament Questions/Assurances, VIP references, Public Grievances and RTI on matters related to NT wing.

3.1.3 DDG (Access Services)

(i) Policy matters (including amendments) of Unified Licence (UL), UL Virtual Network Operator (VNO) and guidelines for Grant of Unified License.

(ii) Issuance of :-

a) Unified Licence (UL) for access service authorization

b) UL (VNO) access service authorization and VNO Category B License

c) UL/UL(VNO) for more than one authorization

d) In-Flight and Maritime Connectivity (IFMC) permissions

(iii) Matters related to Operation/ implementation of ownership related issues of Access Services licensee companies such as merger/ de-merger of licensee companies, change of name/ registered office address of licensee companies, six-monthly reports on FDI and paid-up capital of licensee companies.

(iv) Processing of TRAI's recommendations pertaining to terms and conditions of UL and UL(VNO) licenses.

(v) Implementation of National Security Directive on Telecom (NSDT) in consultation with National Cyber Security Coordinator (NCSC).

(vi) Policy matters related to subscriber verification i.e. guidelines and processes for implementation of Know Your Customer (KYC).

(vii) Policy and administration of National Numbering Plan (NNP) including allocation of mobile and fixed line numbering resources to the telecom service providers.

(viii) All matters relating to Mobile Number Portability (MNP) service policy and issue of licenses.

(ix) Policy matters related to EMF radiation.

(x) Matters related to telecom facilities in border areas, pre-paid services/ roaming facility/ special security consideration in J&K, Assam and North East services areas

(xi) Matters related to designation of LEAs for interception and monitoring of telecom traffic

(xii) Coordination with Law Enforcement Agencies (LEAs) on matters related to:

(a) Lawful Interception Monitoring (LIM)/ Lawful Interception System (LIS)

(b) Testing of Value Added Services (VAS) and

(c) Matters related to Remote Access permissions

(xiii) Operational matters related to roll-out obligations of the mobile telecom service providers as per respective Notice Inviting Applications (NIAs) for spectrum auction and imposition of Liquidated Damages (LDs) on non-fulfillment of roll-out obligations

(xiv) Levy of penalty for violation of terms and conditions of licenses

(xv) Matters (including coordination with TRAI) related to interconnection, interconnection-usage-charge (IUC) and Mobile Number Portability.

3.1.4 DDG (Access Services-I)

Task Force, AS Cell :-

1. Obtaining direct feedback on call drops from around 10 lakhs subscribers per month through Interactive Voice Response System (IVRS) based feedback system on Call Drops & sharing the feedback with concerned Telecom Service Providers (TSPs) every week to take corrective action. Review of Action Taken Report of TSPs.
2. To facilitate use of Government buildings /estate for telecom installations to address the concerns of call Drops.
3. Call drops & Quality of Services related issues in the mobile network.
4. Handling Parliament Questions (PQs), Parliament Assurances (PAs), Parliamentary matters, VIP references on Call Drop &Quality of Services issues in mobile networks.

3.1.5 DDG (Carrier Services)

(i) Licensing &Policy matters related to :-
   a. International Long Distance (ILD) Service.
   b. National Long Distance (NLD) service.
   c. Resale of IPLC service.
   d. Voice Mail/ Audiotex/ UMS services.
   e. Public Mobile Radio Trunking Service (PMTRS).
   f. Captive Mobile Radio Trunking Service (CMRTS).

(ii) Registration &Policy matters related to Infrastructure Provider Category-I Registration.

(iii) Residual issues related to IP-II licenses & Radio Paging licenses.

(iv) Grant of NOC for International Roaming SIM Cards and related policy matters.

(v) Policy matters related to Other Service Providers (OSPs).

(vi) Issues pertaining to Green Telecom/renewable energy (Work related to operational and monitoring aspects of use of Non-renewable energy in telecom networks and Carbon footprint/Carbon credits will be looked by BW wing of DoT).

(vii) Work related to Parliament Questions on Unsolicited Commercial Communications (UCC) / Telemarketers.

(viii) Formulation and review of EMF emission norms from mobile towers keeping in view the recommendations of WHO/ITU/ICNIRP or any other authorized national/international organizations and coordinate with these agencies for country specific R&D work.

(ix) Policy related to National EMF Portal (Tarang Sanchar), organising EMF awareness programs and research studies while handling complaints & court cases related to Mobile Tower emissions/ installation/ RoW issues.

(x) Infrastructure, Right of Way and other Policy related issues of Mobile tower installation.

(xi) Security clearance for :-

a. Setting up of International Long Distance (ILD) Gateways and related issues.
b. Setting up of Cable Landing Station (CLS) and related issues.
c. Remote Access (RA) and related issues.
d. Foreign personnel/crew from MHA w.r.t. licensees of CS Cell.
e. Cable Ships from Ministry of Defence for Submarine Cable Repair or survey works.
f. Security Monitoring & Lawful Interception Monitoring (LIM) related issues raised by Security Agencies w.r.t. NLD and ILD Licenses.

3.1.6 DDG (Data Services)

i) Security clearances of personnel under ISP License from Security Agencies.

ii) Remote Access and International Internet Gateways permissions under ISP License.

iii) Blocking/Un-blocking instructions to ISPs.

iv) Issue of new ISP licenses, Surrender/Termination of ISP licences.

v) Processing of application for name change, merger/amalgamation, change in registered office address.

vi) Handling of Parliament Questions, Court cases, VIP references and Audit paras related to DS Cell.

vii) TRAI recommendations and policy issues relating to Internet service.

viii) Handling of Inspection report and violation cases from TERM Cells against ISPs.

3.1.7 DDG (Satellite)

i). Satellite Communication (SATCOM) Policy issues

ii). Grant of satellite related licenses/ permissions

a. Commercial CUG VSAT service license
b. Captive CUG VSAT service license
c. Mobile Satellite Services- Reporting (MSS-R) license
d. GMPCS license & Sui-Generis category license for provision & operation of satellite based services

iii). TRAI recommendations relating to these services

iv). Arranging inter-ministerial Apex Committee meetings and granting in-principle approval of all satellite related networks involving new technology/ augmentation in existing networks by Apex Committee.

v). Co-ordination with DoS, MoIB, WPC, NOCC and MHA on satellite based communication policy related issues. Coordinating with TEC on Interface Requirements/Standards for Satellite Systems and other SATCOM related matters.

vi). Handling satellite related subjects requiring specific knowledge & expertise. Representing DoT in SATCOM related committees in which DoS is the convener, i.e. inter-ministerial Technical Advisory Group (TAG), Secretary level Satellite Co-ordination Committee (SCC), the Committee for Authorizing the Establishment and Operation of Indian Satellite System (CAISS), CAISS Support Group (CSG).

vii). Coordinating for introduction of new Satellite Technologies & Systems

viii). Satellite handset related matters

ix). Coordinating SATCOM bandwidth demand for BBNL project 'BharatNet', BSNL projects & other USOF projects like remote area connectivity through SATCOM e.g. for A&N islands, Lakshadweep, NE, DSPTs etc.

x). Processing of application for name change, merger/amalgamation, change in registered office address.

xi). Handling of Parliament Questions, Court cases, VIP references and Audit paras .

xii). Handling of Inspection report and violation cases from TERM Cells against Satellite Providers.

3.1.8 DDG (Disaster Management)

i. Disaster Management work like coordination with National Disaster Management Authority, (NDMA) India and Ministry of Home Affairs for issues related with Disaster management.

ii. Coordination with TEC for preparation of Disaster Management and Mitigation plans, Emergency Support Function (ESF) plans.

iii. Standard Operating Procedures (SOP) for handling disasters in Telecom Sector.

iv. Issues relating to implementation of National Disaster Management Guidelines – National Disaster Management Information and Communication Systems (NDMICS)

3.1.9 DDG (Standards-R&D-Innovation)

(i) Facilitate & coordinate DCT standardization efforts among/with domestic stakeholders, International standardization bodies/platforms and other departments/Ministries, and submission of technical and substantive contributions in International platforms.

(ii) Establish DCT engagement repository/portal to facilitate engagement with stakeholders on technical and substantive contributions on International platforms.

(iii) Facilitate DoT efforts on R&D, SMEs, Start-ups and Innovation activities.

(iv) Carryout technical-policy-research based on developments and submissions on International platforms.

(v) Coordinate with the IR, IC, WPC Divisions, TEC, NTIPRIT, TSDSI etc., to represent unified positions on International platforms.

(vi) To publish Technology DoTs e-Newsletter- a glimpse of technology landscape in DCTs.

(vii) To participate in various international forums like ITU, APT, IEEE, One M2M, APNIC etc. to keep abreast with latest Standards & technological developments and contribute from an Indian perspective.

(viii) Development of Schemes, project and Pilots to promote indigenous & innovative R&D to develop products in emerging technologies.

(ix) Handling of RTI, Parliament Questions/Assurances, VIP references on matters related to SRI Division.

(x) Handling TRAI recommendations on all issues related to SRI Division.

3.2 Wireless Adviser (WPC Wing)

(i) All matters relating to Spectrum Planning, Spectrum Management and Regulation which includes formulation and analysis of spectrum policy issues.

(ii) National nodal agency for ITU (International Telecommunication Union) and APT (Asia Pacific Telecommunity) on all issues related to radio frequency management including satellite orbital resources;

(iii) Efficient, equitable and cost effective management of a total of 40 odd radio communication services, of which some of the important ones being are Aeronautical Radio-navigation Service, Mobile(including cellular mobile), fixed Satellite services including all geostationary orbit and host of other services involving Public safety, disaster management, Science services etc.

(iv) International, and Regional coordination with other countries on all matters relating to Radio communication on behalf of Government of India and entering into multilateral/ bilateral agreements and national coordination with all the Ministries/Departments of the Govt. of India for management of all frequency usage in the country.

(v) Inter-ministerial coordination to carve out additional spectrum for emerging spectral efficient radio technologies/ applications in lieu of unutilized/ underutilized spectrum lying with the legacy users, commonly known as spectrum re-farming;

(vi) Management of spectrum resources, intra-departmental coordination, for the purpose of auction of spectrum to the access service providers and also post-auction management of spectrum through spectrum harmonization, trading, sharing etc.

(vii) Consideration of various TRAI recommendations i.r.t. spectrum related matters; dealing with litigations associated with various policy provisions of radio spectrum;

(viii) Preparation of the National Frequency Allocation Plan(NFAP) by reviewing the existing of laws/ rules/ regulations and their amendments with a view to make them more effective and cater the needs of fast changing spectrum usages. The latest one being published in 2018.

(ix) Devising a spectrum management policy and delicensing of frequency bands to promote and facilitate innovation and R&D in emerging wireless

technologies. This is in sync with contemporary international practices and also provides a regulatory certainty to potential investors and users.

(x) Conferences, meetings and discussions at regional (APT) and international level (ITU-R) for timely international harmonization, regional/ sub-regional harmonization/ coordination and bi-lateral agreements.

(xi) Finalise national view points on relevant matters in the field of telecommunication of other International Organisation viz. International Civil Aviation Organisation (ICAO), International Maritime Organisation (IMO), World Meteorological Organisation (WMO), Non Aligned Movement (NAM), Economic and Social Council for Asia and Pacific (ESCAP), UN forum on peaceful uses of space, etc. Co-ordination and execution of Bilateral co-operation and agreements on spectrum related matters.

(xii) Grant and renewal of various categories of Wireless Telegraph Station Licenses under the Indian Telegraph Act, 1885 which includes captive, telecom, satellite and broadcast service providers.

(xiii) Grant of frequency assignments/licenses in HF, VHF, UHF and Microwave radio frequencies in respect of all users including Security Agencies, Government Organisation, Public Sector Undertakings and Private users.

(xiv) Multi-lateral coordination and registration of necessary technical parameters of the satellite with the Radio communication Bureau of the International Telecommunication Union.

(xv) To cater to the spectrum needs of the satellite communication systems and also to acquire the right of using the satellite orbit though the prescribed coordination procedure of ITU-R

(xvi) Site clearance of all wireless installations in the country and related matters concerning the Standing Advisory Committee on Radio Frequency Allocations (SACFA).

(xvii) Issue of licenses/ certificate to operators of Global Maritime Distress and Safety System (GMDSS) equipments on board ships and Radio Telephone (RT) equipments on board aircraft; and to Radio Amateurs (HAM) after conduct of proficiency examination in line with International Regulations.

(xviii) The Regional Licensing Offices (RLOs) at New Delhi, Mumbai, Kolkata, Chennai & Guwahati under WPC deal with the issue and renewal of network and non-network licences such as Import Licence, Possession Licence

(Dealer/Non-dealer), Experimental Licence, Demonstration Licence, Short Range UHF Hand-held Licence etc. of the regions under them.

(xix) The RLOs also issue Equipment Type Approval (ETA) for equipment working in the delicensed bands. As more bands are getting delicenced and the increased use of wireless applications, RLOs ensure that only certified equipment (with the authorised parameters) are permitted.

(xx) Administration of Indian Wireless Telegraphy Act, 1933 and Rules and all matters related there under.

4.0 MEMBER (FINANCE)

- Adviser (Finance)
    - DDG (Licensing Finance Policy)
    - DDG (Establishment & Asset Management)
    - DDG (Budget & Training Finance & Public Enterprises and Finance)
    - DDG(Accounts)
    - DDG (License Finance Assessment)
    - DDG (Wireless Planning & Finance)
    - DDG(Foreign Investment Policy & Promotion)
    - DDG(Finance)

4.1 DDG (Licensing Finance Policy)

(i) Dealing with all Policy and regulation matters relating to:

- Regulation of the terms and conditions of License Agreements;
- Interpretation of the License Agreements;
- Grant of LOI, Licenses and authorizations;
- Merger and Acquisition;
- Surrender and Termination of Licenses;
- Tripartite Agreements of all licenses;
- Other Misc. Policy issues/ clarifications;

(ii) Interpretation and implementation of financial conditions of the license agreements towards effective realization of revenue & related policy issues including new policy initiatives, license amendment wherever required etc.

(iii) Examining TRAI recommendation related with the licensing finance issues including the considerations within the Contracts/License Agreements under Indian Telegraph Act 1885 involving issues such as Bank Guarantee, Spectrum Usage Charge, License Fee, etc.

(iv) Dealing with the legal disputes and Court cases in respect of interpretation of License Agreements before the following legal fora:

- Hon'ble Supreme Court of India;
- High Courts;
- National Company Law Tribunal and National Company Law Appellate Tribunal;
- TDSAT;
- Insolvency and Bankruptcy Code 2016;
- Licensing related court cases in any other court/ Tribunal

(v) Monitoring and Co-ordination with CGCA and Pr./ CCA offices in respect of following matters:-

- Issuing of clarifications regarding assessment of License Fee and Bank Guarantee management;
- Any other issue related to the License Agreement to be dealt by the Pr. CCA/CCA offices etc.

4.2 DDG (Establishment &Asset Management)

(i) Staff, Establishment and Administration of IP&TAFS Gr. "A" and Gr. "B" officers posted in DoT, DoP HQrs and those on deputations along with field & attached offices.

(ii) Supervision and monitoring of field units of DoT i.e Pr./Controller of Communication Accounts (CCA) direct or through O/o CGCA.

(iii) Asset Management (AM) division is responsible for preparation as well as monitoring of overall asset management policy in respect of Department and related offices as well as Public Sector Undertakings (PSUs) under the administrative control of Department of Telecommunications. Asset Management Division deals with the work of overall monitoring of the land and building assets, inventory management and related valuations. It also deals with the finalization of policy regarding schedule of accommodation and standards of staff quarters.

It deals with the asset cases requiring approval of the President in accordance with the Memorandum of Association (MoA) and Article of Association (AoA) of PSUs. It is also responsible for handling the work of inter-departmental/inter-ministerial transfer as well as acquisition of land and buildings, retention of land and buildings for DoT Units and other Government offices and management of joint held properties. The division also monitors the work of verification of DoT assets and related matter of schedule of accommodation in respect of DoT field units as well as uploading of data on Government Land Information System (GLIS) portal relating to the land and building under the Department of Telecommunications. Asset Management division also deals with the work relating to approval of lease/ renting of office space/staff quarters as well as estimates for repair/renovation/construction of buildings for DoT and its field offices.

As part of the Revival Plan of BSNL/MTNL, it deals with monetization of land & building assets of BSNL & MTNL. The cases for sale/transfer of assets are processed on the basis of indicative value of assets. If the indicative value is more than 100 cr., the case is referred to Department of Investment and Public Asset Management (DIPAM) and if indicative value is less than 100 cr.,

DoT Policy for monetization of land & building assets of BSNL/MTNL is followed.

4.3 DDG (Budget &Training Finance & Public Enterprises and Finance)

(i) Advising on financial issues relating to DoT's PSUs and disinvested PSUs viz. HTL & TCL.
(ii) All financial matters relating to finance, billing, telecom revenue.
(iii) Audit paras relating to Telephone Revenue in r/o PSUs of DoT
(iv) Arbitration matters related to Telecom Revenue.
(v) Budgeting of whole DoT.
(vi) Re-appropriation from Plan to Non-Plan, Surrenders etc.
(vii) Preparation of Demands for Grants.
(viii) Release of fund to C-DOT.
(ix) Processing of annual plan proposal of telecom sector for its approvals.
(x) Processing of five year plan proposals of telecom sector for its approvals.
(xi) Processing of Mid-Term Appraisal of Five Year plan.
(xii) Telecom Finance Corporation.

4.4 DDG (Accounts)

(a) Accounting:

(i) Accounting matter of DoT.
(ii) Coordinate with Pr. CCA/CCA offices w.r.t. all accounting matters.
(iii) Compilation of Accounts from all units of DoT and its submission to office of Controller General of Accounts, Ministry of Finance.
(iv) DDO function and maintenance of Cash Book for DoT HQ.
(v) Preparation of Pay Bill and allied works for DoT HQ.
(vi) Coordination & implementation of PFMS.

(b) Banking:

(i) Banking Arrangement of DoT and its units.

(c) Pension:

(i) Issue of PPOs to pensioners of DoT HQ, WPC & WMO.
(ii) Maintenance of LS&PC of the incumbents of DoT on deputation to PSUs.

(iii) Monitoring of pension payment of MTNL, C.S.O retirees and revision cases.

(d) GPF:

(i) Maintenance of GPF of employees of DoT, WPC & WMO.

(ii) Monitoring/Implementation of Direct Payment of GPF by Pr. CCA/CCA Offices to BSNL employees.

(iii) Nodal wing for issuing guidelines and policy in matter of GPF, Accounting for DoT.

(e) Digital Financial Unit:

(i) Review of SWR (State of Work Reports).

(ii) Development and customization of all accounting application e.g. Pension, GPF, SWR.

(f) **Digital Payments:**

(i) Coordinating & implementation of Accounting Applications - PFMS, NTRP, CDDO.

(ii) Coordination and implementation of NTRP(Bharat Kosh) w.e.f. 01.01.2017.

(iii) Nodal wing for monitoring of Digital Payment for Telecom Sector.

(iv) Monitoring of "Help Desk" for attending & resolving queries of PFMS/NTRP at DoT HQ.

(g) Internal Audit & Audit Coordination:

(i) Coordination & Monitoring of report of IA (Field units) sent by CGCA.

(ii) Settlement of Part II-B objection of DG, P&T Audit.

(iii) Audit coordination for DoT HQ, PSUs.

(iv) Matters relating to coordination of Draft Audit Paras, CAG Paras, PAC Paras/Reports received from O/o DG Audit (P&T) O/o CAG of India and Lok Sabha Sectt. with the nodal wings of Department of Telecom.

(v) Coordination with Monitoring cell and Lok Sabha Sectt. for settlement of P&T Paras and commercial paras respectively.

(vi) Coordination with PAC Branch (Lok Sabha Sectt.) for the settlement of PAC Paras/Reports.

(vii) Submission of quarterly monitoring statement of pendency of Audit/PAC/COPU/DAP cases to Digital Communication Commission.

(h) <u>Other Miscellaneous:</u>

(i) Monitoring and implementation of New Pension System for all DoT Units.

(ii) Issue of verification of Service Certificate to employees of DoT HQ, WPC &WMO.

(iii) RTI and appeal cases for related matters of Accounts.

(iv) Related VIP references, Parliament Questions and JPC for DoT.

(v) Updating of Court cases on E-Samiksha web based (Where the cabinet Secretary is Respondent).

(vi) Administration and staff matters.

4.5 <u>DDG (LF-Assessment)</u>

(i) Assessment of AGR and Licence Fee and issuing demand notices to the following Access Service Providers based on Audited AGRs, Audited Annual Accounts and Reconciliation Statements :

(a) BSNL (b) MTNL (c) Airtel Group of Companies (d) Idea Group of Companies (e) Reliance Group of Companies (f) Reliance JioInfocomm Ltd (g) Vodafone Group of Companies (h) Vodafone- Idea Group (since 31.08.2018) (i)Loop Group of Companies (j) Etisalat DB Telecom (k) Tata Group of Companies (l) Telenor India Communications Pvt Ltd / Telewings Communications Ltd (m) Videocon (n) Loop (o) S-Tel (p) HFCL /Quadrant Televentures Ltd (p) Sistema Shyam Teleservices Ltd (MTS) (q) Aircel Group of Companies

Dealing with Parliament Questions, Parliament Assurances, JPC matters and VIP references.

(ii) Furnishing information / data etc. to the Standing Committee / other Parliamentary Committees and Cabinet Secretariat; related with LFA Division.

(iii) Compilation of assessment done and demand issued year wise and TSP wise

(iv) Monitoring of Bank Guarantees (PBGs & FBGs) maintained by concerned CCAs.

(v) Processing of representations received from various TSPs, compilation of deduction verification reports (DVRs) received from CCA offices and issuing the guidelines and clarifications from time to time.

(vi) Issues relating to LD vetting.

(vii) Augmentation / modification and implementation of DoT's existing LF & WPF software.

(viii) Data compilation in respect of License Fee collections of Access Services.

(ix) Administration and staff matters relating to LF - Assessment division.

(x) Budget (RE & BE) and other related work.

(xi) Compilation and submission of outstanding License Fees.

(xii) Providing inputs to LFP wing on assessment process and clarifications.

(xiii) Review of LF payments and outstanding.

(xiv) Supply of information / data / files etc. to Audit as and when requisitioned by them.

(xv) Reply to (a) CAG (b) Internal Audit.

(xvi) Review of State of Work Report (LF - Assessment portions only).

(xvii) Inputs on Policy matters relating to LF - Assessment / Telecom Revenues.

(xviii) Action under clause 22.1 of Licence Agreement.

(xix) Monitoring and enforcing provisions of clause 22.2, 22.3 (a) and 22.3 (b) of Licence Department.

(xx) Scrutiny under clause 22.4 of Licence Agreement.

(xxi) Appointment of Auditors under clause 22.5 of LA and Special Auditors under clause 22.6 of Licence Agreement.

(xxii) Capacity Building in respect of LF Assessment.

(xxiii) Use of Technology (especially ICTs) for strengthening Financial Management System with reference to the redefined FA's charter.

(xxiv) Review of receipts of various penalties levied by other wings of DoT / Field Units and compilation of CAF & EMR penalty.

(xxv) PFMS / Bharat Kosh and other related work.

(xxvi) Monitoring of LF payments on quarterly basis through online and offline mode.

(xxvii) Development of MIS Report in LF software

(xxviii) Computerisation of LF Assessment process

4.6 DDG (Wireless Planning and Finance)

(i) Conduct of auction of Spectrum in various bands.

(ii) Selection of Auctioneer for conduct of auction

(iii) Inter Ministerial Committee to overlook the work of selection of Auctioneer and conduct of Auction.

(iv) Monitoring deferred payments for spectrum acquired in various Auctions after 2010.

(v) Maintenance of Financial Bank Guarantees for securitisation of deferred instalments payable by successful bidders in auction of spectrum

(vi) Assessment/ Monitoring of Spectrum Usage Charges / One Time Spectrum Charges (OTSC) / Liberalisation Charges

(vii) Monitoring of assessment of Spectrum Usage Charges (SUC)/ its collection in respect of GSM, CDMA, Commercial, V-SAT & Captive services.

(viii) Preparation of Budget Estimates on Revenue Receipts in respect of Spectrum Usage Charges. Budget of WPC & Wireless Monitoring Organisation (WMO)

(ix) Rendering Financial Advice on the proposals received from WPC and WMO in respect of Capital Services.

(x) Collecting and depositing the DDs/ Cheques received from WPC wing in respect of captive licenses.

(xi) All SUC policy issues, TRAI recommendations pertaining to Wireless services.

4.7 DDG (Foreign Investment Policy & Promotion)

Foreign Investment Policy & Promotion (FIPP) Wing is the nodal wing in Department of Telecommunications to deal with the processing of FDI proposals/application pertaining to the Telecom Services Sector. The wing was created in 2018. The wing has to coordinate with the other concerned

Ministries/Departments/Offices, mainly RBI, MHA, DPIIT, DoR, MEA, SEBI etc. The brief of the work dealt by the FIPP wing is as under:

i. **Examination and approval/rejection/closure of the FDI cases relating to the Telecom Services Sector**. FIPP wing receives the proposals online on the FIF Portal of DPIIT The proposals are examined in coordination with the licensing wings of DoT, viz, AS, CS, DS LFP, WPC wings. RBI comments and MHA security clearance are also required as per DPIIT SOP. Interactions are held with the applicants to resolve the deficiencies noted in the applications. The FDI case are then submitted for approval of the competent authority after receipt of all required documents as per the FDI policy and DPIIT SOP. For cases where FDI is upto Rs. 5000Cr, the Department (MoC) is the competent authority and in cases where FDI exceeds Rs 5000 Cr, the Competent authority is CCEA. In the event of FDI proposals found deficient in required documents etc the cases are closed. If there are adverse inputs/comments on the proposal by MHA/DoR etc the cases can be rejected after concurrence by DPIIT**.**

ii. **Examination of the policy issues relating to the promotion of Foreign Direct Investment in Telecom Sector.** Whenever any new policy or guidelines relating to FDI are notified like Press Note 3 (2020), FDI Policy 2020, DPIIT SoP, FEMA Non Debt Instrument Rules 2019, the FDI wing examines the new policy and submits the same to the competent authority with its comments from time to time.

iii. Monitoring of compliances of conditions under the FDI approvals pertaining to the Telecom Sector, including the past cases approved by DoT/erstwhile Foreign Investment Promotion Board (FIPB). All the proposal that are processed by the FIPP wing, need to be compliant with the conditions set by the FIPB/DOT. If violations are noted, the case is processed only subject to compounding by RBI.

iv. Conducting regular monthly review as per SOP on the FDI Proposals relating to the Telecom Sector pending with the DoT and submitting the same to competent authority.

v. To assist Secretary (Telecom) in Inter- Ministerial Committee (IMC) meetings held under the chairmanship of Secretary, DPIIT and Secretary, MHA (PN3 cases), as the case may be.

vi. To maintain the database as per the requirement of DPIIT SoP of the proposals received along with the details such as date of receipt, investor and investee company details, volume of foreign investment involved and date of issue of approval/rejection/closure letter.

vii. Work relating to the parliamentary matters pertaining to FIPP Wing.

viii. To promote ease of doing business for investors by coordinating and monitoring of implementation of National Single Window System in DOT. NSWS is the flagship programme of DPIIT implemented across Govt. of India and State Govts. By Invest India. DDG (FIPP) is the nodal officer in DOT for the project.

4.8 DDG (Finance)

DDG (Finance) is heading Internal Finance Division (IFD) of the Ministry under Member (F), Digital communication commission (DCC) DoT. DDG (Finance) also acts as a Financial Advisor to the Additional Secretary, DoT.

IFD renders Finance advice on proposals pertaining to tenders for procurement and execution of contracts. All the proposals requiring approval of Secretary and Hon'ble Minister are examined by the IFD for concurrence. Besides this, it also includes the following:

(i) Examination of Cabinet Notes and DCC Notes;
(ii) Examination of EE/RPE/EFC Memos;
(iii) Delegation of financial powers;
(iv) Creation/abolition of posts;
(v) Cases related to TRAI, TDSAT and C-DOT;
(vi) Nodal for granting relaxation for journeys by private airlines;
(vii) Examination of cadre review proposals of all the services/cadres of DoT;
(viii) Deputation/Delegation/Training in India and abroad;

(ix) Approval of Expenditure to Seminar/Conferences etc., in India and abroad

(x) Cases relating to admissibility of Medical Attendance Rules;

(xi) Honorarium and award etc. to Staff;

(xii) Nodal wing for GeM in the DoT

5. Pr. Economic Advisor/Sr. Economic Advisor / Economic Advisor

(i) Preparation of Annual Report of the Department of Telecommunications.

(ii) Preparation of Annual Statistical Bulletin of DoT

(iii) Supply of Telecom Statistics to International Organizations like International Telecommunications Union (ITU).

(iv) Monitoring of Global Indices namely ICT Development Index (IDI) and Network Readiness Index (NRI).

(v) Interaction with ITU on IDI

(vi) Work related to Sustainable Development Goals (SDG).

(vii) Handling other Global Indices as a line Ministry.

(viii) Preparation of inputs for Pre-budget economic survey.

(ix) Collection of Telephone Subscribers data on monthly basis and preparation of various reports on telephone subscribers data, tele-density, total number of connections (Rural/ Urban) and License-wise operators etc.

(x) Compilation, tabulation and analysis of statistical data and preparation of monthly & quarterly reports

(xi) Preparation of DCC memo on telecom parameters

(xii) Presentation of Telecom Parameters before DCC

(xiii) Providing material for Updating DoT dashboard

(xiv) Compilation of material for Finance Minister's Budget Speech.

(xv) Socio Economic Studies.

(xvi) Preparation and supply of Material for Press Information Bureau on Annual basis.

(xvii) Supply of data to various other Ministries / Departments as well as different wings of DoT as per requirement.

6. ADMINISTRATOR (USOF)

(i) Joint Administrator (Technical& Administration)

(ii) Additional Administrator (Finance)

(iii) DDG(Project Monitoring -USOF)

(iv) DDG (I)

(v) DDG (II)

(vi) DDG (Special Project)

6.1 Joint Administrator (Technical &Administration)

(i) BharatNet Installation and all related matters (Including A&N).

(ii) All Wi-Fi Pilots and Wi-Fi at Rural Exchanges by BSNL/CSC Projects.

(iii) BharatNet O&M and Utilization (except PPP) and its GIS mapping.

(iv) Monitoring of BBNL works.

(v) Co-ordination Work for Parliament Assurances, VIP References, PG Cases, Twitter Cases and IEM.

(vi) Daily/Weekly/Biweekly/Monthly/Quarterly/Annual Report

(vii) E-Samiksha/OOMF.

(viii) Administrative and Establishment Work of entire USoF Wing

(ix) Hiring and Management of regular and contractual man power / Staff for the entire USoF wing.

(x) O&M Activities of USoF Wing including preparation and finalization of "Channel of Submission and Level of Final Disposal" for USoF Wing.

(xi) Issues relating to staff and training of entire USoF Wing.

(xii) BharatNet State Led Model related works for the States of Gujarat, Maharashtra, Andhra Pradesh, Chhatisgarh, Odisha and Jharkhand

(xiii) Allocation of work among all Divisions of entire USoF Wing

(xiv) Arranging / co-ordination for Office Infrastructure, Vehicles etc

(xv) Procurement of Goods and services for entire USoF Wing.

(xvi) Court work pertaining to the Division.

6.2 Additional Administrator (Finance)

(i) Financial Advise regarding amendment to the terms and conditions of Agreement.

(ii) Financial advice for Disposal of clarifications received from USPs and CCAs.

(iii) Inspection reports.

(iv) Maintenance of USOF website in co-ordination with Technical

Divisions of USOF.

(v) Work relating to Finance Advice.

(vi) Financial Advise relating to the new activities including Broadband, Mobile Infrastructure, OFC network Gender budgeting Pilot Project etc.

(vii) Development and management of claim Settlement and Management System (CSMS) part of the USOF website and other NIC related work in Co-ordination with USoF Technical Wing.

(viii) Financial Advice for on-going schemes of USOF.

(ix) Financial advice regarding Mobile services phase-I

(x) Financial advice regarding New schemes

(xi) Budgeting exercise and preparation of various estimates, Outcome Budget, Performance Budget.

(xii) Maintenance of information relating to intimation of claim and requisition of Fund.

(xiii) Authorization of Fund.

(xiv) Maintenance of PBG(s).

(xv) Work relating to Audit.

(xvi) Reconciliation of payment booking with TA Section

(xvii) Budget Accounts and Audit matter

(xviii) Delegation of financial powers

(xix) Court work pertaining to the Division.

6.3 DDG(Project Monitoring – USOF)

(i) Prayas Dashboard

(ii) NITI Aayog SewaPuri Vikas Abhiyan

(iii) Dashboard for USoF Schemes

(iv) Physical Verification of BharatNet Works

(v) Issues related to BharatNet

(vi) Specific Monitoring of BharatNet Work in Banaras / Varanasi

6.4 DDG(I)

(i) Provision of mobile services in NER (Except Meghalaya, Arunachal Pradesh and two districts of Assam) implemented by M/s BAL/BHL.

(ii) OFC projects in NER (including BharatNet).

(iii) Monitoring and coordination with BBNL for data updation on existing Prayas Portal and creation of new project for reflection of connectivity of 6 lakh villages on Prayas Portal as per the directions of PMO.

(iv) BharatNet State Led Model related works for the States of Telangana and Tamilnadu.

(v) Parliament Questions (Nodal division for USoF Technical Wing).

(vi) Coordination for FTTH connections to Government Institutions.

(vii) Coordination for Provisioning of 10 Gbps International BW to BSNL from COX Bazar to Agartala through USOF funding.

(viii) Court work pertaining to the Division.

6.5 DDG(II)

(i) RCP, SMCF and RDEL.
(ii) Island projects.
(iii) VPT Phase-II and closed schemes such as MARR and VPT Phase-I.
(iv) Rural Wire Line Broadband scheme.
(v) Shared Mobile Infrastructure scheme.
(vi) All Satellite projects of USOF** (including communication with ISRO).
(vii) Court work pertaining to the Division.

6.6 DDG(Special Projects)

(i) LWE Phase-I/ Phase-II and Border States.
(ii) Mobile project in Arunachal Pradesh and 2 districts of Assam and Meghalaya.
(iii) Uncovered villages and aspirational districts.

(iv) Court cases.

(v) PPP BharatNet.

(vi) BharatNet State Led Model related works for the States of Uttarakhand, Goa, J&K

(vii) Pilot Project.

(viii) Court work pertaining to the Division..

7.0 CHIEF VIGILANCE OFFICER

(i) Scrutiny of complaints as per CVC guidelines.

(ii) Investigation/inquiry of complaints having vigilance angle.

(iii) Examination of the Self-contained notes/ CBI reports and its follow up.

(iv) Seeking advice from CVC / UPSC.

(v) To extend assistance / liaison with CBI / Lokpal /Police & other agencies in the enquiry / investigation of cases.

(vi) Processing of Prosecution sanction in corruption cases.

(vii) Issues concerning suspension and other departmental actions against the employees concerned in vigilance matters.

(viii) Conduct departmental / disciplinary proceedings in vigilance matters, in respect of all employees, including retired employees, having disciplinary authority inDoT.

(ix) Coordination with CVC, UPSC, DoPT and other agencies on vigilance matters.

(x) Monitoring court cases relating to vigilance matters.

(xi) Ratification of major penalties in respect of absorbed employees of BSNL & MTNL.

(xii) Processing the appeal, review and revision petitions in departmental proceedings, arising out of vigilance matters.

(xiii) Issue of Vigilance clearance including CVC clearance.

(xiv) Monitor exercise under FR-56(j) by respective Cadre Controlling Authorities in the Department.

(xv) Preparation and maintenance of Agreed list, Officers of Doubtful Integrity (ODI) list etc., and necessary action thereon.

(xvi) Conduct of periodic/surprise inspections/reviews/audits and scrutiny of Audit reports.

(xvii) Suggesting systemic /procedural improvements for ensuring transparency and mitigating scope for corruption or malpractices.

(xviii) Identification of sensitive areas and monitoring implementation of rotational transfer policy.

(xix) Scrutiny of 'Annual Property Returns' & 'Intimation of acquisition/disposal of property'.

(xx) Organizing training /workshop on Vigilance matters and observance of 'Vigilance Awareness Week'.

(xxi) Appointment of Chief Vigilance Officers / Vigilance Officers in the Public Sector undertakings/ autonomous bodies/attached offices/subordinate offices under administrative control of the Department.

(xxii) Updation of relevant data on "Probity portal" & "System for Online Vigilance Clearance Enquiries (SOLVE) portal".

(xxiii) Co-ordination with the CVOs of PSUs & other units under DoT and holding regular meetings with them.

8.DIRECTOR GENERAL (TELECOM), HQ

- Sr. DDG (Director General Telecom HQ)
  - DDG (Admn. & West)
  - DDG (Security & East)
  - DDG (IT & South)
  - DDG (Policy & North)
  - DDG (Electrical)

8.1 DDG(Admin & West)

(i) Staff/ Establishment/Training and General Administration matters.

(ii) PG cases/RTI cases.

(iii) MIS aggregations.

(iv) Parliament questions/assurances/other related matters.

(v) Holding of national level workshops/ conferences etc.

8.2 DDG(Policy & North)

(i) Policy Issues related to AS/CS/DS Wing.

(ii) CAF verification related issues

(iii) EMF Radiation testing related issues

(iv) Roll-out testing related issues

(v) Budget matters.

(vi) Audit matters.

8.3 DDG(Security & East)

(i) Policy issues related to Security matters.

(ii) Policy issues related to USOF.

(iii) Court cases.

(iv) VIP references.

(v) Grey market related issues.

8.4 DDG(IT & South)

(i) IT infrastructure.

(ii) Social media monitoring.

(iii) Policy issues related to Disaster Management.

(iv) Matters related to new technology.

8.5 DDG(Electrical)

(i) Green Technology.

(ii) Renewable Energy Technology.

(iii) Monitoring of electrical installations.

(iv) Monitoring of building infra related functions such as energy functions such as energy conservation and fire safety.

(v) Powering of telecom towers with renewable energy.